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# JOHN WESLEY POWELL : STAUNCH NEO-LAMARCKIAN

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John Wesley Powell (1834-1902) was one of the most outstanding contributors to the history and development of the American Far West. His contributions to the fields of geology, ethnology and physical geography are well known. His field trips into the unknown regions of the Colorado and Green rivers opened new horizons for understanding the enormous wealth of natural resources of the northern continent in the Western Hemisphere. The area in which he is lesser known is his treatises dealing with neo-Lamarckian theory. Similar to his pupil and friend, the well known sociologist Lester Frank Ward, Powell utilized staunch neo-Lamarckian expositions in interpreting man's physical, biological, and social development. Powell believed that exercise as explained in Lamarck's law of use and disuse helped develop physical and mental attributes which were passed on to the progeny. Powell viewed man's role as controller of nature and not as a victim of the blind force of natural selection. The control of flooding of the great rivers of the Far West which caused considerable loss of life and property was one of the social aspects of neo-Lamarckism prescribed by Powell.

Powell recommended government intervention and supervision of planned communities in an age of noninterference. The principle of laissez-faire dominated in land speculation, land abuse, Indian containment, Negro exploitation, and various types of schemes to cheat the new immigrants. Powell visited the Hopi Indians and learned to appreciate their cyclical interpretation of man's role in nature as being part of the large self-replenishing universe.

Powell, a great admirer of Darwin's contributions to the biological sciences, could not accept the transfer of some Darwinian concepts to justify the principles of Eugenics. It is strongly possible that Powell's philosophical thoughts concerning American social history are being deleted from our textbooks because of the strong influence exerted by current social Darwinists.

John Wesley Powell (1834-1902) was a geologist, evolutionist, ethnologist, physical geographer, and often forgotten philosopher. Powell considered his

commentaries on the philosophical interpretation of nature as the epitome of his academic achievements. However, present philosophical circles and social historians have ignored this phase of his life studies. Wallace Stegner corroborates this actuality by writing, "The fact that he does not appear in the discussions of modern philosophers or get himself quoted in the symposia which aim, as he did, to synthesize scientific knowledge,...Powell does not appear importantly in the social and political histories either,..."[1] Powell's scientific reputation is based on his field trips to the Far West, his call for conservation of natural resources in an expanding economy, and for his friendship as well as mentorship of the young sociologist, Lester Frank Ward. His copious writings giving evidence to a staunch neo-Lamarckian position are less known.

He was born in New York State in 1834 the son of a fundamental Methodist preacher. His father advocated abolition of slavery and possessed a strong unchanging anti-science attitude[2]. Powell received his basic scientific training at Wheaton and Oberlin Colleges. In the early 1860's during the American Civil War, he was a Major in the Union Army and lost an arm in one of the battles. Upon his discharge from the service Powell was invited to teach geology at Illinois Wesleyan College. His duties included a curatorship of a small museum and field trip training for his students. Two years later he became a lecturer and curator at Illinois Normal University.

He enjoyed college teaching but after a time developed the urge to continue explorations and the study of natural history. The frontiersman's spirit in him was once more rekindled. Once having made the decision, Powell then carefully chose to explore the banks of the great Colorado and Green rivers. The year 1869 was spent planning the trip and when course was finalized, he embarked with a group of fellow adventurers on an excitng and dangerous expedition. In addition to mapping, Powell spent part of the journey collecting and entering into the logbook information describing newly discovered species. His new maps were drawn to show specific topographic features of this rugged wild territory.

The scientific knowledge acquired from this and other trips to the Far West acted as a bud for the blossoming conservation movement. The description of this expedition, the new sights seen, and the significance of ecological controls were expanded in Powell's geological work, *Exploration of the Colorado River of the West and Its Tributaries* (1875). Powell's contributions to geographical and geological sciences were soon to be recognized by the academic community. In 1877 he was awarded the degrees of Master of Arts and Doctor of Philosophy from Illinois Wesleyan

University. Harvard and Heidelberg Universities bestowed additional honorary degrees upon him for his outstanding achievements.[3]

During his trips, Powell developed an interest in the science of ethnology, which was later crystallized in his writings about the folklore of the Hopi Indians. During the period of his residence with this tribe, Powell studied and recorded their language structure and customs. After the defeat of the Indians in the post Civil War period, the Smithsonian Institution organized a division to preserve the rapidly vanishing cultural heritage of the Native Americans. Because Powell's intensified investigations in this area were well known, he was invited to direct this specific project as well as being given and was given the charge of the newly created section. He described the Bureau's duties to the section of legal education of the American Bar Association by saying, "The Bureau of American Ethnology was instituted in 1879 as a branch of the Smithsonian Institution and has since been maintained by Federal authority. Its function is the collection of data relating to primitive people, primarily the American Indian....The categories of information pertain chiefly to the arts, institutions, languages and beliefs of the Indians."[4].

