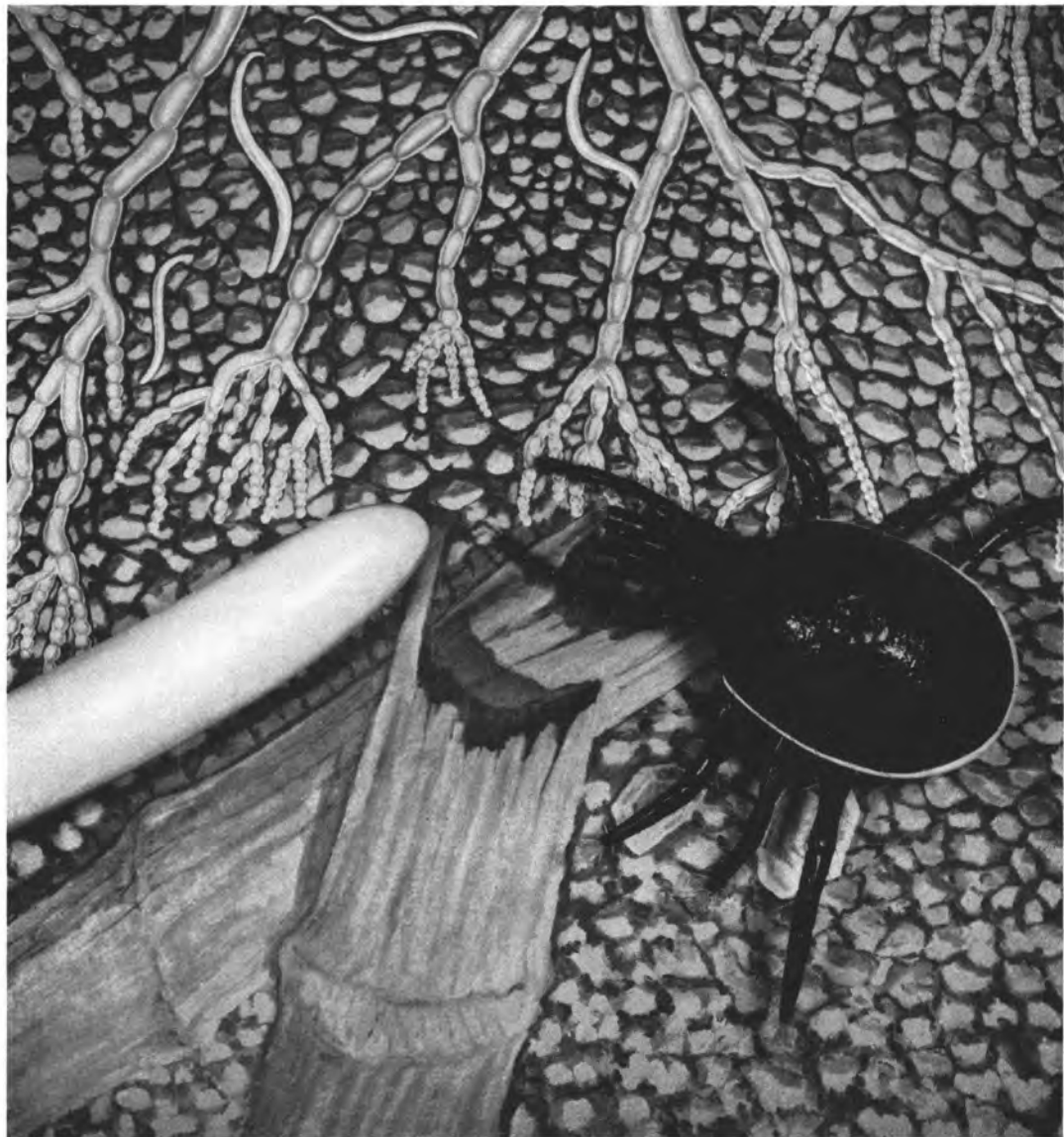


# **museum service**

BULLETIN OF THE ROCHESTER MUSEUM OF ARTS AND SCIENCES

VOL. 38 NOS. 3-4

March-April 1965



# MUSEUM SERVICE

*Bulletin of the Rochester Museum of Arts and Sciences*

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Rochester Museum of Arts and Sciences—*Dedicated to a Better Understanding of the Laws of Nature and the Cultural Achievements of Mankind*—is administered by the Municipal Museum Commission for the City of Rochester.

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*Chartered by the University of the State of New York*

Rochester Museum Association is a sponsoring group of leading citizens who feel that a museum of science, nature and history has a distinct place in our community and is worthy of their moral and financial support. It is entitled to hold property and to receive and disburse funds.

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### Cover Picture—

A greatly enlarged soil mite about to eat a housefly egg. Surrounding them both is a subterranean forest of mold strands. This incomplete diorama, a striking new exhibit in the Hall of Nature made by Mr. David T. Crothers, senior exhibits designer, is the first part of a composite picture of life in farm soil.

—*Photograph by William G. Frank*

## *The museum opens the green world*

Late winter and early spring days bring swift and sometimes emotional reactions from city dwellers when they think of the outdoor world. The cold and prolonged winters of our locality combined with the complexities and drab surroundings of urban living lead us to reflect on man's relationship to wild nature and the benefits we can derive from closer acquaintanceship with the natural world.

Museum visitors fortunately are reminded of the woods and fields all the year round by viewing and studying the impressive and ever-growing number of natural history exhibits or habitat groups such as those of the Seasons shown in our Bausch Floral diorama, the Spring Warblers, the Manitou Beach scene, the Field Bird group and others.

