

S C R I P T
CUSTER'S 1874 EXPEDITION TO THE BLACK HILLS
--THEN AND NOW--
(SLIDE TAPE PROGRAM - FEBRUARY 1975)

Slides are in Kodak Carousel tray that will work on standard Kodak Carousel projectors.

Cassette tapes will work in standard cassette tape players.

Reel tapes will work on reel to reel tape players that have 7~ IPS speed capability.

An audible tone on the tape signals projectionist to change slides, however, projectionist should follow along on script to be sure correct slide is on screen at all times.

EQUIPMENT NEEDS

Projector - Kodak Carousel

Tape player - Cassette player (for cassette tapes) or reel to reel player (for reel tapes that have 7 1/2 IPS capability)

Projection Screen

Extension cord with two female receptacles for projector and tape player.

Extra bulb for projector.

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INTRODUCTION - Read to audience before starting slide program

It is hard to believe that as recently as 1874--just over 100 years ago-- the Black Hills had not been explored by white man. This is significant when you consider that:

In 1836, David Crockett and Jim Bowie had been killed in the Alamo

In 1849, the California Gold Rush had started.....

In the 1850's, gold was discovered in Montana

And in the 1860's, the Civil War was fought.

By 1870, exploration of the "west" could certainly be considered fairly complete. Yet in almost the exact geographic center of North America, the Black Hills still remained a mystery.

In 1874, an expedition was authorized by the U.S. Army under the leadership of General George Armstrong Custer to map the "Hills" and determine if gold existed there in paying quantities.

During this slide program you will see some of the pictures taken on that expedition plus some modern day photos taken from the same locations. These companion photograph: will help you understand environmental changes that have occurred during the past 100 years.

May we please have the projector turned on now and the room lights turned off.

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1. Title Sixteen musicians mounted on white horses, played "Gary Owen" and "The Gal I Left Behind Me" as the wagon train left Fort Abraham Lincoln, Dakota Territory, near the present site of Bismarck~ North Dakota, on July 2, 1874. Thus began the historic journey to the Black Hills, a mysterious island lying some 300 miles to the southwest.
2. Vicinity Map The Black Hills are located in western South Dakota and eastern Wyoming. They comprise an area approximately 65 miles wide by 125 miles long. The "Hills" are thought to be. about the same geologic age as the Rockies. The Indians called them "Paha Sapa" meaning "Hill Black" because of the dark appearance of the tree covered slopes when viewed from a distance
3. Local Map Custer's expedition traversed portions of what is now North Dakota, South Dakota, Montana, and Wyoming before entering the Black Hills from the Western Edge. They toured the Hills for about two weeks, camping at several places, including a five day stay near the present city of Custer, where they discovered gold; The expedition arrived back at Fort Abraham Lincoln 60 days after departure.
4. Horses, wagons, etc. The expedition was assigned a three inch mountain howitzer and three of the relatively new gatling guns, an early type machine gun. The makeup of the expedition as explained by General Terry was to prevent trouble, not make it.
5. Graphic - members of expedition One thousand men, 2,000 horses and mules and 300 head of cattle joined Custer on his march. One hundred ten wagons carried the gear. In addition to this group, the expedition included a small corps of civilian employees: a photographer, Indian scouts, frontier guides, newspaper correspondents, miners, scientists, a sutler to furnish provisions, a wagon master and a black cook, the only woman in the party. Each cavalry company had horses of the same color, a practice Custer always carried out in his regiment. Trumpeters were assigned gray horses so they could be easily spotted among the mass of men, wagons and livestock.
6. Photographer's wagon William H. Illingworth, the expedition photographer from St. Paul, used this wagon as his "traveling darkroom." It hauled his equipment and supplies and was used to process his negatives. He was considered an expert photographer, having been on previous exploratory expeditions to Montana and the Yellowstone Country.
7. Glass plates He had mastered the new "wet plate" process for making negatives on window glass. After Illingworth's death in 1898, his son sold some of the glass plate negatives to a collector. In 1920, they were purchased by the South Dakota State Historical Society for \$60.00.
8. Expedition on prairie Life on the expedition included long days and short nights. The troopers were roused out of bed each morning at 2:45 by the bugler. "Boots and Saddles," the bugle call to proceed was sounded at 5 a.m. often they didn't get to bed until 10 or 12 p.m.

