

President Theodore Roosevelt sent his final annual message to Capitol Hill (what is now the State of the Union address was not delivered in person by the president then) to warn Congress and the nation one last time of the perils of deforestation by sharing observations of contemporary China provided to him by a Department of Agriculture researcher. He even sent along visual aids to make his point. His reasons for doing so were multifold, but it is clear that Roosevelt wanted to make as big an impact as possible about this issue.

THEODORE ROOSEVELT'S CAUTIONARY TALE

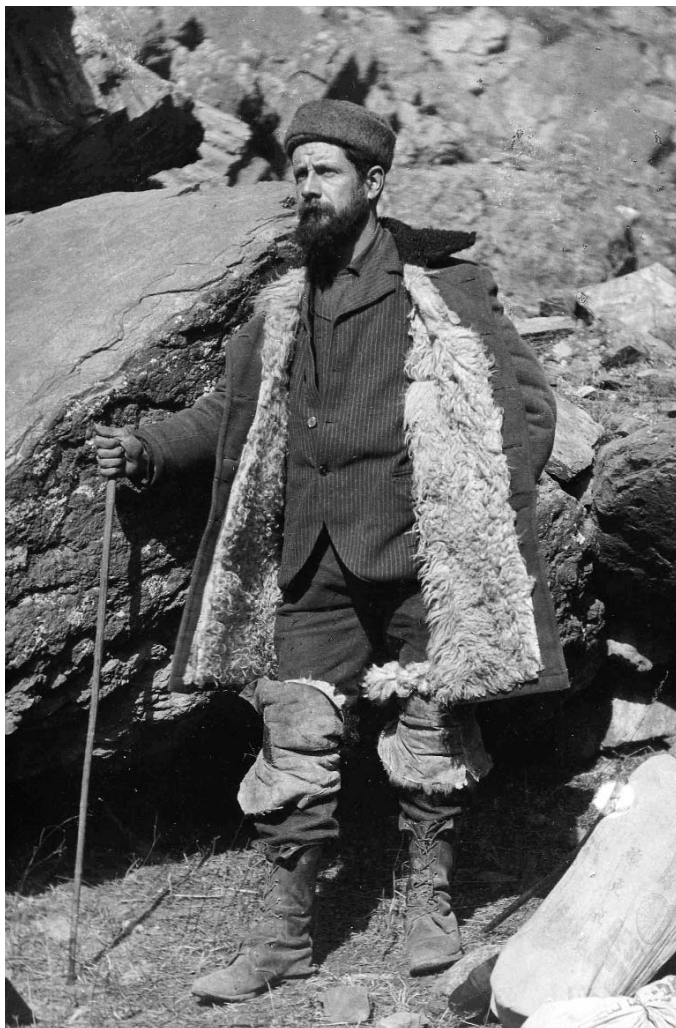
Three years after the establishment of Forest Service in 1905, President Theodore Roosevelt was still making the case for the agency's mission of watershed and forest protection. Roosevelt's far-reaching conservation measures had placed the new agency at the forefront of the conservation

movement. However, the president, the Forest Service, and the conservation movement itself had all run afoul of Congress by 1907. Many westerners still did not want to hear Roosevelt's warnings or those of his policymakers, including Forest Service chief Gifford Pinchot, that stripping the land of timber promoted soil erosion; others resented his shifting 63 million acres of public land into the national-forest system. Perhaps seeking to blunt western criticism (or to secure his legacy or both), Roosevelt took one last opportunity to make the case that no less than the future of American civilization was at stake in the debate over how to manage the country's natural resources.