But parents, teachers, camp and scout leaders are particularly aware that it is becoming more and more important to stimulate interest in and, where possible, to teach the principles of plant and animal relationships to children. The Rochester Museum of Arts and Sciences is in a unique position to provide such a program because of its resources in the form of collections, exhibits and the specialized skill of its staff, and the experts in the community it can secure as instructors.

Over the years the Museum has conducted a variety of courses in the field of nature education. Among the most

successful of these has been the Nature Leaders Training Institute which will be given starting May 3 at the Museum for the eighteenth consecutive year. During that time over four hundred adults have attended the spring courses in the form of indoor laboratory and field sessions each spring. We know that this unique type of educational opportunity is needed in this area.

Two years ago in cooperation with the University of Rochester the Museum offered an eight-week daytime course directed especially to mothers and titled, Nature and Your Child. Sixty parents of young children enrolled in these sessions learned much about the specialized fields of natural science.

Museum staff members who work daily with children are well aware that one of the greatest opportunities for interpretation of the vast fields of scientific discovery lies with knowledgeable teachers and informed parents who can not only explain facts but stimulate and arouse interest and enthusiasm. Familiarity with the resources of the Museum is needed along with knowledge and understanding of nature in the parks and woods and fields of our surrounding region. Through the doors of the Museum, the green world of nature can be thrown open to countless thousands of the coming generation.

W. STEPHEN THOMAS, *Director*

# Our teeming soil

By EDWARD T. BOARDMAN,  
Assistant Director and Curator of  
Biology

Few people realize it, but every clod of arable soil is a seething world of life. Even the most observant people see only emerging June beetles or their larvae among the roots, or see cutworms or wireworm larvae or earthworms. These are a half inch long or longer and easy to find, especially so to a gardener. Most soil animals are so tiny that the 1mm. (1/25 inch) long mite in this exhibit seems a giant by comparison. Yet, so numerous are soil creatures that if all of them could be separated from the soil of one farm and weighed, they would outweigh all of the cattle, horses, pigs and chickens combined on that same farm.

The soil mite of our Museum exhibit is one of the animals with interlocking lives. Housefly maggots feed upon manure lying on the ground, helping to digest and liquify it. This tiny mite with the long name of *Macrocheles muscaedomesticae* eats fly eggs and larvae at the rate of three or more a day. In fact, mites may destroy 70 to 90 percent of eggs and maggots—which is a better record than have sprays. Ultimately the mites themselves, their eggs and larvae may be eaten by other mites, by insects or by nematode worms. Certain nema-

todes and protozoa and bacteria consume even the droppings of mites and insects. Other protozoa and nematodes enter the bodies of mites as well as of larger animals and live within them as parasites. Should a fly larva live long enough to pupate and to eventually emerge and stretch its wings as an adult, mites will attach themselves to its legs and get a free ride to another and fresher manure pile. A fly is very lucky if it does not carry parasitic protozoa and nematodes in its body too.

This teeming microscopic world is responsible for soil fertility because it first breaks apart and then digests large and small pieces of higher plants and animals and then gradually blends them into a watery, nutritious soup. Things like wood and the wiry stems of plants, pieces of chitin, muscle, cartilage, bone and hair of animals are first broken into small pieces by such things as black ants, termites, and by carrion-fly and carrion beetle larvae, and by dermestid beetle larvae. Soon a damp, moisture-holding carpet is formed at the soil surface. Much of this is then pulled underground by the work of earthworms and other soil inhabiting animals. All of this surface humus contains useful chemicals stored in insoluble form. However, masses of the tiniest of soil organisms work together as a digestive system which produces from broken down debris, from particles of inorganic soil, from gases in the air and from water, simple chemical solutions which plants can absorb and use directly. These liquid fertilizers are produced throughout mild weather so that plant growth is continuous.

Only as a result of a high population of soil plants and animals can great areas of farmland retain its ideal surface of moisture-holding particles which not only are of ideal consistency for plant root growth, but are continuously bathed

*Continued on page 25*

# *The coyote in New York state*

By JAMES D. GREINER, Associate Curator of Biology



Captive New York State Coyote.

—Photo courtesy N. Y. State Conservation Dept.

As evidenced by the old movie westerns seen on television, coyotes have been as familiar upon the American scene as campfires and cowboy ballads. This sharp-snouted desert resident is known to everyone for his characteristic howling at the full moon. Walt Disney, in his incomparable manner, has brought the coyote and his life story to the public in his *Living Desert* and other film productions. As a result of his western repu-

of the northeast, New York State to be tation, few people realize that the coyote exact, is even around. I have long felt that there is a pressing need for material dealing with the coyote in the Northeastern United States, for he is certainly a true resident of New York State and our neighboring states as well.