The expedition had to average 15 miles per day. However, some days 30 miles were covered to make up for those spent in camp. The pay for a trooper was about \$14 per month.
9. Expedition lined up on prairie During the journey, enough wild game was shot so that none of the 300 cattle driven along had to be slaughtered for fresh meat. Antelope, deer and buffalo were taken on the prairie; deer, elk and bear in the Hills.

The practice -of shooting at running antelope while they were among the wagons had to be discontinued, however. On several occasions troopers had to dive under wagons or horses for fear of being hit by stray bullets.

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10. Old and modern photos of Inyan Kara On the western edge of the Black Hills, Inyan Kara Mountain stands as a famous landmark. The 100 year old photo is on the left -- the modern day photo on the right. The red arrows have been superimposed on each photograph to point out the same branches that are still in place after 100 years.
- Comparison of the. Forest cover on the two photographs show more trees now than 100 years ago.
11. Graveyard with Inyan Kara in background A recent photograph shows the gravesite where two of Custer's troopers were buried on the slopes of Soldier Creek. Inyan Kara is in the background.
12. Grave headstones Private John Cunningham from Massachusetts died of some natural cause. Private George Turner died of instant lead poisoning one morning from a pistol bullet. It seems he chose to cross-hobble another trooper's horse the previous night preventing the animal from sleeping or eating adequately.
- Because they were several hundred miles from their home fort, this caper took on quite serious proportions. An argument ensued between the horse's mount and Private Turner. Pistols were brought into action and Private Turner obviously came out second best. An autopsy was ordered to try and find the cause of Turner's notoriously bad behavior. However, the records do not indicate anything unusual was found that might give a clue to his actions.
13. Wagons coming down Castle Creek This picture, often called "the string of pearls" is probably the most famous picture of the expedition. The 100 year old photo on the left shows the wagons wending their way down Castle Creek. Trees have grown up in the foreground of the modern day photo on the right so we cannot see the forest configuration or relative tree density in the background.
14. Offset of #13 By moving the camera a short distance, the modern day photo on the right provides a comparison of the forest . conditions 100 years ago and now. Just as in the Inyan Kara photographs we can see there are more trees now in any given area.
- This has probably resulted from effective wildfire control during the last half century. The blackened tree stubs in the 100 year old photo though not visible in the modern day photo, are still in place. They are good historical sources which tell us that the Black Hills burned over about every 20 years prior to settlement in the early 1900's.
15. Comparison photos Castle Creek Looking down Castle Creek from a point near where the string of pearls picture was taken, notice that trees again have grown up and obstruct our view. The red arrows point to snags remaining after 100 years.
16. Offset of #15 By moving the camera we can now compare the hillsides. As before, we can see a much thicker stand of trees.
17. Wagons in Castle Creek The expedition is preparing to camp in Castle Creek.
- More trees are evident now on the slopes of the Limestone Peak in the background near the present community of Deerfield. The fence in the foreground indicated that the previously wide mountain meadow is now a pasture for cattle.
18. Hat Mountain Looking down Castle Creek, Illingworth caught another view of the Deerfield encampment showing grazing horses, tents and campfires in the lush mountain meadow. The lines in the upper right center of the original

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photographs are from a fingerprint on the glass photo. Whose are they? .. Custer's? ... Illingworth's? . . Wouldn't it be interesting to know?

In the present day photograph, Hat Mountain in the distance remains in prairie, but the lower and distant hills have become overgrown with pine. The community of Deerfield is around the far bend of the road.

