Ozark Society Bulletin

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Buffalo River Hearing

October 22: Ozark Society has chartered a bus to Washington to transport the delegates making statements for the Buffalo National River. Delegates from northwest Arkansas, Tulsa, and Kansas City will board the bus in Fayetteville at 1 p.m. Tuesday, October 26. Other boarding points are Alma, Russellville, Conway, Little Rock, and West Memphis. The group will be housed at McLean Gardens. A full report of the Hearing will be in the next Bulletin.

Annual Meeting

The Ozarks Society's Annual Meeting will be at Mather Lodge, Petit Jean State Park Saturday and Sunday November 6 & 7. Delta Chapter is host and is planning an outstanding program. The program will be mailed to Chapter Chairmen well in advance and will be published in the Autumn Bulletin.

Make reservations early for rooms in the lodge or for cabins by writing Mather Lodge, Petit Jean State Park, Morrilton, Arkansas 72110 or phone (501) 727-5431.

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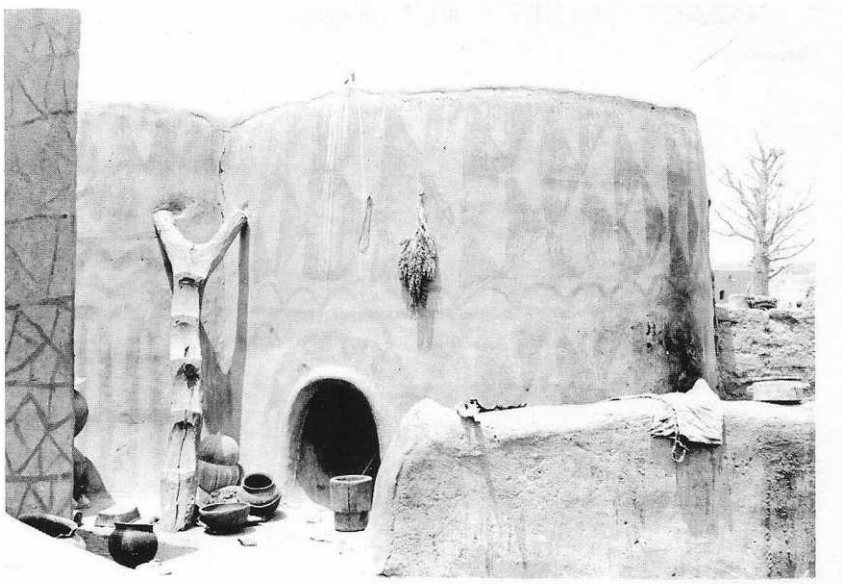
Front Cover:

Pedestal Rocks - Ozark National Forest - Joe M. Clark

Impressions of West Africa

Frances C. James,
University of Arkansas Museum



African Compound, Bolgatanga, Ghana - Fran James

"Good morning, madam, how are you feeling? "Better, thank you, Ignatius" I replied, mildly surprised at the sincerity of the question. It came from the cook-steward who had not only assumed all the responsibilities of cooking and keeping house for my family, but was now offering sympathy for our tropical ailments. I had been down with the headaches and sore eyes that West Africans recognize immediately as symptoms of malaria. Some expatriots are particularly sensitive to it and must learn the proper individual doses of the supressants. Ignatius was a typical Ibo, clever, industrious, and dependable. So one of my first impressions of life in Africa was a comparison between the American housewife, frantically trying to clean, cook, and care for children (all the while sublimating her outrage at this assignment), and the African woman who earns her own money at whatever work she has chosen and pays the less educated servants to do the chores.

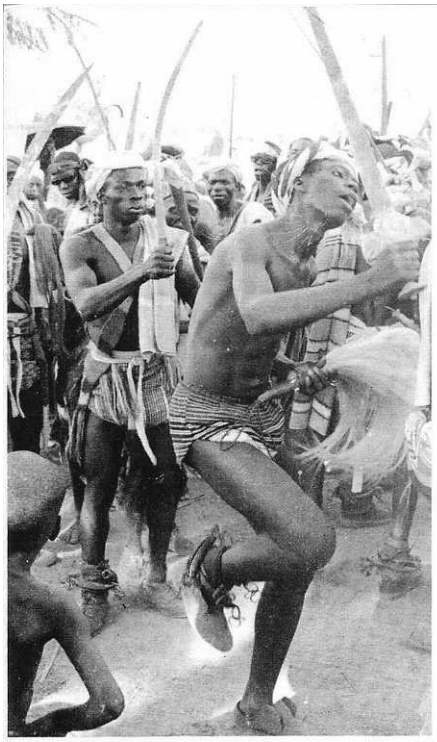
We had any attractive block house on the campus of the University College of Cape Coast. All African Universities supply furnished housing for staff. Each room had an entrance to the interior court, as in a typical African compound, but in the latter each room would be for a different wife. The campus was immense. We could hear drumming at night from the primitive villages nearby. All of this plus the fabulous tropical vegetation was the setting for our one academic year in Ghana. Doug had accepted a Fulbright professorship to teach ecology and animal behavior.