## WOLF VS. COYOTE

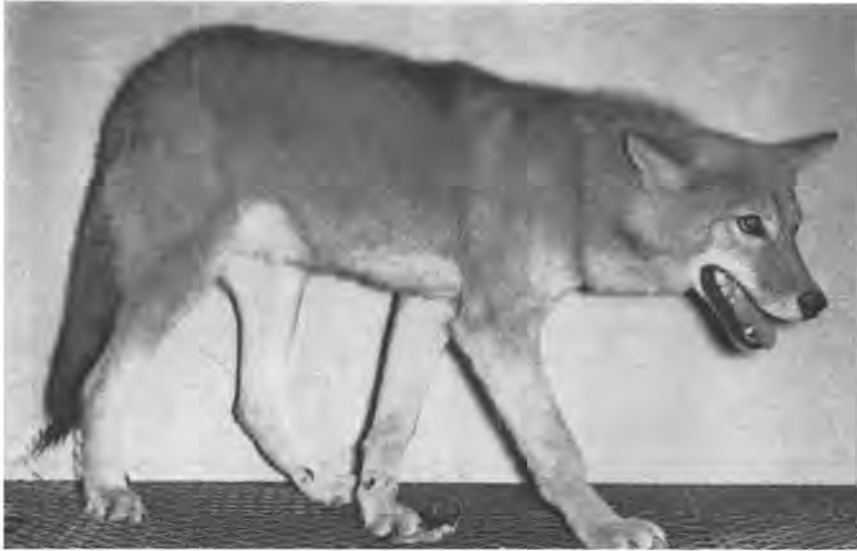
The true coyote, *Canis latrans*, is as

much a distinct species as is the true wolf, *Canis lupus*. Little known cross-breeding between the two takes place in the wilds, and as a result it becomes obvious that the name "brush wolf" is a misnomer in the case of our friend the coyote. True wolves are rare and perhaps even nonexistent in New York State, though a few may cross the ice of the St. Lawrence River. For most persons who have seen a timber wolf, there is usually little doubt left that the coyote is an entirely different critter. Though closely related, just as a German shepherd dog is closely related to a collie, the coyote is a much smaller animal and is grossly different in body shape as well. The average body weight for the true timber wolf is usually listed at 75 to 100 pounds, with many animals being considerably larger. Records for weight in the neighborhood of 150 pounds are not uncommon in Canada and Alaska. When one considers that the average weight for the northern whitetail deer is about 115 pounds, the wolf is a large animal indeed. In the case of the coyote, body weights of 23 to 50 pounds represent a true range, and few animals have been recorded at the maximum figure. In coloration there is little difference between the two animals, both being gray with black guard hairs overlying the bulk of the pelt, with the exception of the belly and inner leg surfaces, which are creamy white. In wolves, a fairly wide divergence of coloration has been recorded, with specimens bearing pelts ranging from pure black to pure white. The coyote seems to show less in the way of color variations than does his northern counterpart. In gross outline or body conformation, the wolf shows a much heavier physique with large feet and an overdeveloped under jaw being the main points of interest, while the coyote walks upon feet which are almost abnormally small and has a fine, pointed muzzle. The ears of the wolf are rather nonde-

script and do not stand nearly as erect as do those of the coyote.

#### COYOTES AND DEER HERDS

Coyotes have been recorded in New York State since 1925, the earliest specimens being taken in the Town of Belmont, in Franklin County. Other reliable reports during the mid 1930's came from the Luther Preserve, south of Saratoga and at Vichers Ferry on the Mohawk River. Coyotes were never released in this state, but apparently moved into this part of the country along the Canadian border, where populations of them have been heavy for many years. Northern coyotes, such as those found in this state, are considerably heavier than their western counterparts, the latter averaging 20 to 35 pounds in weight. That coyotes have become a numerous species, especially in the Adirondacks, has been born out by Conservation Department records and the tallies of men who trap the animal. During recent years, Conservation Department studies have revealed an almost amazing relationship between numbers of coyotes and numbers of whitetail deer in central Adirondack counties. Records show that accompanying an increased deer (buck) kill in this part of the state (4600 in 1942 to a record 8000 in 1954), the coyote increased his range from a mere 700 square miles in 1942 to 1600 square miles in 1954. It is probably evident, even to the layman, that these statistics would seem to indicate that somehow, there are definite benefits which are mutually shared by both deer and coyotes. It is conceded by professional game biologists that coyotes will kill deer, though the animals have a much easier time capturing wounded, starving or sick deer. Upon reviewing these facts and figures, I feel that a logical conclusion would be that the predations of coyotes would seem to upgrade the deer, increasing their population levels. At the time, however, conservation officials con-



New York State Coydog—Cross-bred coyote and domestic dog.

—Photo courtesy N. Y. State Conservation Dept.

sider increase in pressure upon the coyote by trapper instruction and predator control the answers to the opinions of local groups in the central Adirondacks that coyotes were "reducing" the deer herd to dangerously low levels.

#### LIFE CYCLE OF THE COYOTE

The life history of the coyote is well documented, but not well known. As is true of the bobcat in New York State, most of the facts dealing with the coyote's life story are cloaked in mystery. Coyotes, again like the bobcat, are shy almost to a fault, and since they are seldom seen, they are assumed to be rare by the average hunter or vacationist and his family. The shy nature of the coyote makes him a rather difficult animal to trap, and special efforts on the part of the trapper must be taken. Keen of nose, he can ferret out even the most infinitesimal of the scents left by man, and although his sense of sight is well developed, he relies chiefly upon his ears and

nose for safety in his native haunts. Coyotes breed during the months of January and February, and due to the prevalence of "wild" dogs (farm and house dogs which have become habitual or permanent strays) in many areas, considerable crossbreeding takes place. The puppies born of these matings are of various types and are called coydogs. Though coydogs are of semi-wild parentage, they will grow to adulthood and assume the same way of life that the coyote follows. Actually, there is little difference between true coyotes and these domestic animals which have reverted to the wild form. In many areas where winter concentrations of deer are present, stray farm dogs create even more of a problem than do coyotes which may be present, and often the coyote is blamed for the deeds of these animals.