19. Elk Antlers Custer's troopers found this pile of elk antlers on what is now called Reynolds prairie. Indians in the area probably used it for ceremonies or as a landmark. Many skeletons, bones and other antlers found scattered in open areas of the Hills during early settlement were indicators of abundant wildlife. Records from the Expedition reveal that over 100 head of deer were shot in one day in the Hills.
20. Tenderfoot Gulch Several areas of the granite range north of Custer and Crazy Horse Monument were included in Illingworth's photographs. A striking combination of natural and man- caused changes over the past century can be observed in these photos. Excluding fire as one of nature's management tools has probably been a major factor in allowing the pine to become much thicker.
- Construction of U.S. Highway 385~ domestic livestock grazing and killing of the willow by insect infestations undoubtedly have been major factors which have eliminated much of the shrub vegetation along the valley bottoms.
21. Permanent Camp Illingworth photographed several scenes of the permanent camp in the meadow flats east of the city of Custer. Smoke from campfires hangs over the tents and grazing horses.
- The hills in the background appear similar in both pictures. The trees have been thinned and are now producing excellent timber while also providing outstanding wildlife habitat.
22. Custer's initials Custer's initials and U.S. 74 Overlook permanent camp and Calamity Peak where gold was discovered east of Custer. There are numerous reports of Custer's initials being found at other points along the expedition route. However, none appear as authentic as these.
23. Burned over area east of Custer The nearest background hills were recently ravished by wildfire. When fire, natural or prescribed, is excluded from the pine ecosystem in the Black Hills, young trees fill in the openings. These young trees then compete for soil nutrients, sunlight and moisture with the older trees, and the grass and broad leafed shoots needed for wildlife. Soon the forest floor becomes a tinderbox of pine needles, cones and branches. When wildfire comes, it burns so hot everything is destroyed.
24. Cathedral rock This picturesque meadow seems to flow out of Cathedral Rock in the background. You will notice that relatively few trees were growing on the slopes and ridges in 1874. Some young trees can be seen in the open foreground. With today's camera set at the same spot, the meadow is not visible because the Forest has thickened and in many places encroached on previously open areas. The same pointed flat rock in each picture identifies the exact location.
25. Turkey Rock Illingworth named this formation Turkey Rock. It proved to be almost as elusive as its namesake. Modern photographers and foresters searched for it several times over a period of three years.
26. Camp picture with Fred Grant Colonel Fred Grant on the right, son of President Ulysses S. Grant, was attached to the command as an aide and made the trip. Close observation with a magnifying glass on the original negative confirms the presence of champagne and cigars on the table. Gold was discovered

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earlier in the day, justifying the celebration. The following day, "Lonesome Charlie" Reynolds, a famous frontier guide with the Expedition was dispatched to Fort Laramie, Wyoming Territory, the closest telegraph location to spread the news. Legend has it that Charlie rode at night, holed up during the day and put the shoes on his horse backwards to evade Indians.

27. Camp Picture During their stay at permanent camp, Illingworth took this photograph. Number 4 is General Custer, Number 1 is Colonel Ludlow, Chief Engineer responsible for mapping the area through which the wagon train passed as well as to chart and measure the route of travel.

Number 2 is identified as a professor. Possibly it is Professor Newton H. Winchell, a University of Minnesota Geologist, who kept an accurate and informative geological diary of the trip.

Number 3 is Bloody Knife, an Arikaree who headed the Indian scouts. He was one of Custer's favorites and accompanied the General on several expeditions. He too lost his life at the battle of the Little Big Horn two years later.

A varied array of clothing, particularly hats can be observed in this photograph. There was no standard uniform for the expedition, so the troopers wore what suited their fancy. Remnants of Civil War issue and various other military campaigns are evident.