Of course we investigated the dense shrubland between our house and the science building for birds. We set up Japanese mist nets and found we could catch birds that were impossible to see otherwise. Doug spent parts of every day working on an analysis of the shrubby vegetation. He wanted to know how the birds there have subdivided the resources of their habitat so that so many different species can live together. Zoologists are still debating why tropical faunas are so much richer than temperate ones.

I had two projects. The first was a study of behavioral thermoregulation in the common rainbow lizard (**Agama agama**) that lives near houses. One dominant male had our house as his territory. He spent the nights on a window ledge and spent very active days displaying his colors, and running along the concrete walks. I found from my captive lizards that they are able to maintain a very constant body temperature by moving around and assuming various postures according to the time of day, position of the sun, etc. Coming down to the east side of the house in the morning, the male would bask in the sun, and lie flat on the warm concrete until his temperature got up to 37 degrees c. (coincidentally, body temperature for humans). Then he would spend the rest of the day alternately in the shade, on the bare soil, on rocks, or up in shrubs, depending on the conditions of his ever-changing microclimate. If I had been given the assignment of taking a doll outside the house and trying to keep it at 37 degrees C. all day, I could not have managed nearly so well as my lizard. The goal of my other project was to see whether geographic size variation in birds in the tropics varies in the same way that it does in temperate regions. My plan was to collect gray-headed sparrows (**Passer griseus**) from various parts of the country, and then run an analysis of geographic variation of the bones. This gave me an excuse to take lots of trips. Now I have the skeletons, but have not yet run the analysis. Before I tell about the trips, you should know more about Ghana and the University College.

Ghana became independent of British rule in 1957. The exservicemen returning from the second world war had been dissatisfied with conditions and stirred a great nationalistic movement among the people. Today Ghanaians are proud and dedicated to the development of their country. In spite of the fact that they are now spending a higher percentage of their national budget on education than any other nation, nearly eighty per cent of the people are illiterate. One thing they need badly is secondary school science teachers. Fifteen years ago the University College of Cape Coast was established to fill this need. Beautiful facilities for teaching prospective science teachers were set up, largely with money from UNESCO. It was hoped that this school would supply African science teachers for all of West Africa. But at first there were not enough students serious enough to follow through the entire program. Students trained at the college did not want to return to small villages to teach, but preferred the less demanding and more lucrative civil service jobs in the big cities. So, although there has been a great deal of progress, only a small percentage of the students actually end up as science teachers. Most science teachers in West African secondary schools today are American members of the Peace Corps or its British counterpart (Volunteer Service Overseas). It is exciting for them to have a chance to live in another culture, as it was for us, but we hope to see the day when Africans are able to be independent in this sense as well. Our three girls went to African schools. They found they were behind the other students in several subjects, and they were not used to old-fashioned discipline. The tests were demanding, but anyone who passes the A-level examinations at the end of secondary school is rewarded with a full scholarship to college.

In order to explore as much of the beautiful coastline as possible, we formed a club called GOSH, the Ghana Ocean Shore Hikers. With several other families we hiked a different stretch of the beach each week, leaving cars at the other end, as with a canoe trip. With a few phrases of Fante and some sign language we could always persuade some small boys to get us some coco-



Festival Dance in Northern Ghana - Fran James

nuts so that we could have a refreshing drink.

Beginning to look further for adventure, we got into a giant twenty-man canoe, hollowed out of one tree, and were paddled out in the ocean for about a mile to an island off Busua Beach. Here there were rocks and tide pools complete with sea urchins, star fish, sea hares (nudibranchs), and beautiful little fish.