Powell's early interest in history served to stimulate many years of study which ultimately led to a highly sophisticated analysis of the roots of civilization. He extrapolated from the maze of history the role that beginning technology exerted in remote times. Referring to this subject in his address delivered at the Inauguration of the Corcoran School of Science and Arts in the Columbian University he remarked, "The people who lived in the barbaric villages of the Mediterranean lands discovered metallurgic processes and acquired the use of iron. By this discovery all their arts, industrial and aesthetic, were eventually transformed"[5]. Powell's love for knowledge and drive to understand the mechanisms of historical happenings compelled him to become very skillful and proficient in the fields of science, history, literature, philosophy, and the fine arts. This aspect of his life is seldom referred to by recent scholars of ecological science.

Yet, Powell earned his fame for his geographic and geological reports. The most important of these were Report on the Lands of the Arid Region of the United States, United States House of Representatives, Executive Document 73, 45th Congress, 2nd Session April 3, 1878.[6] This report acted as one of the harbingers of the American conservation movement. He called for the end of the laissez-faire policy and for more realistic governmental programs to aid farmers and local communities. Powell campaigned against land hucksters who were offering false images of the Far West by picturing it to be a fertile crescent. Meanwhile, the expansionists pressured Congress

to remove the Indian tribes to barren lands and in the interim continued misleading and deceiving advertisement depicting the Far West as a land of paradise. On the other hand, Powell proclaimed the Far West to be neither a fertile crescent nor an empty desert. He soon incurred the anger of those members of the establishment who advocated that the rain followed the plow. But, Powell was not to be intimidated and rallied influential friends to his cause. Being a meticulous researcher Powell had the facts on his side. His "Report" Ralph H. Brown testified,"...came out of a careful survey of the natural environment of the West and its social problems, which by then had reached a critical stage. It remains a classic in its field ..it was no routine office job, but a thorough, hard-hitting analysis, accompanied by recommendations for legislation."[7] Powell continued to press this thesis in his essay, "The Lesson of Conemaugh" (1889) which called for govermental intervention and control after a poorly constructed dam broke and killed a large number of people. His neo-Lamarckian approach to nature was expressed by his speaking earnestly and repeatedly for control and channeling the furor of the rivers.

The depth and intensity of his geographic work earned for him the Directorship of the United States Geological Survey from 1881-94. With the support of Frederick Jackson Turner's thesis which explained that the frontier and usable free land was gone, Powell's efforts came to fruition the year of his death (1902) when Congress supported his environmental concepts by establishing the Bureau of Reclamation as part of the Reclamation Act for Arid Lands. Life in the Capital was exciting and changing in a rapid pace during this period of history. Powell attempted to stay neutral in the political conflicts and imbroglios of tumultuous Washington. Nevertheless, as a government official and dedicated scientist, he was drawn into the sorrowful disagreements concerning the scientific approach between two leading American paleontologists, Othniel Marsh of Yale University and Edward D. Cope of the University of Pennsylvania. In this conflict, Powell favored Marsh's path to politics and science and because of this stance, he became subject to acrid attacks for being a poor administrator by Cope.[8] Unfortunately, both Powell and Cope were vigorous neo-Lamarckians.

In the 1880's and 1890's the social Darwinists were at their peak strength in the academic world. Their philosophical overtones coincided with the existing negative creed toward Negroes, Indians and immigrants. Powell possessing a determined will and with a few of his supporters defied the philosophical edicts of the ruling social Darwinists in both the scholarly and political areas. Clearly, the theory of social neo-Lamarckism did not answer the needs of the American imperialists. These aristocrats called for continuing economic expansion and subjugation and control of territories throughout the world.