Young coyote pups are born into the world usually beneath a brush pile or upturned tree, after a gestation period of about nine weeks—the same length of

time being considered normal for the domestic dog. The litter usually consists of seven to nine puppies, all of which are blind and completely helpless at birth. Life in the den is exactly parallel to the early life of young domestic dogs, with the exception that all food is supplied by the parents, usually the female. Coyotes, again like the domestic dog, are chiefly carnivorous, though the adults will eat considerable vegetable material. As evidence of the latter I submit that coyotes will typically eat the stomach or paunch contents of herbivorous prey animals before they make any attempt to eat the flesh. Coyotes have also been recorded raiding tomato patches during the early fall, apparently craving the taste of frost-bitten tomatoes which have been left on the vines. Coyotes, like their cousin the fox, are known consumers of a wide variety of foods, including insects, fish, etc.

After they are weaned, young coyotes frequent the den site at less regular intervals and soon stay away altogether. The youngsters are apparently equipped with a high degree of hunting instinct at birth and probably imitate the female during their early quests for food. They are, as a result of the lack of natural enemies, a tenacious species and there is an excellent chance for survival of all the pups in a given litter. As a result, coyotes, like the common crow, can and do replenish and build their numbers at an optimum rate.

### WILDLIFE BALANCE

The coyote, ecologically speaking, occupies a major niche, for he is one of the few remaining carnivorous predators occurring in the State of New York. The niche in which the coyote exists is occupied also by the fox and the bobcat. There are many reasons which express the need for these carnivorous predators, one of the more common being the control they exert upon the numbers of animals such as the varying hare or snow-

shoe rabbit. Many states have discovered, to their dismay, that upon the severe reduction of the populations of these carnivorous predators, the increase in numbers of such small prey animals such as the above named, varying hare, small rodents and others, reached such drastic proportions that a dangerously unbalanced situation was in evidence. The chosen method of controlling and upgrading the population of moose in Isle Royale National Park was the introduction of timber wolves on the island. With time an equitable balance was established, and today, the wolves live in natural harmony with the moose. Many times the effects of the predator population upon other animals is not obvious—in fact, it seldom is. I think that it is for this latter reason that the phrase "natural balance" has become rather trite during these hunting season conscience times. Few states which boast a population of coyotes have a regular hunting season by which the harvest of these animals is regulated. Most states still consider the animal a noxious species, and it is legal to kill them at any time of the year. The coyote is a member of the bounty list in most states and is hunted and trapped upon this basis. Even in the face of all of the above mentioned factors, the coyote seems to laugh at those persons who are apparently bent upon his eventual extinction. Again, like the crow, he seems to adapt to situations as they occur. During recent years, it has become obvious to conservation agencies in many states that the bounty habit is a poor one. It does not accomplish what it originally set out to do, for the coyote as well as other predator numbers seem to remain static, making the payment of bounties an expensive indulgence.

### HUNTING THE ANIMAL

I have had the opportunity to observe coyotes in northern Michigan, and have



heard no wilder sound than the whining and yapping of a small pack of coyotes in pursuit of a wounded deer in the early morning and night-time hours. There are, in my humble estimation, few examples which are as clear cut—nature in its most functional form. Deer which are wounded will, almost without exception, die a useless death far from the hunter's gun, and though death at the hands of the coyote is not pleasant to envision, these wounded deer are used by the latter as one source of livelihood. Thus, deer which meet their demise in this manner are not truly wasted, for they help support a species of animal which is as truly native as the deer himself. Even where the waste of deer occurs through starvation, the few which are removed by coyotes meet, I am sure, a much more humane end than the mouth-rotting, marrow-thinning death that a lack of browse metes out. It is a known fact among game men that even where coyotes are abundant, many deer still waste away in the form of mummified starvation victims, to be found in the early spring by those few who look for them.

In no small way, the coyote defines a very valuable game animal in many areas. In the west, coyotes are chased by greyhounds, and I am told by those who have participated that the sport is physically demanding of men and dogs as well as one which requires a considerable amount of skill. In a northeastern coyote range, the animal is also pursued with dogs, but in a much different manner. Here, hounds such as black and tans, triggs, Walkers, etc. are used for their tracking abilities, and in the final analysis, the coyote is shot by the hunter. The latter practice differs from the western style of hunting coyotes, for the greyhound with his great speed is fully capable of overtaking the quarry and dispatching it, the gun being considered an unsporting aspect of the hunt. Though

many persons who object to the practice of hunting methods used in pursuing the coyote, it is a recognized fact that the utilization of the animal through hunting is, in many areas, a means by which his numbers are controlled. Coyotes, especially in western regions, often become confirmed killers of sheep and poultry, and to the rancher who has experienced the depredations that can be perpetrated by coyotes, few tears are shed when the hunter offers his dogs and efforts. In some instances the coyote has become a real problem and his inroads upon the interests of man can only be checked by the employment of state trappers and/or government hunters. Problems of this magnitude occur in western states, almost without exception, for populations of coyotes in the northeast seldom reach the proportions which gives rise to serious pest situations.