After the shipping arrived, in January, we were equipped for camping so we headed northward into the high forest. This was beyond description, trees 250 feet tall with staghorn ferns in the tops, lianas and vines twisting downwards, colobus monkeys growling like motorcycles in the forest, casked hornbills whooshing by on giant wings. On our way out of that area we saw that parts of the forest had been trampled by elephants just the night before.

Ghana has set aside some natural areas but only one has facilities for visitors. This is the Mole Game Reserve in north central Ghana. The further north you go, the drier it gets, and the vegetation at Mole is called guinea savanna. This means scattered acacia trees with tall grasses below. Seeing animals is hampered by the vegetation and also by the tsetse flies which bite fiercely. They do not carry encephalitis in this area but they certainly interfere with enjoying the out-of-doors. Nevertheless we enjoyed the secretary bird, and saddle-billed stork, the baboons, the green monkeys, the duikers, and the various antelopes.

In this northern section boys would peek in the windows of our microbus and ask whether they could have Avis (12) for a wife. One of them explained that in his tribe people buy wives with cows and he offered eighteen cows for Avis. We declined. There is a natural form of air pollution in the winter here, the hot, dry, dust-laden Harmattan winds coming south off the Sahara Desert. If there has been a good harvest the stores of food will last through this long dry winter and spring. But by last April some whole villages had been forced to walk southward, and others were having one meal every third day. We stayed with Dutch missionaries, very practical people who were running an experimental farm to teach Ghanaians more efficient farming techniques.

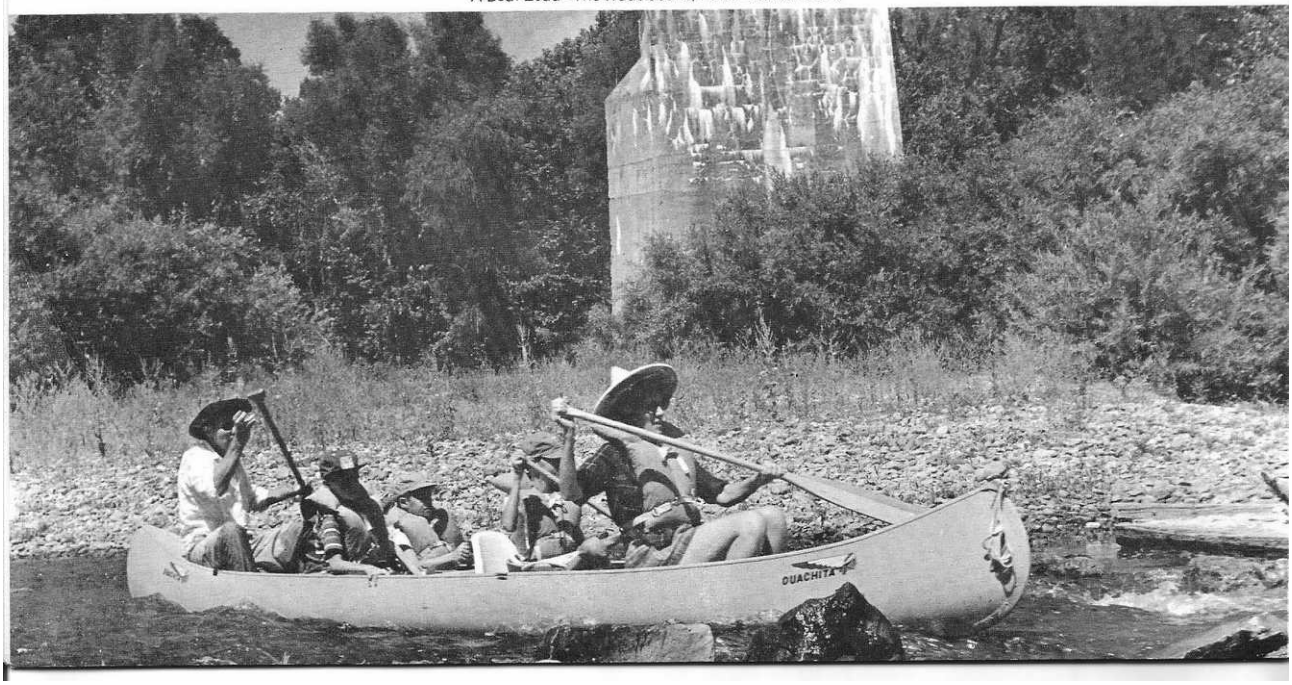
During spring vacation we drove along the coast through the small French-speaking countries of Togo and Dahomey, and then on to the modern city of Lagos in Nigeria. Here there was a beautiful harbor, modern roads with overpasses, and many signs of thriving industrialization. But the luxury hotel did not have running water and just at the outskirts of the city was desperate poverty.

