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LIMESTONE CAVE VIDEO (SCRIPT)

VIDEO IMAGE

LOCATION: INSIDE

CAVE.....DARKNESS PREVAILS, EXCEPT FOR A SLIGHT FLECK AND GLIMMER OF LIGHT AS SEEN FROM A DISTANCE OF 40', THE LIGHT WAVERING SLIGHTLY, BACK AND FORTH ON THE CAVE WALLS AND SLOWLY GETTING MORE INTENSE AND PROMINENT

ZOOM OUT SLIGHTLY FROM THE GLIMMER OF LIGHT (WHICH ORIGINATED FROM DR. WHITE'S HEADLAMP), AS DR. WHITE ROUNDS THE CORNER IN THE CAVE AND WALKS INTO VIEW, STOPPING NEXT TO PRETTY, COLORFUL STALAGMITES/STALACTITES (DR. WHITE IS WEARING A HEADLAMP AND HARD HAT.)

SHOT OF DRIPPING WATER COMING FROM COLORFUL STALACTITE POINTS THAT HANG FROM THE CAVE'S CEILING

AUDIO

Ambient, dripping cave water inside Lincoln Caverns (brief, 3-5 seconds) amidst sound of walking feet on gravel/stones, with the steps getting louder (Dr. White's is walking closer to us as the scene progresses.)

Dr. White V/O throughout video.

His Talking Points:

- Introduces himself and mentions his research and his job focus, including his research relating to caves
- Talks about his first impression in cave (darkness/dripping water, smells, shapes, sounds of bats, etc.)
- Suggests caves are an amazing place where gorgeous formations are found.....and that Lincoln Caverns displays an uncommon beauty with an interesting "story" worth sharing.

Talking Points:

- Dr. White begins his "story" of Lincoln Caverns and caves by relating the meaning and significance of water heard and seen in cave
- (i.e., Comments relate to the first thing you

notice when entering Lincoln Caverns: the sound of dripping water and the beauty, including the stalactites/stalagmites, which are created, in part, from the percolating water we hear)

ORIGINAL FOOTAGE OF CAVE SHOWS ITS LIMESTONE WALLS AND FORMATIONS (THAT ARE MADE OF THE SAME CALCIUM CARBONATE MATERIAL AS THE STALAGMITES/STALACTITES)

Talking Points:

- Mention of what limestone is and what it's made out of (i.e., calcium carbonate)
- Mention of how the stalags/stalac's are a form of limestone, how they formed and how long it took them to form
- Comment about the the reasons for the colors (minerals) and ongoing growth of the stalagmites/stalagmites

GRAPHIC/MAP SHOWS LOCATION OF LIMESTONE CAVES THROUGHOUT PA (Dr. White owns this map and we can shoot it.)

Talking Point:

- Discussion relating to where caves are found in PA (matching with shot of map that identifies limestone caves in PA) and where limestone outcroppings are located.

SHOT IN CAVE OF DR. WHITE HOLDING AN APPLE AND A CORN ON THE COB WHILE STILL INSIDE CAVE

Talking Points:

- Dr. White explains why PA's limestone—the rock we're currently seeing in this cave—is a major reason why excellent soil was produced in many parts of PA.
- He identifies as V/O how limestone is a major reason why we enjoy abundant harvests of apples, corn and soybeans, as well as other important PA crops).

CUT TO ARCHIVAL FOOTAGE OF (in order): FARMER'S FIELDS, APPLE ORCHARDS, CORN CROPS, SOYBEANS, AND OTHER FARMERS' CROPS

ARCHIVAL ANIMATION SEQUENCE ILLUSTRATES LONG-AGO EARTH FORCES, (in sequential order proceeding from most distant in past to more recent events): PLATE TECTONICS, MOUNTAIN BUILDING (INCLUDING PA'S VARIOUS "APPALACHIAN/ALLEGHENY" PA

Talking Points:

- In chronological order and sequentially, Dr. White talks about each of the Earth forces seen in the order mentioned in Video (left column)
- He notes how the "story of how PA came to be" is a result of many Earth forces, with the first event (plate tectonic movement/breakup of supercontinent Pangaea) occurring 200-250

MOUNTAIN RANGE FORMATIONS/EROSION SEQUENCES); OCEAN MOVEMENT OVER CURRENT PA LAND; COAL FORMATION FROM PLANTS; AND GLACIAL ADVANCES AND RETREATS

million years ago.....and, all of the Earth forces combining their effects over millions of years to create PA's current geological, geomorphological and topographical appearance, in addition to the state's waterways: Lake Erie and major rivers.

-Science-related comments are V/O that correspond to animations:

1. Plate tectonics theory based on the Earth's crust divided into 9-12 major plates, with the N. American plate where we live.
2. Four major mountain building phases in Pennsylvania have occurred over millions of years.
3. Periodic climatic changes in the past have caused melting of the polar ice caps, thereby resulting in ocean basins atop Pennsylvania. In turn, limestone was created from the breakdown of animal shells/backbones accumulating on the ocean bottom, supplemented by calcium "precipitation/fallout" in super-saturated shallow seas where algae mats grew in thick mats.
4. Coal formation was due to prolific plant growth spurred by the long ago, transient tropical climate that once gripped Pennsylvania. Decay and, subsequently, compaction of dead plants over many years.
5. Among four glacial advances in the last million years, the most recent (The Wisconsinan Glacial Phase, ending around 12-15,000 years ago) helped shape Pennsylvania current watersheds, including the major river systems and Lake Erie, as well as land features such as drumlins, kames, moraines and eskers. (i.e., different kind of hills and land formations).

ORIGINAL SHOT OF DR. WHITE IN A LUSH, PA FOREST WHERE AN ABUNDANT UNDERSTORY OF FERNS (CHRISTMAS FERNS WOULD BE BEST; SECOND PRIORITY: BRACKEN FERN UNDERSTORY) IS GROWING

Talking Points:

- Comments relating to the long-ago abundant plant growth caused by 1) the good soil created from limestone and 2) the warmer, tropical climate that previously gripped PA long ago

Dr. White explains how the warm, tropical climate produced abundant plant growth in marshes, swamps and forest. He mentions a process by which plants directly related to ferns (the fern allies and the ancient large Cycads/'huge ferns'') eroded with other plants over many thousands of years, thereby creating the coal deposits of PA.

**ARCHIVAL FOOTAGE SHOWS COAL'S
ROLE IN ADVANCING PA'S
CULTURAL/INDUSTRIAL LIFE IN THE
PAST AND THROUGH TODAY**

Talking Points:

- Mention of coal's role in helping settlers develop PA and its role as a catalyst in advancing cultural and industrial life (i.e., Mention of how coal stimulated advancing cultural and industrial life.)
- Explanation and interpretation of how people used coal in diverse ways and the way life once was lived in PA, both in rural and urban areas (i.e., the pervasive effect coal had on life in all parts of PA)
- Dialogue relating to: coal mining processes (strip mines that damaged the land and more "environmental-friendly" mining that occurs today); transportation of the coal by rail to cities (such as Pittsburgh); use of coal by power plants in the past and currently, as well as industrial uses of coal (Pittsburgh steel mills thrived, for example, until the early 1980s).

**(TRANSITION OPTION:
DISSOLVE/MORPHY FROM PREVIOUS
ARCHIVAL FOOTAGE OF TRAIN
BRINGING COAL TO MARKET TO
ORIGINAL FOOTAGE OF RAILROAD
MOVING BY THE LANDSCAPE AND AFTER
IT PASSES DR. WHITE IS ON CAMERA IN
FOREGROUND WHILE BEHIND HIM WE
SEE A VISTA SCENE FROM PUBLIC
LOOKOUT AREA CALLED RIDENOUR
LOOKOUT (or, alternatively, another nearby
vista scene through which a railroad periodically
runs).**

