

"WHAT ONE KNOWS ONE LOVES BEST": A BRIEF ADMINISTRATIVE
HISTORY OF SCIENCE EDUCATION IN THE NATIONAL PARKS, 1916-1925

by

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ABSTRACT

This study focuses on the early administrative history of the National Park Service (NPS) science education and interpretation programs. In particular, it examines 1) how publicists, academics, and park rangers initiated science and natural history programming in the early years of the National Park Service; 2) how these three approaches eventually gave way to the more pragmatic NPS emphasis on hiring ranger naturalists with training in the sciences to implement park educational programs; and, briefly, 3) how the establishment of the NPS education division in 1925, as equal to the engineering and landscape divisions, effectively institutionalized the ranger naturalist approach to science education of park visitors.

The study relies primarily on documents from the National Park Service, including reports, proceedings, correspondence, training manuals, and materials produced for the visiting public to document the evolution of science education within the service as evidenced in Yosemite and Yellowstone National Parks. While every effort has been made to understand the economic, social, and political context of this particular chapter of NPS history, the study does not attempt to look beyond the administrative history of the National Park Service itself. Rather, it is meant to serve as a baseline for additional research into how these early science education programs can be viewed in the context of other social and cultural movements, as well as the history of science and science education in early twentieth century America.

CHAPTER 1

INTRODUCTION

“Who will gainsay that the parks contain the highest potentialities of national pride, national contentment, and national health? A visit inspires love of country; begets contentment; engenders pride of possession; contains the antidote for national restlessness. It teaches love of nature, of the trees and flowers, the rippling brooks, the crystal lakes, the snow-clad mountain peaks, the wild life encountered everywhere amid native surroundings. He is a better citizen with a keener appreciation of the privilege of living here who has toured the national parks.” -- Stephen T. Mather¹

In the 1916 *Annual Report of the Superintendent of the National Parks*, the last report before appropriations officially established the National Park Service (NPS), R. B. Marshall introduced the themes that would carry the new agency forward. Marshall’s point was simple: a large investment had been made in developing and maintaining a national park system, but to date only a small financial return on investment had been experienced. And yet, “each year large

¹ U. S. Department of the Interior, *Report of the Director of the National Park Service to the Secretary of the Interior for the Fiscal Year ended June 30, 1920 and the Travel Season 1920* (Washington, DC: Government Printing Office, 1920) 13-14 (hereafter 1920 NPS Annual Report). While Mather’s name is on the annual reports, most reports were written by Horace Albright on Mather’s behalf. “From the very beginning, [Mather] said that he hated office work, administrative minutiae, what he called *chores*.” Horace M. Albright and Marian Albright Schenck, *Creating the National Park Service: The Missing Years* (Norman, OK: University of Oklahoma Press: 1999), 43.

sums of money have left this country to be spent by tourists in foreign lands in search of scenic beauty.”²

Clearly, for the parks to succeed and for travelers to “see America first,”³ more attention needed to be paid to informing the American public about the national parks. But Marshall expressed concern for more than just publicity and income. He also wanted to ensure that the parks were managed for the betterment of the American people. For example, national parks should not be set aside simply for recreation, since that is the natural function of city, county, and state parks. Rather, national parks should focus on larger goals that would impact the nation:

1. The stimulating of national patriotism.
2. The furthering of knowledge and health.
3. The diverting of tourist travel to the scenic areas of the United States.⁴

While all three mandates deserve closer scrutiny, and all three helped contribute to the realization of the other, this study focuses on the expressed long-term goal of furthering knowledge as implemented in the early years of the

² U. S. Department of Interior, *Annual Report of the Superintendent of the National Parks to the Secretary of the Interior for the Fiscal Year ended June 30 1916* (Washington, DC: Government Printing Office, 1916) 1 (hereafter 1916 NPS Annual Report)..

³ Marguerite S. Shaffer, *See America First: Tourism and National Identity, 1880-1940* (Washington, DC: Smithsonian Institution Press, 2001).

⁴ *Ibid.*, 2.

National Park Service. As Secretary of the Interior Franklin K. Lane would later write to Stephen T. Mather as part of his directive on park management:

The education, as well as the recreational, use of the parks should be encouraged in every practicable way. University and high-school classes in science will find special facilities for their vacation period studies. Museums containing specimens of wild flowers, shrubs, and trees and mounted animals, birds, and fish native to the parks and other exhibits of the character, will be established as authorized.”⁵

While the directive to preserve the national parks unimpaired for future generations still informs public debates about the national parks, this strong mandate to promote the educational value of the parks is often overlooked. And yet, as the General Plan of Administration for the Educational Division would eventually codify in 1929:

Our function ... lies in the inspirational enthusiasms which we can develop among our visitors – an enthusiasm based upon a sympathetic interpretation of the main things that the parks represent, whether these be the wonder of animate things living in natural communities, or the story of creation as written in the rocks, or the history of forgotten races as recorded by their picturesque dwellings.⁶

At a time when museums and other informal science education venues promote their entertainment value, often at the expense of their scientific and

⁵ Lary M. Dilsaver, ed., *America's National Park System: The Critical Documents* (Lanham, MD: Rowman & Littlefield Publishers, Inc., 1994), 50. See note 60 for an additional discussion of Lane's directive.

⁶ [Ansel Hall], "General Plan of Administration for the Educational Division," (June 1929) 5, interpretation vertical files, Yellowstone National Park Library.

educational missions, a reader of these early reports cannot help but be impressed by how seriously the National Park Service took its mandate to encourage and inspire the general public to learn more about science through exploration of the parks. This commitment is particularly striking since none of the three key proponents of education in the early years of the National Park Service were trained as scientists: Robert S. Yard, who directed the early public relations campaign for the parks and served as the first head of the unofficial NPS education division, was a newspaper man; the independently wealthy Stephen T. Mather, the first Director of the National Park Service, made his fortune in the business of borax; Horace M. Albright, who served first as Mather's assistant and later as Superintendent of Yellowstone National Park and eventually Director of the National Park Service, studied law. While all three expressed and implemented their commitment to science, natural history, and public education differently, they demonstrated through their writings, their hiring practices, and their moral and financial support for science-based educational programs, their understanding of how science and natural history could help inform and genuinely enhance the quality of the national park experience.

When Robert Sterling Yard developed his first public relations publication to help secure legislation to establish the National Parks Service, he focused not only on the physical beauty of the parks but on their educational and natural history amenities as well.⁷ When establishing the first NPS educational programs at Yosemite National Park, Stephen T. Mather recruited University of California faculty and other experts to speak to park visitors during the summer months, to conduct more informal campfire talks, and even to lead backcountry tours. And when Horace M. Albright arrived in Yellowstone National Park, without the benefit of a world-class university close by, he hired park rangers, male and female, with academic and/or hands-on field training in the sciences. These park ranger naturalists were expected to become experts themselves by studying the park's natural history and then to share their expertise with park visitors.

Much has been published about the history of interpretation in the national parks,⁸ education and/or research in the national parks,⁹ and early

⁷ See Robert Sterling Yard, *The National Parks Portfolio*, (Washington, DC: Department of the Interior, 1916).

⁸ See, for example, C. Frank Brockman, "Park Naturalists and the Evolution of National Park Service Interpretation through World War II," *Journal of Forest History*, 22, No. 1, January 1978, 24-43; Barry Mackintosh, *Interpretation in the National Parks: A Historical Perspective* [book on-line] (Washington, DC: U. S. Department of the Interior, National Park Service, History Division, 1986, accessed 7 December 2003), available at http://www.crnps.gov/history/online_books/mackintosh2/index.htm; Laura Feller and Page Putnam Miller, "Public History in the Parks," *AHA Perspectives on Line* (January 2000) [journal on line]; available at

interpretation in Yellowstone.¹⁰ Other historians have focused on the history of science in the parks and/or the role the national parks' scenic beauty and wildlife have played in inspiring the American public.¹¹ However, little has been written about the goal of furthering the public's knowledge, particularly as it applied to enhancing the science and natural history education of national park visitors. Nor have historians examined the specific science content that NPS employees independently and as a group identified as important for visitors to understand in order for them to gain a better appreciation of the national parks.

This is a significant oversight since, almost from their inception, the national parks have been viewed as unique environments for inspiring an

<http://www.historians.org/perspectives/issues/2000/001/001pub1.cfm>; and Edward T. Linenthal, "Committing History in Public," *Journal of American History*, 81, no. 3 (December 1994, accessed 7 July 2004).

⁹ Harold C. Bryant and Wallace W. Atwood, Jr., *Research and Education in the National Parks* [book on-line] (Washington DC: GPO, 1932), accessed 3 December 2003) available at http://www.cr.nps.gov/history/online_books/resedu/index.htm; Denise S. Vick, "Yellowstone National Park and the Education of Adults" (Ph.D. diss., University of Wyoming, 1986); and Dwight T. Pitcaithley, "National Parks and Education: The First Twenty Years," [article on line], 2002, accessed 1 February 2004; available at <http://www.cr.nps.gov/history/resedu/education.htm>.

¹⁰ See, for example, Lee Whittlesey, "The First National Park Interpreter: G. L. Henderson in Yellowstone, 1882-1902," *Montana, The Magazine of Western History*, 46, No. 1, 26-41, and Lee Hale Whittlesey, "Storytelling in Yellowstone: Horse-and-Buggy Tour Guides in the Grand Old Park, 1872-1920" (MA thesis, Montana State University, 2004).

¹¹ See, for example, Richard West Sellars, *Preserving Nature in the National Parks: A History* (New Haven, CT: Yale University Press, 1997); R. Gerald Wright, *Wildlife Research and Management in the National Parks* (Chicago, IL: University of Illinois Press, 1992); William L. Halvorson and Gary E. Davis, eds., *Science and Ecosystem Management in the National Parks*, (Tucson, AZ: University of Arizona Press, 1996); Paul Schullery, *Searching for Yellowstone: Ecology and Wonder in the Last Wilderness* (Boston, MA: Houghton Mifflin, 1997); and Committee on Improving the Science and Technology Programs of the National Parks Service, *Science and the National Parks* (Washington, DC: National Academy Press, 1992).

appreciation of the natural world. For example, in *Our National Parks*, originally published in 1901, John Muir wrote of how a coach trip through Yellowstone National Park never failed to inspire a wealth of questions:

Among the gains of a coach trip are the acquaintances made and the fresh views into human nature; for the wilderness is a shrewd touchstone, even thus lightly approached, and brings many a curious trait to view. Setting out, the driver cracks his whip, and the four horses go off at half gallop, half trot, in trained, showy style, until out of sight of the hotel. The coach is crowded, old and young side by side, blooming and fading, full of hope and fun and care. Some look at the scenery or the horses, and all ask questions, an odd mixed lot of them: "Where is the umbrella? What is the name of that blue flower over there? Are you sure the little bag is aboard? Is that hollow yonder a crater? How is your throat this morning? How high did you say the geysers spout? How does the elevation affect your head? Is that a geyser reeking over there in the rocks, or only a hot spring?" A long ascent is made, the solemn mountains come into view, small cares are quenched, and all become natural and silent, save perhaps some unfortunate expounder who has been reading guidebook geology, and rumbles forth foggy subsidences and upheavals until he is in danger of being heaved overboard. The driver will give you the names of the peaks and meadows and streams as you come to them, call attention to the glass road, tell how hard it was to build - how the obsidian cliffs naturally pushed the surveyor's lines to the right, and the industrious beavers, by flooding the valley in front of the cliff, pushed them to the left."¹²

Without a basic understanding of the evolution of the National Park Service's dedication to the public understanding of science, current NPS education and interpretive programs appear to operate in a vacuum. This study, therefore, sets out to examine 1) how the three types of park educators -- the

¹² John Muir, *Our National Parks* (San Francisco, CA: Sierra Club Books, 1991), 39-40.

publicist, the academic, and the park ranger – initiated science and natural history programming in the National Park Service, 2) how these three approaches eventually merged into the NPS emphasis on hiring ranger naturalists with training in the sciences to implement park educational programs, and, briefly, 3) how that approach was eventually implemented and institutionalized in 1925.

Chapter Two, *The Origins of NPS Science Education*, examines the public relations origins of the early educational programs in the national parks and the science and natural history messages that were deeply embedded in those materials. Chapter Three, *The National Parks as Super Universities*, looks at the first educational programs in Yosemite National Park and how they functioned as a free, informal education extension for the University of California. Chapter Four, *The New Park Ranger Naturalists*, introduces park ranger naturalists and how the model developed in Yellowstone National Park. Chapter Five, the conclusion, reflects on how the ranger naturalist came to define the foundation upon which NPS educational programs were built.

The National Park Service, NPS employees, and historians often use the term education, nature guiding, nature study, and, later, interpretation

interchangeably.¹³ For purposes of this study, the term “education” refers to all types of natural history and/or science-related visitor outreach activities, in much the way the term was originally used at the time by the National Park Service. As explained by Horace Albright, park visitors naturally want to know the “why” of the physical environment, which provide opportunities to impart “a little scientific information, ... apparently casually, but always based upon careful research.”¹⁴ NPS materials suggest a genuine desire to take advantage of this curiosity to inform visitors about scientific processes, such as how rivers formed the Grand Canyon of the Yellowstone or “why geysers gyze,” as well as provide a foundation in the more empirical natural history. To this end, park educators, from university faculty to the ranger naturalists, introduced visitors to both the scientific nomenclature and the common names of birds, animals, and plants, and provided basic geological history and general insights into ecological relationships. In many ways, NPS educational proponents viewed the parks as

¹³ In her study of adult educational programs in Yellowstone, Denise Vick relies on Freeman Tilden’s distinction that *education* is “the deliberate, systematic, and sustained effort to transmit, evoke, or acquire knowledge, attitudes, values, or skills, as well as any outcomes of that effort,” while *interpretation* is “an educational activity which aims to reveal the meanings and relationships through the use of original objects, by first hand experience and by illustrative media, rather than simply to communicate factual information.” See Vick, “Yellowstone National Park and the Education of Adults.”

¹⁴ Horace M. Albright, “Research in the National Parks,” *The Scientific Monthly*, 36 (1933): 483-501, reproduced in Dilsaver, ed., *America’s National Park System: The Critical Documents*, 122-131.

outdoor museums, in which visitors could gain a better understanding of science and the natural world and experience for themselves the secrets of nature.¹⁵

The National Park Service also used the term “education” when referring to public relations and promotion of the national parks. When appropriate, a distinction has been made between education and publicity especially when discussing the work of Robert Sterling Yard, who served as chief of the first educational division, but whose primary function was park promotion.

This brief administrative history acknowledges obvious political, social, economic, and other motives inherent in the parks’ early education and interpretive programs. Of necessity, it has focused not on this wider context but on documenting a baseline history of the National Park Service’s programs upon which further studies can be pursued. Thus, in many ways, this study itself functions in a vacuum, as it acknowledges but does not give real voice to those native peoples who had been dispossessed to ensure early twentieth century Americans could learn to appreciate and conserve the natural world in places like Yosemite and Yellowstone; fails to pursue the specific histories of those women who were, for the most part, given limited options for careers in the

¹⁵ For a description of how late 19th century museums introduced visitors to “God’s very design of the planet,” see Steven Conn, *Museums and American Intellectual Life, 1876-1926*, (Chicago, IL: The University of Chicago Press, 1998), 32-73. For a different view of how museums can be used to codify culture, see Steven C. Dubin, *Displays of Power* (New York, NY: New York University Press, 1999).

parks; ignores the very real role the railroads played in promoting the national parks; mentions only in passing the eugenics interests of some of those promoting the study of natural history; and downplays the social and political implications of the desire to “Americanize” the public and promote patriotism during a time of war abroad and unrest at home. All these themes deserve closer scrutiny in the future and will serve to enrich the limited administrative version presented here.

That said, by closely examining available NPS materials, this study documents what appears to be a sincere effort not only to promote the parks through “education” to improve the number of park supporters, but evidence of a desire to make science and natural history more accessible and understandable for all visitors to the national parks. As the nation and organizations like the National Science Foundation currently struggle to broaden and deepen the American public’s understanding of basic science in both formal and informal settings, this desire to establish educational laboratories and living museums in the national parks seems particularly relevant and, thus, worthy of exploration.