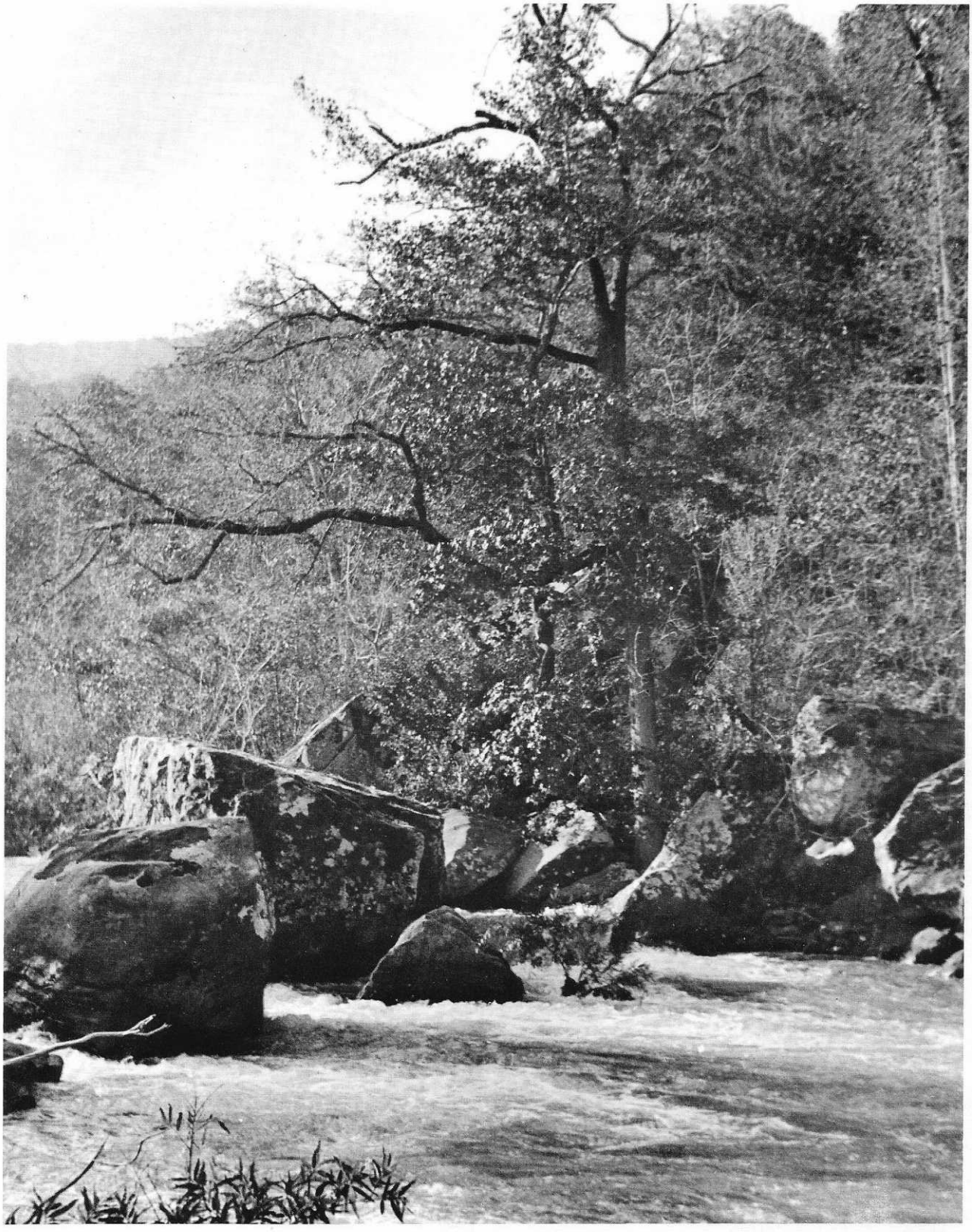
I have not told about the time we hiked into Vli Falls at dusk and saw thousands of crow-sized fruit bats leaving their roosting places on the high cliffs to fly out over the forest—or about the two weeks we spent in Kenya seeing the fantastic game parks—or about Ghanaian friends we made, the gay parties, the magnificent drumming for special occasions. We feel very fortunate to have had all these exciting experiences.

