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**Extraordinary Tourists:
The Transcontinental Excursion of 1912**

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My note to the fellows and workshop participants:

Imagine that you have come to a sort of private archive in which I, as the author of a work in progress to be entitled *Extraordinary Tourists: The Transcontinental Excursion of 1912*, have covered a number of ordinary oak library tables with maps and manuscripts, photographs and drawings, all to be incorporated in the final work. As soon as you enter the archive, you perceive my excitement about the work, but you also recognize a familiar confusion, the delighted bemusement that issues from possessing an embarrassment of riches. In my excitement to show you what I have, the neat piles on tables quickly become a jumble. With each question you ask, I open a file cabinet and pull out folders filled with material that, as often as not, seems tangential to your understanding of what my project is about. I ramble on, seeming to digress at every turn. Finally, you have had enough.

“What is this project about?” you ask. “What historical problem do you address with it?”

Your question brings me down to earth, and I reply: “I was hoping you could help me answer that question. What do you think?”

The scope of *Extraordinary Tourists* is national, even continental; it is also transnational. It incorporates history of science and environmental history; it trends easily into social history. It provides opportunities to consider the multiple constructions of colony and empire, and it entails a shuffling of standard categories in order to find new insights.

It is very much a work *in progress*. My intention is to take a moment in the history of science, processed according with the theoretical sophistication of history of science as it is today, and to use that moment – roughly ten weeks in the late summer and early autumn of 1912 – as a probe for understanding the environmental history of the North American continent. It is important, in the current framing, for me to note that the environmental history is not present here. This paper is no more than the framework from which I intend to hang the environmental history, or (to use a more apt descriptive verb) to *cantilever* the environmental history.

The chief theoretical insight that I have deployed in the work here is the use of nonretrospective history to capture knowledge, as it was known at a particular moment in time, by a community of experts. I have deployed that here, in a short sample, using the apparatus of discursive footnotes to provide a complementary, interrogative text. Clarifying what was known at a particular moment in historical time, and using language that the historical actors would recognize, are problematic tasks in a variety of ways. Inasmuch as this is a work in progress, it is unlikely that I have achieved a completely scrupulous nonretrospective history here; it is the end in view.

I apologize for the sparse and uneven footnoting in this paper. A too-recent personal crisis has introduced an element of chaos into my system of files, which are current distributed across three states.

Prologue

In the late summer and early autumn of 1912, William Morris Davis, a self-identified geographer trained as a geologist, newly retired from Harvard University, led an excursion of European and American scientists twice across the North American continent, covering more than 13,000 miles in fifty-seven days, by private train. The extended outing was organized ostensibly for the benefit of the Europeans. Davis held the conviction that they would benefit from seeing the United States in his company.¹

This is the story of that excursion, but it is quite a bit more. By looking through the excursionists' eyes, through the lenses of their cameras (they took in excess of 12,000 photographs), through their notebooks, and through what they wrote about America and published in the aftermath, we can glimpse the United States as it was nearly a century ago – a landscape and a collection of peoples on the cusp of world leadership and power, a nation that in short order would achieve agricultural, industrial, economic, artistic, and even intellectual global position and, in some cases, hegemony. In 1912 the foundation stones for the American edifice were in place. This is a book about that foundation.

The excursion would not have happened were it not for the formidable ambition of William Morris Davis. Trained as a geologist and mining engineer in the years immediately following the Civil War, Davis set his sights on academic accomplishment. His progress was slow at first, but by the 1880s he dominated the field of meteorology in the United States. In the 1890s he set that aside in favor of cultivating the science of geography: teaching graduate students, publishing papers, starting professional associations and journals. His idea of geography as a scientific discipline included more than the single sense of that word; he made it his business to attend every meeting of geographers he could, to comment on their papers, on occasion to make them weep. By 1900, he had accomplished all that he could in the realm of American geographers and looked to Europe for peers. In that year, he taught as a visiting professor at the University of Berlin, and he taught at the Sorbonne in Paris in 1911-1912.²

¹ A brief account of the excursion was published as part of a Memorial Volume in 1915. Albert Perry Brigham (1915) "History of the Excursion," in American Geographical Society of New York (1915). *Memorial volume of the Transcontinental Excursion of 1912 of the American Geographical Society of New York*. New York, The Society, pp. 9-31.

² A substantial biography of William Morris Davis is found in Chorley, R. J., R. P. Beckinsale, et al. (1973). *The history of the study of landforms or the development of geomorphology, v. 2. The life and work*

In that first decade of the twentieth century, Davis was obsessed with his “cycle of geography,” and used all means available to him to make this the foundation of geography as a science. One useful and congenial means at his disposal was to take the unconvinced outside with him, to do a little traveling. Davis persuaded best when in the field. He had a hand in organizing the New England Intercollegiate Geological Congress, taking the first of their annual outings to Blue Hill outside Boston. In Europe, he led two extended excursions, the second of which began in Ireland and concluded in the Italian Alps. It was here, he recalled, that he was inspired to organize a more formal field trip in the United States.³

His American colleagues may not have been eager to see this happen. Davis was respected and feared, and he had a small cadre of disciples among a younger generation of American geographers. But Davis also had detractors who did not relish the thought of providing Davis with a platform from which to further discipline their science. Davis floated proposals for the field excursion at the Association of American Geographers and at the American Geographical Society of New York. Although the latter did not immediately bite, one of its more influential members did. Archer Huntington, an heir to the Huntington railroad fortune, pledged \$25,000 to Davis’s scheme. With that commitment, Davis sent invitations to the geographical societies of every European country and got commitments. The planning thus began.

Whereas the European fieldtrips were informal, each member providing for his own lodging and transportation, the American excursion was to be more formal – a congress on wheels, as Albert Perry Brigham of Colgate College, one of Davis’s deputies, put it. The Raymond-Whitcomb Company, travel agents in Boston, made the hard arrangements as Davis and those he trusted worked out the itinerary. The excursion was to start in New York, cross the continent, and wind through the American west. Los Angeles was on an early itinerary, but was later dropped. As the plan gelled, Davis wrote a guidebook and managed to coax a publisher to print and distribute it, gratis. A major brewery donated an unlimited supply of beer for the journey.

No itinerary can be complete; there were many places in the continental United States that the excursion would pass unseen: Yosemite Valley, for one; the Allegheny mountains, coal fields, and oil derricks of Pennsylvania for another. Davis began to warn his American colleagues of their role as hosts, in

of William Morris Davis. London, New York, Methuen ; Wiley.

³ Chorley, R. J., R. P. Beckinsale, et al. (1973).

a list of what politicians would later call “talking points:” they should never say “we should have gone here” substituting instead “on your next visit to the States you may want to visit ---.” To fit everything in, the excursion would often pass great scenery through the night, unseen. The South was little more than an afterthought. The excursion covered it in a mere three days, and made few stops. This anti-Southern bias may have reflected Davis’s upbringing. Davis was the grandson of the abolitionist Lucretia Mott, spent much of his childhood in her Philadelphia home, and was doubtless imbued with a distaste for all things southern.

Yet the list of places they *did* plan to visit was formidable enough: Niagara Falls, Chicago, the glacial drift of Wisconsin, the iron mines and lake ports of Minnesota, Yellowstone National Park, the Grand Coulee of Washington State, Seattle, Crater Lake National Park, San Francisco, Great Salt Lake, the Rocky Mountains, Santa Fe, Meteor Crater, the Grand Canyon, Phoenix, the Mississippi River at two crossings, Monticello, Washington D.C.

To make this possible, the Raymond-Whitcomb Company put together a special train: two Pullman sleepers, two observation cars, and a baggage car. All across the continent there were local arrangements to be made. Cars, trolleys, wagons, and horses were enlisted to transport the visitors from train stations to destinations. Meals were arranged in exchange for the chance for townspeople to demonstrate their generosity to the world. The railroad companies, eager for European tourists, made plans to attach their finest company rail cars to provide hospitality while the excursion rolled over their rails. Speeches were planned, written, and rehearsed. State, federal, and commercial cartographers provided maps to be consulted. Hotels and tents were made ready.