CHAPTER 2

THE ORIGINS OF NPS SCIENCE EDUCATION

“[I]t is necessary to enlarge the patronage in order to reduce the cost per capita. That means advertising. In short, from whatever angle we view national parks progress we get back to the fact that the pressing need of the moment is publicity.” -- Robert Sterling Yard¹⁶

The national parks are so deeply engrained within American culture, it is hard to imagine a time in which they did not exist or a time when their very survival was in question. And yet, as many historians have noted, the national parks have routinely been under pressure from competing interests.¹⁷ For example, attempts to establish a National Park Service, to be administered within the Interior Department, had been resisted by the Agriculture Department's Forest Service, which “rightly foresaw the creation and removal of more parks from its national forests.”¹⁸ Plus, with an economy based largely on the

¹⁶ Robert Sterling Yard as quoted in *Proceedings of the Fourth National Parks Conference* (Washington, DC: Government Printing Office, 1917), 82.

¹⁷ See, for example, Dilsaver, ed., *America's National Park System: The Critical Documents*, Barry Mackintosh, *The National Parks: Shaping the System, 1916 to 1933*, 3rd ed. [book on-line] ([Washington, DC: Government Printing Office], 1985, 1991, 2000, accessed 1 February 2004) available at http://www.cr.nps.gov/history/online_books/mackintosh1/index.htm, and Wright, *Wildlife Research and Management in the National Parks*.

¹⁸ Mackintosh, *The National Parks: Shaping the System*, n.p. According to Horace Albright, “From the moment an independent Park Service was organized, the Forest Service was jealous of

consumption of natural resources, removing large parcels of land from private development created “uncomfortable interruptions of business as usual.”¹⁹ Around the country, land speculators, business owners, ranchers, hunters, and even park vandals all desired their own piece of the national parks. The U.S. Cavalry and, later, NPS personnel effectively countered these private interests, but the pressure to open the national parks to traditional consumptive uses continued throughout the National Park Service’s formative years (and some might argue continues in many parks today). These voices for access grew particularly shrill when the United States entered World War I. Only months after the National Park Service came into existence, many argued that large-scale hunting, fishing, and grazing of livestock were needed in the parks to feed the war effort.²⁰

These early and on-going threats to the very existence of the national parks convinced Stephen T. Mather, who would become the first head of the

it and never failed to fight it whenever their land was involved. But look at it this way. For new parks or additions to old ones, the Park Service had few places to acquire land in the public domain unless it dipped into holdings of the Forest Service. They stood for use of anything within their borders: water, minerals, forests, and other commercially attractive enterprises. They allowed hunting, dams, summer homes and unlimited roads for lumbering. Their beliefs contradicted all of ours.” Albright, *Creating the National Park Service*, 293.

¹⁹ Dilsaver, ed., *America’s National Park System, The Critical Documents*, 9.

²⁰ Wright, *Wildlife Research and Management*, 10. According to Horace Albright, “The Interior Department was flooded with all kinds of demands. Slaughter the Yellowstone elk herds. Kill the nearly extinct bison. Allow the organization of hunting parties to enter the parks to shoot wild animals for additional meat. And allow grazing everywhere.” As one western newspaper proclaimed, “Soldiers need meat to eat, not wild flowers!” See Albright, *Creating the National Park Service*, 271.

National Park Service, that to ensure the parks' survival, the nation needed to first learn about the national parks and, next, be encouraged to visit the parks for themselves. This national publicity campaign, "became [Mather's] principal goal throughout his tenure as director, and he was brilliantly successful at it."²¹

While still working as the assistant to the Secretary of the Interior in charge of national parks, Mather hired his friend Robert Sterling Yard to get the word out about the parks.²² One of Yard's first products was the *National Parks Portfolio*, a book of lavish black and white photographs and written descriptions of the various parks, published with support from western railroads and distributed free of charge to politicians and other national opinion makers.²³

²¹ Wright, *Wildlife Research and Management*, 10. As will be documented, however, Mather's goal to publicize the parks would expand significantly to include a genuine interest in science and natural history education in the national parks.

²² According to Ellis Yochelson, "Yard was a newspaperman and had been the best man at Mather's wedding. Mather brought him to Washington in 1915 [to conduct a publicity campaign on behalf of the proposed National Park Service], but since there was no parks organization yet, he became a USGS employee and was immediately detailed to the office of the secretary of the interior, with office space provided by the Bureau of Mines... Mather paid his salary directly from his own pocket." See Ellis Yochelson, *Smithsonian Institution Secretary, Charles Doolittle Walcott* (Kent, OH: Kent State University Press, 2001), 234. Yard had also worked as the Sunday editor of the *New York Herald*. See Pitcaithley, "National Parks and Education."

²³ "It will be recalled that this beautiful document was issued with the cooperation of the western railroads, and that these railroad lines subscribed \$43,000 to cover the cost of printing, binding, and mailing the edition of 275,000 copies. It is estimated that over 20,000 applications for this document have been received during the past year.... The tremendous demand ... prompted the preparation of a second edition by Mr. Yard...." *Report of the Director of the National Park Service to the Secretary of the Interior for the Fiscal Year ended June 30, 1917* (Washington, DC: Government Printing Office, 1917), 11 (hereafter referred to as 1917 NPS Annual Report). Horace Albright remembers the publication being distributed to libraries, travel offices, editors, and others, and that "Mather himself put up more than five thousand dollars for the plates or cuts of the pictures." Albright, *Creating the National Park Service*, 60.

The book introduced the history and unique features of nine major western national parks, was designed to educate these policy makers, along with the American public if they were lucky enough to see a copy, about “the most inspiring playgrounds and the best equipped nature schools in the world.”²⁴

The *National Parks Portfolio* opens an interesting window onto Mather’s and Yard’s thinking about which qualities in the national parks merited publicizing, and provides some insight into their initial thinking about the role the national parks could and should play in educating the general public about the natural world. The opening section of the *National Parks Portfolio* highlights Yellowstone National Park, the nation’s *second* national park according to how the parks were initially presented.²⁵ On the very first page of the book’s first section, next to a dramatic full-page photograph of the Great Falls of the Yellowstone, “nearly twice as high as Niagara,” and below a photograph of grazing antelope, readers learned that Yellowstone “contains more geysers than are found in the rest of the world together” and “has innumerable wild animals

²⁴ Stephen T. Mather in Yard, *The National Parks Portfolio*, n.p.

²⁵ In early NPS publications, including annual reports, Hot Springs *Reservation* founded in 1832 and featuring “46 hot springs possessing curative properties... hotels and boarding-houses in adjacent city of Hot Springs, [and] bath-houses under public control,” is routinely listed first under any listings of the national parks. See “The National Parks at a Glance, arranged chronologically in the order of their creation,” in Yard, *The National Parks Portfolio*, n.p. According to Albright, Hot Springs had been the first *reservation* area set aside by the federal government, in 1832, thirty-two years before Yosemite and forty years before Yellowstone. It did not actually become a *national park* until 1921, and somehow it never seemed like a national park.” Albright, *Creating the National Park Service*, 114.

which have ceased unduly to fear man; in fact it is unique as a bird and animal sanctuary.... In short, it is not only the wonderland that common report describes; it is also the fitting playground and pleasure resort of a great people; it is also the ideal summer school of nature study."²⁶ Readers opening the book would have had little doubt how park promoters wanted them to think of Yellowstone: it was meant to be viewed as nature's schoolyard.

While Yellowstone is the first national park touted for its potential for learning about the natural world, it is not the only one. Intermixed with brief snippets on history and folklore, positive comparisons to European scenery, and interesting national park trivia,²⁷ the reader learns that Rocky Mountain National Park serves as "a primer of glacial geology whose simple, self-evident lessons immediately disclose the key to one of nature's chiefest [sic] scenic secrets." Crater Lake National Park "affords one of the most interesting and instructive fields for the study of volcanic geology to be found in the world." Mount Rainier is described as being home to "several species of minute insects [that] live in the ice, hopping about like tiny fleas.... [s]lender, dark-brown worms live in countless millions in the surface ice, [and] [m]icroscopic rose-colored plants ... thrive in such great numbers that they tint the surface here and there, making

²⁶ Yard, *The National Parks Portfolio*, n.p.

²⁷ For example, the General Sherman Tree in Sequoia National Park is "the largest and oldest living thing in all the world" and "was probably a sapling" at the birth of Moses. *Ibid.*, n.p.

what is commonly called ‘red snow.’” And at Glacier National Park, visitors can see for themselves where “the earth has been contracting through unnumbered cycles of time...” While the book inferred that the unschooled visitor might find these interpretations new or even unsettling, “[t]he geologist learns to accept such theories without question...the evidence of it is so plain that it is incontestable.”²⁸

Since eye-catching half-page, full-page, and two-page spread photographs dominate the portfolio, with written descriptions of the individual parks kept to a minimum, the fact that Yard chose to highlight the scientific and instructive value of the national parks merits attention. “This nation is richer in natural scenery of the first order,” Stephen Mather began his introduction, but he hoped that the portfolio might “bring some realization of what these pleasure gardens ought to mean... to [the American] people.”²⁹ Clearly, in addition to being viewed as spectacular scenery that rivaled anything Europe had to offer, the national parks were meant to be viewed as outstanding schools of nature study.

²⁸ Ibid., n.p.

²⁹ Yard, *The National Parks Portfolio*, n.p. Mather is quoted here, but this introduction was most likely drafted by Yard for Mather’s signature. “Scenery,” as Stephen J. Pyne and others have argued, doesn’t exist but is culturally constructed in historic contexts. See, for example, Stephen J. Pyne, *How the Canyon Became Grand: A Short History* (New York, NY: Viking, 1998). National parks in particular have been subject to just these sorts of constructions of nature tied to patriotic images, as evidence by Mather’s and other comments throughout this period.

In 1916, Congress passed legislation to create the National Park Service, with a straightforward mandate:

“The service thus established shall promote and regulate the use of the Federal areas known as national parks, monuments, and reservations ... conserve the scenery and the natural and historic objects and the wild life therein and ... provide the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.”³⁰

Interestingly, while the first legislation said nothing about education, right from the beginning it urged the fledgling agency to promote itself. Without initial funding for any activity, Stephen Mather’s first challenge was to create an organization to promote and regulate the national parks and monuments, and then secure an appropriation to support it.³¹

To this end, in 1917 Mather hosted the national parks annual conference, not at one of the parks as had been done in the past, but at the National Museum in Washington, DC, where he could invite members of Congress both to speak at and attend sessions. The conference opened with a reception at the National Gallery, where Mather organized the first-ever large-scale showing of national park landscape paintings by Bierstadt, Moran, and other leading painters of the

³⁰ “An Act to Establish a National Park Service, and for other Purposes, Approved August 25, 1916 (39 Stat. 535)” reproduced in Dilsaver, ed., *America’s National Park System: The Critical Documents*, 46.

³¹ John C. Miles, *Guardians of the Parks: A History of the National Parks and Conservation Association* (Washington, DC: Taylor & Francis, 1995), 14.

time. As described by Dr. William H. Holmes, head curator of the National Gallery of Art, “every picture in the central group tells the vivid story of the wonders of our great West.”³²

As part of this not-so-subtle lobbying event, Robert Sterling Yard played an important role, hosting an entire day of presentations and discussions. As suggested by those invited to present on “educational day,” the initial concept of education in the national parks covered a wide array of topics and approaches from public relations to scientific research. For example, Herbert Quick spoke on “The Author and the National Parks,” Dr. Charles D. Walcott, Secretary of the Smithsonian Institution, spoke on “National Parks as a Scientific Asset,” Professor E. M. Lehnerts from the University of Minnesota spoke on “University Classes in the National Parks,” and the Reverend Charles W. Gilkey of Chicago spoke on the “Spiritual Uplift of Scenery in National Parks and the Grand Canyon.”³³

As Yard explained in his opening remarks, “When we speak of education in connection with our national parks we mean two things. One is the education of the people to the glories and the magnificence and the uses of their national

³² *Proceedings of the National Parks Conference*, 131-133. Dr. Holmes apparently did not appreciate “modern art” because he also commented that the paintings on display, “for the most part [were] a sane exhibit although not wholly free from the pathologic manifestations which characterize the so-called modernist movement of to-day.” *Ibid.*

³³ *Ibid.*, 80-187.

parks; the other is how the national parks can be used for the education and inspiration of the people.”³⁴ In the simplest of terms, Yard continued, “the question of educating the people in the knowledge of their own national parks possessions ... means, in the common business phrase, publicity.”³⁵ It was in this spirit that the funds needed to pay for the *National Parks Portfolio* were raised from “those whose interest might be furthered by our propaganda. We have found them in the transcontinental railroads.”³⁶

But another, deeper motivation revealed itself in these early discussions of the national parks and education: the American public required a greater appreciation of the natural world so that they might “know the value of their own possessions.”³⁷ To that end, these early proponents of education, including Yard, expressed the idea that the “ultimate purpose of the national parks is the education and the inspiration of the people.”³⁸ And this meant introducing park visitors to science and natural history of the parks.

For example, at one point during the 1917 national parks conference, Yard related how he had visited Glacier National Park and came to understand how a

³⁴ Ibid., 80.

³⁵ Ibid.

³⁶ Ibid., 81.

³⁷ Ibid., 83.

³⁸ Ibid., 80.

solid grounding in the physical sciences could enhance a visitor's appreciation of the park:

[T]o understand scenic beauty I had to get down to the geological skeleton, exactly as the artist has first to study anatomy before he can paint the human figure. Geology is the anatomy of scenery.... I have found that wherever we go into any national park the peculiar kind of beauty there found, the beauty that makes that particular park individual, that differentiates it from all the others, has its source in geology. Consequently we base all our studies of national parks upon geology as the foundation. I believe that this idea must become the basis of any educational system which is to make the parks useful to the people of the United States.³⁹

Yard expressed the need to teach the nation about the national parks so that Americans would visit and support them, alongside the need to teach park visitors about the science and nature of the national parks to ensure that, once there, visitors would learn to better appreciate and eventually even love their parks. In so doing, he posited, visitors would gain a greater appreciation and love for their country. Thus, Yard described the national parks as both "the great schoolhouses for nature and science" for the American public, and a place where adults and children alike could become "better citizen[s] of the United States and ... better patriot[s]." ⁴⁰ While the question of park-generated patriotism and love

³⁹ Ibid., 83-84.

⁴⁰ Ibid, 85. While the early publicity efforts of Yard and others are beyond the focus of this study, some of the proposed and actual activities are worthy of note. For example, in addition to the exhibition of national park paintings at the Fourth National Parks Conference to encourage members of Congress to "see for themselves" the greatness of the park resources, other speakers

of country helps in part explain the push to promote the study of natural history during this period, this study must defer that analysis for a later date and focus for the time being on the idea of national parks as field laboratories.

According to Harold C. Bryant and Wallace W. Atwood, Jr., the idea that national parks could be used as field laboratories for higher education began as early as 1899 when Professor Rollin D. Salisbury from the University of Chicago traveled with geology students into what would eventually become Glacier National Park. In addition, Professor William Morris Davis from Harvard University took students to the Grand Canyon and Dr. Douglas W. Johnson took Columbia University classes into several national parks. In this manner, Bryant and Atwood reported, a dozen universities “took advantage of the exceptional opportunity to study science in the Nation's parks.”⁴¹

This idea was promoted at the 1917 National Parks Conference in Washington D.C. by University of Minnesota Professor, E. M. Lehnerts, who presented the rationale for viewing the national parks as a significant educational resource:

at the conference addressed the question of effectively promoting the national parks. Suggestions included using “Greater Grub Street” to encourage writers to set their novels, plays, and short stories in national parks, to enlisting the nation’s great painters to “convey to the mind of those who can not visit the region some idea, howsoever weak, of [the Grand Canyon] this greatest wonder of the world.” Ibid., 122-134.

⁴¹ Bryant and Atwood, Jr., *Research and Education in the National Parks*, n.p.

[W]e now have a territory that offers all kinds of problems for study and there are as many problems on a small or on a large scale as one might wish to encounter. The work of water, the work of ice, the work of winds, the work of rock-forming and mineral-forming agencies – all these processes that we study in the classroom in our textbooks on geology are illustrated in the national parks on a magnificent scale. .. the problems are there...they are exceedingly interesting... it is easy for university classes to be organized for such interesting work... and ... it is easy to handle classes in national parks because provision is made for taking care of them.⁴²

Lehnerts, who regularly traveled to Yellowstone and Glacier National Parks with his students, went on to say that national parks had the potential to become the sites of university summer schools, where “students who are becoming specialists in geology; ... freshmen, sophomores, juniors, and seniors studying elemental geology; and those who merely wish to get the cultural value of geology without afterwards following it as a profession” could all participate in “elaborated courses in which nature herself is the lecturer.”⁴³

Arthur E. Bestor, President of the Chautauqua Institution, seconded the educational value of the national parks, urging educators to “look to the national parks as laboratories, as opportunities for scientific research and as the most ideal centers for combined vacation and education.”⁴⁴ Schools and textbooks should pay more attention the national parks, highlighting the parks unique

⁴² *Proceedings of the National Parks Conference*, 94.