They sought ideologies to justify their acts. As Henry Steele Commager points out, "By the 1870's and 1880's business had even developed its own philosophy, one which levied arrogantly on economics, law, biology, and even religion to justify the special privileges it enjoyed. We have come to call this philosophical potpourri 'Social Darwinism'."[9]

The great friendship between the younger Ward, who developed into an intellectual giant, and the older Powell was maintained over a number of years. Powell's influence on Ward's development can be exemplified by Ward's appreciation in dedicating his major work *Dynamic Sociology* to him ; and Powell in return reciprocating the honor in his only major philosophical book *Truth And Error*. Why were both dedicated neo-Lamarckians ? George W. Stocking in analyzing the historic trend of some of the 19th century theorists explained, "In view of the long tradition and contemporary currency of Lamarckian thought, it is not surprising that a number of older social theorists writing before 1900 explicitly accepted, and even ardently defended, the doctrine of the inheritance of acquired characteristics. Three of the most outspoken and influential Lamarckians were John Wesley Powell, director of the United States Geological Survey and the Bureau of (American) Ethnology, Lester Frank Ward,...."[11] Clifford H. Scott gives further evidence of the importance of neo-Lamarckian thinking to the social history of the time. He registered,"...Ward accepted the principle of acquired hereditarian characteristics espoused by Jean Lamarck, the French botanist, as a scientific basis for educational theory in a democratic republic."[11] Scott indicated that Ward manifested a Turnerian hypothesis that democratic principles are inherited in an open society. He confirms this supposition by writing that "Lamarckianism provided a source of legitimacy in validating the efficacy of social reform ; the improvements of one generation could be passed on, like its sins, to subsequent generations."[12]

Powell examined and studied Darwin's, Lamarck's and Lewis Henry Morgan's methods of interpreting the evolutionary tacks of nature. He expressed his feelings and admiration for Darwin in his lecture to the Biological Society of Washington given at the Darwin Memorial Meeting : "It remained for Darwin to demonstrate the laws of biologic evolution, and the course of the progress of life upon the globe....By his discoveries the discoveries of all other biologists have been correlated and woven into systematic philosophy."[13] During his trips, he met and developed a friendship with the famous ethnologist Lewis Henry Morgan. Powell was so enthralled by Morgan's treatise of social development of man that he incorporated its essence into his own essays. Powell maintained that three consecutive periods are required in order to develop into societal man. They are : (1) brutish behavior, (2) ignorance

status, and finally (3) humanization. This sequence directs attention to the influence of Darwinian thought on Morgan's anthropological manuscripts. William H. Goetzmann, Director of the American Studies at the University of Texas is quite right in saying that "Powell incorporated this Darwinian point of view into the methods and approaches used by the Bureau of Ethnology, which he established in 1879."[14] In the year of Darwin's demise, Powell delivered two important lectures highlighting the English naturalist's contributions to science. The following year (1883) Powell began to drift from his previously unconditioned acceptance of the Darwinian hypotheses. This change of position is recorded by Darrah in his chapter, "A Philosophy of Science" when he annotated, "Already Powell had taken a stand very much apart from that of Darwin."[15].

Powell, as a staunch supporter of Lamarck, presented to the Anthropological Society his lecture, "Human Evolution" in which he stressed the Lamarckian view on exercise. He said, "Man, prior to the evolution of objective activities, progressed under the methods of biotic evolution, namely, the survival of the fittest in the struggle for existence. But man as an animal is no longer to any appreciable extent dependent upon the biotic method. The exercise of his animal functions is now controlled, to a greater or less extent, by mind in the prosecution of activities ; and among the lower and higher races of men the youth are systematically trained in physical exercise. Athletic games and sports designed for physical exercise are born in the lowest savagery and are continued to the highest civilization."[16]

Obviously, he received his inspiration for the above lecture from Lamarck's law of use and disuse which was partly based on the application of continued mental or physical exertion. Lamarck promulgated this law in *Zoological Philosophy* when he wrote, "Compare two men of equal ages, one of whom has contracted the habit of eating very little, since his habitual studies and mental work have made digestion difficult, while the other habitually takes much exercise, is often out-of-doors, and eats well ; the stomach of the first wlll have very little capacity left and will be filled up by a very small quantity of food, while that of the second will have preserved and even increased its capacity.