The Europeans started to arrive, a few at a time, early in August. For those who arrived far enough in advance, there were “pre-excursions” to New England (not on the excursion’s itinerary) and to the Delaware Water Gap. Davis did not attract quite every one of the Europeans he had hoped to enlist; in particular, his German colleagues at the University of Berlin, Walther and Albrecht Penck, did not make the trip. And two of the most interesting and controversial Americans could not attend: Ellsworth Huntington was in South America seeing to fieldwork; Ellen Semple was in Paris, teaching at the Sorbonne, and wouldn’t have been welcome at any rate. The invitation clearly stipulated that this was to be

an all male affair. But those who did commit made up a formidable roster, especially given the time commitment – just shy of two months, plus travel time across the Atlantic and back.

On the Sunday before the excursion, the *New York Times* devoted two full pages to the excursion, with photographs and biographical sketches of the participants and a story about the itinerary. Over the weeks ahead, J. H. Cuntz, a member of the American Geographical Society of New York, would post weekly stories on the excursion's progress.

Over the next two months they would see America, sometimes through Davis's eyes, often from their own peculiar perspectives. These were expert travelers. Many had climbed mountains, spent weeks in untraveled places. But the scale of the excursion would not permit of detailed scientific travel, of close fieldwork. These were tourists, albeit extraordinary tourists.

My primary interest in reconstructing the Transcontinental Excursion of 1912 is to provide a framework for examining the *environmental history* of the United States at a specifiable moment in time. The timing of the event is fortuitous: it occurred at the twilight of rural America, on the eve of the First World War, and at a time when Manifest Destiny had been fulfilled. On the train, it was evident that colony and empire were matters of concern, but it is not entirely clear who the colonials were.

Theoretical perspectives

A broad spectrum of theoretical perspectives will ultimately inform the narrative, sometimes in the selection of empirical material to be included, and sometimes in the shape that the empiricism ultimate takes. Gender, to take but one example, has significance for understanding the interchanges between an expert community that was exclusively male, and a landscape and culture that was shaped in no small measure by women. The work will of necessity examine race, ethnicity, and religion as categories in American experience, albeit categories that the excursionists themselves only sometimes acknowledged in textual contexts. From the growing literature of environmental history, I plan to make special use of the bioregional perspectives of Dan Flores and William de Buys, in spite of the decreased current interest in bioregionalism after its high point in the 1990s. The emergent interest in *transnationalism* is timely for considering the relationships between the several excursionists, representing most of the nations of Europe, sharing close sleeping quarters for two months on the brink of the First World War. Nonretrospective historical narrative, a major theoretical component of the methodology I employ in the book, is best

demonstrated and defended in Martin J. S. Rudwick's *The Great Devonian Controversy: The Shaping of Scientific Knowledge among Gentlemanly Specialists*. In this paper, I will discuss but two theoretical perspectives, one in brief form, and the other at greater length. Briefly, there is a need for a consideration of time and the scale of time in historical perspective, especially in relation to environmental matters, and I discuss this immediately below in discussion of "mindfulness" as an epistemic value. Then, at somewhat greater length, I examine the role of fieldtrips and field excursions as elements of practice in the field sciences, especially geology and physical geography.⁴

Mindfulness as an epistemic value. Environments exist from moment to moment, in time and in place. Moments are fleeting and so too, then, are environments. Descriptions of environments may arrest the character of a moment, but more often they generalize and idealize, as do, unsurprisingly, the theoretical constructions that aim to explain the compositions of environments. Many of the characteristics of environments remain stable over periods of time, however: hours, days, months, decades. But the rock faces of Yosemite Valley have been altered substantially during the professional careers of the present audience for this paper, and the Old Man of the Mountain in New Hampshire has lost the defining character of his face. Just as science must generalize time across fleeting moments, so too must environmental historians do much the same. What is lost in this process is a sense of the environment as it was at any given moment. To recapture a moment with a sense of satisfactory completeness is always difficult, and often impossible.

One advantage to using the Transcontinental Excursion as a framework for a *synchronic* reconstruction of environmental history is its specificity. In this, the narrative of the excursion is not unlike those in military histories in which battles and campaigns are reconstructed moment by moment. In military history, weather is important. Was it hot or cold? Was the ground wet and muddy or dry? Were conditions

⁴ The literature of identity – race, ethnicity, gender – is too vast to include here. For bioregionalism see, for example, Dan L. Flores (1999). *Horizontal Yellow: Nature and History in the Near Southwest*. Albuquerque, University of New Mexico Press; William E. DeBuys, W. E. (1985). *Enchantment and Exploitation: The Life and Hard Time of a New Mexico Mountain Range*. Albuquerque, University of New Mexico Press. For nonretrospective narrative see Martin J. S. Rudwick (1985), *The Great Devonian Controversy: The Shaping of Scientific Knowledge among Gentlemanly Specialists*, Chicago: University of Chicago Press.

ordinary or unexpected? Although the sample of narrative provided in this paper does not yet fully provide it, specifics about the environments through which the excursionists passed are important.

Of necessity, I will be reconstructing the entire journey, as closely as possible, before constructing the narrative. In some places, as at Meteor Crater, for instance, that will seem simple enough. In other cases, it will be impossible, and whatever reconstruction I accomplish may need to meet the standard of plausibility.

In addition to walking the same ground that the excursionists walked, wherever possible, and taking trains along railways that are the same as or similar to those on which the excursionists traveled, I intend to deploy what clinical psychologists refer to as *mindfulness*, or being in the moment. I cannot perceive what the excursionists perceived, but I can experience my own perceptions, be mindful of them, use them to suggest the character of historical experience and to enrich description. Mindfulness must be used with great care. A narrator's self-deception, transferred to a falsified narrative, constitutes a danger of such a practice. But to reject mindfulness from historical practice, in cases where it may have value, is a complementary danger, and one that I intend to avoid.⁵

The field sciences and field excursions in the history of science. After decades of relative neglect by historians of science, studies of field science have become more fashionable in historical inquiry. Much of this recent interest in field scientists, their practices and culture, and their systems of belief, has focused on the history of field sciences as an especially sensitive probe for revealing the relation of science to a set of cultural issues of interest beyond the disciplinary boundaries of history of science: race, ethnicity, gender, colonialism or imperialism, class – some of the same interests that partially motivate the current work.⁶ While such studies are salutary, the new interest in the field sciences may have neglected to notice and comprehend the variety and scope of institutional forms and epistemological issues that are *peculiar* to science when it is practiced in the field.⁷ One such peculiar practice is the geological or geographical field trip, an institutional form that has but tenuous analogs in other instances of field science, let alone in

⁵ I've drawn the notion of mindfulness from a literature that address the problem of pain in a clinical context. A classic popularization in this literature is Kabat-Zinn, J. and University of Massachusetts Medical Center/Worcester. Stress Reduction Clinic. (1991). *Full Catastrophe Living: Using the Wisdom of Your Body and Mind to Face Stress, Pain, and Illness*. New York, N.Y., Dell Publishing.

laboratory sciences.⁸ The published and archival sources documenting field trips are equally peculiar, albeit rich in content and numerous in extent. Historians of science could learn much from such resources, but may need to modify their assumptions about field science, and possibly their own research practices, to do so.