⁴³ *Ibid.*, 94-95.

⁴⁴ *Ibid.*, 121.

features as part of their science curricula, and photographs of the national parks should hang alongside copies of European fine art in every schoolhouse in the country.⁴⁵ As part of the “See America First” campaign, Bestor also touted the patriotic value of substituting “America for Europe as the travel field for lovers of magnificent scenery and natural beauty.”⁴⁶

Bestor admitted that the educational, public relations, and ultimately so-called patriotic goals of the national parks were not without their challenges. These included the parks’ distances from major centers of population in the East, the related expense of travel, and the “lack of romantic, literary, and historical associations” that would help define the parks within American artistic traditions. Bestor also bemoaned the potential threat of private exploitation of the parks, and pointed to Niagara Falls where “the old individualist system was almost unbearable.”⁴⁷

With so many obstacles, the task of promoting the educational values of the national parks appeared to Bestor to be overwhelming:

Any of us who are engaged in the task of public education know what a task such a propaganda involves in an individualist society like ours. It is not merely that the human mind is so inveterately opposed to new ideas

⁴⁵ Ibid.

⁴⁶ Ibid., 119.

⁴⁷ Ibid., 119-120. These were just the sorts of obstacles Yard’s publicity efforts hoped to address through paintings, books, and alliances with magazines, newspapers and, of course, the railroads.

and that so many of us look to some country on the other side of the side of the sea as our mother land, but that the work of giving a hundred million people even a minimum of knowledge is a vast work which challenges us by its very immensity.⁴⁸

Bestor, again closely linking education and patriotism, argued that the nation needed public education more than ever, adding that “[o]ur propaganda yields itself to every agency for popular education and democratic organization and national publicity; it relates itself to every organization of a patriotic character; it links itself to every movement in which we are most deeply interested at the present time, conservation, preparedness, Americanization; it challenges us to an individual and collective task of the utmost importance and far-reaching value in our common national life.”⁴⁹

By the end of the January 1917 conference, most if not all presenters agreed that the national parks needed to advance the public’s knowledge and love of country. How to support such efforts, without specific funding to accomplish it, became the next question facing Stephen T. Mather and his right hand public relations man, Robert Sterling Yard. Unfortunately, during the 1917 annual meeting, Mather suffered a severe nervous breakdown, one of the many

⁴⁸ Ibid.

⁴⁹ Ibid., 121.

bouts of depression altered with mania that plagued him throughout his life.⁵⁰ Many believed that Yard would step in to fill his patron's shoes, however, Horace Albright was named assistant director of the National Park Service and acting director until Mather could recover. Albright continued to articulate a vision for the new service's organization and argued for support before a Congressional appropriations committee. Although the committee did not go easy on the young man, Albright managed to secure "a reasonable allotment for the new agency." In the meantime, Yard continued as chief of the educational division, even though no appropriations had been negotiated for the position. In fact, Yard would continue to be paid by Mather, until it would become illegal for government employees to receive support from private sources.⁵¹

With Mather gone, Yard found little personal or institutional support for his continued presence within the new National Park Service, in spite of the apparent success of the 1917 conference. Yard interpreted this not as a personal affront, but rather as an institutional lack of interest in education/promotion:

⁵⁰ According to Albright, Mather had been increasingly upset with Robert Marshall and his handling of park business. This, coupled with pressures of his own associated with the new park service, led him to behave in increasingly unpredictable ways. During the meeting, he would often ramble about unrelated topics, and leave unexpectedly during sessions, disappearing for hours at a time. On January 4, Mather did not appear at all, only to reappear the following day as if nothing had happened. By the end of the conference, Mather experienced a complete breakdown and had to be hospitalized. See Albright, *Creating the National Park Service*, 187-200.

⁵¹ Miles, *Guardians of the Parks*, 15-16.

Educational promotion wasn't much of a success at first. No one in Washington took any interest in it except Mr. Mather, spasmodically; Congressmen smiled over it; and with a very few exceptions the concessioners opposed it. Somebody politically influential on the Pacific Coast slammed the whole idea of education in national parks by letter to his Senator who called up Secretary Lane about it, and Lane phoned down to Mather that he'd better go slow on that unpopular kind of stuff. Thus the cause passed under a heavy cloud just as things were beginning to be hopeful. But I still kept my title, and hammered away as inconspicuously as possible.⁵²

In his history of interpretation in the national parks, Barry Mackintosh quoted Yard as evidence for his own argument that, in spite of expressions of support for education, the Park Service did not consider itself to be in the education business.⁵³ Yard's contention that education lacked support conflicts, however, with the direction the National Park Service took under Lane, Mather, and Albright after Yard's removal from the agency, and may be nothing more than a way, in retrospect, to explain his own personal unpopularity.⁵⁴

Experienced in the world of publishing and publicity, and apparently self-confident and even arrogant when it came to his abilities, Yard found himself increasingly marginalized within the National Park Service. With his biggest moral and financial supporter sidelined by illness, those who were acting in

⁵² Robert Sterling Yard to Harold C. Bryant, 24 June 1931, quoted in Barry Mackintosh, *Interpretation in the National Park Service*, n.p.

⁵³ *Ibid.*

⁵⁴ For a more detailed look at the personal problems Yard faced in the new National Park Service, see Albright, *Creating the National Park Service*.

Mather's absence discussed whether they should get rid of Yard, if not his education division.⁵⁵

Although his exact thinking at the time is unclear, Yard no doubt read the writing on the wall and, in 1918, he took his talents elsewhere, enlisting the support of leading scientists such as Charles Doolittle Walcott, secretary of the Smithsonian, and George Bird Grinnell to organize a committee on education that eventually grew into the National Parks Association (NPA).⁵⁶ The

⁵⁵ Miles, *Guardians of the Parks*, 14-16. See also, Albright, *Creating the National Parks*, 211-212, and Donald C. Swain, *Wilderness Defender: Horace M. Albright and Conservation* (Chicago, IL: University of Chicago Press, 1970): 67. The question of what role Yard would play was raised in his friend's absence. "The minute [Yard] learned that Mather had left Washington, he rightly guessed the truth of another breakdown and raced back from vacation, assuming that he would step into Mather's shoes. I had a long, careful talk with him, telling him that Lane had instructed me to take over Mather's job until further notice, that he was to continue his same work, that I would continue paying him from Mather's funds. Above all, he was to have no communication with Mather until Weisenburg [Mather's doctor] gave permission. Yard immediately circumvented me.... I sat Yard down and had another straightforward talk with him.... "I'm a lot younger than you, but I happen to be in charge here, and you will obey me or you will be released to go back to newspapering in New York." See Albright, *Creating the National Park Service*, 203-204. When the Park Service was officially funded, Yard's role in the new agency became even more precarious since it became illegal for Mather to continue to fund his position. *Ibid.*, 297-298. While Albright managed to stay on friendly terms with Yard during this period, preferring to protect Mather's friend rather than fire him, he also relied more on Howard Hays whom he had met in Yellowstone in 1915. At that time they met, Hays worked for the Wylie Camp and Staging Company, scheduling tours and coordinating advertising. In 1917, Hays went to work for the Union Pacific and Chicago and Northwestern railroads. In this job, according to Donald Swain, "he cooperated closely with Albright in 1917 and 1918 in promoting the 'See America First' campaign." In the fall of 1918, Hays edited and published "a series of national park booklets which 'became at once the most powerful inducement to travel in the parks since the publications of the National Parks Portfolio.'" Swain, *Wilderness Defender: Horace M. Albright and Conservation* (Chicago, IL: University of Chicago Press, 1970), 92-93.

⁵⁶ In June 1918, Yard helped organized an education committee of university presidents and representatives of leading conservation organizations throughout the country, with Walcott from the Smithsonian serving as the chairman. The committee in turn organized itself as the National Parks Association in April 1919 with similar educational objectives, thus, circumventing the lack

expressed goal of the NPA was, first and foremost, to “interpret the natural sciences which are illustrated in the scenic features, flora and fauna of the national parks and monuments, and to circulate popular information concerning them in text and picture.”⁵⁷ The NPA also served as an agency that could promote the parks and raise money without governmental oversight.

Dwight T. Pitcaithley, Chief Historian for the National Park Service, cited the objectives of the National Parks Association as “the earliest expressions of the National Park Service’s founding fathers on the pedagogical aspects of park management.” Even though the National Park Association’s education philosophy in many instances anticipated the programs implemented in the parks by National Park Service personnel, Yard organized the NPA outside the National Park Service, to function instead as a privately funded advocacy

of funding for education within the NPS. Supporting Yard in such an endeavor may have been a convenient way for Mather to provide a smooth exit strategy for his long-time friend, who he had brought to Washington to work on park-related promotion. According to John C. Miles, Mather first tried to secure a job for Yard with the American Civic Association, but was rebuffed. Later, Mather agreed to donate \$5,000 to the new National Parks Association, but only on the condition that Yard be appointed “in an important executive capacity.” See Miles, *Guardians of the Parks*, 15-21.

⁵⁷ Both Pitcaithley, “National Parks and Education” and Miles, *Guardians of the Parks*, provide good background on the early history of the NPA (now NPCA), and how it was established to support educational activities in the national parks. According to Miles, “Yard was, in every sense, the founder of NPA. There is little doubt that NPA was his idea.... In short, Robert Sterling Yard *was* the National Parks Association during this period.” See Miles, *Guardians of the Parks*, 40-41.

organization. Yard's work with the National Park Association has, therefore, not been included in this study.⁵⁸

With the leading advocate of educational publicity effectively sidelined into a separate organization, the management of the National Park Service turned to realizing the goal of using the parks as nature's laboratories and outdoor schools for the American public. The same year that Yard developed the NPA independent of the National Park Service, Horace Albright wrote what he referred to as his "creed, a framework of ideological guidelines to which the National Park Service could aspire and grow into the future as time and conditions might change. Some years later a secretary of the interior called it the Magna Carta of the national parks."⁵⁹ At Albright's suggestion, Secretary of the

⁵⁸ Pitcaithley, "National Parks and Education," n.p. The objectives of the NPA National Parks Educational Committee were to 1) educate the public in respect to the nature and quality of the national parks; 2) further the view of the national parks as classrooms and museums of nature; 3) use existing publicity and educational systems so as to produce a wide result; 4) combine in one interest the sympathy and activity of schools, colleges and citizen organizations in all parts of the country; and 5) study the history and science of each national park and collect data for future use. Ibid. In addition, according to John Miles, the committee wished to define "those functions which have for their general objectives the uses of the parks by the people, in distinction from the government function of the physical development and administration of the parks for the people...." In other words, let the Park Service bureaucracy administer, but the new NPA would develop privately the more worthwhile objectives of the parks (e.g., science and education) for the benefit of the people. See Miles, *Guardians of the Parks*, 18. [It is no coincidence that in 2004, the conservative think tank, the Cato Institute, is a proponent of the National Parks and (now) Conservation Association.]

⁵⁹ Albright, *Creating the National Park Service*, 274. As Albright remembered it, "at the time I needed to rough out my thoughts and, I hoped, those of Stephen Mather." He also noted that "Words and ideas of the famous and the unknown from Catlin to McFarland, Olmsted, and Colby, from men and women I'd talked to out in the parks, names beyond recall if I ever knew them," needed to be captured in a more official form. Ibid.

Interior Franklin K. Lane issued Albright's statement of purpose in the form of a letter of management instruction to Stephen T. Mather:

The education, as well as the recreational, use of the parks should be encouraged in every practicable way. University and high-school classes in science will find special facilities for their vacation period studies. Museums containing specimens of wild flowers, shrubs, and trees and mounted animals, birds, and fish native to the parks and other exhibits of the character, will be established as authorized..."⁶⁰

With these seemingly straightforward instructions, park administrators faced a fork in the road, with paths pointing in two distinct science and natural history education directions: one led to Yosemite National Park and the other led to Yellowstone.

⁶⁰ Dilsaver, ed., *America's National Park System: The Critical Documents*, 50. This key statement of park policy was written not by Secretary Lane but by Horace Albright, who was acting as unofficial head of the National Park Service during Mather's extended absence. So even though Lane was the Secretary of the Interior and Mather officially headed the National Park Service, in effect Albright wrote to instruct Albright on the priorities in the parks. Apparently, few knew at the time Albright had played in writing the original directive. In 1925, Albright was asked to update the creed on behalf of the new Secretary of the Interior, Hubert Work, and Stephen Mather. The revised version was reproduced almost verbatim in regards to education. See Albright, *Creating the National Park Service*, 274-275.

CHAPTER 3

NATIONAL PARKS AS SUPER UNIVERSITIES

“The National Parks are commonly considered as essentially designed for recreation and this must of course be one of their major functions. But the recreation for which they serve is secured under conditions particularly favorable to education and growth of mind and spirit as well as body. ... There are not in America other places where there may be found so great an opportunity for effective adult education concerning nature with the grandest products of creation themselves as teachers. There is nowhere a larger opportunity to teach clear thinking and to prepare a multitude of minds for honest reasoning. It is like a super-university, where the professors would be only guides not educators....” -- John C. Merriam⁶¹

When Stephen T. Mather returned to work after his extended illness and submitted his annual report for the fiscal year ending 1919, he claimed to be “more than pleased” by the progress made in the parks:

[I]n every branch of our activities successful results, directly beneficial to the national parks, have been obtained.... Never before has there been such travel in America, and never before have so many people toured the parks. Released from the strain of war activities, and freed from the power of sentiment against vacation touring, there was a general desire to

⁶¹John C. Merriam, “The Responsibility of Federal and State Governments for Recreation,” Remarks at the National Conference of Outdoor Recreation, Washington, DC, January 20, 1926, Yellowstone National Park vertical files.

move about the country for recreation, or amusement, in search of new business opportunities, and oftentimes simply to get a change of scene.⁶²

Still, when Mather toured the parks during the 1919 season, he noticed that “their usefulness as fields for practical summer investigations in numerous branches of scientific and historic research have not been utilized to any appreciable extent by the colleges and universities of the Nation or by individual scholars and scientists unassociated with particular institutions.” He was, therefore, “extremely anxious that steps should be taken in several of the largest parks next year to demonstrate the practicability of conducting studies of the natural features at reasonable expense to students availing themselves of the opportunities for the field laboratory work that the parks afford.”⁶³

Mather pointed to a few “far-seeing educators, public officials, and men and women in several very different walks of life” who had responded to the idea of using the national parks for study and field laboratory work. At least two universities had integrated parks-related subjects into their curriculum.

⁶² Department of the Interior, *Report of the Director of the National Park Service to the Secretary of the Interior for the Fiscal Year Ended June 30, 1919* (Washington, DC: Government Printing Office, 1919), 11 (hereafter 1919 NPS Annual Report). During the fall of 1918 Mather returned to Washington, so although he may not have literally written the report, it is likely he was personally responsible for this report (as opposed to the two before them which were the responsibility of Albright who was acting director in Mather’s absence).. Interestingly, the 1919 and 1920 annual reports are both approximately 400 pages (as opposed to approximately 100 pages for other reports), and were produced as hardbound books, suggesting that Mather was indeed back and anxious to return to a more rigorous promotion of the parks.

⁶³ 1919 NPS Annual Report, 29.

Columbia University, for example, had developed a program of national-parks study and offered a course in the scenery of the national parks, introducing students to how nature produced or formed the parks' spectacular landscapes.⁶⁴ The most extensive university educational programs based on park science, natural history, and archaeology, however, were developed by the extension office at the University of California and offered the summer of 1919 in Yosemite National Park.

The Le Conte Memorial Lectures were named after geologist, university professor, and early supporter of Yosemite National Park, Joseph Le Conte. The lecture series, organized by University of California zoologist, Joseph Grinnell, featured leading experts from the UC campus at Berkeley, the Smithsonian, and other agencies, who spoke on the wildlife, botany, geology, and the Native American cultures of Yosemite (see Table 1). College faculty and other experts presented illustrated lectures in the pavilion in Yosemite Village, while others were offered outdoors, near the Le Conte Memorial Lodge.⁶⁵ According to

⁶⁴ Ibid.

⁶⁵ 1920 NPS Annual Report, 249. Superintendent Lewis described the need for an auditorium where public lectures could be held. "This was particularly so in connection with the Le Conte memorial lectures, some of which at least it was desired to hold at or near the Le Conte Memorial Lodge. Temporary seating of the audience in front of the lodge had [not] been satisfactory the year before because of the unevenness of the ground. So with the cooperation of the Sierra Club a very satisfactory outdoor auditorium with log seats and canvas back and a rustic speaker's platform was erected at a very small cost. While not in the least elaborate, it is at least attractive and at the same time serves the purpose for which intended." Ibid., 250.

