

Taft Times

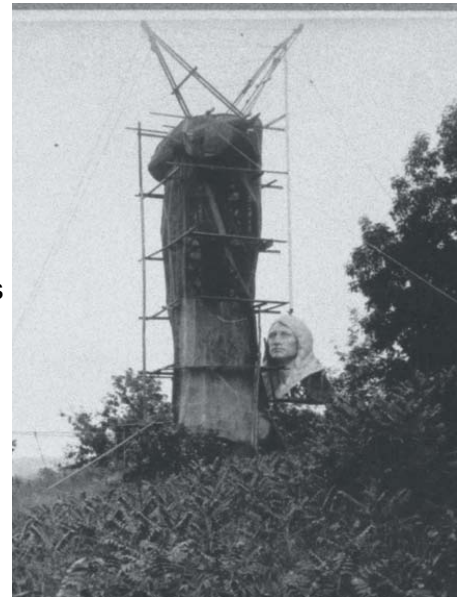
Winter 2006

Northern Illinois University Lorado Taft Field Campus

Oregon, IL

The Birth of the Blackhawk Statue

In 1898, Lorado Taft and a group of his friends established the Eagle's Nest Art Colony on the land that became the Lorado Taft Field Campus. The land belonged to Chicago attorney Wallace Heckman whose home, Gany-mede Farm, included all the land that became both Lorado Taft Field Campus and Lowden State Park. Mr. Heckman's home was located where Lowden State Park's campground is now, and over the years, Taft and his friends would walk along the bluff as they traveled from their summer homes over to Mr. Heckman's house. One day in 1905 as they paused to watch the sun set over the river valley, it occurred to Lorado Taft that Native Americans had undoubtedly stood on that very spot over the centuries before and enjoyed the sunset just as they were doing. He decided at that point to build a monument to those Native Americans and the idea for the Blackhawk statue was born.



It took Lorado Taft five years to turn his idea into reality. He began with a sketch, then a small clay model, and eventually created a six foot model. He hired an engineer, John Prasuhn, to turn the model into the concrete statue. Taft chose concrete because he had seen a concrete smoke-stack being poured at the University of Chicago with an inner and outer form leaving the center empty. He decided

he could build a statue the same way. The first step was for Taft to decide on its exact location and size. Taft put a wood frame on the back of a wagon and moved it back and forth on the bluff until he liked how it looked from the town of Oregon. He decided it should be fifty feet tall so it could be seen easily. With these decisions made, Prasuhn began calculating the amount of material and workers it would take to build. Work began in the fall of 1909 and stopped for the winter. Over that winter, a big storm blew down everything they had done.



They returned in the summer of 1910 and began construction again. Many supply problems occurred as Taft was building the statue out of his own money. The construction took too long and Taft did not begin pouring concrete until late November. The concrete froze before it could set up so they stopped pouring. Taft and Prasuhn then had the idea of heating the mold they had made. They wrapped the whole thing in steam piping and insulated it with burlap and muslin. They then borrowed two steam engines for heat from the local piano factory and started again on December 20, 1910. It was two degrees below zero.

Continued on page 2





To Hibernate or Not to Hibernate?

While at Taft, students, parents and some teachers might try to sleep in to conserve energy during the cold months. Unfortunately, there is no recorded knowledge of humans undergoing winter hibernation. In fact, not many animals truly hibernate. Hibernation is a behavioral adaptation some animals have developed to overcome extreme cold or heat.

Surviving colder temperatures means animals need to increase their metabolism to create enough energy to maintain a healthy body temperature. To have sufficient energy, animals need to find more food than any other time of the year. Ironically, winter's cold temperatures and snow-covered ground leave food sources scarce. Most animals would not be able to find enough food to increase their metabolism. Therefore some animals enter a period of inactivity. The term "true hibernation" refers to a period of dormancy where an animal will drastically lower its body temperature, slow its heartbeat and decrease how many breaths it takes per minute. All of these functions require energy to maintain. An animal, by diminishing its activity, slows the rate it uses stored energy. Lower body temperature is beneficial because a colder body uses energy slower than a warmer body.

Hibernation lasts throughout the winter but most hibernating animals do not remain inactive the entire time. Generally the dormant periods only last a couple

of days to several weeks. Some are aroused because of warmer temperatures, the need to excrete accumulated waste or the need to hydrate by drinking water. During hibernation, animals are inactive but are *not actually sleeping!* Some animals will actually become active to catch up on sleep!

Who truly hibernates? Some cold-blooded animals hibernate because they cannot regulate their body temperature. Smaller mammals will benefit more from hibernation than larger ones. Smaller animals lose body heat faster to the environment, therefore smaller animals have higher metabolism and need more energy. Bats, jumping mice, woodchucks, box turtles, black snakes, garter snakes, and toads are some of the few animals that undergo "true hibernation".

Other animals enter a period of dormancy that is often confused with hibernation. This dormancy is known as a daily torpor. Daily torpor is when an animal will become inactive for no more than a day. Their body temperatures & other physiological functions decrease but not as sharply as animals undergoing "true hibernation". Many species of deer mice, skunks and raccoons have been known to use daily torpor. Brown bears tend to sleep the winter away. People think bears hibernate, but their body temperatures and metabolism drop only slightly. They are just asleep and can wake easily. So, as the saying goes, it is always best to leave sleeping bears lie.