Most historians have experienced with field trips in the settings of elementary and secondary education, occasionally but not often as part of a course of higher education, and as adjuncts to the annual meetings of professional associations such as the American Historical Association. Such experiences may mislead historians such that they take geological field trips for granted, or to interpret them as having much the same theoretical and practical import as other kinds of field trips. Even if they are not taken for granted, the temptation may be to deconstruct field trips as exercises in pedagogical or, more broadly, cultural authority. And while such deconstructions might have some value in analysis, they begin from a faulty premise. For while it is true that field trips have an educative role in the training and indoctrination of geologists, it is also the case that the practice is layered in its intention and execution. Geological field trips are often instances of *actual witnessing* among elite scientists, a complement to what Steven Shapin has called “virtual witnessing.” Though it shares much with the social technology of “virtual witnessing,” the

⁶Several of the essays in Robert E. Kohler and Henrika Kuklick, eds., *Science in the Field, Osiris 11*, 1996, turn in this direction. But the historical study of field science has a somewhat longer tradition of serving as a site for studying class and gender, especially when combined with the related study of natural history. See, for instance, David E. Allen, *The Naturalist in Britain: A Social History* (London: Allen Lane, 1976, rpt. Princeton, N.J.: Princeton University Press, 1994) and Anne Secord, “Corresponding Interests: Artisans and Gentlemen in Nineteenth-Century Natural History,” *British Journal for the History of Science*, 1994, 27:383-408; Anne Secord (1994), “Science in the Pub: Artisan Botanists in Early Nineteenth-Century Lancashire,” *History of Science*, 1994. For a sociological view of colonialism, see Bruno Latour’s construction of the “centers of calculation” model in *Science in Action*.

⁷The most important exception to this is Martin J. S. Rudwick (1985). Although now ritually cited *generally* as the precursor of studies of visual representation, Rudwick’s “A Visual Language for Geological Science, 1760-1840,” [] can be read as an argument for a new and different set of practices in geology. General studies of practice include Adele E. Clarke and Joan H. Fujimura, eds., *The Right Tools for the Job* (Princeton: Princeton University Press, 1992) and David Gooding, Trevor Pinch, and Simon Schaffer, eds., *The Uses of Experiment* (New York: Cambridge University Press, 1989).

⁸ Throughout the remainder of this discussion, I will refer only to geological field trips, but it will be understood that this includes some kinds of geographical field trips.

growth of geological field trips as a social technology conveys the message that, in the earth sciences, the “virtual” may be necessary but it is not always sufficient.⁹

Attention to field trips as institutional practice in geology and physical geography points up the significance of physical *place* in the field sciences.¹⁰ Attention to place is valuable for understanding field sciences as environmental sciences, through studies conducted at the same geographical scale as work currently being done by environmental historians.¹¹ Like the practices they reconstruct through a performance ritual, field trips represent both the global and the local ends in a spectrum of concerns. On the more global end, physical places may serve as appropriate sites for securing assent or raising controversy over the validity of global theories and even methodological precepts.¹² At the other end of the scale are field sites, which show peculiarities explained by recourse to historical and geographical contingencies. Similarly, the organization of field trips provides a lens for investigating the relation of elite scientists to their more local but accredited colleagues. This is perhaps especially true in the United States.

While not all fieldtrips have epistemic significance, the Transcontinental Excursion was among those that clearly do. The doctrine of ‘multiple working hypotheses,’ first articulated by T. C. Chamberlain in 1890, has moral weight in geological methodology.¹³ But historians of science have shown the difficulty of successfully executing the doctrine.¹⁴ If, however, we look at field trips as constitutive of practice, the doctrine appears to have substantial validity when executed as a *social* instrument.

⁹Steven Shapin and Simon Schaffer, *Leviathan and the Air Pump* (Princeton: Princeton University Press, 1985). Though the authors do not call it that, the performance of air pump experiments is an example of *actual* witnessing, though Shapin has gone on to show the layers of mediation in what was witnessed; see his “The House of Experiment in Seventeenth-Century England,” *Isis*, 1988, 79:373-404.

¹⁰See Dan Flores, “Place: An Argument for Bioregional History,” *Environmental History Review*, 1994, 1-18. “Place” has a variety of meanings across disciplines and subdisciplines. In Yi-Fu Tuan, *Space and Place*, place is defined as the sum of space plus culture. The meaning is quite different in history and sociology of science. See also Steven Shapin (1988). See also Owen Hannaway, “Laboratory Design and the Aim of Science: Andreas Libavius versus Tycho Brahe,” *Isis*, 1986, 77:585-610.

¹¹See, e.g.: Richard White (1995). *The Organic Machine*. New York, Hill and Wang.

¹²See for example, Rudwick (1985), and David R. Oldroyd (1990). *The Highlands Controversy: Constructing Geological Knowledge through Fieldwork in Nineteenth-century Britain*. Chicago, University of Chicago Press.

¹³T. C. Chamberlain (1890) “The Method of Multiple Working Hypotheses,” *Science*.

¹⁴See, e.g., Ellen Drake. (were there field trips to Barringer Crater?)

For geologists and geographers, the meaning of “field trip” is contextual and is taken-for-granted. Scientists learn what field trips are by accompanying them, first in the pedagogical context where field trips make up a portion of the “laboratory” component of undergraduate coursework; later as part of socialization in the standards of practice. The shift from the former context to the latter is comparable to the shift from reading textbooks in geology to reading professional papers. It is useful to provide some sense of definition, however inadequate it might be: field trips and excursions are public or quasi-public ventures into the field to examine and review geological or geographical field work that has been previously published in the form of a map, paper, or monograph. Usually, though not always, a field trip is organized and led by the scientist whose authority in the field site has been established by one or more publications. In due course, I shall refine this definition. For the present, it is sufficient for the task at hand: to see what might and might not count as a field trip in the nineteenth century, *before* the explicit appearance of excursions and field trips as planned and advertised events on the institutional calendar.

When looking for field trips in the nineteenth century, it is important to search for them using their other name: excursions. Something of the sort was surely the essence of ventures into the field when Charles Lyell visited the United States in the 1840s, although here the excursion was casual and the usual direction of authority was clearly reversed; American geologists were eager that Lyell should have a full serving of geological phenomena in the United States, but they were also eager to gain his approval for their interpretations.

Such impromptu field excursions were not unusual in the United States in the nineteenth century, but for a more institutionalized form one must look to Europe, to organizations such as the British Association for the Advancement of Science and to the French Societe Geologique. After the civil war, the expansion of geological education in the United States provided opportunities for organized instruction in the field. In the 1870s, for instance, Nathaniel Southgate Shaler of Harvard, William Morris Davis’s older colleague, led students -- mostly schoolteachers -- in a field camp based in Kentucky. It was here that Shaler reveled in empiricist assertions. There were other field camps, but these are not field trips per se. The model upon which American field excursions were based were those organized and sponsored by the International Geological Congress (IGC). Although a primary *raison d’être* of the IGC in the 1880s and 1890s was to establish a uniform, international nomenclature for geology, as well as graphical standards for

shading and coloring geological maps, participants were keen to travel together on field excursions planned for the host countries. The fifth of the triennial congresses, and the first in the United States, met in Washington, D. C. on August 26, 1891; on September 2, eighty of its members departed for the Rocky Mountains on a twenty-five day excursion to Yellowstone Park, followed by an additional ten-day excursion to the Grand Canyon, led by John Wesley Powell. S. F. Emmons prepared a 150-page guidebook for the excursion.¹⁵

With the IGC excursions as a model, the Geological Society of America (GSA) moved to incorporate excursions into its summer meetings. For the Denver summer meeting in 1893, Charles R. Van Hise organized an eleven-day excursion through the Rocky Mountains. Emmons, Whitman Cross, and T. C. Chamberlain led the excursion, which covered 1400 miles, primarily by rail. En route, the excursion party engaged local experts as necessary. On its first day, the excursion followed J. B. Hatcher to Four-mile Creek, where Hatcher was “quarrying” dinosaur bones, and where “for the first time a number of the party saw Dinosaur bones in place,” according to Van Hise, who used the report of the excursion to argue for excursions as regular features of the summer meetings. Through “mutual study of the same field,” he argued, the “peculiar or partial views” of a geologist whose “field experience ... has been somewhat narrow ...in consequence of isolation” could be “corrected” by the opportunity “to go over a considerable part of a great region in order to obtain a large view.” Van Hise made a stronger case:

... if it is advantageous for geologists to see the same phenomena together, or in other words, to be able to see with one another’s eyes; if it is advantageous for geologists to interpret phenomena together, or to interpret with one another’s brains; if it is advantageous for geologists interested in similar problems to confer with one another as to geological phenomena and their meaning, then the excursion was well justified.