28. Custer with Grizzly On the way out of the Hills, Custer realized a life-long ambition--to shoot a grizzly bear. Posing with Custer are Bloody Knife, Colonel Ludlow and Private Noonan, an orderly. A set of antlers on the ground between the tents gives evidence of other wildlife in the area. Expedition records indicate both grizzly and black bear were numerous.

29. Private King's Grave Another trooper, private King died as the expedition was leaving the Hills. His grave is located overlooking Boxelder Creek on the Nemo Road between Rapid City and Nemo. The cause of his death is unknown.

30. Graphic showing route and photo areas We can see the route traveled by Custer and his men through the Black Hills on this map. The dots indicate the places where Illingworth photographed the scenes that we have viewed during this program.

Although the historical value of these pictures is priceless, there are additional values for the forest ecologists today. By comparing present photos with century old ones of the same areas, we can see the changes that have occurred in forest communities

To illustrate, let's look at pictures of present day forests in the Black Hills and compare them to how the forest appeared to Custer.

31. Man standing in thick stand of pine Prevention of natural fires without prescribing some alternative treatment has allowed this stand to develop into this crowded condition. The trees totally occupy the site. They are competing with each other for sunlight, soil nutrients and water. Because of this relatively unhealthy situation, they grow slowly and are much more susceptible to insect and disease attacks than are more healthy stands.

32. Forest Floor Little or no ground vegetation can grow under a thick stand. Many wildlife species find it impossible to survive where this condition prevails over large areas. Production of wood on the trees or forage on the ground is low or nonexistent when the forest is like this.

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33. Man standing among large trees In a more open forest as shown here, we find trees producing wood at the rate of 100 board feet per acre per year and ground vegetation, or forage, being produced at the rate of 600 pounds per acre per year.

34. Man in very open stand In this very open forest configuration, more like what Custer saw 100 years ago, wood is being produced at the rate of 300 board feet per acre per year and forage amounts to 3,000 pounds per acre per year.

A healthy pine stand, as this one, should be thinned about every 15 to 25 years to assure maximum annual growth and allow ground vegetation to develop for wildlife food and cover. Such a stand also uses minimum moisture, thus enhancing water production into streams and reservoirs, and food for domestic livestock.

35. Graphic showing board feet per acre and pounds per acre In graphic form, we can see the differences in the wood and forage production of thick and managed stands. An analogy might be a gardner's experience with growing carrots. Might trees, like carrots, grow faster and bigger and be more able to ward off insects and diseases if each has ample room to grow?

36. Three cross-sections Nature is constantly recording past events which gives clues to the future. These tree cross-sections are all about the same size. The top one is about 35 years old. Why did it take the one on the left about twice as long and one on the right almost three times as long to grow the same size?

37. Close-up of cross-section Looking closer at the top cross-section we may find some clues as to what nature is telling us. Beginning at the center, when the tree was young, we can see growth slowing each year for about the first 25 years of the tree's life. This is evident by the growth rings becoming closer and closer together. At about 25 years of age we can see a great increase in growth. This coincides with a thinning project that was carried on in the area at that time. Other trees nearby were cut down, removing competition for soil nutrients, sunlight and water. The tree then took a new life and grew rapidly.

38. Cover of publication "Yellow Ore, Yellow Hair, Yellow Pine" is a publication comparing all of the presently located expedition photo sites with the present. It is available from the agricultural experiment station, South Dakota State University, Brookings, South Dakota.

39. Child and Tree Such photographic documentation over a century is valuable to natural resource managers in developing management plans for an area. A blend of history and science can produce a better understanding of forest ecology, resulting in increased forest opportunities and experiences.

40. Credits Don Progulske, Project Coordinator; Dick Sowell, Photographer; and Cam Ferweda, U.S. Forest Service

41. Blue Slide Let tape run to end (About 50 seconds)

Turn room lights on before turning projector off

Note to Projectionist

Be sure to return last slide (blue) number 41 -- Script and tape.

THANK YOU