Here then is an organ which undergoes profound modification in size and capacity, purely on account of a change of habits during the life of the individual."[17] One month after addressing the Anthropological Society, Powell delivered his Annual Address Of The President Of The Philosophical Society Of Washington. This Adress, "The Three Methods Of Evolution" continued further, "Now the rate of change in any integral part of an organism is dependent upon the activity of the organ. Exercise increases

the rate of change in the constituent matter of a biotic organ, and thus the slow change in its structure, which proceeds from life to death, is accelerated."[18]

Powell believed that both plant and animal have purpose and that exercise leads to an increase of happiness. In *Forum*, April, 1891 he expressed this claim: "The plant has vitality, and perchance the beginnings of sentiency may be found in some species; but this mode of life is the primal attribute of animals. They feel pains and pleasures, and have organs for the purpose."[19] Moreover, Powell, in indicating that effort was needed as the impetus for increased happiness and purpose, again looked to Lamarck for inspiration. In his philosophical work, *Truth And Error*, Powell once more demonstrated his favored position towards the Lamarckian school by agreeing to their definition of matter. He asserted, "In the motile state of matter the special law of evolution was discovered by Lamarck. It is the law of effort, and may be stated as the development of organs by exercise and their extirpation by use."[20] Powell then proceeded to describe five modes of motility as physiological, they perform in the functions of (1) metabolic, (2) circulatory, (3) muscular, (4) reproductive, and (5) reasoning in organs.

In a Smithsonian Report, Powell displayed evidence that he agreed with Wardian thought which advocated that the direction of man's evolutionary pathway had shifted from the physical to the psychic and intellectual. He explained, "I shall endeavor to explain to you the effect of environment on man. I shall try to demonstrate that primarily the environment has little effect on the physical man that the principal effect, though not the whole of it, is on his mind. I wish to demonstrate to you that human evolution is intellectual evolution, in which it greatly differs from animal evolution."[21] One of the major themes of his historic report dealt with the nature and differences between form and qualities. Powell hypothesized that qualities have purpose and can be expressed in terms of good and evil. He listed five properties of nature: (1) numbers, (2) extension, (3) motion, (4) duration, and (5) animate being having judgment. He philosophized that any changes in the properties of things leads to qualitative changes in their essence of being.

Powell placing great stress in the study of the psyche and suggested that it played a major part in the development of human evolution. He came to this conclusion by analyzing human mental evolution through the avenues of (1) man's discoveries, (2) inventions, (3) appreciation and sensitivity to art and beauty, and (4) the development of language patterns. Powell along with most social neo-Lamarckians (Turner, Mann) believed that

man's cultural and social achievements can be passed on through his biological nature. In the case of ancient man, Powell acknowledged that the ancients had the ability and capacity to plan and devise his designs and decisive goals. In his Address, "The Three Methods of Evolution" Powell "elaborated, "Man, so far as he is superior to the beast, is the master of his own destiny, and not the creature of the environment. He adapts the natural environment to his wants, and thus creates an environment for himself."[22]

## Conclusion

John Wesley Powell's geographic and ecological contributions are well known. Odie B. Faulf of Arizona Western College wrote, "John Wesley Powell, explorer of the Colorado River during 1869-72, from his position as head of the Bureau of Ethnology and director of the United States Geological Survey did much to awaken the conscience of the nation about the wasteful policies being pursued. As a result the Forestry Bureau was created within the Department of Agriculture in 1890."[23]

It is his neo-Lamarckian philosophy which sets forth the theme that man is in control of his present and future status in the environment. Throughout his professional life, Powell never wavered from the neo-Lamarckian social theories, and strongly believed that for a democratic republic to function at its maximum, man must exercise his control of the environment. Powell, unlike his contemporaries, the cattle barons, did not find the American Indian to be a destructive barrier to progress but part of the natural cycle of the Far West. His philosophical approach to administrative intervention was that the government must interpose in order for small farmers and local communities to prosper. This philosophy was not acceptable to the expansionists. These aggrandizers wished to rapidly deplete the nation's natural resources, drive out the Indian, and exploit the dreams of the incoming non-English immigrants. Powell fought to prevent these usurpers from capitalizing upon the poor and defenseless. Perhaps, this phase of John Wesley Powell's attributes are little known because his social neo-Lamarckian ideas are in disfavor with the current social Darwinists. If the leaders of this country seriously studied Powell's writings and followed his guidelines, the overflows of the Mississippi River will become a story of the past. Powell, while still maintaining his individuality, championed biological and social neo-Lamarckism during his entire life.

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