Van Hise’s case for including field excursions in the programs for the summer meetings appears to have about it a sense of timelessness, but changes in the organization and conduct of geological field inquiry in the last decade of the nineteenth century provide an important context for reading the argument. With the founding of the GSA, the age of heroic exploration of the American “frontier” had drawn to a close; increasingly, fieldwork was the purview of individuals or small and often isolated parties. At the

¹⁵American Journal of Science, 42 (250), 343-344. The guidebook is William Morris Davis (1912b), *Guidebook for the Transcontinental Excursion of 1912* (Boston, New York, Chicago, London: Ginn and Company).

same time, geological training took place at land grant colleges across the continent, and academic geologists had fewer opportunities to spend time in the field with peers. The winter meetings of the GSA was one venue for securing a uniform observational outlook, and it did so primarily through the use of lantern slides; so to, the spectrum of visual objects -- from proxies to maps and diagrams -- disciplined seeing. The excursions, then, added to a chain of social constraints on observation and interpretation.

Though not organized on the scale of the IGC excursions, the earliest annual GSA excursions were nevertheless complex affairs, demanding advanced planning for logistics as well as the cooperation of locals to feed, house, and transport the excursionists. The organizers also depended on local landowners, mine operators, and others for permission to traverse and inspect proprietary areas. In these early years, the excursions were organized to augment the summer meeting, which was held in conjunction with the American Association for the Advancement of Science but was often poorly attended by comparison to the December meetings. Excursions were intended in part to boost summer attendance. Although membership in the GSA was restricted to accredited geologists, participation in the excursions was open to students and others. The “Personnel of the Excursion” associated with the [year] meeting in Pittsburg included a lawyer, a manufacturer, a student, and an individual “engaged in banking” among the “excursionists.”

By 1896, several GSA excursions were planned on a concurrent basis. Shorter in duration, they were divided by interest areas. “Circulars” listing itineraries and descriptions of highpoints, and short bibliographies, were distributed in advance. Four excursions were planned for the 1896 meeting in Buffalo, New York, but excursions focusing on the stratigraphy and paleontology of New York and on economic geology were cancelled “on account of lack of sufficient interest.” Those on petrographic geology and Pleistocene geology drew enough participants to go ahead; the latter, led by G. K. Gilbert, drew a dozen excursionists. Despite the inauspicious cancellations, field excursions as an adjunct to the summer GSA meetings had been established by the turn of the century. In 1901, the secretary of the GSA proposed that excursions comprise the whole of the summer meetings.

Van Hise’s justifications for excursions were not lost on William Morris Davis, who refined the genre into short field courses in his methods of genetic description. But where Van Hise allowed for a distribution, perhaps even a contest, of authority, Davis’s executions of the genre were designed so that participants would see with his eyes, think with his brain, and solve problems his way, if he could help it.

Davis was clear about this, as in his description of one such excursion through France in 1910 shows. The account made up part of Davis's presidential address to the GSA in 1911. He used the occasion to discuss the process of conceptualization in the field and of the relationships between object, locale, observation, word, picture, and discipline.

Davis stressed the importance, in the construction of a fact, of giving a name to the construction -- a "construal" as Gooding has called it in another context.¹⁶ Thus, Davis told a parable, set in a summer excursion or "pilgrimage" through France, about the etymology of his neologism *morvan*. The problem, in Davis's view, was to define a class of phenomena -- intersecting peneplains -- by assigning a single term to the class. The term would be explicitly conventional, as Davis argued; "...one day, patience being exhausted, I exclaimed: 'Let us call the thing a skiou!'"

"What is a skiou?" asked my companions. "A skiou is the thing we have been talking about." "What is the origin of the word?" "It hasn't any origin; it is made up from nothing, like the words "gas" and "boss;" let us use it until we find something better." "How is it spelled?" "It never has been spelled, but it is going to be spelled s-k-i-o-u; its plural shall be in s, and its gender is masculine."

"This last declaration, be it noted, was made to satisfy my French and German companions," Davis reminded his American audience, further justifying the arbitrary naming of a class of phenomena by pointing to similar practice in other branches of geology, such as petrographers who "... talk of eleolite-syenites, or hypersthene-andesites, wherever they are." The bulk of the story illustrated Davis's reinforcement of the term and its meaning through repeated use of the term, especially as newcomers would join the party. "Thus we developed a sort of initiation ceremony, and when the next newcomer arrived it was for his predecessor to exclaim, 'What! have you never heard of a skiou?'"¹⁷

In the conclusion to his story, Davis described his exchange of the classificatory term "skiou" for the formal nomenclature "morvan" -- a term scarcely less arbitrary than "skiou," though named for the Morvan "mountains" in France. The resulting term, considered infelicitous and seldom used, nevertheless

¹⁶Gooding 1990, 22-23.

¹⁷Davis, William Morris (1912) "A Geographical Pilgrimage from Ireland to Italy," *Annals of the Association of American Geographers*, 2: 73-100.

remains a part of the geological vocabulary.¹⁸ As told to an audience of fellows of the GSA, Davis's narrative is somewhat misleading as a depiction of fieldwork in his company. The account suggests consensual activity; but under Davis's leadership, the appearance of consensus, if any, veiled Davis's exercise of authority. Davis's mastery of the excursion as an exercise designed to enforce consensus is best seen in his planning of the Transcontinental Excursion of 1912.

The Transcontinental Excursion of 1912 was conceived, scripted, and executed on a "liberal" scale. Writing sometimes in the first person, sometimes in the third as "the director," Davis recalled that his initial proposal for the excursion, in an address before the Association of American Geographers in December 1909, was met with "amusement and derision" among American geographers. But, assuming that this was in fact the moment of inception, the lead time of two and one-half years was remarkably short for an undertaking of this kind, and suggests that Davis was merely bearding his contemporaries for questioning, even momentarily, his international status and authority. Early in 1911, Davis secured a patron in Archer M. Huntington, the adopted son of the railroad tycoon Collis P. Huntington and the president of the American Geographical Society (AGS) from 1907 to 1916. Huntington, a Spanish scholar and archaeologist, was persuaded to extend his patronage by Davis's promise of European participants, whose presence in the United States would help to publicize the sixtieth anniversary of the AGS and the completion of the society's new headquarters in New York City.¹⁹

Davis originally sought to diffuse his authority -- and, no doubt, spread some of the work of organization -- by constituting American and European committees to plan the excursion, but he quickly scrapped the committee approach in favor of his accustomed autocratic role. Thwarted by Interstate Commerce Commission regulations in his attempt to secure free passage from various railroads, Davis was nevertheless able to enlist the donation of special observation parlors from the Pullman Company, bottled

¹⁸"Morvan" is defined in the 1984 edition of the Dictionary of Scientific Terms. Bates and Jackson 1984, 337: "1. The intersection of two peneplains, as where an exhumed, tilted peneplain is cut across obliquely by a younger surface at a more nearly horizontal attitude. 2 A region that exhibits such a relationship."

¹⁹A photograph of the new society headquarters serves as the frontispiece of the Memorial Volume of the Transcontinental Excursion of 1912 of the American Geographical Society of New York. Davis's remarkably brief account of the conception and planning of the excursion are found on pp. 3-7. Given Huntington's scholarly interests, one wonders at the notable absence of Spanish geographers from the list of participants. Davis often inserted "international" into the name.