Stephen Mather, these university lectures “sought ... to contribute to the study of nature and to the general enlightenment of scientific subjects relating to the outdoors,” and were exceedingly popular with the general public.⁶⁶

Table 1. Le Conte Memorial Lectures.

-
- 1919⁶⁷**
- I. Willis L. Jepson, professor of botany, University of California
 - 1. The History and Origin of the Buttercup Family in Yosemite. Tuesday, June 24.
 - 2. The Biology of the Chaparral. Thursday, June 26.
 - 3. The Ancestry of the Yosemite Pines and Sequoias, Friday, June 27.
 - II. William Frederic Bade, literary executor of John Muir
 - 1. John Muir, Nature, and Yosemite. Tuesday July 1.
 - 2. Muir’s View of the Valley’s Origin. Thursday, July 3.
 - 3. Muirs [sic] Services to the Nation. Friday, July 4.
 - III. Francois Emile Matthes, geologist, United States Geological Survey
 - 1. Origin of Yosemite Valley, as Indicated in the History of its Waterfalls. Tuesday, July 8.
 - 2. The Highest Ice Flood in the Yosemite Valley. Wednesday, July 9. (To be delivered at Glacier Point.)
 - 3. The Origin of the Granite Domes of Yosemite. Saturday, July 12.
 - IV. A. L. Kroeber, professor of anthropology, University of California.
 - 1. The tribes of the Sierra. Friday, July 11.
 - 2. Indians of Yosemite. Saturday, July 12.
 - 3. Folk-lore of Yosemite. Sunday, July 13.
- 1920⁶⁸**
- I. Joseph Grinnell, professor of zoology, University of California
 - 1. Special modes of life of some notable Yosemite birds. Tuesday, June 22.
 - 2. Squirrels, woodpeckers, and jays in relation to sierran forests. Thursday, June 24.
 - 3. Burrowing mammals as agents of erosion and as natural cultivators of the soil. Friday, June 25.
 - II. Clinton Hart Merriam, research associate, Smithsonian Institution.
 - 1. Indian tribes of the Yosemite region. Tuesday, June 29.
 - 2. Customs, beliefs, and modes of life. Thursday July 1.
 - 3. Implements and industry. Friday, July 2.

⁶⁶ 1920 NPS Annual Report, 51-52.

⁶⁷ 1919 Annual Report, 30.

⁶⁸ 1920 NPS Annual Report. 52.

- III. John Campbell Merriam, professor of paleontology and historical geology [University of California].
 - 1. Le Conte philosophy of evolution. Tuesday, July 6.
 - 2. Application of Le Conte's philosophy to religion. Wednesday, July 7.
 - IV. Andrew Cowper Lawson, professor of mineralogy and geology, University of California.
 - 1. The mountains of Mesozoic time. Tuesday, July 13.
 - 2. The early Tertiary peneplain and its residual mountains. Thursday, July 15.
 - 3. The mountains of Quarternary [sic] time. Friday, July 16.
-

Ansel Hall, who worked as a park ranger in Yosemite during the early 1920s and would later become the Chief Naturalist of the National Park Service, recalled that Mather's initial goal for the educational programs in the parks was to give visitors "an understanding of the park and therefore a great love of what they saw."⁶⁹ Since formal lectures by university faculty on such detailed topics like the mountains of the Quaternary or the effect of burrowing mammals on erosion would not necessarily appeal to all park visitors, campfire talks were offered informally during this period to meet a growing demand for information about the natural history of the parks.

Many of these early informal programs were natural carry-overs from the formal lectures. For example, Dr. Matthes, from the US Geological Survey, who

⁶⁹ Ansel Hall, quoted in "Minutes of the Eighth National Park Conference Held in Mesa Verde National Park, Colorado, October 1 to 5, Inclusive," 40, National Park Service History Collection, Harpers Ferry Center Archives, Box A40.

lectured on the geological origins of Yosemite, “remained in the park for a considerable time and delivered many talks and addresses at the public camps and at the Sierra Club camp fires.”⁷⁰ Others were informal talks given by regular park visitors who were familiar enough with the park’s features to help introduce them to visitors.⁷¹

Looking for the origins of science and natural history education in the national parks, many point not to the Le Conte lectures or informal campfire talks but to Stephen Mather’s trip to the Lake Tahoe area to observe a highly successful “nature guiding” program.⁷² A plaque at Fallen Leaf Lake commemorates 1919 as the year that “W. W. Price... owner of Fallen Leaf Lodge, convinced reluctant proprietors of 5 other Tahoe resorts as to nature guiding movement ‘imported’ from Europe by Mr. And Mrs. C. M. Goethe. National

⁷⁰ 1919 NPS Annual Report, 30. It’s interesting to note, too, that Joseph Grinnell, who organized the first lecture series, tied his own educational programs to current scientific research, as he conducted “a comprehensive study of the animal life of the park.... The results of Dr. Grinnell’s work will probably appear next year and will be a distinctly valuable addition to the literature of the parks.” Ibid, 70.

⁷¹ Ibid., 30.

⁷² In a brief typed history of education in the national parks, an unidentified author writes that “the education work in the national parks was in a way an outgrowth of nature-guide work in the summer resorts of California which had its beginning in 1918, although the concept of nature guiding in reality was in part a product of World Survey which brought the idea from Europe and planted it in America. In 1918 the California Fish and Game Commission sent its educational director to Yosemite National Park to deliver a number of lectures. As a stimulus to further interest in wild life, field trips were offered which proved very popular. The following year saw a more extensive program developed in Lake Tahoe resorts.” “History of Educational Department in the National Parks,” n.d., n.p., author unknown (although “written by Joyner” has been penciled in on the copy), Yellowstone National Park Library, vertical files.

Parks' Director S. T. Mather, witnessing its amazing popularity at Fallen Leaf, requested its introduction in 1920 to Yosemite. Thus began [the] National Park Ranger Naturalists' Interpretive Program."⁷³

The Goethes had learned about nature education programs while on a climbing trip in Switzerland. The programs they saw helped "inculcate love of country by learning about its birds, wildflowers, [and] the why of scenery." They also learned about "the nature study techniques of some five European nations." Anxious to recreate a similar program in the states, they "labored several years trying to adapt [the] above to American youngsters [and] simultaneously started saving money for what later became dubbed our 'Tahoe Laboratory.'" With help from the University of California, the Goethes identified two scientists to lead the program, Dr. Harold C. Bryant, education director of the California Fish and Game Commission, and Dr. Loye Homes Miller, a professor of Biology at the University of California, the Southern Branch, and with them organized a weekly "Nature Study field excursion" at five participating Lake Tahoe area resorts. Each outing was followed by a science or natural history lecture.⁷⁴

⁷³ Photographic print, c. 1960, National Park Service History Collection, Harpers Ferry Center Archives, Box 1810.

⁷⁴ C. M. Goethe, "How Nature Study Began in Yosemite," n.d., n.p., see National Park Service History Collection, Harpers Ferry Center Archives, Box K1810. Referencing Goethe's

“Sensing that nature is more appreciated when it is understood,” Mather convinced the Goethes to try their Lake Tahoe program in Yosemite National Park, where it could serve a larger audience.⁷⁵ Mather did not intend to simply replicate the nature guiding approach at Yosemite, using those already in the National Park Service’s employ to implement the program in the park. Instead, he wanted to take the Lake Tahoe program and its leaders to Yosemite with him. Both men were extremely qualified, with doctorates in biology. Bryant had studied with zoologist Joseph Grinnell at Berkeley, worked as a staff ornithologist at the museum of vertebrate zoology at the University of California,

autobiography, *Seeking to Serve* (Sacramento, CA: Keystone Press, 1949), Yosemite Park Ranger wrote that “Goethe’s nature interest seemed ultimately to be a way of exploring eugenics, which was his real concern...” Jim Snyder, Yosemite National Park, to Dick Russell, Harpers Ferry Center, West Virginia, 27 March 1978, National Park Service History Collection, Harpers Ferry Center Archives, Box K1810. Since Goethe had no direct involvement with the early educational programs in Yosemite, other than that documented above, the question of a eugenics tie to the promotion of nature study has been deferred for a later study.

⁷⁵ A typescript accompanying the photo of the plaque states “National Park service director Stephen T. Mather in 1920 persuaded Dr. and Mrs. C. M. Goethe to try at Yosemite the “Nature Guide” movement they had imported from Europe. The program was an immediate success, first on a seasonal basis conducted by Harold C. Bryant and Loye H. Miller and, later, as a full-time activity under park naturalist Ansel F. Hall. As a result, men in uniform in every national park stand ready to help you understand and appreciate your heritage.” A handwritten note, signed by “L. Miller” (presumably Loye H. Miller) corrects some of these specifics, as “contrary to fact”: “1 – Supt. Mather had proposed to me such a plan in an interview at Lake Tahoe in July 1919. 2 – Nature Guides had served in Yosemite and in Yellowstone for some time prior to 1920. 3 – Dr. Goethe was an enthusiastic advocate of such work but it was already functional in America when he saw it in Europe.” Ibid. In a letter to Dick Russell at the National Park Services Archives in Harpers Ferry, Jim Snyder (who identifies himself as a Yosemite “repairer of trails rather than a naturalist in the formal sense”) notes “Muir became widely known as a guide in Yosemite very early. Yet he was not just a guide to get people from one place to another; he was the sort of guide who told people what he saw and read the landscape to them.” Jim Snyder, Yosemite National Park, to Dick Russell, Harpers Ferry, West Virginia, 27 March 1978, Ibid.

and was in charge of education, publicity and research for the California Fish and Game Commission.⁷⁶ During the academic year, Miller worked as a professor of biology at the University of California, the Southern Branch. Goethe and others touted Miller as a “veteran paleornithologist, [with] professional knowledge in zoology. ... He was amazingly skillful in calling wild birds.”⁷⁷

Because no budget had yet been set aside for education in the national parks, Mather convinced the California Fish and Game Commission to contribute Bryant’s summer salary, and raised the remainder of the necessary funds through private donations. Since most if not all of the outside funding needed to start the program came from Mather, he clearly believed the educational program a worthy investment. With Bryant agreeing to lead the program for the summer, Miller assisting during the busiest period in June and July, and Yosemite Park ranger, Ansel Hall, himself a trained forester, helping as well, “the Yosemite Free Nature Guide Service was launched.”⁷⁸ Although rarely

⁷⁶ Harold C. Bryant, *Nature Guiding*, Bulletin Number 17 (Washington, D.C.: Nature Study Department, American Nature Association, [1924]) 11. See also Sellars, *Preserving Nature in the National Parks*, 95.

⁷⁷ Goethe, “How Nature Study Began in Yosemite,” n.p.

⁷⁸ Horace M. Albright as told to Robert Cahn, *The Birth of the National Park Service: The Founding Years, 1913-33* (Salt Lake City, UT: How Brothers, 1985), 121-122. Hall would go on to become, in 1921, the second full-time naturalist in the National Park Service (after Skinner, appointed in Yellowstone the year before), and eventually the NPS’s first Chief Naturalist. Goethe wrote that “For a few years the Yosemite effort was privately supported by Mr. Mather, Mrs. Goethe, and writer [i.e., C. M. Goethe]. Later taken over by Government, it has continued to expand into what has been called the greatest outdoor classroom in the world.” Goethe, “How Nature Study Began

mentioned, another seasonal naturalist was hired at Yosemite that same year to help with the development of the new educational service. Enid Michael, a botanist and member of the California Botanical Association, organized a wildflower display in the park and led field trips as needed.⁷⁹

The campfire talks, nature walks, and other activities organized for Yosemite visitors in 1920 were not the first of their kind in the national parks. For example, Rocky Mountain, Mesa Verde, Yellowstone, Sequoia, and Glacier parks all hosted informal campfire talks by nature guides and volunteer lecturers for a number of years, depending on the park. In addition, informal educational programs had been organized the previous season at Yosemite as an experiment.⁸⁰ However, the 1920 Yosemite program marked the first time these educational talks were organized on a regular basis throughout the season, with

in Yosemite," n.p. A note penciled on the copy at the HFC archives adds "L. Miller writes that funding [of the Yosemite education program] was ALL by Mather."

⁷⁹ H. C. Bryant in 1920 NPS Annual Report, 254.

⁸⁰ 1920 NPS Annual Report, 245. This may be referring to talks given in Yosemite in 1919 by H. C. Bryant. The Sierra Club had also organized outings as early as 1901. "Like many of the outings to follow, these annual [Sierra Club] outings were more than just hiking trips. Before the first outing, the 96 adventurers were advised to read John Muir's *The Mountains of California*, and Joseph LeConte's *Journal of Ramblings Through the High Sierra*, the latter of which was considered an inspiration for the trip. Once the trip was underway, professor William Dudley lectured on forestry, C. Hart Merriam, director of the U.S. Biological Survey, taught biology, Theodore Hittell, a noted historian, discussed the history of Yosemite, and Muir spoke on geomorphology. The Club outings program attracted people from all walks of life, including a large number of women. The first outing included Muir's daughters, Wanda, 20, and Helen, 15, along with other Berkeley and Stanford college women." See "History of LeConte Memorial Lodge," at <http://www.sierraclub.org/education/leconte/history.asp>.

the expressed goal of informing visitors about the unique scientific and natural history features of the park. As Yosemite Superintendent W.B. Lewis explained:

In addition to “the recreational advantages the park offers, it also affords exceptional opportunities for the study of geology and natural history, and there is, and has been a very notable demand on the part of park visitors to gain information in this field. Unusual interest is displayed by visitors in efforts to ascertain the cause of the sheer walls of the valley, why the smoothly polished granite domes so characteristic of the region exist, and the names and characteristics of the flowers and trees, and the names and habits of the park mammals and birds. It seemed, in order to meet this demand and at the same time be able to give out not only interesting information but authentic, that there should be some one on the ground versed in the geology and natural history of the region to disseminate it.⁸¹

Throughout the summer of 1920, tour leaders offered hour-and-a-half field trips, during which park visitors were introduced to “15 to 20 varieties of birds, about 20 kinds of wild flowers, and some 10 or 12 trees and shrubs. During the nesting season it was not uncommon to discover five or six different birds’ nests on a single excursion. All three of the different pines found on the floor of the valley could be shown and a demonstration made as to the means of identifying each by needles and by the bark.” These outings proved to be so successful and engaging that many visitors reportedly participated in the trips

⁸¹ Ibid.

for a week or two at a time. By the end of the summer, a total of 1,082 adults had attended the 69 field trips offered from June through August.⁸²

The park also sponsored excursions for children, who reportedly assimilated the information more rapidly and retained it better than the adults, with what educators assumed would to greater effect.⁸³ A total of 299 children participated in the 24 trips that first summer, which Bryant considered a disappointment, blaming “insufficient advertising in the valley” for the poor attendance.⁸⁴

To complement the field excursions during the day, featured speakers presented regularly scheduled lectures and campfire talks, illustrated by motion pictures or stereopticon slides, on everything from bird migration in California to the relation of birds to insects (see Table 2). To help build up attendance, some talks were postponed to ensure that they did not compete with the already scheduled Le Conte lectures. Bryant believed that the nature talks “did much to break down the hysteria which goes along with the sight of a snake and the many myths which have grown up about the more unusual birds and mammals as, for instance, the story that a bat dives into ladies’ hair and that a porcupine can throw his quills. Furthermore, these lectures helped to answer questions

⁸² Ibid., 254.

⁸³ Ibid.

⁸⁴ Ibid.

regarding certain birds, animals, and trees which the visitor had met on coming into the park." That first summer, the nature program offered a total of 24 formal lectures and 30 informal campfire talks, with a total of 25,752 park visitors in attendance.⁸⁵

The new program also organized "nature play" for children with "bark feeling," "herb smelling" and other blindfold games, and "sleeping-bag trips into the high Sierra" so that visitors could see for themselves the geology, botany, and wildlife introduced in the lectures and talks. A flower show, displaying and identifying branches and cones from coniferous trees and seasonal wildflowers, greeted visitors in front of the National Park Service Office. Organized by Enid Michael of the California Botanical Association, the show displayed more than 400 different species of wild flowers during the season. Bryant estimated that 300 to 500 individuals visited the flower display show each day.⁸⁶ Mather

⁸⁵ Ibid., 254-255.