In his final annual message to Congress, issued in December

1908 and excerpted below, Roosevelt provided a cautionary tale about deforestation and soil erosion in contemporary imperial China to illustrate the importance of his conservation program and the Forest Service's mission of watershed protection. Roosevelt made use of new information presented to him by Frank N. Meyer, a U.S. Department of Agriculture economic botanist (or plant explorer). Meyer had recently returned to the United States after spending three years in China gathering plant samples and seeds for the Bureau of Plant Industry. His findings so impressed his boss that he arranged for Meyer to meet with Roosevelt at the president's home in Sagamore Hill while Roosevelt was preparing his annual message. Meyer's report of the damage from deforestation

BY JAMES G. LEWIS



Plant explorer Frank N. Meyer, returning from an expedition in the high Wu Tai Shan mountains of northeastern China, February 1908. A few months after this was taken, Meyer met with President Roosevelt to share his findings about deforestation in China.

resonated with Roosevelt, who had witnessed forest destruction in New York's Adirondack Mountains and had probably read a recently reissued version of Marco Polo's accounts of traveling through China.¹ The president asked Meyer to draw up a concise illustrated report showing the disastrous effects of deforestation in China. Meyer's images apparently made such an impact that Roosevelt took the unprecedented step of attaching the photos to his message.²

George Perkins Marsh's *Man and Nature* (1864) also influenced the discussion of China's environmental problems. Marsh's examination of the destruction of Europe's forests and his argument that national governments needed to intervene to protect land, water flow, and forest cover to prevent the destruction of civilization had profoundly shaped American conservationism. Roosevelt was well versed in Marsh's perspectives, as was Chief Pinchot. What Meyer reported about China supported what Marsh had documented in Europe.

Meyer's report also supported what Bailey Willis of the U.S. Geological Survey had to say about China. In 1903–04, Willis, a renowned government geologist, spent nine months on a geological expedition in northern China in some of the same areas



President Theodore Roosevelt and Chief Forester Gifford Pinchot during the Inland Waterways Commission excursion in 1907, which was taken to promote the administration's conservation policies. Congress rejected Roosevelt's request to fund the commission's work, effectively shutting it down.

Meyer explored. In January 1905, Willis presented a paper on deforestation in China to the Society of American Foresters, the organization of professional foresters of which Pinchot was president. The organization published the paper a year later in its journal, along with a photo of terraced land stripped of any trees or shrubs by settlers.³ When Pinchot heard Meyer's report a few months after Roosevelt did, it undoubtedly struck a familiar chord, one first struck by Willis when Pinchot was occupied with launching the Forest Service in 1905. For Pinchot, who frequently ghostwrote the conservation sections of President Roosevelt's speeches and worked closely with Roosevelt to formulate his administration's conservation policies, the two reports further validated the need for conservation in America. Given Pinchot's influence with Roosevelt, that a discussion of deforestation in China made it into the president's address is of little surprise.

The annual message imparted lessons about how the Chinese had failed to protect their timber and watersheds, and the ramifications of their inaction. At the time of the address in 1908, imperial China had been reduced to a mere shell of itself. Since



Deforested and terraced mountains in the Shansi province in northern China, around 1903. This photo appeared with Bailey Willis' article. He reported that in less than two hundred years, settlers in this region had stripped bare an area once "abounding in forests."

the 1840s, the once-powerful empire began suffering one embarrassing military defeat after another and was forced to accept humiliating treaties with the leading world powers that left it carved up into European-dominated "spheres of influence." By the end of the nineteenth century, infighting had crippled the imperial government and left it unable to protect its citizenry. Severe annual flooding of the Huang Ho (or Yellow River) since 1895 and a serious drought in the north in 1899–1900 led to an enormous amount of starvation. The poor and the hungry, along with disenchanting soldiers and unemployed boatmen displaced by the Western-built railroads, were easily recruited by a xenophobic group called the I-ho ch'uan (Righteous and Harmonious Fists, or the Boxers, as they were called in the West) to join its uprising directed against foreigners. When in 1900 the Boxers attacked several foreign legations in Peking (Beijing) and Tiajin, a combined force of European and American troops invaded, successfully suppressing the Boxer Rebellion. After another round of humiliating concessions, the Chinese empire was on the verge

of collapse. The defeat of the Russians at the hands of the upstart Japanese in 1905, a war that ended because of Roosevelt's mediation, also probably reminded the president that a large land mass did not guarantee a country's continued prosperity.