Poland Spring drinking water from Hiram Ricker and Sons of Poland Spring, Maine, and Budweiser beer from Anheuser-Busch, the last for the "reduction of discomfort in a long journey, much of it across a dry country." One railroad car was designated the "excursion library," and was outfitted with maps and books coerced from federal and state geological surveys, as well as the publications of American participants. The railroads added a "business car" to provide "hospitality" for the participants. Davis's publisher, Ginn & Company, printed the guidebook at no cost to the excursion. Thus, the excursion was organized much like the annual meeting of professional society -- albeit one that lasted two months and traversed, on average, more than 200 miles per day.²⁰

There were local arrangements to see to as well. At each stop, and particularly in the western states, motorcars were needed to move the party from the railhead to each day's destination. These, and sleeping arrangements for the contingent, were usually arranged by local "commercial clubs" and chambers of commerce, each in exchange for a "personal welcome" by small-town boosters across America at the height of the Progressive era. This quid pro quo provided copy for many a front-page story, with headlines like the Denver Post's

Geographers of Europe Amazed by Grandeur
of the Mountain Scenery Revealed in Colorado

Nothing Like It to Be
Found in All
Europe.

followed by quotes extolling the American scenery at the expense of European counterparts the likes of the Alps. It was also a field day for newspaper artists, who caricatured the Europeans as effete aristocrats. Such attention was not entirely unwelcome; the party had a press secretary in its "accredited journalist," Nevin Fenneman of the University of Cincinnati.²¹ Still, some of the more exploitative aspects of the excursion may have irritated its participants. "The geologist who could not deliberately pick his specimens and draw

²⁰Davis, William Morris (1915), "The Development of the Transcontinental Excursion of 1912," in American Geographical Society of New York (1915), 3.

²¹Brigham (1915), p. 19.

his sections" because of constraints on time at any given stop might be expected to feel irritation about whole days devoted to inspections of "the business methods of the Sears, Roebuck Company."²²

While Davis allowed the various participants, sponsors, and locals to exploit the excursion as needed, he planned it with one purpose in mind: to make a forceful claim for his own grand theoretical system, the geographical cycle. In a letter to Davis's biographer, Richard Chorley, one participant recalled a scenic stop in the Appalachian Mountains. There the excursion

... came to a magnificent viewpoint. The whole party rushed forward to see the landscape. But Davis made them turn their backs on it and then explained to them what the landscape ought to be according to his theories. That done, he allowed them to turn and face the view and demonstrated that in fact the landscape happened to conform exactly to his theoretical construction of it.²³

Both the IGC's and Davis's transcontinental excursions were major affairs; those of the GSA were shorter in duration if no less formal in approach. By the turn of the century, a more localized and informal pattern cropped up. A good example is the New England Intercollegiate Geological Excursion, which began to meet for a weekend each year, generally in early October. Davis led the first outing in 1901, to the Westfield River Terrace in Massachusetts, the site of research he had published several years earlier. The annual excursion (later renamed the New England Intercollegiate Geological Conference, or the NEIGC, though with no change in purpose) met each fall beginning in 1901. Participation by undergraduates was not initially encouraged; the event was open to academic geologists exclusively.

The field trip as an institution was formed in the disciplinary matrix of a professionalized and increasingly academic geology around the turn of the century. There was no single intention of organizers that explained its rapid acceptance as an institution, though some may be excluded. Field trips were not initially devoted to undergraduate education, or conceived as an exercise in what was later called "public understanding of science." They were rather an adjunct of disciplinary meetings, a presentation of field evidence and interpretation *in situ*. It is probably correct to argue that the institution blended almost seamlessly with other genres of geological argument and presentation, such as the exhibiting of samples

²²Brigham (1915), pp. 14 and 20. Brigham justified the side trips to commercial concerns, not perhaps without warrant, by arguing that " ... it is recognized by all true geographers ... that the science does not come to its full fruition until it has taken in, not only the lands, but the interests and relations of those who live upon them." (p. 14).

²³A. Cailleux to R. P. Beckinsale, 10 April 1966, Paris, in Chorley et al. (1973), pp. 381-382.

and the use of visual language. With that, the excursions of the early twentieth century, no less than those that followed, must be viewed critically. Organizers and trip leaders exercised substantial control over the presentation of field evidence. They could select stops to make the best case for their arguments, while passing more ambiguous sites without comment. Constraints on time prevented opportunities for too much dissent. The introduction of contrary evidence was, to a degree, controlled.

The accompanying map provides an overview of the full itinerary of the excursion. In the remainder of this paper I provide a précis of the narrative, covering six days, September 30, 1912 through October 5, 1912, all of which were spent in Arizona, which had only become a state earlier in the year of the excursion.

Nonretrospective narrative of the excursion in Arizona

The tourists encountered morning light on September 30 near the boundary between New Mexico and Arizona. Overnight they had passed through the vast, flat mesas of New Mexico, past the center of the Anasazi empire of a thousand years before, past higher mesas where Indians now lived in culturally autonomous pueblos: Acoma, Zuni. From the state line, the landscape graded subtly upward, gaining several thousand feet in elevation by the time it reached Flagstaff. After a short run, they approached the beginning of the Painted Desert, with its mixture of grasses and Great Basin desert scrub. To their north, the Navaho tended sheep on what was the largest reservation to survive the broken treaties of the prior century. Amidst the Navaho, on elevated inliers, were the Hopi. To the south were the former lands of the Apache, who were now gathered on small reservations. Westward, upslope, the land rose to more than 12,000 feet in the remains of a volcanic peak north of Flagstaff.

The first stop of the day, just after breakfast at 7:30, was at Adamana, named by combining the Christian and last names of the first station keeper, Adam Hanna, who ranched the area in the 1890s.²⁴ There wasn't much to the "town": a station house, a small hotel made up of a pair of bungalows for tourists who would stop over to see the forest, a post office run out of the hotel. Still, tourists found it exotic. In

²⁴ From the state line through Flagstaff, the Santa Fe line lies south of where Route 66 crossed through the first half of the 20th century, to be replaced for most of its length by Interstate 40. Both routes passed more than ten miles north of Adamana.

1906 a tourist named Lillian Whiting, wrote to the New York Times, speaking of the “spellbinding power” of the place.²⁵

From Adamana, the tourists traveled by wagon through a landscape dominated by the colors red and purple to the Petrified Forest.²⁶ The monument was one of several that were protected in the first cluster of lands set aside under Theodore Roosevelt’s exercise of the Antiquities Act. No more than six years old in 1912, the monument had yet to add significant infrastructure. When the tourists arrived in the forest after their short wagon ride, “the custodians of the forest were not required to have both eyes open on this occasion, and the geographers were permitted to help themselves somewhat freely from these most ancient wood piles of the Southwest.” The excursion’s visit to the forest was little more than a pleasant romp. In his guidebook, Davis mentioned it for the forty-first day and commits to a visit, “either coming or going.”

²⁵ Lubick, G. M. (1996). *Petrified Forest National Park: A Wilderness Bound in Time*. Tucson, University of Arizona Press.

²⁶ Lubick (1996). Lubick has examined the history of the Petrified Forest in In pre-columbian times, Lubick says, the area was a mixing ground for somewhat distinct cultures: the Anasazi, the Mogollon, and the Sinagua peoples. But it was abandoned between 1000 and 1300 a.d. The Dine’ arrived around 1400. When they arrived after 1500, the Spanish all but ignored the immediate area. But in the nineteenth century, successive survey parties passed through the forest, each commenting what by then they understood to be fossilized trees.

Later in the nineteenth century, the area was exploited commercially, first by William Adams Jr., who purchased the Chalcedony Manufacturing Company from a group of San Francisco investors, reorganizing it as the Jasperized Wood Company in the 1880s. Adams did his best to make a go of the resource, and indeed removed thousands of tons of fossilized wood from the area, but it was never profitable. In the early 1890s, a company in Chicago proposed to site a factory there, to crush the fossils for abrasives. This prompted the Federal government to move toward protecting the land as a memorial in 1895. Thereafter, only tourists would visit the forest; and they did, taking souvenirs with them when they departed.

Ten years later, the forest was caught in the sweep of western lands designated as National Monuments by the Lacey Act of 1906, better known as the Antiquities Act. The Act, the final draft of which was written by Hewett, was primarily intended as a means to protect and preserve the abundant archeological resources of the Southwest. But it proved useful for the preservation of natural sites as well, and in his grand gesture of 1906, Roosevelt included the petrified forest.

But protected status did not make for much protection; Hewett and other supporters were far more interested in protecting the ancient pottery, rock art, and other artifacts of the archeological sites in the region, which had been pilfered by tourists and – in Hewett’s eyes – by early excavations. The monument’s fossil wood did not have the same cache, and the monument would not get a paid custodian until late in the teens. It suffered, in a sense, from the seeming abundance of its single notable resource: the hundreds upon hundreds of fossilized trees.