Talking Points:

- Explanation of the landscape features we're currently seeing (hills, high ridges, valleys, Lake Raystown, eroded features)

**ORIGINAL FOOTAGE SHOWS
GEOLOGICAL LANDFORMS/FEATURES
FROM THE RIDENOUS LOOKOUT AND
ELSEWHERE
(Arrows and graphic letters alert viewers to the
land features Dr. White is discussing.)**

- Comments relate to how the glaciers created landforms such as drumlins, kames, moraines and eskers

- Dr. White identifies each of these features (and arrows/popup bubbles appear on the screen, as

(Alternatively, we may use VH-1/MTV pop-up video style bubbles to identify the land features and/or define terms.)

described in left column)

ORIGINAL FOOTAGE OF DR. WHITE, APPEARING ATOP LINCOLN CAVERNS (HE IS AGAIN WEARING HIS HEADLAMP/HARDHAT.)

Talking Points:

- He mentions the glaciers ALSO moved aside the Earth to expose features at its surface, including bedrock such as limestone (and, hence, Lincoln Caverns, which had been forming before the last glacial stage's arrival AND continues to form and change shape.)

- In fact, Dr. White explains, it's now time for him to continue studying Lincoln Caverns, and he "must excuse himself," because he will now head back into the cave to continue his investigations/research.

- It's been nice showing you Lincoln Caverns, Dr. White remarks, while summarizing how its limestone rock relates to our past and current lives.....and saying (paraphrase) "the next time you go to the store or the farmer's market, consider the soil in which your fruits and vegetables grew.....and think about how that soil formed with the help of limestone....et al."

ON-CAMERA, STANDUP, DR. WHITE IS HOLDING AN OLD-TIME BUSHEL OVERFLOWING WITH APPLES IN ONE HAND AND ANOTHER OVERFLOWING WITH CORN IN HIS OTHER HAND.....HIS FINAL REMARKS (RIGHT) ALLUDE TO THE PRODUCE HE IS HOLDING.

(Alternate conclusionary remark by Dr. White to replace above paragraph: DR. WHITE IS HOLDING AN APPLE, TAKES A GENTLE BITE FROM IT TO BRIEFLY INTERRUPT HIS ON-CAMERA SUMMARY, THEN SPEAKS FINAL SENTENCE (SEE RIGHT) TO ILLUSTRATE HIS POINT.)

(- Alternate dialogue option to replace above paragraph: It's been nice showing you Lincoln Caverns, Dr. White remarks, while summarizing how its limestone rock relates to our past and current lives.....and saying (paraphrase) "the next time you bite into an apple," (HE bites apple here) consider the soil its tree grew in and think about how that soil formed.....et al."

END WITH 15-20 SECOND SEQUENCE THAT CONTINUES FROM PREVIOUS STANDUP:

CAMERA STAYS ON DR. WHITE AND PANS SLOWLY TO FOLLOW HIM AS HE APPEARS TO WALK A FEW STEPS FROM THE SINKHOLE ATOP LINCOLN CAVERNS

Sound of Dr. White's footsteps as he walks on the pebbles/rock outside from the sinkhole to the cave's entrance

TO THE CAVE'S ENTRANCE

SHOT OF DR. WHITE ENTERING, AND SLOWLY DESCENDING THROUGH THE SMALL CAVE OPENING

DARKENED SHOT FROM 10-20' DEEP IN THE CAVE SHOWS DR. WHITE ENTERING THE PARTIALLY BLACK CAVE FROM THE OUTSIDE AND HE WALKS PAST US WITH HIS HEADLAMP ON AND ITS LIGHT WAVERING BACK AND FORTH SLIGHTLY AS HE COMES TOWARD US.

Footsteps on the pebbles/rocks increases in loudness { (as Dr. White approaches the camera, then footsteps are muted and ambient sound changes completely to the sound of trickling/dripping water (after Dr. White passes by the camera.) }

FADE TO BLACK

Trickling/dripping water