In his address, the president used China's woes to drive home his request that Congress support his proposals for fully funding his Inland Waterways Commission and for the transfer of all national parks to the Forest Service; Roosevelt believed that directly involving the federal government in public-resource management provided the best long-term solution to his nation's environmental problems. Congress disagreed. It refused to fund the commission, which Roosevelt had created to circumvent the Army Corps of Engineers and its congressional supporters, effectively ending the commission's work. Already resentful of the Forest Service's increasing power, Congress rejected Roosevelt's idea to place the parks under the agency's jurisdiction, and eight years later ended the debate over which body should manage them when it established the National Park Service in 1916.

PRESIDENT'S ANNUAL ADDRESS TO CONGRESS⁴

BY THEODORE ROOSEVELT, 1908

If there is any one duty which more than another we owe it to our children and our children's children to perform at once, it is to save the forests of this country, for they constitute the first and most important element in the conservation of the natural

resources of the country. There are of course two kinds of natural resources. One is the kind which can only be used as part of a process of exhaustion; this is true of mines, natural oil and gas wells, and the like. The other, and of course ultimately by far the

most important, includes the resources which can be improved in the process of wise use; the soil, the rivers, and the forests come under this head. Any really civilized nation will so use all of these three great national assets that the nation will have their benefit in the future. Just as a farmer, after all his life making his living from his farm, will, if he is an expert farmer, leave it as an asset of increased value to his son, so we should leave our national domain to our children, increased in value and not worn out. There are small sections of our own country, in the East and the West, in the Adirondacks, the White Mountains, and the Appalachians, and in the Rocky Mountains, where we can already see for ourselves the damage in the shape of permanent injury to the soil and the river systems which comes from reckless deforestation. It matters not whether this deforestation is due to the actual reckless cutting of timber, to the fires that inevitably follow such reckless cutting of timber, or to reckless and uncontrolled grazing, especially by the great migratory bands of sheep, the unchecked wandering of which over the country means destruction to forests and disaster to the small home makers, the settlers of limited means.

Shortsighted persons, or persons blinded to the future by desire to make money in every way out of the present, sometimes speak as if no great damage would be done by the reckless destruction of our forests. It is difficult to have patience with the arguments of these persons. Thanks to our own recklessness in the use of our splendid forests, we have already crossed the verge of a timber famine in this country, and no measures that we now take can, at least for many years, undo the mischief that has already been done. But we can prevent further mischief being done; and it would be in the highest degree reprehensible to let any consideration of temporary convenience or temporary cost interfere with such action, especially as regards the National Forests which the nation can now, at this very moment, control.

All serious students of the question are aware of the great damage that has been done in the Mediterranean countries of Europe, Asia, and Africa by deforestation. The similar damage that has been done in Eastern Asia is less well known. A recent investigation into conditions in North China by Mr. Frank N. Meyer, of the Bureau of Plant Industry of the United States Department of Agriculture, has incidentally furnished in very striking fashion proof of the ruin that comes from reckless deforestation of mountains, and of the further fact that the damage once done may prove practically irreparable. So important are these investigations that I herewith attach as an appendix to my message certain photographs showing present conditions in China. They show in vivid fashion the appalling desolation, taking the shape of barren mountains and gravel and sand-covered plains, which immediately follows and depends upon the deforestation of the mountains. Not many centuries ago the country of northern China was one of the most fertile and beautiful spots in the entire world, and was heavily forested. We know this not only from the old Chinese records, but from the accounts given by the traveler, Marco Polo. He, for instance, mentions that in visiting the provinces of Shansi and Shensi he observed many plantations of mulberry trees. Now there is hardly a single mulberry tree in either of these provinces, and the culture of the silkworm has moved farther south, to regions of atmospheric moisture. As an illustration of the complete change in the rivers, we may take Polo's statement that a certain river, the Hun Ho [which flows across central China before emptying into the China