More important to Davis, perhaps, was that the excursion rise through the Colorado Plateau by the light of day.²⁷

Wagons brought the tourists back to Adamana by a little past noon. In all, the visit had been mostly a lark. Only Richierri mentions the Petrified Forest in his paper for the Memorial Volume, and then only as an afterthought. Ogilvie mentions the vegetation in the area: “Not a tree was to be seen; everywhere an unclosed growth of sage-brush, and a waggon ride to the south from Adamana to visit the petrified forest showed only a change for the worse, to bare clay hills, except at the crossing of a dry wadi where aspens and golden *Bigelovia* bushes refreshed the eye.”²⁸

Back aboard the train, the party enjoyed lunch aboard as the train trended upslope to Sunshine Station. They were now deeper into Navaho territory, and doubtless witnessed the Navaho tending sheep. Perhaps they passed a hogan along the way, between Mormon ranches. If the morning’s visit to the Petrified Forest was no more than a lark, the afternoon’s business was to be quite another matter.

Originally, a visit to Meteor Crater was not part of the excursion’s agenda. Davis did not mention it in his guidebook; he may have preferred to pass over this stop and the continuing controversy it represented, instead continuing up the Colorado Plateau through the light of day. But the stop had been added to itinerary. “Meteor Crater,” also known as Coon Butte, opened up on private land belonging to Daniel Moreau Barringer, who had joined the excursion in New Mexico. A successful businessman with a law degree, Barringer was also the author of two books on mining, and had an interest in geology. Barringer had purchased the land, along with mining rights to it, between 1903 and 1905, because he was convinced that he would profit by mining the nickel and iron he believed to be close under ground.²⁹

The purchase was an act of faith. Barringer renamed the site Meteor Crater even though there was little consensus among American geologists that the name correctly described the geological cause of the crater. Grove Karl Gilbert, a leading geologist of the late nineteenth century, had once thought that it might

²⁷ Davis (1912b). Brigham (1915), 25.

²⁸ A. G. Ogilvie (1913), “The American Transcontinental Excursion of 1912, III: Impressions of the Vegetation in the United States,” *Geographical Journal* 42: 355.

²⁹ D. M. Barringer, E. Thomson, et al. (1983). *Heroic efforts at Meteor Crater, Arizona : selected correspondence between Daniel Moreau Barringer and Elihu Thomson*. Rutherford N.J., London, Fairleigh Dickinson University Press ;Associated University Presses.

be such, but his studies led him to conclude otherwise. Barringer hoped that the Europeans, who might be expected to be less awed by Gilbert's authority and by the orthodoxy of the U. S. Geological Survey, might affirm his view of the crater as evidence of what a meteorite, falling to Earth, could do.³⁰

It was near evening when the tourists arrived at the crater. They ambled about and some looked at Barringer's evidence. Dinner, for 65 excursionists, was at Barringer's expense. The dinner conversation doubtless centered on the crater's cause. Was it an impact crater as Barringer hoped and believed that it was? Or was it the result of subterranean forces? Certainly, there was no outward sign of volcanic activity. That absence distinguished the crater from the one at Crater Lake, in Oregon, which the excursionists had visited and considered a few weeks earlier. Perhaps the better geological analog was the landscape at Yellowstone; maybe what they were seeing was the remains of a geyser or even a geyser field that had built up more steam pressure than it could release, and had blown its top. That seemed more likely.³¹

The steam hypothesis was also consistent with the theoretical mindset of uniformitarianism, which can accept catastrophes like explosive volcanic eruptions. No one had witnessed and documented the impact of a meteorite of the size required to sculpt so-called Meteor Crater. It just didn't fit the uniformitarianist mindset. On this, most of the tourists were agreed.

Barringer could not have been more displeased. Though he had planned to continue with the excursion as far as the Grand Canyon, in order to keep the dialogue going, there was no dialogue to continue. His opponents had made up their minds, based on what Barringer considered very scant evidence. The party had arrived too late in the afternoon to make much more than a cursory examination of all the evidence. After seeing the tourists back to their train at Sunshine, Barringer bid them a bitter goodbye.

And to think that he had fed them! At his own expense! Barringer complained in a letter that he was disappointed and angry.

It was dark when the train left Sunshine Station, and began the remainder of its climb up the plateau, to the consternation of Ogilvie, the biogeographer, who noted this in his article for the *Geographical Journal*, published the following year. The excursionists missed the abrupt change from the sparse desert

³⁰ Barringer, Thomson, et al. (1983).

³¹ Barringer, Thomson, et al. (1983), *New York Times*, October 6, 1912, p. 5.

scrub of the Painted Desert to the juniper and piñon pine and thence to the ponderosa pine forest as they reached Flagstaff. So, too, they were unable to see, except perhaps as silhouettes against the sky, a vast field of cinder cones on their approach. John Wesley Powell, the second director of the U. S. Geological Survey, had named one of the cinder cones “Sunset Crater” for the brightly colored cinders near its peak.³²

In due course, the train reached Williams and switched to continue on to the Grand Canyon, alternating between ponderosa forest, juniper and piñon pine, and the occasional open grassy area, or “park,” where elk often grazed. The excursionists got their first view of the canyon on the morning of the forty-second day. This was not as Davis planned it; he had expected a first view at sunset the night before. But the improvised visit to Meteor Crater changed that. The first view was a morning view.³³

For many of the excursionists, the first view of the canyon may have been through windows in the El Tovar hotel. This is unfortunate; one’s first view should be from the rim itself, away from human walls, for the canyon is not shaped on a human scale. Although the mind quickly adjusts, the initial moment of perception overwhelms. The canyon appears so vast, stretching endlessly in three directions.³⁴

After breakfast at the El Tovar, served by Harvey Girls, the excursionists divided themselves into two parties. One party made a trek down into canyon, another that remained on the rim. From either vantage point, it was manifestly clear why the canyon was connected closely with William Morris Davis’s cycle of erosion, and why it had become the standard subject of his “stump speech,” accompanied by lantern slides. The cycle of erosion was a system that made it possible to *describe* any geographical feature and *explain* its recent history at the same time. There are three components to the cycle: structure, process, and stage. Structure speaks to solid ground: what is the landscape composed of, and how is it put together? In the case

³² A. G. Ogilvie (1913).

³³ Davis (1912b).

³⁴ Though it may seem counterintuitive, the delight and awe of visiting the canyon requires advanced knowledge of its enormity. There is a set of ideas one must already have in one’s head before the canyon can have much effect. For one thing, the canyon has none of the aesthetic qualities that usually pass for scenery in the western palette. In Patricia Nelson Limerick (1985). *Desert passages : encounters with the American deserts*. Albuquerque, University of New Mexico, the author points out that the canyon, like so many others of the “scenic wonders” of the Southwest, is not a primarily a green place or well-watered with lakes, ponds, and brooks. Europeans and Americans needed to be instructed in how to find scenic beauty in the canyon. The geologists and their helpmeets – painters like Thomas Moran – did their part. But the person who did the most to educate the eastern taste was van Dyke, an eastern aesthete who published *The Desert* in 1900.

of the canyon, the structure is mostly flat-lying layers of sedimentary rock: shales, sandstones, and limestones, all remains of erosion from ancient mountain ranges deposited in a vast inland sea. Davis didn't care much about that, only that the structure was what it is. The *process* is erosion. It is almost always erosion in Davis's work, hence "cycle of erosion." In the case of the canyon, the forces of erosion were "dissecting" the underlying structure, removing rock in regular ways. *Stage* is the most interesting part of Davis's theory, because it is a developmental theory: it posits a "life" for landscapes: youth, maturity, old age, and rejuvenation. The canyon was Davis's best case.³⁵

In the evening the party regrouped for entertainment. First, there was an exhibition of Indian dancing at the Hopi House. Adjacent to the El Tovar, the Hopi House was the work of the canyon's best-known architect, Mary Coulter. Designed to resemble a Hopi pueblo, it was a romance. Following the performance, the tourists walked a few hundred feet to the Kolb brothers' studio at the head of the Bright Angel Trail.³⁶

Some of the excursionists may have arisen the next morning to watch the sunrise. As the sun rises in the east, it distributes its light judiciously through the curtains of rock in the canyon, while cold air on the plateau spills into the canyon's depths, causing a breeze at the rim. Where there are pines, the susurrant of wind through needle provides the sunrise its continuo. On this second day, the party split again. Those who had ambled along the rim went down into the canyon; those who had been down in the canyon stayed on the rim.³⁷

As Emmanuel de Margerie explored the canyon, he felt privileged to walk in the footsteps of John Wesley Powell, the first Anglo-American to forge passage through the canyon in the summer of 1869. Powell returned with a second expedition in the years 1871-1872, attending to the Indians in the region as much as to the geology. Davis had known Powell as the second director of the U. S. Geological Survey, where Powell had seen the survey through growth and retrenchment. Aspects of Powell's geology were

³⁵ So it was in 1912. Today, the canyon is understood to be considerably more complex, in terms of causes, than Davis thought it to be. Davis (1912b).