⁸⁶ Ibid., 255. According to Kaufman, Enid Reeves Michael was hired as a temporary ranger naturalist, and served in this position for more than 20 years. "In addition to leading nature walks and maintaining a wildflower display and garden, she contributed 172 articles, on a variety of subjects, to *Yosemite Nature Notes*." Unlike other women during this period, Michael was never issued a ranger uniform and had to lobby extensively to secure permanent employment, which was temporarily funded by a private philanthropist in 1931. See Polly Welts Kaufman, *National Parks and the Woman's Voice: A History* (Albuquerque, NM: University of New Mexico Press, 1996), 74-75. In 1921, Laura Dodge and Myra Drachman, both from the University of California's southern branch, assisted the nature guide service in Yosemite. See Department of the Interior, *Report of the Director of the National Park Service to the Secretary of the Interior for the Fiscal Year ended June 30, 1921 and the Travel Season 1921* (Washington, DC: Government Printing Office, 1921), 197 (hereafter 1921 NPS Annual Report).

predicted that Yosemite's success would serve as a model for other parks to introduce their own courses and talks.⁸⁷

Table 2: Lectures and Campfire Talks, Yosemite National Park, 1920.⁸⁸

Lectures:	
Bird migration in California	Nesting waterfowl
Fish and fishing	Camouflage in nature
Wild life conservation	Instinct and habits of birds
Bird music	Common birds of the Yosemite
Predatory mammals	The game mammals of California
Distribution of plants and animals	Common wildflowers of Yosemite
Our national parks	Instinct in birds
Camp-fire Talks	
The nature guide service	Snakes and lizards
The mountain lion	The weasel
The black bear	Common wild flowers
The Douglass squirrel	Predatory animals
The big trees	The owls
The water ouzel	Relation of birds to insects
The band-tailed pigeon	The canyon wren
The snow plant	Bats
The coney	Life zones
The harlequin duck	The mule deer
The rattlesnake	The geology of Yosemite
Toads, frogs, and salamanders	

⁸⁷ 1920 NPS Annual Report, 54-55.

⁸⁸ Ibid., 54.

At the end of the first year, Bryant reported on the new educational program in the Yosemite contribution to the 1920 NPS annual report. Excerpted below, his discussion provides a good sense of the goals and focus of the first official NPS science education program:

The aim of the nature guide service was to furnish useful information regarding trees, wild flowers, birds, and mammals and their conservation and to stimulate interest in the out-of-doors, and particularly in the natural objects found in the Yosemite National Park. Behind this aim was the conviction that the person who knows something about what he sees and hears more greatly enjoys his vacation. The means utilized to attain this aim were as follows:

1. Trips afield where visitors might attain first-hand information regarding the living things of interest to be found along the trail side.
2. Lectures and camp-fire talks, designed to awaken interest in birds, trees, and wild flowers and to convey information useful on a summer vacation.
3. An office hour at which time the usual questions of the vacations regarding natural history could be answered.
4. A set of dependable reference works made available to everyone.
5. A flower show where the commoner wild flowers properly labeled were displayed.⁸⁹

While the first year of the “free nature guiding program” was extremely successful, Bryant reported potential difficulties with organizing outings that included those who stayed in the park’s grand hotels and those who “roughed it” in the campgrounds. In his report, Bryant appeared to genuinely sympathize

⁸⁹ Ibid., 254.

with campers who “often felt out of place meeting at Camp Curry and at the Yosemite Lodge.” He recommended, therefore, that “it might be well to establish a meeting place among the camps and conduct a special trip especially for campers.”⁹⁰ Giving him the benefit of the doubt, this could have been a genuine attempt to ensure that more campers would feel comfortable attending field trips, rather than an attempt to keep segregate the campers from the park’s more well-heeled hotel guests.

Like Mather, Bryant was quick to see the potential for scientists, while in residence in the park, to add to baseline data on the fauna and flora of the park. He reported, for example, that scientific surveys had been initiated so that park managers would have some basis for documenting population increases or declines.⁹¹ He also expressed a particular interest in documenting a widely seen pair of harlequin ducks. Harlequins nest in the rushing streams of the Sierras, but as of 1920 their nests reportedly had never been discovered. A number of other birds and their nests were documented by visiting scientists and staff that year as well, including the hermit warbler, belted kingfisher, canyon wren, and trail flycatcher.⁹²

⁹⁰ Ibid., 256.

⁹¹ Ibid.

⁹² Ibid.

With the number of visitors served by the nature guide service growing, and the small staff of professional scientists and assistants kept busy day and night, Bryant asked the National Park Service to support “an efficient permanent man to lead the work in all the parks and an all year man in Yosemite with, perhaps, the added duty of caring for the museum.... An additional staff for each summer should be recruited from the universities and colleges. Only with such an organization can nature guide work be properly and adequately developed.” In other words, in addition to the specific educational needs of Yosemite, the Park Service needed to organize and build the program throughout the park system because, as Bryant noted, the success of the program in Yosemite will “create a demand for equal privileges in other national parks.” Bryant believed there was a pressing need to train “men capable of carrying on the work in other places.”⁹³ Stage drivers and hotel guides, with their tall tales and misinformation, would also benefit from a little schooling at the hands of the nature guide service, according to Bryant.⁹⁴

⁹³ 1921 NPS Annual Report, 203. Having said that, during its second year (1921) two women, Laura Dodge and Myra Drachman, both from the southern branch of the University of California, were hired to accompany the nature guides on field trips, help with instruction, and maintain an additional flower show at Camp Curry. Two visiting scientists also assisted with lectures: E. C. Van Dyke, professor of entomology at the University of California, spoke on the insects of the park, and F. P. Matthes, a government geologist, lectured on the geology of the park. Loye Miller extended his work in the park from one month to six weeks. *Ibid.*, 201..

⁹⁴ *Ibid.*, 203.

In 1922, the National Park Service annual conference was held in Yosemite National Park. At that meeting, Roger W. Toll, Superintendent of the Rocky Mountain National Park, issued a joint resolution from the park superintendents arguing that the mission of the national parks is not to provide “cheap amusement, but healthful recreation and to supplement the work of schools by opening the doors of Nature’s laboratory, to awaken an interest in natural science as an adjunct to the commercial and industrial work of the world.”⁹⁵ At Yosemite National Park, college faculty and professional scientists were opening those doors, providing park visitors with an opportunity to learn more about science and nature.

By 1924, Stephen T. Mather estimated that Yosemite’s nature guide service served close to 70,000 park visitors, or two out of every three visitors, and that many “school teachers, taking their vacations in the Yosemite were turning the nature guide service into a regular summer school, asking all kinds of questions concerning the natural history of the region.” Sensing an obvious need, the park organized a free Yosemite Field School of Natural History in the summer of 1925.

In a booklet on nature guiding announcing the school, Harold Bryant explained that “[b]iology as taught in the average high school and college does not emphasize field study and as a consequence there are few persons who are

⁹⁵ Dilsaver, ed., *America’s National Park System: The Critical Documents*, 58.

able to recognize, name and properly study the living things along a trailside. Many, feeling themselves handicapped in this regard, are seeking for instruction that brings a first-hand acquaintance with the living thing in its native environment."⁹⁶ As part of the new Yosemite school, students learned botany, zoology, and geology in the field, and had hands-on practice teaching, guiding nature walks, presenting campfire talks, and writing nature notes for publication.⁹⁷

Initially, students were accepted into the program not on the basis of their gender, but solely on the date of their application, assuming they met the minimum requirements of two years of college. The first year, eighteen students, most of them teachers in California schools, enrolled in the course. Although no college credit was given for participation in the field school, the course of study was intended to be the equivalent of attending a similar series of

⁹⁶ Bryant, *Nature Guiding*, 9-10.

⁹⁷ U. S. Department of the Interior, *Annual Report of the Director of the National Park Service to the Secretary of the Interior, for Fiscal Year ended June 30, 1925*, 11 (hereafter 1925 NPS Annual Report). According to Kaufman, the first class included more women than men, and featured talks by Enid Michael on plant life (although the regular staff members were men). Contrary to what Mather reported, Kaufman wrote that students paid \$25 for the course and "lived in tents in Camp Number 19, the staff campground." A fee may indeed have been charged later, but the early materials say that "no tuition or fees will be charged." See Bryant, *Nature Guiding*, 11. Kaufman also noted that the field school was designed by Harold Bryant to train naturalists for the service, but "women students soon learned that only male trainees would be considered for positions." Still, "[w]omen dominated classes at the field school for the first four years; the classes of 1927 and 1928 each had thirteen women – to four men in 1927 and to six men in 1928. Soon Bert Harwell, assistant director of the school and Yosemite chief naturalist (and a field school graduate), began to argue that there were too many women." See Kaufman, *National Parks and the Woman's Voice*, 70-71.

college courses, with the added advantage of having outdoor laboratories in which to study. Those who completed the work satisfactorily were issued a certificate of completion.⁹⁸

The course of study, a list of faculty, and grading metrics are presented as Table 3.

Table 3. Yosemite School of Natural History, 1925 Session.⁹⁹

Courses:

1. Physical geography and geology of the Sierra Nevada.
2. Classification and nomenclature (animal and plant).
3. Plant and animal distribution. Life zones.
4. Botany - (a) Common trees and shrubs; (b) Flowers. (c) Algae and fungi.
5. Zoology - (a) Invertebrates - insects; mollusks. (b) Common vertebrates - (1) Fishes, (2) amphibians, (3) reptiles, (4) birds, (5) mammals.

Schedule (June 29 - August 8, regular instruction; August 9-14, high mountain field trip):

1. Field trips for study of fauna and flora of the valley floor at 8 a.m. daily.
2. All-day field trips every Saturday to the rim of the valley.
3. Special collecting trips for rarer forms.
4. A week's trip to the high lake and meadow country, affording studies at timber line.

Emphasis is to be placed on intensive field work, and each student will be expected to know and identify all the common Yosemite trees, shrubs, wild flowers, insects, fishes, amphibians reptiles, birds and mammals. Grading will be apportioned as follows:

Field identification, 60 percent; teaching ability, 20 percent; notebooks, 10 per cent; preparation of scientific specimens, 5 percent; familiarity with literature, 5 percent.

Teaching Staff:

Harold C. Bryant, B.S., M.S., Ph.D., Economic Ornithologist, Museum of Vertebrate Zoology, University of California, and in charge of education, publicity and research, California Fish and Game Commission.

Ansel F. Hall, B.S. chief park naturalist, Yosemite National Park, National Park Service

Carl P. Russell, A. B., M.A., park naturalist, Yosemite National Park.

M. B. Nichols, Ph.D., instructor biology, Oakland Technical High School, nature guide.

Mrs. Enid Michael, park botanist and nature guide.

Roland Ross, naturalist, nature guide.

⁹⁸ Ibid., 10.

⁹⁹ Ibid., 10-11.

Robert Harwood, A. B., teacher of biology, Bakersfield Union High School, nature guide.

Leo Wilson, M.S., University of California, nature guide.

The school being a contribution of the National Park Service with the aid of the California Fish and Game Commission, no tuition or fees will be charged. Expense is thus limited to sundry materials, such as notebooks and collecting apparatus and transportation, food, housing and clothing.

Mather viewed the new field school as a logical extension of the nature guiding services, allowing those with an interest in developing a better understanding of the physical and biological sciences to both broaden and deepen their education using the national parks as their museum and their classroom.¹⁰⁰ The field school also professionalized the study of natural history to better prepare park nature guides to work alongside college faculty.

The expressed goal of Yosemite's first nature guide service was "to awake visitors to Yosemite to their natural history opportunities, to teach them to see and appreciate living things they have never seen before, and to hear sounds never heard or understood before."¹⁰¹ But as demonstrated by the Le Conte Memorial Lectures, the free nature guide service, and the Yosemite Field School of Natural History, such an appreciation of the natural world must be based not

¹⁰⁰ As Mather noted earlier, "The parks are repeatedly called the great outdoor museums. Their possibilities are far beyond that. Museums are passive exhibits. The parks themselves are nature, vibrant with vital, virile action. They offer the greatest fields for nature study in the whole Americas by the very nature of their creation, their physical attributes, and the policy of conservation governing them. Here nature is an open book for those who come and can read." Department of the Interior, *Report of the Director of the National Park Service to the Secretary of the Interior for the Fiscal Year ended June 30, 1923 and the Travel Season, 1923* (Washington, DC: Government Printing Office, 1923), 19 (hereafter 1923 NPS Annual Report).

¹⁰¹ 1921 NPS Annual Report., 200.

on casual chats by the campfire but on rigorous college-level instruction and sound science.

CHAPTER 4

THE NEW PARK RANGER NATURALISTS

“[A]n American’s education is [not] complete, nor is it possible for him to know the wonders of his own country, until he has seen the marvelous geysers, boiling springs, and volcanoes, brilliant hued canyons, great lakes 8,000 feet above sea level, in the Yellowstone National Park...” -- Senator Reed Smoot¹⁰²

Long before Congress created the National Park Service, Yellowstone National Park had a tradition of employees and visitors alike presenting informal talks and campfire presentations on the natural history of the region. As noted by Horace Albright in his first-person account of the early years of the National Park Service, soldiers “had at times given ‘cone talks’ for visitors at Upper Geyser Basin, although an 1888 report indicates that their accuracy may have left something to be desired.” Albright also pointed to the arboretum and botanical garden established in 1904, and lectures given as early as 1911 by photographer Jack Haynes who also operated the photographic concession in Yellowstone.¹⁰³

The Wylie Camping Company recruited school teachers and college students to work in the campgrounds during the summer months, and to provide campfire entertainments and tours. Coupled with the regular campfire

¹⁰² Utah Senator Reed Smoot quoted in *Proceedings of the National Parks Conference*, 17-18.

¹⁰³ Albright, *The Birth of the National Park Service*, 119. This brief overview of interpretation in Yellowstone is also mentioned in Brockman, “Park Naturalists and the Evolution of National Park Service Interpretation.” 26. For a more colorful history of early interpretation in Vick, “Yellowstone National Park and the Education of Adults,” 52-53.

songfests and other entertainments conducted at the campgrounds, what was known as “the Wylie Way” set a precedence of how to successfully entertain and inform visitors to Yellowstone National Park, a model that carried over to more formal National Park Service programs.¹⁰⁴ For example, Wylie employee Milton P. Skinner championed the need for an educational service in the park, and eventually became Yellowstone’s (and the National Park Service’s) first ranger naturalist.¹⁰⁵

For the most part, however, even though the Great Northern Railroad and others provided a few reliable guidebooks and travelogues, educating park visitors was not a high priority.¹⁰⁶ In his “Concise History of Scientists and Scientific Investigations in Yellowstone National Park,” Carl P. Russell, who served as Chief Naturalist of Yosemite National Park, noted that prior to the arrival of Horace M. Albright as superintendent in 1919, few Yellowstone employees spent their time on “writing and general interpretation of park phenomena for public good.”¹⁰⁷ As evidence, Russell pointed to his comprehensive bibliography that included only a few publications that might

¹⁰⁴ Aubrey L. Haines, *The Yellowstone Story: A History of our First National Park*, revised ed., vol. 2 (Niwot, CO: University Press of Colorado, 1977), 137.

¹⁰⁵ Ibid.

¹⁰⁶ Vick, “Yellowstone National Park and the Education of Adults,” 53-54.

¹⁰⁷ Carl P Russell, “A Concise History of Scientists and Scientific Investigations in Yellowstone National Park,” [1933], 7, Montana State University government documents.

qualify as science-based and/or educational written prior to 1919 by employees in Yellowstone National Park.¹⁰⁸

When the National Park Service appointed Horace M. Albright as superintendent of Yellowstone in June 1919, however, the emphasis on providing scientifically sound information to park visitors changed dramatically. Having worked closely with Stephen T. Mather and even Robert Sterling Yard, Albright supported the vision of the national parks as a source of quality field-based science and natural history education. However, unlike the quasi-academic programs Mather and Bryant developed in Yosemite, with its proximity to universities and state-supported programs for public understanding of science, Albright, of necessity, developed a different approach in the relatively isolated Yellowstone. To enlist the staff needed to implement quality science and natural history programs required more ingenuity on the part of Yellowstone's new superintendent. If Albright couldn't rely on vacationing college faculty with relevant expertise to present lectures to park visitors, Albright needed to identify generalists with the ability to educate themselves and the public on a variety of Yellowstone-related topics.

¹⁰⁸ Russell points to two exceptions: Edgar A. Mearns, an Army surgeon with the troops in the park, who published "Feathers Beside the Styx," in the *Condor* magazine in 1903, and "Col. S. B. M. Young, Superintendent in 1897, 1898, and 1907 [who] published notable material on wild life in his annual reports." See Russell, 7.