During hibernation, animals are inactive but are not actually sleeping!



Blackhawk Statue

Continued from page 1

Two crews of fourteen workers per crew worked ten, long, twelve hour days around the clock to complete the construction. When they were done, they ran the steam engines for three more days and then shut everything down for the winter and returned the steam engines to the piano factory with their thanks. Then, everyone went away for the winter.

On the first warm day of spring, Lorado Taft and John Prasuhn took the train out from Chicago to see what had become of their new statue. They climbed the scaffolding and started tearing at the mold over the face hoping to see the detail of the facial features. If the nose, eyes, and mouth were good, they knew the rest of the statue would be good too. Lorado Taft had taken a big risk pouring the concrete in the winter, but he was afraid of another winter storm ruining his work again. When asked later why he had pressed on, he replied, "I was broke. It was now or never."

And that is how the Blackhawk statue came to be built.





The Science of Snow

A snowflake is an individual thing. We learn this in school from the very start, but what makes the snowflake what it is? How does each one become that unique entity?

Each snowflake we see is made up of many individual snow crystals. These crystals are the foundation of the snowflakes we imagine. The formation of ice is a systematic arrangement of water and hydrogen atoms into a six fold symmetry. Snow crystals maintain this organization once they are assembled resulting in something that is both beautiful and fascinating.

Wilson Bentley, one of the first observers of snowflakes, photographed thousands of images throughout the 1800s. These images were published in 1931 in the book *Snow Crystals*. After Bentley's research, many classification charts were developed based on the differing types of snowflakes. The latest classification system established by the International Commission on Snow and Ice in 1951, details seven types of solid precipitation as well as three types of frozen precipitation. According to this chart, solid precipitation is crystals that form in the vapor of a cloud and travel to the earth's surface in that state. Frozen precipitation is ice pellets in the form of sleet and hail that reach the earth. The classification system names the following types of snow crystals; plate crystals, needles, columns, stellar crystals, spatial dendrites, capped columns, or irregular forms.



Source: Marcia Politovich, National Center for Atmospheric Research

The type of snowflakes generated depends upon variations in the temperature and humidity in the atmosphere. Plate crystals are formed in clouds with temperatures between 32-25 degrees Fahrenheit and average humidity levels. These flakes are a solid hexagonal shape and are very thin. Needle crystals are created under high humidity levels and temperatures ranging 25-21 degrees Fahrenheit. Though these crystals are fairly common, they break very easily. Column crystals are the most common of all snowflakes. These hollow hexagonal flakes require temperatures between 21-14 degrees Fahrenheit and low humidity levels to form. Stellar dendrites, which resemble the branches of a tree, are the most recognizable of all snowflakes. These crystals are created at temperatures from 10-3 degrees Fahrenheit and high humidity levels. On a stellar flake the symmetry is created due to the similar growing conditions of the crystals. Spatial dendrites are formed under similar conditions as the stellar crystals, but they have a three dimensional orientation. It is possible that a single spatial dendrite is several crystals lumped together. The capped column crystals form under the combined conditions of a column crystal and the plate crystals. Irregular forms are the last crystal category. These crystals take a beating on the way to the earth's surface. High winds or warm snowfalls may damage the flakes until they are unrecognizable. These are the snowflakes that commonly create our winter snowfalls.

Regardless of which snowflake falls, they all remain unique and rare. During the next snowfall, take a magnifying glass and go snowflake watching. Use this observation time as an inspiration to create your very own six-sided snowflake.

IDNR Grants for Field Trips

The Illinois Department of Natural Resources, through the ENTICE (Environment and Nature Training Institute for Conservation Education) program is offering grants to all Illinois teachers for natural resources related field trips. This would include Lorado Taft! We have already had several schools successfully apply and receive funds for their visit to Taft.

The grant has a limit of \$500 per teacher. But multiple teachers from within the same district may collaborate on a field trip. There are two application periods for the grant, one ending February 15 the other ending October 15.

Requirements include:

- Potential field trip site must be in Illinois.
- A list of expenditures to be covered by the grant must be included.
- Grants are available only to Illinois teachers and should be for the purpose of studying some aspect of Illinois biodiversity.
- Transportation, substitute teachers, and guest speakers among other costs are eligible to be covered.

Funding is administered by the Illinois Conservation Foundation. Additional information can be obtained from IDNR at

(217) 524-4126

Or

teachkids@dnrmail.state.il.us

Your Taft coordinator can also assist you with information about the grant. GOOD LUCK!





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2005-2006 Lorado Taft Environmental Education Staff Mission Statement

The 2005-2006 Lorado Taft Environmental Education Staff is committed to providing visitors opportunities for growth through exploration beyond the classroom.

By using Taft campus as a model for the natural world, we are committed to creating a positive learning community. We aim to provide fun and safe experiences that foster stewardship and instill respect and awareness of self and the communities of which we are all a part.

Fall 2005 Zero Food Waste Hall Of Fame

🏆 Gates Elementary

Everyone who comes to Lorado Taft works hard to reduce their food waste. This semester, we would, once again, like to acknowledge those schools who have reached the promised land of zero ort. Unfortunately, we do not have the space to recognize the many schools who make it into the "1 Pound Club" by achieving 1 pound of ort or less. Congratulations and keep working towards zero ort!