Doug and Fran James and daughters Sigrid, Helen, and Avis have returned after a wonderful year in Africa. As a Fulbright Professor Doug taught at the College of the University of Cape Coast, Ghana. This summer the James family traveled extensively in west Africa, especially in Kenya. At the request of the State Department, Doug lectured on conservation and ecology at the Island of Mauritius in the Indian Ocean.

Our first chance to welcome them home was on the Clean-up Float. Good news for our readers is that she will continue writing her articles on avifauna and ecology for the Bulletin.

A Boat Load - The Wade Scotts, L. R. - Joe M. Clark





The Upper Buffalo - Joe M. Clark

The Grand Prairie

Thomas Foti

Maybe you've seen the Riceland Foods television commercial which opens with a scene showing the sun setting over a ricefield, and the words "Out on the Grand Prairie of America, with its 140 hot days and 140 cool, most nights. . . (rice grows)" Or maybe you've driven through the rice country between Haz en and Stuttgart in Eastern Arkansas and thought about the name "Grand Prairie" which is so commonly applied to the area. A prairie is a grassland, right? So drive through this area today and look for a "Grand Grassland". True, rice is a grass, but a rice field is not a prairie anymore than is a lawn. The name bears witness that there was prairie here, but obviously something has changed drastically.

In 1968, Mrs. Howard Stern and I became interested in the situation during a conversation with Raymond R. McMaster, the manager of the White River National Wildlife Refuge. He mentioned that he had been looking (without success) for patches of prairie which might have escaped plowing through the years. Mr. McMaster knew a little about the Grand Prairie and by the time we left him we were thinking of the Grand Prairie as an honest-to-goodness prairie rather than just a name. We thought the chances of finding any prairie left, however, were slim.

Later that summer, I was talking to Dr. Douglas A. James at the University of Arkansas about the controversy surrounding Traill's Flycatcher. Certain ornithologists believe **Empidonax traillii** should actually be considered two species and, with the thoroughness typical of scientists, there is tremendous dispute over what the names of the two species should be. The species was discovered by John James Audubon at Arkansas Post in 1822. He painted a representative of the species and named it after a friend of his. The bird which he painted he found to be a female carrying eggs (he usually painted dead birds and often ate the specimen when he was through). The presence of eggs would mean that the bird Audubon named **E. traillii** nested in the area. In the current dispute, the ornithologists need to know which group of **E. traillii** nests in the vicinity of Arkansas Post because, according to the "rules" of nomenclature, the name **traillii** should be applied to the group Audubon's specimen represented. One problem though: it seems that Traill's Flycatcher almost never nests in the vicinity of Arkansas Post or, indeed, anywhere in Arkansas anymore. It simply migrates through the state and breeds elsewhere. It happens that those members of the species which nest in Arkansas are almost entirely restricted to the Grand Prairie. Arthur H. Howell, in 1911, commented in his **Birds of Arkansas** that though the species was rather rare elsewhere in the state, on the Grand Prairie it was "fairly common, living in orchards, dooryards, and about small clumps of trees on the prairie". Therefore, as the prairie with its "small clumps of trees" was destroyed, the population of birds formerly nesting there either failed to nest or moved elsewhere.

Dr. James told me that he knew of only one breeding population of these birds remaining in Arkansas. That population is located on a farm owned by Sam A. Konecny near Slovak, about fifty miles from Arkansas Post. Since I was interested in seeing the birds, Dr. James gave me a map which showed the roads to the farm and the grove in which the birds could be found. The map also showed a little area of the farm marked "Virgin Prairie."

The Great Grand Prairie Hunt was on! Mrs. Stern, Mr. McMaster and I went to see this remnant of the Prairie in August of 1968. We introduced ourselves to Mr. Konecny and were treated to a guided tour of the farm. We piled into Mr. Konecny's new car and roared off, helter skelter, across the farm, stopping occasionally to leap out and pull a "weed" while battling off mosquitos and sweltering in the heat. When we first started talking to Sam Konecny, his attitude was "It's a good thing you came this year because I'm ready to plow it under." Later, we found that he was less than anxious to plow. His grandfather had set aside the patch of prairie as a hayfield and even though the "hayfield" has shrunk to about 70 acres today, it has remained and has become a traditional part of the farm. Then too, the Konecnys are "old-style" farmers who live on the farm, have roots there, and feel responsibility to their land. They would prefer to keep their prairie intact.