#### FAMILIAR CALL

The coyote has always enjoyed the reputation of the musician, his vocalizing being as much a part of the western scene as are badmen and the sheriffs' posse, and his wails and howls have become an integral part of the western night. Coyotes of the northeast are also vocal, but in my travels, I have never known them to produce the complex music which their desert cousins are capable of. The latter may be due to the fact that the habits of the animal in this region are indeed different, or perhaps it is because the coyote exists here in much smaller numbers. Misery loves company may be an applicable phrase when one considers the wails of the coyote, for like the wolf, the voice of the coyote seems to embody all of life's sorrows. The wolf has been described by poets as the animal who "howls out his woes to the homeless snows" and, like the wolf, the coyote's voice seems to be completely devoid of humor. The explanation as to why the wild canines howl has escaped natural-



Timber Wolf "Howling out his woes to the Homeless Snows"—Service  
—Photo courtesy Province of Ontario—Dept. of Lands and Forests.

ists and zoologists since time began. The theory that wolves howl to communicate with each other has been popular as a partial explanation, and yet I have been unable to find any conclusive documented proof of the latter. Even domestic dogs howl, a fact that has become well established in the minds of people who have thoughtless dog-owning neighbors. With regard to the coyote, it is thought by some that the harmonious serenade is triggered by one or two individuals who just feel like howling, and the rest follow suit because the sounds are perhaps annoying to the ear.

Coyotes, again like the wolf and many other wild species, are territorial, meaning that they preempt a certain area in their range and the intrusion of other coyotes is not tolerated. The boundaries of the territory are patrolled and marked by regular applications of urine to rocks, trees, etc. which then serve as boundary markers to be observed by others of the kind. The scent post idea has become an accepted means by which coyotes are trapped, the method calling for the placement of coyote scent upon a known boundary post and a trap or traps be-

neath it.

## CONCLUSION

To realize that coyotes not only exist but thrive in many areas within our state and neighboring states as well will hopefully make people aware that residents of this portion of the country are gifted with a diversity of wild species. It is the belief of this writer that it should be an important aspect of modern conservation practice to maintain these species to the best of our abilities. Coyotes, like other so-called "pest" animals play an important, though subtle, role in the normalcy of natural populations, and to more fully understand the role he plays is to make the subtle more obvious. Certain hunter-naturalists such as New York's own Fred Streever Houndsman, of Adirondack fame, have demonstrated that hunting animals, such as the coyote and the conservation of same, are mutually dependent entities. During these days of dissipated game populations, we may find that the future holds more noble stores for the lowly coyote than even our most sophisticated thinkers can envision.

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## *Our teeming soil*

*Continued from page 19*

in solutions of plant food. Drought or the presence of chemicals injurious to these organisms is likely to make the soil infertile. In recent years when men have applied the wrong chemical or the wrong combination of chemicals to the soil, or where the mineral content of irrigation water has become too high, the population of microscopic animals and plants of the soil has dropped greatly,

and farm crop plants and even trees and shrubs do poorly.

Man is very dependent upon soil organisms for clearing the ground surface of debris and for mixing this with particles of subsoil to form a nutritious sponge which will in turn support life in higher plants and animals that live above ground. We must learn more about this vital world of humus.

# The Navaho Exhibit

By DANIEL M. BARBER, Junior Anthropologist

Unlike other North American culture areas the Southwest offers three major sub-culture economies: hunting and gathering as is practiced by such tribes as the Havasupai, farming as is practiced by the Pueblos and herding as practiced by the Navahos.

To supplement our Pueblo exhibit and in order to give a fuller picture of the Southwestern Culture Area, a Navaho exhibit has been installed at the rear of the Hall of Man to the right of the library entrance.

The Navaho, since Spanish times, have been shepherds. Always readily acceptable to new ideas, they have become so acculturated with other groups that it is difficult to isolate purely Navaho traits or even to say what *Navaho* really means. Many cultural traits have been borrowed from their Pueblo neighbors, others from the Plains Indians, while still others from the early Spaniards and Anglo-Americans. The Navaho today carry on two major crafts: rug weaving and silversmithing. Neither are indigenous occupations but are, again borrowed.

Our exhibit not only attempts to show the Navaho as a separate, distinctive group in the Southwest, but also as one which is highly acculturated.

The theme is introduced by means of a large, single brightly painted *yei* figure which is a reproduction and enlargement of Harrison Begay's, "Night Clown Dancer."\* *Yei* figures in Navaho belief are the *Earth People* who crawled up from the center of the earth through a reed and who eventually created the Navaho people. The bright colors and simple lines are characteristic of modern Navaho art. They also reflect the adaptation of the Navaho to his bright and

colorful surroundings. The mask and silver conch belt represent another type of adaptation—an adaptation to another culture. The mask is Pueblo in style while the silver in the belt is, of course, a Spanish introduction. A map and photograph illustrate the location of the Navaho reservation, its ruggedness, color and awesomeness.

The log Hogan shows the shape characteristic of modern Navaho dwellings. However, the earlier ones were conical shaped earth houses probably derived from the Plains Indian earth lodges. Women's clothing style is reminiscent of both the Spanish and mid-19th century Anglo-American styles. Actual fragments of bright velvets and satins of the type used by both women and men illustrate again the desire to harmonize with nature and with new ideas introduced by other cultural groups.

Silverwork takes on many forms; the making of necklaces, bracelets, earrings, belts, etc. The label in reference to the necklace emphasizes the blossom motif as being pomegranate rather than squash, with which it is so often confused. Rug weaving, probably thought to be the most characteristic of any Navaho craft was originally learned from the Pueblos. When the Spanish introduced sheep, wool was substituted for native cotton. The rug, therefore, should suggest to the viewer that the Navaho is now a shepherd and that he has, again, borrowed foreign concepts and made them his own. Sand-painting is another trait borrowed directly from the Pueblos. The tomahawk with its beaded handle represents a borrowing from the Plains Indians to the east. Neither the form nor the beadwork itself are characteristic of Southwestern Culture.



Adaptation to nature and other cultures is emphasized in the Navaho exhibit.

—Photograph by William G. Frank

\*Reproduction of "Night Clown Dancer" by Jon Alexander, senior exhibits designer.