Sea], was so large and deep that merchants ascended it from the sea with heavily laden boats; today this river is simply a broad sandy bed, with shallow, rapid currents wandering hither and thither across it, absolutely unnavigable. But we do not have to depend upon written records. The dry wells, and the wells with water far below the former watermark, bear testimony to the good days of the past and the evil days of the present. Wherever the native vegetation has been allowed to remain, as, for instance, here and there around a sacred temple or imperial burying ground, there are still huge trees and tangled jungle, fragments of the glorious ancient forests. The thick, matted forest growth formerly covered the mountains to their summits. All natural factors favored this dense forest growth, and as long as it was permitted to exist the plains at the foot of the mountains were among the most fertile on the globe, and the whole country was a garden. Not the slightest effort was made, however, to prevent the unchecked cutting of the trees, or to secure reforestation. Doubtless for many centuries the tree-cutting by the inhabitants of the mountains worked but slowly in bringing about the changes that have now come to pass; doubtless for generations the inroads were scarcely noticeable. But there came a time when the forest had shrunk sufficiently to make each year's cutting a serious matter, and from that time on the destruction proceeded with appalling rapidity; for of course each year of destruction rendered the forest less able to recuperate, less able to resist next year's inroad. Mr. Meyer describes the ceaseless progress of the destruction even now, when there is so little left to destroy. Every morning men and boys go out armed with mattocks or axes, scale the steepest mountain sides, and cut down and grub out, root and branch, the small trees and shrubs still to be found. The big trees disappeared centuries ago, so that now one of these is never seen save in the neighborhood of temples, where they are artificially protected; and even here it takes all the watch and care of the tree-loving priests to prevent their destruction. Each family, each community, where there is no common care exercised in the interest of all of them to prevent deforestation, finds its profit in the immediate use of the fuel which would otherwise be used by some other family or some other community. In the total absence of regulation of the matter in the interest of the whole people, each small group is inevitably pushed into a policy of destruction which can not afford to take thought for the morrow. This is just one of those matters which it is fatal to leave to unsupervised individual control. The forest can only be protected by the State, by the Nation; and the liberty of action of individuals must be conditioned upon what the State or Nation determines to be necessary for the common safety.

The lesson of deforestation in China is a lesson which mankind should have learned many times already from what has occurred in other places. Denudation leaves naked soil; then gullying cuts down to the bare rock; and meanwhile the rock-waste buries the bottomlands. When the soil is gone, men must go; and the process does not take long.

This ruthless destruction of the forests in northern China has brought about, or has aided in bringing about desolation, just as the destruction of the forests in central Asia aid in bringing ruin to the once rich central Asian cities; just as the destruction of the forest in northern Africa helped towards the ruin of a region that was a fertile granary in Roman days. Shortsighted man, whether barbaric, semi-civilized, or what he mistakenly regards as fully civilized, when he has destroyed the forests, has rendered certain the

ultimate destruction of the land itself. In northern China the mountains are now such as are shown by the accompanying photographs, absolutely barren peaks. Not only have the forests been destroyed, but because of their destruction the soil has been washed off the naked rock. The terrible consequence is that it is impossible now to undo the damage that has been done. Many centuries would have to pass before soil would again collect, or could be made to collect, in sufficient quantity once more to support the old-time forest growth. In consequence the Mongol Desert is practically extending eastward over northern China. The climate has changed and is still changing. It has changed even within the last half century, as the work of tree destruction has been consummated. The great masses of arboreal vegetation on the mountains formerly absorbed the heat of the sun and sent up currents of cool air which brought the moisture-laden clouds lower and forced them to precipitate in rain a part of their burden of water. Now that there is no vegetation, the barren mountains, scorched by the sun, send up currents of heated air which drive away instead of attracting the rain clouds, and cause their moisture to be disseminated. In consequence, instead of the regular and plentiful rains which existed in these regions of China when the forests were still in evidence, the unfortunate inhabitants of the deforested lands now see their crops wither for lack of rainfall, while the seasons grow more and more irregular; and as the air becomes dryer certain crops refuse longer to grow at all. That everything dries out faster than formerly is shown by the fact that the level of the wells all over the land has sunk perceptibly, many of them having become totally dry. In addition to the resulting agricultural distress, the water-courses have changed. Formerly they were narrow and deep, with an abundance of clear water the year around; for the roots and humus of the forests caught the rainwater and let it escape by slow, regular seepage. They have now become broad, shallow stream beds, in which muddy water trickles in slender currents during the dry seasons, while when it rains there are freshets, and roaring muddy torrents come tearing down, bringing disaster and destruction everywhere. Moreover, these floods and freshets, which diversify the general dryness, wash away from the mountain sides, and either wash away or cover in the valleys, the rich fertile soil which it took tens of thousands of years for Nature to form; and it is lost forever, and until the forests grow again it can not be replaced. The sand and stones from the mountain sides are washed loose and come rolling down to cover the arable lands, and in consequence, throughout this part of China, many formerly rich districts are now sandy wastes, useless for human cultivation and even for pasture. The cities have been of course seriously affected, for the streams have gradually ceased to be navigable. There is testimony that even within the memory of men now living there has been a serious diminution of the rainfall of northeastern China. The level of the Sungari River in northern Manchuria has been sensibly lowered during the last fifty years, at least partly as the result of the indiscriminate rutting of the forests forming its watershed. Almost all the rivers of northern China have become uncontrollable, and very dangerous to the dwellers along their banks, as a direct result of the destruction of the forests. The journey from Peking to Jehol shows in melancholy fashion how the soil has been washed away from whole valleys, so that they have been converted into deserts.