The late-season prairie we saw was characterized by a dense growth of grass, two or three feet high and sometimes higher, with a few flowers reaching up above the level of the grass. In our quick look we found several grasses we could identify: switch grass (**Panicum virgatum**) and big bluestem (**Andropogon gerardi**) being the most notable. The most outstanding flowers were prairie button-snakeroot (**Liatris pycnostachya**), rattlesnake master (**Eryngium yuccifolium**) and compass-plant (**Silphium laciniatum**). These plants are all part of a fantastic prairie flora, formerly found over a large part of our continent, now rapidly being reduced to vestiges called "relict populations" by ecologists.

The grove which provides habitat for the Traill's Flycatcher is about 20 acres in extent and is a lowland "slash" made up largely of ash, locust and a few oak trees. Toward one end of the slash is a cattail marsh bordered by willows, which cattail marsh bordered by willows, which, according to tradition, was a "buffalo wallow". Along the edges of the slash are thickets of hawthorn in which the Flycatchers nest. It, like the prairie remnant itself, seems to be a natural feature of the Grand Prairie.

The primary motivation for not clearing the grove has been provided by Mrs. Konecny. She has planted trees in her yard only to watch them die in the prairie soil, and has developed a healthy respect and affection for the trees of the grove.

This grove has an interesting recent history. In the early 1950's, the grove was a roost site for approximately 15 to 20 million blackbirds. The roost was selected for "experiments" in blackbird eradication by Brooke Meanly of the Wildlife Research Laboratory of the Fish and Wildlife Service, U. S. Departemtn of the Interior, who described his work in Bulletin 584 of the Agricultural Experiment Station of the University of Arkansas, "Blackbirds and the Arkansas Rice Crop". In evaluating "roost bombing" as a control measure, Mr. Meanly supervised 23 bomb tests in the roosts involving from one to ten bombs each. He says: "As a result of the progressive series of tests, effective results were finally obtained when a 10-bomb series was detonated that resulted in an average kill of 2,320 birds per bomb at a cost (excluding the labor of back-packing equipment a half-mile into the thicket) of seven-tenths of one mill per bird". He questioned the economics of the method, however, saying that the 300,000 birds killed during two winters seemed to have no affect on the later nesting populations of the blackbirds. Trusten Holder, who was on hand for the experiments, gives an interesting account of one of the bombings in his **Disappearing Wetlands in Eastern Arkansas**, published by the Arkansas Planning Commission in 1970.

Mr. Meanly, a competent bird student as well as exterminator, found Traill's Flycatchers nesting in the grove at this time (1951) and wrote a short paper describing the habitat which appeared in the **Wilson Bulletin** in June, 1952. When Dr. James needed more information on the species for his studies of the distribution and abundance of Arkansas birds, he contacted Brooke Meanly and obtained the map which he later showed to me which shows the "Virgin Prairie" owned by the Konecnys. The paths of conservationists are devious indeed.

We left the Konecny farm that day in love with the Grand Prairie. We called a good friend, Sookie (Mrs. Paul) McCoy of Stuttgart, whom we knew was interested in prairie flowers, and found that she knew of other sizable "pieces" of prairie as well as numerous corners and strips which the plows had missed. The next day we were out looking and are

still looking today. To date we have found about a dozen unplowed tracts, ranging from 10 to 80 acres in extent, and numerous small edges still harboring the prairie flora. Although most of the remaining prairies are located in Prairie County, there are also relicts in Arkansas, Lonoke and Monroe counties.