³⁶ In 1912, the brothers attempted to recreate John Wesley Powell's first passage by boat through the canyon and to capture it on moving film. I have yet to determine whether the excursionists viewed the film in any form, but it is likely that they did.

³⁷ Brigham (1915), 25.

evident in Davis's cycle of erosion. But for de Margerie, Powell and others of his generation of American geologists were heroes of the first order.³⁸

In the decades since Powell's expeditions there had been many attempts to exploit the canyon, for mining or as a route, at river level, for a railroad. By the turn of the century, however, it was beginning to be clear that the ideal use for the canyon was tourism. In due course, tourism in the American southwest was to be a foundation for the fortunes of the Santa Fe railroad. This is not without certain mild ironies. The canyon as a tourist attraction was created primarily by the construction of a rail link to the canyon. But the Santa Fe had to be coaxed to undertake the spur, and the carrot was freight: the boosters of Flagstaff and Williams promised the railroad that transportation of ores mined from the canyon would be profitable. This was not to be, but with the rail link in place, the carriage of tourists, not freight, would keep the Santa Fe profitable for decades to come. The spur was completed in 1901, and it transformed life on the South Rim, bringing not just many more tourists but also the infrastructure to support them. Each day, a train arrived with a tank full of water, the only water available on the rim. The timbers for the El Tovar were Douglas fir, transported from Oregon. For all its remoteness, the village at the south rim was cosmopolitan in its ecological footprint. And more than anyone else, it was the Fred Harvey Company, working with the Santa Fe Railroad, and the architect Mary Colter, who determined what the experience of the canyon would be for most tourists.

At 8 pm the party returned to their train and departed for an overnight run to Phoenix. The train retraced its route to Williams, then ran west for ten miles or so before being switched to the spur line to Phoenix, traveling through the night back through the ponderosa pine, into the juniper and piñon pine, and down from the Colorado Plateau, passing through much the same Paleozoic strata that they encountered in the canyon earlier in the day. After dropping 3000 feet, they crossed the Verde Valley and headed up into the central mountain range of Arizona, past Prescott (the former capital of Arizona Territory during the Civil War), past silver mines, and down into the northern reach of the Sonoran Desert. As the sun rose, the scenery was unlike anything they had heretofore seen: vistas of cholla and ocotillo, palo verde and saguaro

³⁸ Brigham (1915), 27.

cactus, mesquite and creosote, and in the harshest soils, saltbush. From time to time this natural ecoscape was broken by fields of cotton and other crops.³⁹

As the train made its descent, the citizens of Phoenix made ready to receive what the *Arizona Republican* called, doubtless with tongue in cheek, “the most distinguished body of men that ever came within her doors.” The preparations, as elsewhere along the route of the excursion, were elaborate. Wayland Wood, the owner and proprietor of the Arizona motor company, had organized a fleet of twenty Studebakers to convey the party from the rail station to their destination, the newly completed Roosevelt Dam on the Salt River. Most of the cars were privately owned; Wood contributed two cars, filled with “mechanicians,” to see that the excursionists reached their destination and returned.⁴⁰

The train arrived twenty minutes early, at 8:30 am, causing a bit of fluster.⁴¹

A town of no more than a few thousand residents, Phoenix was the center of a growing agricultural district cultivated atop the remains of an older civilization.⁴² This was the dream of the American west: to reclaim the desert, to grow crops year-round. Before there could be agriculture, settlers from the east had to do what the Spanish and the Mexicans had not accomplished, nor the Pima and Maricopa Indians – descendents of the Hohokam – before them. They had to rid the area and the mountains to the east of the Apache. Once that was done, the early settlers created irrigation channels, sometimes reclaiming the channels that were left by the Hohokam. But by the turn of the century had fewer acres in cultivation than the Hohokam had had five centuries previous. Private industry was not up to the task of making the Salt River usable; it took the federal government, and an offspring of John Wesley Powell’s scheme for watersheds, the Bureau of Reclamation, to do the job, with the creation of the Roosevelt Dam, completed the previous year.⁴³

That is what the excursionists had come to see, and the citizens of Phoenix were delighted to show it to them. They had organized a caravan of automobiles to carry the party out of Phoenix, up the Apache trail

³⁹ Brigham (1915), 26.

⁴⁰ *Arizona Republican*, October 4, 1912.

⁴¹ *Arizona Republican*, October 4, 1912.

⁴² Through 1400, the Hohokam lived here, irrigating their crops with water diverted from the Salt River (as the Spanish called it), which they diverted into an elaborate maze of canals and channels.

⁴³ David Lavender (1982), *Colorado River Country* (New York: E. P. Dutton, Inc.), p. 178.

to the dam and the lake that backed up behind it. The festivities in Phoenix were as follows: each of the townspeople wore a flower in his lapel removing it and ceremoniously presenting it to each of the foreign members of the excursion. The Indian school band played. Then the excursionists were escorted to their cars, each of which was decorated with flowers and with an American flag and the flag of one of the European countries. There was some concern about whether the provisions for automobiles would be enough: “In the geographers’ party alone there are sixty-five men, and some of them may be portly,” the Arizona Republican wrote.⁴⁴

The automobile route to the dam passed through miles of Sonoran desert landscape, and the excursionists were interested to examine and contemplate it. It was here, east of Phoenix, where Forrest Shreve, who had joined the party three days before, at Adamana, began to display his expertise. Trained as a botanist, Shreve spent his early career in the Caribbean but took a position with the Desert Botanical Laboratory in Tucson and quickly developed a great love of the desert, its vegetation, and its general ambiance.⁴⁵

After the desert landscape of the Great Basin, and in light of the experience that some in the party had of deserts in Africa and Asia, the Sonoran desert was a bit of a surprise. It was unlike other deserts, almost a jungle by comparison. Getting the maximum annual rainfall allowed under the definition of a desert – 10 inches – during two rainy seasons, spring and late summer, the Sonoran was a well-watered as a desert could be, and still be called a desert. Not that every member of the excursion accepted that designation. Here is how Alan Grant Ogilvie, a biogeographer from Oxford University, described the landscape:

The journey southward and westward to southern Arizona was full of interest from the point of view of vegetation. The European traveler is made to feel that he is surely entering the strangest part of the continent. The increasing number of Indians, the ancient architecture, native and early Spanish, and most of all the changing flora, combine to produce this effect. Part of the transition area will be described below. The deserts and semi-deserts have recently been described in the *Geographical Journal* by two leading authorities, and a few words must suffice here to describe the landscape of the intensely interesting region crossed in traveling (by motor car) from Phoenix to the Roosevelt dam.⁴⁶

⁴⁴ *Arizona Republican*, October 4, 1912.

⁴⁵ Brigham (1915), 26. On Forrest Shreve, see J. E. Bowers, and L. C. Powell (1988). *A sense of place: the life and work of Forrest Shreve*. Tucson, University of Arizona Press.

⁴⁶ A. G. Ogilvie (1913).