# *University of New Mexico 1964 Summer Field Session in Archaeology and Anthropology*

By Robert E. and Mildred R. Stauffer

Dr. Robert E. Stauffer is head of emulsion research division, of Eastman Kodak Company. He is a Fellow of Rochester Museum and a Trustee of the Rochester Museum Association. Both Dr. Stauffer and Mrs. Stauffer are members of the Rochester Academy of Science and participate actively in the Botany Section.

The 1964 Field Session in Anthropology of the University of New Mexico continued, for the second season, the excavation of the large Pueblo-IV site on the dry playa at Sapawe which overlooks the arroyo of the El Rito River. The site is about five miles from the Spanish-American village of El Rito in northwestern New Mexico.

The six-week field session of the University of New Mexico has been held for several years as part of the summer term program of the University, and offers United States and foreign students at advanced undergraduate and graduate levels field instruction and practical experience in archaeological techniques and the anthropology of southwestern United States. In 1964, Dr. Florence H. Ellis, professor of anthropology at the University of New Mexico, was director of the field session, and with her assistant, Mrs. Marian Krebs, and a staff of five student assistants and about 50 students, carried forward the excavation of the Sapawe pueblo site.

We had the privilege of spending two weeks during the session as photographers for the group. Our duties included photographing the progress of excavations, making in situ records of artifacts or building features, and preparing photographs in the field laboratory of the principal objects excavated, after they had been cleaned and catalogued, and prior to packing them for shipment to the University at Albuquerque, New Mexico.

Besides field instruction in excavation techniques, the field session features instruction in the archaeology of the south-

western United States, particularly of the "Four Corners" area where Arizona, New Mexico, Utah and Colorado meet. In addition, the students of the session made guided anthropological field trips to living pueblos such as Santa Clara, San Juan and Mambe, to study village life and to observe craftsmen and workers. Other trips were made to study archaeological ruins at Mesa Verde, Aztec and Chaco Canyon to examine earlier Basketmaker and Pueblo-II and -III sites and to see artifacts from these sites in museums such as that at Mesa Verde National Park.

The members of the 1964 session were quartered in buildings of the College of Northern New Mexico in the village of El Rito. The daily schedule started at 6:45 a.m. with the rising bells. Breakfast was served in the college dining room at 7:30 a.m. and by 8:00 a.m. students, instructors and the photographers with their equipment piled into jeeps, station wagons and a school bus. Paraphernalia for the digging included shovels, trowels, whisk brooms, steel tape, plane table equipment, fresh water supplies in a Lister bag, and any other apparatus needed for the day's excavation. By 8:30 the party was on the site and excavation by the individual groups of their respective rooms, plazas or kivas was under way.

As the sun climbed higher over the hot dry Sapawe playa overlooking El Rito creek, time came for the rest break at 10:30, when everyone gathered from the far corners of the ruin site to a central point around Dr. Ellis's station

wagon, which was equipped with large insulated tanks of refreshing iced tea. Notes on progress were exchanged among the groups. Within a short time the students were back at the digging, which continued until lunch time at noon.

Lunch consisted of sandwiches, cold tea and fruit, eaten in the cool shadow of large cottonwoods along the El Rito at the bottom of the arroyo just east of the site. This was reached by a short winding foot trail which lead through a scrub of thorny cholla covered with purple flowers, and of a shrubby aromatic sumac encrusted with its sticky vermilion fruits.

Following lunch the cottonwood grove served as a lecture room for discussions of southwestern pottery, stratigraphy, techniques of dating sites and artifacts by tree rings, pollen profiles and radiocarbon, given by Dr. Ellis or visiting anthropologists and geologists.

Digging was resumed at 2:00 p.m. Often by this hour, high masses of thunderheads piled up over the Jemez mountains to the southwest, and over the foothills of the San Juan mountains of the Carson National Forest north of El Rito, and of the lofty Sangre de Cristos mountains over toward Taos in the east. Brilliant lightning split the skies in repeated strokes, and the rains would circle the Sapawe site. On rare occasions swift downpours of icy rains would sweep into the playa itself and all would scurry to cover. Soon the sun would return and work could be resumed.

In mid-afternoon, diggers assembled for a rest, and to quench thirsty throats with slices of sweet cool watermelon.

Digging was stopped at 5:00 p.m. unless an important cache of objects had been uncovered, in which case work in a particular room might have to be continued into the night until all objects had been triangulated and carefully removed to the laboratory. Normally, all

returned to the college for clean-up before dinner. Evenings after dinner until 10:30 p.m. were spent by the students in the laboratory, cleaning and classifying the pottery sherds, cleaning, protecting, cataloguing and packing other artifacts, and working on notes of the excavations.

Lectures on the ethnology of the area were a part of the evening sessions also. On some occasions these included demonstrations and discussions of pottery techniques by members of present-day pueblos.

During the day the photographers spent their time on the site recording the overall arrangement of room complexes as they were revealed during the digging. Detailed photographs of peculiar features of the pueblo construction were made, and pictures of major artifacts were obtained after they were uncovered, but before removal from the site. Series of pictures were made to show techniques of excavation. Most photographs were made on Kodachrome II or Ektachrome-X, with a 35mm single-lens reflex camera equipped with 28mm wide-angle, 50mm, 105mm, and



PUEBLO IV SITE AT SAPAWE

Conference between Director Dr. Florence Ellis and a group of students in one of the rooms in Plaza D. Dr. Ellis is in white, facing the camera.