In northern China this disastrous process has gone on so long and has proceeded so far that no complete remedy could be applied. There are certain mountains in China from which the soil

is gone so utterly that only the slow action of the ages could again restore it; although of course much could be done to prevent the still further eastward extension of the Mongolian Desert if the Chinese Government would act at once. The accompanying cuts from photographs show the inconceivable desolation of the barren mountains in which certain of these rivers rise—mountains, be it remembered, which formerly supported dense forests of larches and firs, now unable to produce any wood, and because of their condition a source of danger to the whole country. The photographs also show the same rivers after they have passed through the mountains, the beds having become broad and sandy because of the deforestation of the mountains. One of the photographs shows a caravan passing through a valley. Formerly, when the mountains were forested, it was thickly peopled by prosperous peasants. Now the floods have carried destruction all over the land and the valley is a stony desert. Another photograph shows a mountain road covered with the stones and rocks that are brought down in the rainy season from the mountains which have already been deforested by human hands. Another shows a pebbly river-bed in southern Manchuria where what was once a great stream has dried up owing to the deforestation in the mountains. Only some scrub wood is left, which will disappear within a half century. Yet another shows the effect of one of the washouts, destroying an arable mountain side, these washouts being due to the removal of all vegetation; yet in this photograph the foreground shows that reforestation is still a possibility in places.

What has thus happened in northern China, what has happened in Central Asia, in Palestine, in North Africa, in parts of the Mediterranean countries of Europe, will surely happen in our country if we do not exercise that wise forethought which should be one of the chief marks of any people calling itself civilized. Nothing should be permitted to stand in the way of the preservation of the forests, and it is criminal to permit individuals to purchase a little gain for themselves through the destruction of forests when this destruction is fatal to the well-being of the whole country in the future. □

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NOTES

1. Given his interests in natural history, world history, and the growing political importance of China, it is likely that a voracious reader like Roosevelt had read *The Travels of Marco Polo* at some point. In 1903, an unabridged third edition of Henry Yule's annotated translation, as revised by Henri Cordier, was published. If he had not read it by the time he met with Meyer, it is likely that Meyer drew his attention to the work.
2. For more on Meyer's remarkable yet tragically short career, see: Isabel Shipley Cunningham's *Frank N. Meyer, Plant Hunter in Asia* (Ames: Iowa State University Press, 1984). Although his collections include plants from alfalfa to Zoysia grass, Meyer is most noted for his contribution of 42 new varieties of soybean to American agriculture; before Meyer there were only eight varieties in production in the U.S.
3. Bailey Willis, "Deforestation in China," *Proceedings of The Society of American Foresters* 1(3)(April 1906): 141–46.
4. Theodore Roosevelt, "Eighth Annual Message," December 8, 1908; accessed at <http://www.presidency.ucsb.edu/ws/index.php?pid=29549>.