Shortly after assuming his duties in Yellowstone, Albright heard a lecture by Milton P. Skinner, a former college student who had summered in the park, and who had since been hired by one of the hotels to give talks to hotel guests:

He had been studying Yellowstone's wildflowers, mammals, and birds for many years and had good ideas about presenting programs to the public. I felt he could accomplish more by becoming a member of the Park Service staff, and I arranged to hire him as a ranger. The next year I was able to create an entirely new position of park naturalist, and Skinner expanded the educational program. He organized additional natural history lectures, guided field trips to points of interest, prepared natural history bulletins that were given to visitors or posted around the park, and started developing a park museum in the former bachelor officers' quarters at park headquarters.¹⁰⁹

When C. Frank Brockman, himself a former park naturalist, wrote his brief history of National Park Service interpretation, he cited the appointment in 1920 of Milton P. Skinner as the first park naturalist on a year-round basis as the beginning of formal interpretive programs in the parks.¹¹⁰ From Brockman's perspective, the naturalist, not the university scientist, laid the foundation for science and natural history educational and outreach programs in the parks.¹¹¹

¹⁰⁹ Albright, *Birth of the National Park Service*, 119-120.

¹¹⁰ Brockman, "Park Naturalists and the Evolution of Park Service Interpretation," 30.

¹¹¹ Brockman and others used the term "naturalist" to loosely describe anyone with a general background in empirical natural history (e.g., botany, zoology, geology, etc.), in the case of park naturalists often tied to place, as opposed to some one who specialized in one area or discipline (e.g., the science faculty who taught in Yosemite).

The same summer that Albright arrived in Yellowstone, Isabel Bassett [Wasson] traveled with her parents on a *Brooklyn Daily Eagle* tour of national parks. A recent Wellesley College graduate who would earn a graduate degree in geology from Columbia, “Bassett was ‘tremendously excited about seeing geological phenomena’ that she had studied, ‘but had never seen.’”¹¹² Her tour leader asked her to speak to their group after dinner at the Mammoth Hotel, another informal lecture that Superintendent Albright happened to hear:

“She was doing an outstanding job of it. So I returned the next evening to hear her talk on the geysers and geological features of the park. She really knew her subject, and even included comparisons with geysers in New Zealand and Iceland. Complimenting her afterwards, I learned that her name was Isobel [sic] Bassett, she was a geology major just out of college, and she was on the tour with her parents.... I told her that if she would come back next year I would be glad to hire her as a seasonal ranger. She was married in the meantime, but still came to work for us in the summer of 1920 as Yellowstone’s first woman ranger....”¹¹³

That same year, Albright also hired Frank Reedy of Southern Methodist University who was a regular visitor to the park. Both Reedy and Bassett were assigned to help Skinner with lectures and guided trips (i.e., nature walks). Bassett also worked the park’s new information desk and, one day a week,

¹¹² Kaufman, *National Parks and the Woman’s Voice*, 65-66. In his annual report from that year, Mather refers to Bassett as “formerly of the faculty of the department of geology at Wellesley,” but all other references suggests that she was simply a recent graduate, touring the national parks with her parents. See 1919 NSP Annual Report, 30.

¹¹³ Albright, *The Birth of the National Park Service*, 120. Both Albright and Brockman (who appears to have taken much of his information from Albright’s narrative) spell Bassett’s first name Isobel. Kaufman spells it Isabel, as does Mather in his 1919 annual report.

helped Skinner collect information on the park's wildlife and geology.¹¹⁴

Albright asked Basset to return for a second season, but by then she was pregnant with her first child and declined the offer. In 1922, she wrote to Albright asking if she could return to the park for the upcoming summer season but was told that budget cuts had eliminated funding for her position.¹¹⁵

The lack of funding for Basset's position may have been partially due to the fact that, in 1921, Albright hired Marguerite Lindsley [Arnold], the daughter of the former superintendent of Yellowstone, to replace her. While on summer break from Montana State College, Lindsley spent her first season as a Yellowstone employee working at the information office and guiding visitors at

¹¹⁴ Kaufman, *National Parks and the Woman's Voice*, 66. Bassett understood that because people were on vacation, "with the time," in Bassett's words, "to explore, observe, and grope for explanations of the natural wonders around them" Yellowstone provided a natural environment for educating the general public about science. Ibid.

¹¹⁵ Ibid. According to Kaufman, Albright supported women as ranger-naturalists and, while superintendent in Yellowstone, he personally hired ten women as rangers. See Kaufman, 77. He also supported women throughout his tenure as Director of the National Park Service. "In 1931, two years before [Albright left as director of the NPS], a report on educational activities in national parks listed several women ranger-naturalists. At Yellowstone were Marguerite Lindsley [Arnold], employed as a ranger-naturalist for ten years, and Herma Albertson [Baggley], who served nearly five years. At the Grand Canyon was ranger-naturalist Pauline Mead [Patraw] and at Yosemite, Enid Michael. Not listed but working as a naturalist was Ruth Ashton at Rocky Mountain National Park. Each of these women, except for Michael, held a master's degree in botany or biology. Three of them published classic guides to plants in parks. But after Herma Baggley resigned in 1933, virtually no women naturalists worked in any national park, except for Michael at Yosemite. Amid some controversy, Michael survived as a summer naturalist for more than twenty years." Ibid.

Mammoth Hot Springs, an environment she knew well since she had literally grown up in the park.¹¹⁶

Thus, these early years under Albright's leadership set the stage for the development of science and natural history programs that were, at their core, distinctly different than those underway in Yosemite. While the early Yosemite programs hired college faculty and, for the most part, other men with doctorates in science, Yellowstone's early naturalist programs had a decidedly feminine face.

The first ranger naturalists in Yellowstone had distinct responsibilities as well, setting the stage for those who would serve as ranger naturalists throughout the service. As opposed to Yellowstone's chief ranger, who was

¹¹⁶ Ibid., 78. According to Kaufman, Lindsley was an avid outdoorswoman and prolific writer who "recorded [the park's] wildlife, vegetation, and weather in more than fifty articles in *Nature Notes*." In December 1925, Albright hired Lindsley as a permanent, full-time park ranger, a position she held until she married another park ranger (Ben Arnold) in the fall of 1928, at which point she only worked seasonally until the birth of her son in 1932. Kaufman points to Lindsley as "the second woman appointee at Yellowstone," (see Kaufman, *National Parks*, 77). In the 1921 NPS Annual Report, Mather mentions that Mary A. Rolfe, along with Skinner, gave daily lectures on Yellowstone's natural features. See 1921 NPS Annual Report, 34. C. Frank Brockman wrote that Mary A. Rolfe replaced Bassett in the summer of 1921. "A school teacher, Rolfe subsequently wrote a book on national parks for school use, published in 1928. Marguerite Lindsley, first year-round woman park ranger of the National Park Service, also assisted in Yellowstone's interpretive program." Brockman also identified a photo of Lindsley from c. 1928 with the full name of Jane Marguerite ("Peg") Lindley Arnold. See Brockman, "Park Naturalists and the Evolution of Park Service Interpretation," 32-33. In addition to working as a full-time park ranger and writing extensively about the park, Lindsley bought a second-hand Harley Davidson motorcycle and sidecar and, with another woman, both disguised as men, rode across the country, camping along the way. With the wife of another park ranger, she skied the 143-mile loop through Yellowstone in March 1925 - the first women to accomplish the feat. See Kaufman, *The National Parks and the Woman's Voice*, 78.

responsible for protecting the park, operating the buffalo and hay ranches, caring for wildlife, fighting forest fires, and similar activities, in Yellowstone:

The park naturalist [was] in charge of the information office and all scientific work carried on in the park, either under the park service or by scientists working in the park under authority from the department. He also [was] charged with the inspection of the forests for the detection of disease, and [had] charge of wood-cutting and timber operations, when dead and down timber is needed for wood, or live timber for the construction of buildings. He also [edited] and [kept] up to date the park publications.¹¹⁷

The programs Skinner, Bassett, and others implemented in 1920 provide additional insights into the kinds of science and natural history education that Albright and others considered important, and illustrate the duties park naturalists would eventually be expected to perform throughout the National Park Service. For example, Yellowstone naturalists were expected to write materials on the natural history of Yellowstone for posting and distribution to visitors and to give lectures and informal campfire talks to provide a greater understanding of park natural features, complemented by early morning and/or afternoon guided nature walks.

These first naturalists also created a new information bureau, that served as a makeshift museum, with photographs, a ground relief map, wild flower displays, and geological specimens. Maps, pamphlets, and circulars were given

¹¹⁷ 1920 NPS Annual Report, 198.

away or sold. During its first year, for example, 10,100 visitors stopped at the information bureau, and 9,000 general information circulars on Yellowstone and another 1,500 circulars on other parks were distributed. Since the information desk proved to be extremely popular with visitors, Albright expressed his desire to establish a museum where tourists and scientists alike could study Yellowstone's botany, zoology, geology, and other subjects. Albright envisioned locating the museum in the abandoned Fort Yellowstone complex, along with park offices, shops and homes for park employees.¹¹⁸

In addition to answering specific questions at the information desk, Skinner initiated a series of monthly bulletins on birds, animals, flowers, and geology, which were posted around the park. Visitors asked for copies to take with them, so an additional 776 copies were made and distributed free of charge to visitors upon request during that first year.¹¹⁹

Skinner's August bulletins, referred to later as Yellowstone Letters and eventually known as Yellowstone Nature Notes, are reproduced in the 1920 National Park Service annual report, providing an opportunity to experience Yellowstone not only through the eyes of the park naturalist, but vicariously

¹¹⁸ Ibid.

¹¹⁹ Ibid., 206-207.

through the eyes of the 1919-1920 Yellowstone visitor as well.¹²⁰ While these overviews of park natural history failed to answer the basic question of *why* “the blossoms [are] larger and far more beautiful than is usually the case,” or “the Constant Geyser [at Norris] has practically discontinued operations and its activity transferred to the Whirlgig Geyser directly across the footpath” (i.e., why do geysers *cease to gyze?*), the bulletins posted throughout the park did provide a good introduction to what visitors should watch for as they journeyed through the park. For example, as reported by Skinner, a “pair of bald eagles have recently established a nest on a dead lodgepole pine on the eastern bank of Yellowstone River a mile below the road to the east entrance. The eaglets might be seen occasionally when they appear on the edge of the nest.”¹²¹

When Skinner resigned in 1922 to work for the Roosevelt Wild Life Experiment Station, Yellowstone hired Dr. Frank E. Thone as a seasonal naturalist, but he resigned the summer of 1924 to take a position with the Science

¹²⁰ Expanded versions of these monthly notes, along with chapters on Yellowstone geology, flowers, birds, animals, etc., are reproduced in M. P. Skinner, *The Yellowstone Nature Book*, (Chicago, IL: A. C. McClurge & Co., 1924).

¹²¹ 1920 NPS Annual Report, 207-208. In Albright’s contribution to the 1920 annual report, he explained that the abundance of wildflowers during the season was “due, no doubt, to a late spring, well-distributed rains, and plenty of warm sunshine.” Elsewhere, he commented that the lack of forest fires for the year was due in part to the fact that the season was unusually wet.

Service in Washington, DC.¹²² His replacement, Edmund J. Sawyer, an ornithologist and amateur artist, spent much of his time painting the birds and animals of the park for the new museum, mounting specimens, and expanding the museum collections.”¹²³ Again, while Albright and others preferred to hire science professionals and faculty like Thone and later Conard, on summer leave from their academic appointments, Yellowstone, of necessity, hired students or recent graduates who had basic training in the sciences, and who were willing to spend hours at a time writing nature notes, developing public displays, and explaining the environment to park visitors.

The newly married Isabel Bassett -Wasson provides the perfect example. While working in the park, Bassett-Wasson introduced the natural history features to Yellowstone visitors in campfire talks and lectures, presenting free talks at 4 p.m. at the Mammoth Camp, at 7:30 p.m. on the porch of the Mammoth Hotel, and again at 9 p.m. as the central campfire at the Mammoth Hot Springs campground. Her talks, which focused on the geological formation of the park expressed in non-technical language,¹²⁴ attracted the attention of even Stephen Mather, who reported that “[a] valuable feature of the information service in

¹²² U. S. Department of the Interior, *Annual Report of the Director of the National Park Service to the Secretary of the Interior for Fiscal Year ended June 30, 1924* (Washington, DC: Government Printing Office, 1924), 35 (hereafter 1924 NPS Annual Report).

¹²³ Ibid.

¹²⁴ 1920 NPS Annual Report, 208.

Yellowstone was the giving of free half-hour talks by Park Ranger Isabel Basset Wasson three times daily. The title of the lecture usually given was 'How the Yellowstone came to be.' These talks are highly appreciated by the tourists."¹²⁵

In 1921, when Bassett-Wasson was unable to return to the park because of her pregnancy, Park Ranger Mary A. Rolfe took over, presenting free talks on the porch at Mammoth Hotel at 7:30 p.m., at Mammoth Camp at 8:00 p.m., and at the Mammoth public automobile camp at 8:30 p.m. M. P. Skinner and other members of the ranger force (possibly university student, Marguerite Lindsley) filled in when Rolfe was unable to make a presentation. According to Albright, the "lectures, which treated briefly of the simple geology and natural features of the park, were popular, well attended, and brought much favorable comment from tourists."¹²⁶

In 1922, seasonal ranger, Frank Thone, delivered 232 lectures on the park, its geology, flora, fauna, and history. Albright estimated that approximately

¹²⁵ Ibid, 55.

¹²⁶ 1921 NPS Annual Report, 163. According to Kaufman, Lindsley was hired the summer of 1921, but she is not mentioned in Albright's contribution to that year's annual report. Brockman also mentions Lindsley's initial hire in 1921 while still a college student. She received her masters degree in bacteriology from Bryn Mawr College in 1926, at which point she was appointed to a year-round park ranger position in Yellowstone, until she married in 1928. See Brockman, "Park Naturalists and the Evolution of National Park Service Interpretation," 32.

60,000 tourists heard Thone's talks during the 1922 season.¹²⁷ Thone also wrote a book, *Trees and Flowers of Yellowstone National Park*, published in 1923 by park photographer J. E. Haynes.¹²⁸

Visitors to Yellowstone could also participate in instructive "trips to the geyser formations under the guidance of several specially trained park rangers."¹²⁹ In 1922, Mather cited these early nature study programs in Yellowstone as "one of the most popular features of the park."¹³⁰ Albright reported that ranger-naturalists guided 27,103 visitors (337 parties) over the formations at Upper Geyser Basin and, at Mammoth Hot Springs, 10,396 toured the hot spring terraces.¹³¹

The following year, an additional lecture series on the history of the park was initiated at Old Faithful, with 40,000 visitors attending this talk during the 1923 season¹³² and, in 1925, Dr. H. S. Conard, from Grinnell College, was hired at Camp Roosevelt to conduct guided nature tours.¹³³ These naturalist

¹²⁷ Department of the Interior, *Report of the Director of the National Park Service to the Secretary of the Interior from the Fiscal Year ended June 30, 1922 and the Travel Season 1922* (Washington, DC: Government Printing Office, 1922), 108 (hereafter 1922 NPS Annual Report).

¹²⁸ 1923 NPS Annual Report, 50.

¹²⁹ 1921 NPS Annual Report, 34.

¹³⁰ 1922 NPS Annual Report, 33.

¹³¹ *Ibid.*, 108.

¹³² 1923 NPS Annual Report, 50.

¹³³ 1924 NPS Annual Report, 35. According to Vick, "Conard was recommended by Frank Thone before he left. He was ably assisted by his daughters [who led many of the tours] but declined to return in 1927, in part because of the controversy over the edict handed down by the

presentations became such an integral part of the Yellowstone experience that Albright, when suggesting a travel itinerary for John D. Rockefeller, Jr., recommended that Rockefeller's first day in Yellowstone should start with a tour of the hot spring terraces in Mammoth, and that he should "hear the ranger-naturalist talks in the evening on the natural history of the park."¹³⁴

With the growing popularity of the science-based talks and walks in Yellowstone, Mather and Albright both reported the possibility of establishing a summer school in science, to be supported by various universities and by private donations. Albright and Dr. R. B. Harvey with the Department of Agriculture at the University of Minnesota exchanged detailed correspondence and telegrams discussing Harvey's goal to establish a "Yellowstone School of Natural History" located in the barracks building at the Mammoth Hot Springs Headquarters. As Harvey and Albright envisioned it, the proposed field school would bring together both teaching and research in the park, with faculty in residence throughout the summer. The proposed field school would provide a new direction for Yellowstone's educational programs and bring it closer to the Yosemite model.

Washington office to not hire women as park rangers and ranger naturalists." See Vick, "Yellowstone National Park and the Education of Adults," 90.