135mm lenses, and +2 and +3 diopter supplementary close-up lenses for detailed close work. Black-and-white photographs were taken with a twin-lens reflex camera on Kodak Panatomic-X 120 roll film.

Back in the laboratory the various specimen artifacts were photographed singly or in groups. Objects included small well-worked chalcedony and obsidian points, fibrolite grooved axes, bone pins, whistles and an engraved bone flute. A variety of pottery bowls, dishes and ollas was found. Many were of a porous black-on-white biscuit ware, but sherds of incised ware, Sapawe washboard and some polychrome ware were found. Mortars and pestles for grinding pigments, long polished stones known as kiva bells and flat slate blades termed cactus knives, were found in a number of caches. Stone pipes, one still equipped with a bone mouthpiece, were found during the excavation of the kivas. These pipes, which are called cloud blowers, were used in religious ceremonies held by clans in the kivas. One very fine cloud blower which was found was fashioned in the form of a short ear of maize.

Small beads of turquoise, cowrie shells, pierced slabs of selenite, and occasional specimen crystals of minerals such as quartz and sphalerite were also found.

Sapawe site belongs to the Pueblo-IV period which followed the great Pueblo era of Pueblo Bonito of Chaco Canyon and the great pueblos of Mesa Verde and Aztec Ruin to the northwest. Although archaeologists have termed Pueblo-IV the Regressive-Pueblo period, this is not really a very satisfactory term.

In the latter part of the 13th century there was a period of severe drought in the Southwest. Much farmland is believed to have been destroyed by arroyo washing or cutting. The pueblo peoples abandoned their plateau sites and gradually moved southward into new areas. Among such sites is Sapawe, which was occupied from some time after 1300 A.D. until its abandonment just prior to the arrival of the Spaniards in 1540 A.D.

The circumstances and reasons of settlement and abandonment of such Pueblo-IV sites as that at Sapawe are of great interest, since much less is known of this period in pueblo cultures than the earlier periods.

### Reference

Wormington, H. M. "Prehistoric Indians of the Southwest." Publication #7, Denver Museum of Natural History, 1947.

**Conference between Director Dr. Florence Ellis and a group of students in one of the rooms in Plaza D. Dr. Ellis is in white, facing the camera.**

**Student starting to clear along the wall which is distinguished by slight color difference, in Plaza B, rooms W-13, 14, 15.**

**A group of selected artifacts from Sapawe, 1964, including kiva bells, ceremonial hoe, mortars, votive pottery jar black-on-white, incised bone flute and effigy animal.**



# The almanac—a handy guide

By HELEN R. GORDON, Librarian

Nearly everyone is familiar with the "Old Farmer's Almanac" and its reputation for predicting the weather. This is one of the few almanacs of today that resembles in any way the almanacs that were so popular in the 18th and 19th centuries. As few books beside the Bible were found in a household at that time, the almanac was a source of entertainment as well as information. It contained amusing anecdotes, poetry and recipes for the housewife, information about crops, postal rates, names of those holding public office in the Federal and State governments, as well as the calculations of the positions of the constellations for the region in which it was printed. One who did calculations for almanacs was often called a Philomath, which means a lover of mathematics, and one of the famous ones was Andrew Beers, who was well known during the 18th century and did the calculations for the first western New York almanac printed in Canandaigua in 1814. However, two local men interested in mathematics, Oliver Loud, a tavern keeper on the State road through Perinton, and Lyman Wilmarth, the postmaster at Bushnell's Basin, did the calculations for the *Western Agricultural Almanac* for 1822 which was published in Rochester by Everard Peck. Oliver Loud became well known for his calculations for western New York almanacs.

A familiar illustration in most old almanacs is the "Man of the Signs" or "The Anatomy," a man surrounded by the Signs of the Zodiac and showing the parts of the body supposed to be governed by these Signs. Its origin is not really known. In the second century after Christ

a Roman poet, Manilius, described the Man of the Signs which was also called the Moon Man. The idea was not new then, and was probably borrowed from earlier Greek sources. Chaucer described the Zodiac and its Signs and the parts of the body governed by them although he did not describe the Man himself. A free translation of the poem by Manilius was made by Daniel Browne and appeared in "A New Almanacke and Prognostication for the yeare of Our Lord God 1628." As time went on the idea that the constellations governed parts of the body fell into disrepute and as early as 1609 writers made fun of it. Almanac makers were perplexed about what to do about the "misshaped anatomy"—none put any confidence in it, but the people wanted it and in order to sell their almanacs they included it. In fact, it has appeared in many almanacs as late as the 20th century. The following poem appeared in "Poor Robin's Almanack for 1697:"

*Here is presented to your Eye  
The Figure of th' Anatomy,  
For where that this Gue-Gaw doth lack,  
Some will not buy that Almanack:  
Then stand here that my Book may sell  
Though for what Use we cannot tell.*

Some almanacs from the Museum's collection are now on exhibit in the library. For more information on almanacs the readers are referred to a previous article in *Museum Service*, "By the Signs of the Zodiac," February 1954; a monograph by Dr. Blake McKelvey, City Historian, "Early Almanacs of Rochester," *Rochester History*, Vol. III, No. 1, January 1941 and "The Old Farmer and His Almanack" by George Lyman Kittredge, Harvard University Press, 1920.

## Dates to Remember . . .

### PEOPLES OF THE WORLD ADULT LECTURE SERIES

Illustrated with Color Film

LAND OF THE CARIBOU ESKIMOS, Wednesday, April 14, 8:15 p.m.

Art Wilson narrates the way of life in northwestern Hudson Bay. The land, the people, a changing social order.