Ogilvie that he had experienced “disillusionment” upon detouring in the Sonoran desert – he used quotation marks are “the desert” – and described the landscape as “luxuriant.” In his first impression, the plants appeared to dense to accord with his understanding of desert ecology, but he observed that “A hasty examination ... shows that the covering is by no means closed, the soil being quite bare often for several square yards.” Ogilvie noted that the desert plants had made the various adaptations to aridity, and described several individual plant species: creosote bush, saguaro cactus, ocotillo, cholla cactus, and palo verde.⁴⁷

The giant *Cereus* [saguaro cactus] seemed to get more and more contorted and unearthly as we went on, the graceful occatilla [sic] (*Fouquieria splendens*) appeared, its long whip-like stalks radiating from a point and bearing scarlet flowers. The thick-leaved agaves and yuccas, many of them bearing the high flower stalks, completed the picture.”⁴⁸

The Russian Wladimir Dubiansky, Conservator of the Imperial Gardens in St. Petersburg, gathered samples for the czar’s collection. In a caricature, Fritz Nussbaum imagined Dubiansky presenting his collection to the czar, a train of assistants behind him, each with a state’s worth of plants. At the head of the train, the first assistant had a box of plants marked “Arizona,” and dangled a cactus by a single thorn, respectfully clamped between finger and thumb.⁴⁹

In due course, the line of Studebakers reached the Roosevelt Dam, which had been completed only the year before. The dam was constructed of stone blocks, and represented a significant accomplishment by the Bureau of Reclamation, a legacy of John Wesley Powell’s influence in the Department of the Interior.⁵⁰

After the excursionists arrived at the dam, an unseasonal rain began to fall. In due course, there was concern that the road between the dam and Phoenix would be unpassable, so the excursionists and their hosts elected to spend the night and return the next day. This was a substantial modification from the itinerary, and required further modifications in the few days remaining in the excursion.⁵¹

Albert Perry Brigham, still in Phoenix, mused in the mimeographed excursion bulletin:

DAMN NUMBER

⁴⁷ A. G. Ogilvie (1913).

⁴⁸ A. G. Ogilvie (1913), 349-350.

⁴⁹ Albert Perry Brigham papers, Colgate University Special Collections and Archives.

⁵⁰ David Lavender (1982).

⁵¹ Arizona Republican, October 5, 1912; Brigham (1915), 26.

Rise at 6:00 am, to see the blue skies of Arizona. Breakfast at 6:39.

By special arrangement with the Roosevelt Board of Trade, the following features are arranged for our entertainment:

(1) The level of the Roosevelt Reservoir will be raised 6 inches, the precipitation being secured at this time of year at great expense.

(2) The Roosevelt Road will be softened to a depth of 21.7 inches, in order to show the rapidity of drying through evaporation.

(3) Rock slides will be avalanched from the cliffs between Fish Creek and the dam, to demonstrate the attraction of gravitation.

(4) Streams will be placed in all the "washes" which were dry yesterday."

(5) A special feature will be an exhibition of 297 varieties of damns. The large Roosevelt Dam represents the class of concrete dams; but those produced by owners of automobiles and our other hosts will be abstract, concrete, empirical, descriptive, historical, regional, genetic, and blasphemous.

NOTE: Owing to the interruption of telephone service between the Dam and Phoenix, it will be necessary for Messrs Brigham, Dubiansky, Chaix, Oberhammer, Elsen, Herbette, and Goubert to eat 70 dinners, or 10 each; members are requested to pray for our Phoenix members.⁵²

Aftermath

The Transcontinental Excursion of 1912 did not yield any great science. No significant monograph traces itself to an epiphany aboard the train; no important theoretical insight took root over lunch among the participants. But the excursion did have one profound consequence that influenced world affairs: when several of the younger American participants, Davis's "lieutenants," were called to help draw new boundaries in the peace following the First World War, they had acquaintances and friends across Europe to call upon, geographers whom they had met on the excursion. Whether the boundaries accepted as part of the Treaty of Versailles were well drawn is another

⁵² Excursion bulletin, October 5, 1912, Albert Perry Brigham papers, Colgate University Special Collections and Archives.

story.

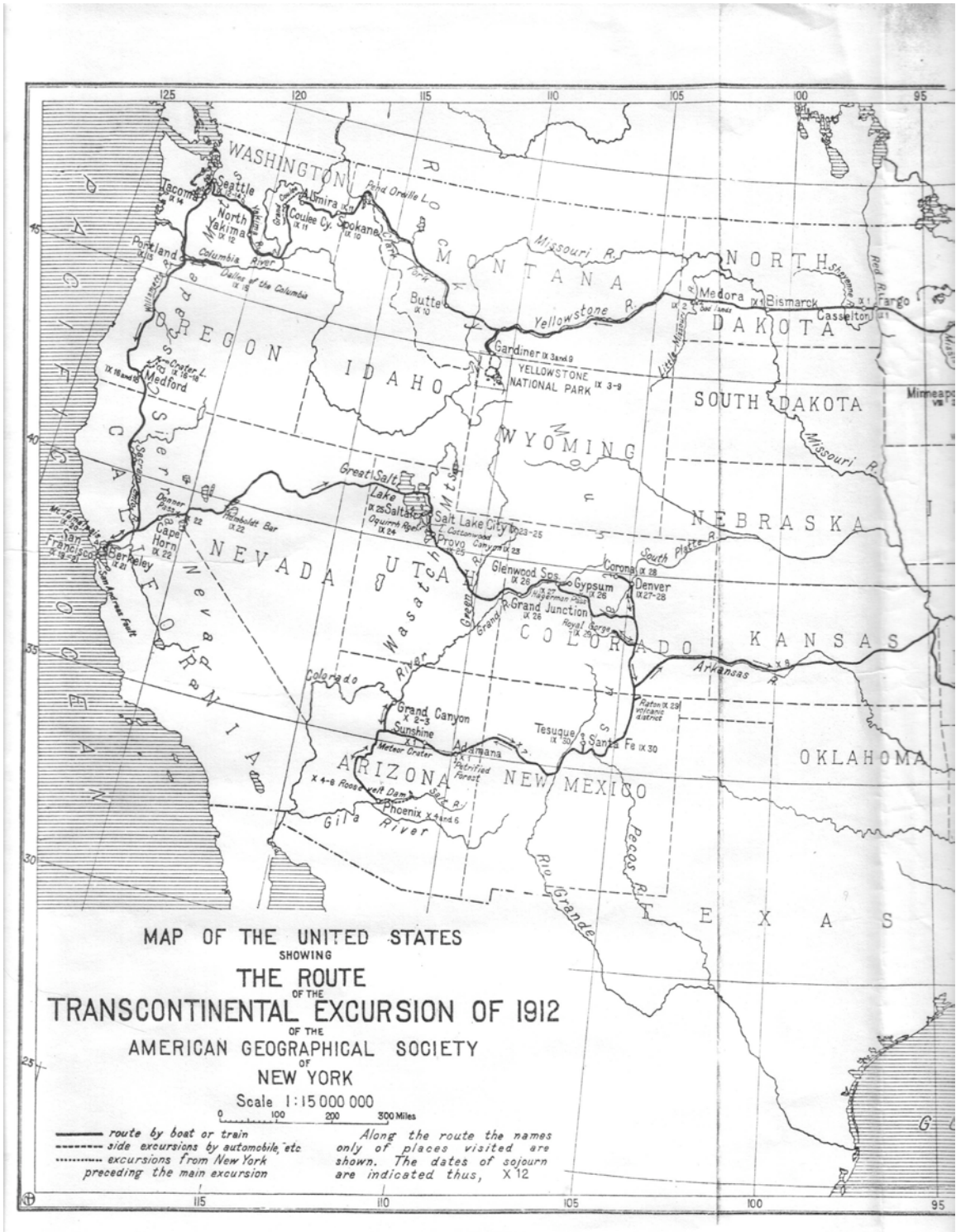


Figure 1. Map showing the route and itinerary of the Transcontinental Excursion of 1912.