¹³⁴ Joseph W. Ernst, ed., *Worthwhile Places: Correspondence of John D. Rockefeller, Jr. and Horace M. Albright* ([New York, NY]: Fordham University Press, 1991), 50.

Planning for the proposed school was extensive. For example, in a letter dated November 2, 1923, Superintendent Albright outlined some of the basic areas of agreement. The school would have access to the entire barracks building except for the first and second floors of one section where Albright wanted to locate his museum and information office. The grounds in front of the building would be made available for a botanical garden, and researchers would have permission to collect specimens for the museum, except for rare specimens, such as petrified wood, fossil leaves and certain rare flowers, animals and birds. And while Albright could not promise housing, he suggested that visiting faculty might be able to use quarters in the old fort if they were vacant at the opening of the season.¹³⁵

On March 20, 1924, Yellowstone National Park awarded the Yellowstone School of Natural History a five-year permit to establish a scientific research station and school and to collect tuition fees for the courses given.¹³⁶ The July 15, 1924 edition of "The Museum News," a bi-monthly newsletter of the American Association of Museums, announced on its front page that a "project for a

¹³⁵ Horace M. Albright, Yellowstone National Park, to Dr. R. B. Harvey, University of Minnesota, Minneapolis, Minnesota, 2 November 1923, Yellowstone National Park Library vertical files, interpretation.

¹³⁶ U.S. Department of the Interior, National Park Service, Yellowstone National Park, "License for the term of five (5) years from January 1, 1924, to maintain and conduct [the Yellowstone School of Natural History]," 20 March 1924, Washington, DC, National Park Service History Collection, Harpers Ferry Center Archives, Box 1810.

university summer school and biological research station in the Yellowstone is actively afoot. According to *Science*, funds for the initial steps are forthcoming from private sources.... Funds for its operation for the first five years are now being collected; therefore the Yellowstone School of Natural History and Biological Station may be considered an accomplished fact...."¹³⁷ In a letter dated July 9, 1924, Harvey explained to Albright that the university would raise funds from "The Minneapolis Journal and its publisher, Mr. H.V. Jones...[who is] squarely behind this project. Mr. Jones is a very wealthy man and has expressed a probability of endowing the school. The Northern Pacific Railway is undertaking to raise a fund for the school from the various railways which supply the park."¹³⁸

The lengthy negotiations and detailed planning for the school are noteworthy because, unlike Yosemite, which established a long-lasting field school with little effort, Yellowstone did not have an existing relationship with a near-by university or access to easy capital to bring the project to fruition, in spite of Albright's enthusiastic support. The lack of an academic science education infrastructure, coupled with the lack of Mather's personal financial commitment

¹³⁷ "Project Afoot for Research in Yellowstone," *The Museum News*, II, no. 6 (15 July 1924), 1, National Park Service History Collection, Harpers Ferry Center Archives, Box 1810.

¹³⁸ R. B. Harvey, University of Minnesota, Minneapolis, Minnesota, to Horace M Albright, Yellowstone National Park, 9 July 1924, Yellowstone National Park Library, vertical files.

to provide start-up funding, appears to have prevented the field school, and another like it proposed in 1930, from ever getting off the ground.¹³⁹ Instead, Yellowstone had to develop other ways to attract seasonal hires to lead its education programs. Thus, the “Wylie Way” of hiring college students or recent college graduates to entertain and guide visitors on nature walks became the tradition in Yellowstone. According to Albright, the older park rangers at first resented the young, college-trained seasonal hires, “but the old-timers soon learned that a college education didn’t make this ‘new breed’ so different at all.”¹⁴⁰

As word circulated about summer employment opportunities, college students wrote to Albright looking for work. In 1923, Albright developed a form letter to respond to their inquiries that describes how he was shaping the new

¹³⁹ Both the YNP library and HFC archives contain copies of extensive correspondence and telegrams between Horace M. Albright, Superintendent, Yellowstone National Park, and R. B. Harvey at the University of Minnesota. Another field school, the “Yellowstone School of Field Natural History,” announced in 1930, was designed to meet the “demand for teachers trained in nature study; to be led by “a man of high type and wide experience” and taught by teachers “drawn from the Ranger Naturalists who serve as guides and lecturers in the Yellowstone during the summer months. Each is a scientist of standing....” A typed note, from “Brock” [park naturalist and historian, C. Frank Brockman] to Dick Russell, dated 25 October 1976, states that Dorr Yeager [YNP naturalist] told him that “the proposed Yellowstone Field School (one sponsored by Dr. Harvey) apparently [sic] never got off the ground because I was there both in 1925 and 1926 and would have known about it’. Re. Dorr’s attempted Field School in 1930 [to be headquartered at Roosevelt Lodge] he states “After my Yosemite experience (seasonal, 1927), I was all hot to have a Yellowstone school.... we sent out the announcement and got practically no response which threw cold water on the whole deal’. So there were two attempts in Yellowstone. Neither ‘jelled’.” See National Park Service History Collection, Harpers Ferry Center Archives, Box K1810.

¹⁴⁰ Albright, *The Birth of the National Park Service*, 142-143.

ranger-naturalist workforce. He wrote that “young men very often apply for ranger positions with the feeling that the duties of the place require no special training or experience and that any man with a reasonably good education can perform these duties regardless of whether he has or has not had experiences in outdoor activities.... The conceptions of the duties of the ranger as just mentioned are just as untrue as it is possible for them to be....”¹⁴¹

As educational programs grew throughout the park service, in 1926 Chief Naturalist Ansel Hall picked up the question of who was qualified to become a ranger naturalist and drafted a form letter of his own, sending his letter and application form to Horace Albright for his review (see the Appendix). Hall reported that he was receiving so many applications for positions as ranger naturalists that he had drafted a list of necessary qualifications and duties, along with an application for prospective applicants, to “weed out ... the unfit applicants.” As Hall explained to Horace Albright, most applicants were “absolutely ignorant of the duties of the ranger naturalists and [were] merely looking for a pleasant vacation in one of the parks.”¹⁴²

¹⁴¹ Ibid., 143-144.

¹⁴² Ansel F. Hall, Berkeley, California, to Horace M. Albright, Yellowstone National Park, WY, 17 February 1926, National Park Service History Collection, Harpers Ferry Center Archives, K1810. A transcription of “The Qualifications and Duties of a Ranger Naturalist,” attached as pages 2 and 3 of this letter, are included in the Appendix.

While Hall wanted applicants to have training in the sciences, ranger naturalists were not intended to function within the parks as a scientist or researcher, but rather as an educator and science resource for park visitors. In many ways, the term “interpretation” was apt in that Hall expected ranger naturalists to translate the technical world of science for the general public.

“I have seen so many Ranger Naturalists who were disappointed at finding it impossible to conduct research problems,” Ansel F. Hall wrote. Using the terms rangers, naturalists, and educational staff interchangeably, he explained that the Park Service’s “educational staff functions primarily to help the hundreds of thousands of visitors to a greater enjoyment of the parks through enthusiastic understanding of their scientific features.” In short, Hall defined the ranger naturalist as someone who dispensed information, delivered lectures, led field trips, and conducted other educational activities as needed.¹⁴³

While ranger naturalists would not have time to conduct field research, naturalists could participate in other learning opportunities if they wanted to

¹⁴³ This lack of emphasis on research was criticized by biologist Charles Adams in 1925. “Adams noted ... that naturalists in the parks were not ‘devoted to technical research, but in the main to elementary educational work with the park visitors.’” See Richard West Sellars, *Preserving Nature in the National Parks*, 86. Focused on the scientific preservation of the parks, Sellars is not much concerned with the National Park Service’s educational mandate during this period. He writes “the Service’s natural history concerns focused on ensuring public enjoyment, not preserving biological integrity. Establishment of Ansel Hall’s Education Division in 1925 confirmed the naturalists’ duties as an important part of park operations. Hall, the chief naturalist, advised parks on museum planning and operation, and on hiring ranger naturalists and giving nature walks and evening campfire talks, among other programs.” Ibid.

take advantage of them. For example, “several splendid opportunities for research [exist] which few Ranger Naturalists realize at the beginning of their service. These opportunities lie in the development of teaching methods and in the working out of the most effective means of reaching the people with whom you come in contact.” In other words, by 1926, the emphasis had moved from encouraging scientists to conduct research in the parks while educating the public, like Joseph Grinnell had done in Yosemite, to hiring generalists whose primary responsibility was to focus on public understanding of science, with opportunities to research and develop new educational methods.

A look at the duties and requirements Hall considered necessary to do the job illustrates the breadth and depth of science knowledge that ranger naturalists were expected to bring to the national parks. These include at least two years of university training in scientific subjects, a “good grasp” of natural history, and a more in depth training in at least one branch of the life or physical sciences. Specifically, ranger naturalists should have field experiences and knowledge of “how to read the trailside” to easily identify a park’s common birds, trees, flowers, mammals, and other natural history features and be able to be able to communicate “scientifically correct” information to the general public. And if that weren’t enough, they should also be knowledgeable enough to compose at

least two or three short articles each week for publication, and conduct university-level lectures and laboratory and field work if called upon.¹⁴⁴

Unlike their university faculty counterparts, ranger naturalists should not expect their stay in the parks to be a pleasant way to spend a vacation. Rather, the applicant should know from the outset that they would be putting in “a full day’s work each day – work entailing continual contact with the public,” and that, on occasion, they would also perform all the duties of a regular ranger, including fighting fires. Needless to say, if applicants were “looking for a pleasant summers’ field work,” Hall advised them to “come as a tourist or as a student in the schools of field natural history maintained by the National Park Service.”¹⁴⁵

With a growing educational program run by seasonal hires, it became increasingly clear that standards needed to be developed to ensure that the service maintained a certain level of professionalism and quality. “We are very far from being completely organized in information and nature work,” Albright admitted in 1925.¹⁴⁶

¹⁴⁴ Ibid.

¹⁴⁵ Enclosed in correspondence, Ansel F. Hall, Berkeley, California to Horace M. Albright, Yellowstone National Park, 17 February 1926, National Park Service History Collection, Harpers Ferry Center Archives, Box K1810.

¹⁴⁶ “Minutes of the Eighth National Park Conference” 48.

As part of a ranger naturalist's training and to help him or her avoid "conflicting statements and too much repetition," Yellowstone naturalists prepared a manual in 1926 that was revised the following year. In 1927, 125 copies of what was considered "volume I" were distributed to park rangers and others in contact with the general public. In 1928, a third, expanded edition was produced as "volume II," with an additional 125 copies distributed throughout the park. The manual, bound together in a single reference book, included sections to help rangers, naturalists, and others answer common questions about the history, geology, botany, and wildlife of Yellowstone National Park, along with a collection of more in-depth articles and scripts for lectures and campfire talks on the natural history, climatic features, and other topics of interest to visitors.

The manual is striking for a number of reasons. First, there appears to be a concerted effort to ensure that all those in contact with the public had the tools they needed to provide scientifically accurate and fairly detailed information on questions of natural history. For example, the Ranger Naturalist division wrote a lengthy question and answer section to "help inform rangers regarding answers to common or typical questions." Not only were rangers better prepared to inform a visitor that Yellowstone was 60 miles long and 54 miles wide, they

could also point to physical evidence of Indian life in the park such as the spear-heads, arrow-heads, and mortar and pestles discovered throughout the park, the obsidian chips found near Obsidian Cliff, and the teepees located on Tower Falls road.¹⁴⁷

Talks and short articles, prepared by park naturalists or others with expertise in the area discussed, were carefully checked to ensure that they might be “nearer perfection in their accuracy.”¹⁴⁸ These lengthier scripts and articles covered everything from Yellowstone National Park during the ice age, written by Dr. W. C. Alden, to the park’s “destructive insects,” prepared by Dr. H. E. Burke, to the place names of the park, prepared by H. M. (Horace) Albright, J. E. (Jack) Haynes, and Marguerite Lindsley.

Park Ranger Lindsley wrote more articles and talks in the Ranger Manual than any other contributor. In addition to the resource on place names, she contributed articles on the watersheds of the park, the acoustic phenomena over Yellowstone Lake, and a list of distances from one place in the park to another. She also prepared a short history of the American bison in Yellowstone Park, a species that had faced extinction in the early years of the park. According to Lindsley, when Emerson Hough skied through the park in 1894, he estimated

¹⁴⁷ “Ranger Naturalists Manual of the Yellowstone National Park,” Third Edition, 1928, bound typescript, National Park Service History Collection, Harpers Ferry Center Archives, 1.

¹⁴⁸ Ibid.

that only 150 animals remained, the remnant of the native animals of the region. By 1902, only 22 bison survived in the park, with four of those in captivity on Stevenson Island in Yellowstone Lake. With Ranger Lindsley's overview in hand, rangers could answer most questions about the history of buffalo in Yellowstone, while helping visitors gain a better appreciation of why conservation in the parks was so vitally important.¹⁴⁹

Unlike their Yosemite counterparts, Yellowstone rangers routinely presented lectures or campfire talks on a variety of topics. If a ranger had to present a talk unexpectedly, the manual included the script for a very general lecture on Yellowstone written by Head Ranger Naturalist Gerald E. Marsh. Called "Four Aces and a Queen," the talk could be presented at any time in the park and be adapted and/or enlarged depending on where it was delivered. "For instance, if delivered at Lake that portion would be greatly enlarged."¹⁵⁰

Marsh also prepared guidelines for presenting a successful educational talk in the park. According to Marsh, most set about preparing a lecture like this:

The prospective lecturer sits down, runs his hand through his hair several times, bites the end of his pencil rather viciously, and mulls the situation over as well as he can. A speech must be given and it must be a certain length. The subject assigned him as the Geology of the Park. A popular lecture always has some funny stories but who in the world could tell any funny stories about geology? ... [P]eople want to laugh and be

¹⁴⁹ Ibid., 71-72.

¹⁵⁰ Ibid., 92-98.

entertained on their vacations and the last thing in the world that they want is to be bored by a lot of heavy geological history!¹⁵¹

While good speakers naturally wanted to entertain park visitors with humorous stories, Marsh did not believe that a speaker's success should be measured by the number of laughs he or she provoked. He also maintained that geology could be made interesting by keeping the material simple enough to maintain the audience's attention, while helping visitors better understand the geological history of the park.

Marsh also made an interesting distinction between the new park ranger naturalist and what he called the "specialist." According to Marsh, specialists "never give a thought to the delivery side of the lecture. They are usually scientific, or specialists on some subject, and feel that a subject which is so intensely interesting to them must be just as interesting to everybody else. The audience... is likely to become lost in the maze of technical terminology and dull academic rehearsal of cold, scientific facts, and leave before the lecture is over, glad to be rid of both the man and the subject."¹⁵²

Unlike the scientists and other experts who lectured their audiences at places like Yosemite National Park, Yellowstone park rangers should engage their audience with the subject matter, and never talk down to them. To this end,

¹⁵¹ Ibid., 87.

¹⁵² Ibid., 88.

Marsh recommended building on that which the audience already knew. "It is only by contrasting or comparing new material with what they have already in their experiences that the new material becomes recognizable or interesting." Speakers should also use human-interest material as much as possible, and appeal to a visitor's natural curiosity, since that was often "what impelled them to visit the park in the first place so an appeal which drives at 'curiosity' will have great force."¹⁵³

While Yellowstone ranger naturalists were not university faculty or professional scientists, they were expected to engage park visitors with methods similar to the best science teachers in the country. In effect, visitors may not have had the benefit of attending a university classroom in Yellowstone, however, they were introduced to the park's natural history by enthusiastic and knowledgeable ranger naturalists who were committed to public understanding of science.

¹⁵³ Ibid., 89-90.

CHAPTER 5

CONCLUSION

It is possible to make the national park system one of the most useful educational institutions in the world through dissemination of information regarding them, through private and public schools, through university extension service, through popular lectures in every part of the country, through lantern slides and other forms of visual education, and through popular writings in magazines and books. -- Stephen T. Mather¹⁵⁴

By 1925, the commitment to improving public understanding of the unique science and natural history features of the parks was well established. According to Stephen T. Mather's report for that year, the science and natural history educational work had developed along three lines: 1) nature guiding, during which rangers and others took visitors on hikes and explained "every object of natural history observed along the trail"; 2) the lecture series, during which speakers presented talks, often accompanied by slides and/or motion pictures¹⁵⁵; and 3) museums, supported in part by the Laura Spelman Rockefeller

¹⁵⁴ U. S. Department of the Interior, *Annual Report of the Director of the National Park Service to the Secretary of the Interior for Fiscal Year ended June 30, 1926* (Washington, DC: Government Printing Office, 1926), 7 (hereafter 1926 NPS Annual Report).