### IN THE YOUTH SERIES ON SATURDAY MORNINGS

LAND THAT I LOVE, Saturday, March 20, 10:30 a.m.

Audubon Screen Tour by Eben McMillen to the land of buffalo and antelope.

### SPECIAL EXHIBITIONS

- 1st floor**     **Wildlife in Miniature**—sculptured figures of North American mammals. Through March  
**Green the Year Around**—artificial plants for museum display. To Mid-March  
**Feeds and Feeders**—devices for feeding song birds in your back yard. March-May  
**Astronomy in Art**—paintings of the solar system and other scientific subjects by Helmut K. Wimmer, artist of the American Museum Hayden Planetarium. March 15 through April
- Mezzanine**     **Faces of the North**—color photos loaned by Eastman Kodak Company, of life and crafts of Canadian Eskimos by Don Nibbelink. Through March  
(From April 4-18 on second floor in Room C)
- Library**     **Almanacs**—a handy guide for reference. Through March  
**Projectile Point Types of Central and Western New York**—specimens and identification chart from Paleo Indian through Woodland Period. March through September
- 2nd floor**     **Underwater Archeology**—photographs, artifacts and diving equipment. Materials lent by Milwaukee Public Museum and members of the Rochester Sports Divers, Inc. and Lake Ontario Divers Association. Through March  
**New Gifts**—objects donated to the Museum. Silver, textiles, clothing, ethnological and natural history materials. Through March
- 3rd floor**     **Rochester Sports in Review**—an exhibition of 30 competitive sports and their history. To March  
**Bonnets and Caps**—from the Museum's Collection. Through March  
**Silhouettes**—a study in profile. Collected by Mrs. Karl H. Hubbard, dating from 1758

## MEETINGS IN THE MUSEUM

Academy of Science		
Astronomy Section	1st Friday of month	8 p.m.
Botany Section	2nd Tuesday of month	8 p.m.
Mineral Section	3rd Tuesday of month	8 p.m.
Ornithology Section	2nd Wednesday of the month	8 p.m.
Amateur Radio Code Class	2nd, 3rd and 4th Friday of month	8 p.m.
Antiquarian League	4th Tuesday of month	8 p.m.
Antiquarian Study Group	2nd Friday of month	1:30 p.m.
Aquarium Society	1st Wednesday of month	8 p.m.
Bonsai Society	3rd Thursday of month	8 p.m.
Burroughs Audubon Nature Club	2nd and 4th Friday of month	8 p.m.
Button Club	3rd Tuesday of month	1 p.m.
Cage Bird Club	1st Thursday of month	8 p.m.
Dahlia Society	1st Thursday of month	8 p.m.
Genesee Cat Fanciers Club	1st Wednesday of month	8 p.m.
Genesee Valley Antique Car Society	3rd Friday of month	8 p.m.
Genesee Valley Gladiolus Society	3rd Thursday of month (no meeting in February)	8 p.m.
Genesee Valley Quilt Club	Last Thursday of month	10:30 a.m.
Hobby Council	2nd Tuesday of month	8 p.m.
Jr. Numismatic Club	3rd Friday of month	7:30 p.m.
Jr. Philatelic Club	2nd and 3rd Thursday of month	7:30 p.m.
Men's Garden Club	4th Wednesday of month	8 p.m.
Monroe County		
Hooked Rug Guild	3rd Wednesday of month	10 a.m.
Morgan Chapter, N.Y.S.A.A.	2nd Friday of month	7:30 p.m.
Numismatic Ass'n	2nd and 4th Tuesday of month	8 p.m.
Philatelic Ass'n	2nd and 4th Thursday of month	8 p.m.
Rose Society	1st Tuesday of month	8 p.m.
Seneca Zoological Society	4th Wednesday of month	8 p.m.

### SUNDAY FAMILY PROGRAMS—Movies 2:30 and 3:30 p.m.

March 7—Introduction to Skin Diving and Yellowstone—Our First National Park

March 14—Silk Makers of Japan and The Enduring Wilderness

March 21—Pitcairn People, Glory of Spring and The Tree

March 28—Africa—An Introduction to the Continent and The Spruce Bog

April 4—Eskimo Hunters, Flowers at Work and Ceramic Glazes

April 11—Eskimo Arts and Crafts and Skyscraper

April 18—Museum Closed—Easter

April 25—The Ancient Egyptian and Adaptations of Plants and Animals

## The Museum Shop

Has gifts for adults as well as for children. Come in to select the perfect Easter, birthday, anniversary or shower gift. You will be especially happy to find a variety of gifts to please the person who has everything—and reasonably priced too!

Easter novelties for children from 25¢; nested eggs from Poland and alabaster eggs from Italy \$1.25 and up; pastel porcelain eggs 75¢; enchanting plush bunnies \$1.25. Exquisite heirloom Easter centerpieces from \$18.

Also—Decorative objects suitable for the Easter season—Italian pottery centerpieces with a spring feeling; large Italian rabbits; colorful Mexican roosters and pottery spring flower candy dishes.

And—Newly arrived jewelry from Mexico, Thailand, Spain, India and Haiti \$2.20 to \$87.50. Plus a small collection of cut stones for jewelry craftsmen.

New animal whimses for garden and patio; extraordinary kite sets; captivating Swedish mobiles and exotic new props for the flower arranger.

As well as—Our regular line of selected educational material and games.

OPEN

Monday-Friday  
10 a.m. to 5 p.m.

Saturday 10 a.m. to 4 p.m.

Sunday 2 to 4:30 p.m.

10% discount to Museum Association Members

Free Parking