¹⁵⁵ In his 1925 annual report, Mather states that "lectures .. given around the evening campfires, and also in the hotels and museums... are very popular. Most of the staff engaged in this lecture work, and also in nature guiding, are recruited from the staffs of colleges and other educational institutions." See 1925 NPS Annual Report, 11-12. However, based on Albright and Hall's correspondence and their recommended qualifications for ranger naturalists, this appears to be a very limited view of who was actually performing the education work in the parks, perhaps based on Mather's experiences in Yosemite rather than a more comprehensive look at

Memorial fund and organized in cooperation with the American Association of Museums. Yosemite National Park's new museum was completed in 1925, and Mather planned to establish other new museums at several locations within the parks to highlight their special natural history features. Several park libraries had also been established, where books relating to the history, geology, and other scientific features of the park were maintained for the benefit of visitors.¹⁵⁶

Although Mather listed museums as part of the science-based educational programs in the national parks, he did not intend for museums to replace the experiences of visitors in the field. Rather, museums should serve as windows on the natural history of the park, and to inspire visitors to experience for themselves the wonders of nature. As Mather explained:

It is not the policy of the service to establish elaborate museums in any of the national parks, or to have them considered 'show' places. Rather, they are to be regarded as places to stimulate the interest of visitors in the things of the great outdoors by the presentation of exhibits telling in a clear, consecutive way, the story of the park from its geological beginning through all branches of history up to and including the coming of man and his works. All unnecessary or extraneous material is to be excluded.... The national parks themselves are the real museums of nature, and the

programs system-wide. Interestingly, the same section in the 1926 annual report was modified slightly, perhaps in response to just this criticism. It reads "Lectures on national park subjects are given nightly around the camp fires and in the museums, hotels, and camps by the nature guides and park naturalists, as well as by visiting scientists. As the majority of those engaged in this work are or have been members of the faculties of colleges and other institutions of learning, the information disseminated is accurate. The lectures are delivered in popular form, which makes them intelligent to the layman as well as to the student of science." See 1926 NPS Annual Report, 9.

¹⁵⁶ 1925 NPS Annual Report, 12-13.

park museum in each will simply serve as an index to the wonders that may be studied and enjoyed on the ground by the observant student of nature.¹⁵⁷

Because education, using methods designed to actively engage visitors and encourage their own learning, was firmly established in most of the parks, in 1925 the Secretary of the Interior approved a new educational division to be housed in permanent headquarters in Berkeley, California, with Ansel Hall appointed Chief Naturalist. Keeping with the growing institutionalization of the National Park Service, Hall outlined an organizational plan for the new division, which he introduced at the Eighth National Park Conference in Mesa Verde National Park, where an entire day was set aside to discuss education.¹⁵⁸

According to notes from that meeting, Stephen Mather initiated the discussion stating that education had been an organizational “stepchild” from the beginning. Committed to changing that status, Mather strongly supported the new division, wanting education to be institutionally equal to both the NPS landscape and engineering divisions. However, while the creation of a new education division would help streamline activities in the parks, and bring some regimentation to a growing bureaucracy, Mather warned that in so doing he did

¹⁵⁷ Ibid., 12.

¹⁵⁸ Ibid., 7. According to Bryant and Atwood, the headquarters would remain in Berkeley until July 1, 1930, when the Branch of Research and Education was established in Washington, DC. See Bryant and Atwood, *Research and Education in the National Parks*, n.p.

not intend that the parks should give up their individual characteristics. For example, he did not wish to see educational activities become so regimented and standardized that “we have to have the same sort of trail sign in each park.... I think people will enjoy the parks more if they get a certain individuality in each park.”¹⁵⁹

During the Mesa Verde conference, superintendents and park naturalists introduced their education programs, which included opportunities for visitors to view botanical exhibitions, attend ranger naturalist talks on geology and other natural history subjects, and participate in naturalist tours of scientific and historical sites of interest. In Glacier National Park, for example, naturalists maintained living flower exhibits and geological history displays at the hotels, Mt. Rainier rangers offered guided tours of the mountain, and, even though it had only been established in 1919, Zion had implemented a nature guide service headed by a St. George naturalist, and was in the process of installing signage to identify trees, plants, and flowers along park trails.¹⁶⁰ The Grand Canyon, on the

¹⁵⁹ “Minutes of the Eighth National Park Conference,” 38 .

¹⁶⁰ See 1925 NPS Annual Report, 133; 1926 NPS Annual report, 152; and “Minutes of Eighth National Park Conference,” 55-56.

other hand, was also established as a national park in 1919, but wouldn't formalize its nature guide program until 1926.¹⁶¹

Yellowstone featured horseback trips to observe animal life and fossil forests, guided nature walks, including hikes of up to four miles around the geyser formations, and both formal and informal talks at several locations within the park. At the Mesa Verde conference, Albright noted that since there was not much to highlight at the Grand Canyon of the Yellowstone, naturalists instead held talks at the bear feeding grounds, where as many as 27 grizzlies could be seen at a time.¹⁶²

¹⁶¹ Michael F. Anderson, *Polishing the Jewel: An Administrative History of Grand Canyon National Park* [book on-line] ([Grand Canyon, AZ]: Grand Canyon Association, 2000, accessed 8 August 2004), available at <http://www.nps.gov/grca/adhi/chapter3.pdf>.

¹⁶² *Ibid.*, 48-49. Interestingly, when critiquing the quality of the educational programs in Yellowstone in 1929, Wallace Atwood noted that the talks at the Grand Canyon of the Yellowstone were the weakest component the park's education of its visitors, because the naturalists were not taking advantage of the park's unique features. "The most striking and inspiring features and phenomena of the Yellowstone National Park are geologic, and yet the great story of geologic changes is not adequately presented to the visitors.... The geological lecture or talk at the lodge near the Grand Canyon is quite ineffective. There the speaker attempts to tell a most complicated geologic history without any demonstration material. He speaks well but his efforts are in vain." Atwood also argued that "[t]he most striking scientific phenomena at this locality are distinctly geological.... Most visitors to Artist's Point [at the Grand Canyon] have already been for several of the geyser basins and made a large part of the conventional tour through the park. They have seen so many phenomena that they should be ready for the presentation of the geologic story." See "Reports of Dr. Wallace W. Atwood on Studies Made in 1929 on Glacier Park, Grand Teton National Park and Yellowstone National Park," 5, in "Individual Reports of Members of the Committee on Educational Problems in National Parks, Together with Minutes of Early Meetings of Committee." National Park Service History Collection, Harpers Ferry Center Archives, Box K1810.

In 1925, Yellowstone also opened a museum and zoo, which Albright reported separately from the educational work:

In this little museum [“relating primarily to buffalo in the old log cabin built by the famous ‘Buffalo Jones’ over 20 years ago”] there has been assembled a very interesting collection of pictures of buffalo herds, hide and meat hunting expeditions, buffalo hunters, bison heads, hides and horns, and much other material reminiscent of early days in the West. Back of the old Buffalo Jones cabin a zoo has been built, and it now houses four very tame bears, a badger, several coyotes, a pet buffalo calf, and a number of different species of birds. During the summer, 12 fine buffalo from the Lamar Valley herd were kept there on exhibition. This museum and zoo were visited by over 50,000 people during the summer.¹⁶³

From August 30 to September 6, 1925, a “buffalo plains week” was hosted during which “a western frontier round-up celebration was staged every day. The tame buffalo herd of over 700 animals, a score or more of Crow Indians from the near-by reservation dressed in the regalia and war paints of other days, and a few real western cowboys made the round-up a thrilling representation of the old days of the West.”¹⁶⁴ Both Albright and Mather, in his year-end overview, reported the museum, zoo, and round-up reenactments separately from the “general educational and museum activity” in Yellowstone suggesting that they drew a distinct line between serious science education and mere entertainment.

¹⁶³ 1925 NPS Annual Report, 21.

¹⁶⁴ *Ibid.*, 22.

Yosemite featured its own unique mix of free guided day trips; week-long backcountry tours, during which participants covered 10 miles per day and had their meals and beds furnished for \$1.50 per day; “Yosemite Nature Notes,” distributed at the museum and throughout the valley; and the Yosemite Field School of Natural History. By 1925, the Le Conte Memorial lectures appear to have been discontinued, perhaps in part because of the growth of other programs.¹⁶⁵

The programs introduced by naturalists and superintendents at the 1925 meeting highlighted the growing importance of the park naturalists. In fact, both Ansel Hall and Stephen Mather made it clear that the new education division would be based on programs delivered by these new ranger naturalists. To this end, the new division defined the role of the park naturalists who, because of administrative requirements, were to be hired under the general ranger classification and then be assigned to naturalists’ work:

There has been no definition in the past of the work and duties of a park naturalist, and sometimes, we have made the mistake of getting a botanist and calling him a naturalist, and have expected him to build up and handle a business organization. It is going to be a difficult matter to find men possessing the necessary qualifications of park naturalists and it will often be necessary that we get them in, and train them along our lines. At the present time the pay for these men is really inadequate. We cannot expect men to give up work at which they are now getting \$3,000 a year

¹⁶⁵ “Minutes of the Eighth Annual Conference,” 45. The last mention of the Le Conte Memorial Lectures appears in the 1923 NPS Annual Report.

and taken an \$1,800 job. The position requires four or five years of college work and considerable business experience.”¹⁶⁶

While drawing a specific cause and effect between the low pay for naturalists and the number of women who succeeded in the early years of National Park Service education programs is difficult, this could be one reason why women were initially so successful in securing naturalist positions and why so many more women than men enrolled in the Yosemite Field School of Natural History. According to Polly Kaufman, the 1920s were a time when women forged new careers as naturalists:

“Stemming from the long tradition of women’s amateur study of natural history, by 1920 enough women had become professional naturalists to serve as models and raise expectations for other women. They served on faculties of women’s colleges and as nature-study teachers in public schools. They published popular handbooks identifying wildflowers and birds and they created herbariums. Like the women who worked to preserve the nation’s premier landscapes, trees, and plants in national parks, women naturalists hoped to generate moral and spiritual values in young people and adults by connecting them with nature.”¹⁶⁷

This could be in part, too, why early naturalists “lacked the respect of coworkers and had limited status in the true scientific community. Not

¹⁶⁶ Ibid., 42-43.

¹⁶⁷ Kaufman, *The National Parks and the Woman’s Voice*, 65-66.

uncommonly they were referred to by their associates as 'nature fakers,' 'posy pickers,' or Sunday supplement scientists."¹⁶⁸

For whatever reason that naturalists were initially viewed as less than their academic counterparts, they did take the lead in defining the National Park Service's programming in science and natural history education, and were drawn closer to the original ranger designation. For example, as John White, superintendent of Sequoia National Park, stated in 1925: "I have always believed that the nature work should not be separate from the ranger service. It is all one ranger service, and so far as possible all our men should be naturalists."¹⁶⁹

In 1929, when the general plan of administration for the education division was officially approved for service-wide implementation, a committee of leading scientists submitted a report with recommendations for improving park educational programs. As part of its report, it recommended how a park naturalist should function within a national park, with Mount Lassen serving as the example. These recommendations, which built on the best practices developed in both Yosemite and Yellowstone, included responsibility for

¹⁶⁸ Brockman, "Park Naturalists and the Evolution of National Park Service Interpretation," 43.

¹⁶⁹ "Minutes of the Eighth Annual National Park Conference" 57. Colonel John White was known for more than supporting naturalists in the National Park Service. According to Horace Albright, "For years, Mather and I could never totally quash the ingenuity of our various officials when it came to their uniforms.... I'll bet Mather fired [White] ten times for his raking hats and swishing baton. (Of course, he was hired back every time.)" Albright, *Creating the National Park Service*, 258-259.

interpreting the natural history of the mountain through nature walks, written materials, and museum exhibits designed to encourage visitors to leave the museum to experience the geological phenomena for themselves, with the ultimate goal of making “the reality of the region visited impress itself upon the visitor and stimulate his thinking.”¹⁷⁰ The committee also recommended that naturalists “conduct such studies or researches on the natural features of the park as are important for understanding ...the materials with which he deals.”¹⁷¹

Acknowledging the fact that the park naturalist had grown to be the principal deliverer of park education programs, the committee also set forth a series of recommendations for desired qualifications:

[T]he nature of the work to be carried out by the naturalist is such that it requires a man of excellent training. It is essential that this person have at least fair ability to presentation of data to the public. It should be borne in mind that simple discussion of matters of great significance before the visiting public requires ability above the average. It is not sufficient that there be parrot-like repetition.¹⁷²

To ensure that parks could attract qualified candidates, the committee recommended raising the annual of salary to \$3,000 to \$5,000, with the salary for assistants ranging from \$1,800 and \$2,500 per annum. Much could be speculated

¹⁷⁰ “Reports with Recommendations from the Committee on Study of Educational Problems in National Parks, January 9, 1929 and November 27, 1929.” 13-14, National Park Service History Collection, Harpers Ferry Center Archives, Box K1810.

¹⁷¹ Ibid.

¹⁷² Ibid., 14.

about whom was qualified for the full salary as opposed half-price paid to fund the positions of assistant, but one conclusion can be drawn for certain. The committee recognized that if education were to be a primary function, the National Park Service could not rely on vacationing faculty to develop the programs in the parks. Thus, park naturalists must be qualified and paid well. As the recommendations from the committee make clear, the science and natural history programs in the national parks were to be provided by generalists with a strong background in science, an affinity for both education and research, and a “sympathy with the visitor.”¹⁷³

Although everyone from vacationing college professors to government scientists to the superintendents of the parks, and even sometimes their wives and daughters, led nature tours, helped in museums, and conducted lectures and campfire talks, the park ranger naturalist was by 1929 identified as the principal educator, tour guide, and reference contact for most national park visitors. While the science and natural history educational path took a fork in the road in 1920, the path that led to Yellowstone turned out to be the one most taken.

¹⁷³ Ibid.

APPENDIX

THE QUALIFICATIONS AND DUTIES OF A RANGER NATURALIST¹⁷⁴

Education and Training:

At least two years university training in scientific subjects is required, and persons of more mature training and experience are given preference.

It is desired that each applicant be specially qualified in some one branch of science such as Zoology, Geology, Ornithology, Botany, etc., but absolutely required that he have a good fundamental knowledge of most of the sciences in order to have a good grasp on the whole problem of natural history in the field.

Emphasis is placed upon field experience and actual knowledge of "how to read the trailside". [sic]

Field Trips:

A Ranger Naturalist must be able to identify all the common birds, trees, flowers, mammals, and other natural history features of the park in which he wishes to be employed.

He will be called upon to lead trips afield and, although his knowledge must be scientifically correct, it must be expressed in interesting every-day language, so as to be comprehended by all park visitors. The habit of always

¹⁷⁴ Transcribed from an enclosure as part of correspondence from Ansel F. Hall, Berkeley, California, to Horace M. Albright, Yellowstone National Park, WY, 17 February 1926, National Park Service History Collection, Harpers Ferry Center Archives, K1810.

being courteous under such conditions as these is not always easy, but must be possessed by each Ranger Naturalist.

Lectures:

Each Ranger Naturalist will be expected to lecture from one to six evenings per week. This calls for a good speaking voice, experience on the platform, and most important of all, the ability to make natural history subjects vitally interesting. Although such lectures are couched in every-day language, they should nevertheless be backed by a good scientific knowledge of the subject and therefore not be superficial. A Ranger Naturalist may have to talk to 1500 to 2000 persons; his lectures may be a part of a general entertainment program where his competitors will be Jazz music, comedy skits, or other forms of amusement.

Informative Bureau Duty:

Ranger Naturalists may be assigned to information Bureau duty either whole or part time at the Park Headquarters, or at an outpost. This assignment calls for intensive study of the park in question, the answering of requests for information on all subjects relating to the park and the sale of publications.

Publications:

Each Ranger Naturalist will be expected to write at least two or three short articles each week for publication in "Nature Notes" or in journals wishing park information. These will be reviewed by the Park Naturalist or the Superintendent.

Museum Duty:

In parks where museums have already been established, Ranger Naturalists may be assigned to museum duty during certain days. This duty will entail not only the maintenance of the scientific information bureau, but also the collection and preparation [sic] of material for exhibit.

Teaching:

In Yosemite National Park, the Service maintains a School of Field Natural History during six or seven weeks of the summer season. Each Ranger Naturalist is expected to conduct lecture, laboratory and field work of university standard in the subjects which he is specially qualified to teach. Similar projects may be undertaken in other parks.

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Abbreviations

HFC Archives: Harpers Ferry Center Archives, Harpers Ferry, WV

YNP Library: Yellowstone National Park Library, Yellowstone National Park, Mammoth Hot Springs, WY.

U.S. GPO: U. S. Government Printing Office.

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