During the spring of 1969, Jane Stern organized the now-famous "Traill's Flycatcher Vigil". Audubon wrote that he had collected the bird he painted on April 17. Since then, no one has seen the bird earlier in the year than April 23. Because Audubon's specimen was not only here but carrying eggs on April 17, some ornithologists are now doubting his claim. Dr. James wanted a competent birdwatcher to visit Konecny's grove each day from the first of April until the birds arrived to (hopefully) settle the question. Mrs. Stern was appointed to organize the project. She was able to round up 27 people to stand watch, and stand, and stand. Finally on May 6, she and Mrs. J. B. Herring of Pine Bluff heard one of the Flycatchers sing, which is the only reliable way of identifying the bird. Nothing was settled, but more grounds for argument were provided. At the 87th state meeting of the American Ornithologists Union, held at the University of Arkansas, September 1-5, 1969, Eugene Eisenmann delivered a long and well-received paper on the problems surrounding the nomenclature of Traill's Flycatcher, during which the information provided by the "Traill's Watch" played a central role. Also at this meeting, a resolution was passed commending Sam Konecny "for preserving, on his farm, the nesting habitat of the Traill's Flycatcher in its natural state" in the "type locality" of the species.

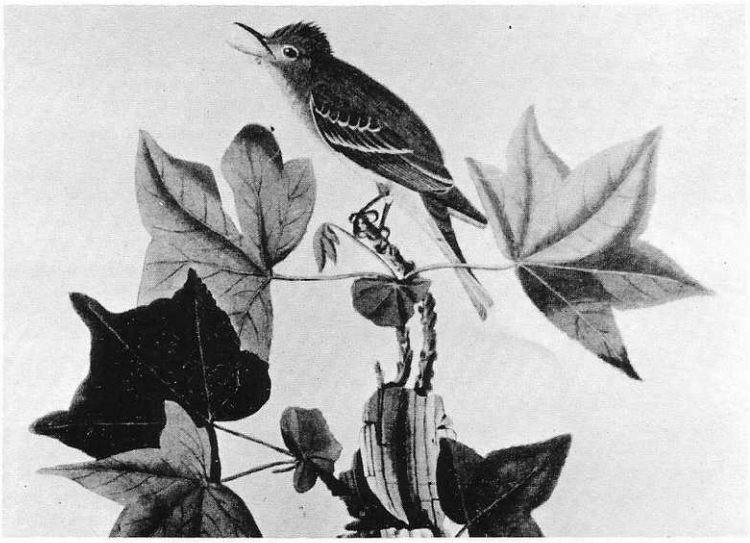
This "vigil" not only produced some valuable information, but, more importantly, it introduced more people to the Grand Prairie. This is typical of our activities on the Grand Prairie which have been directed by a number of goals, which to an extent must be approached in series. The first goal has been to find relicts of prairie. Then we have tried to show the owners of prairie tracts that others are interested in their "hayfields", and to convince them that they have something unique. We have encouraged them to keep their prairie remnants unplowed. At the same time we have been introducing people to the Grand Prairie, trying to stimulate their interest in it. Only by developing an interest in enough people can we hope to see relicts permanently preserved. We have tried to learn more about the Grand Prairie by finding information which has been written about it and by personal observation. Sookie McCoy has kept records of the species of flowers blooming on each relict and I have begun an ecological investigation of several of the patches. This knowledge should enable us to make reasonable judgments about the relative "quality" of the prairie remnants so that we can arrange them into a set of priorities for preservation. We are also trying to assess management practices to determine whether some are more effective than others. Only when these things have been done can we begin to seriously discuss preservation of these prairies.

Indian Grass Surrounded by Big Blue Stem - Tom Foti

Our knowledge of the Grand Prairie is extremely limited because no biologist has ever intensively studied the area. We missed a great chance as early as 1819 when Thomas Nuttal passed by the area during his trip up the Arkansas River. In his book, **A Journal of Travels into the Arkansas Territory**, he says that while he was at Arkansas Post, he tried to find someone to carry his baggage upstream by boat so he could walk overland through the "Great Prairie" from Arkansas Post to the mouth of Cadron Creek. However, unable to find anyone willing to help, he was forced to go by river. An entry dated January 28th states: This morning accompanied the doctor to shoot wild geese, as they passed to a neighboring lake, about two miles in the rear of the town (Arkansas Post). Here a vast plain opens to view, like a shorn desert, but well covered with grass and herbaceous plants. Over this vast plain, which proceeds a little to the west of north, computed to be not less than 30 leagues in length by 10 to 15 in breadth, passes the road to Cadron and the settlements of Red River."

Valuable information on the biology and geology of the Grand Prairie is found in the "Soil Survey of the Stuttgart Area, Arkansas" 1902, by J. E. Lapham, and "Soil Survey of Prairie County, Arkansas" 1906, by Carter, et al.

In 1914, Roland Harper made a whirlwind trip through Eastern Arkansas and published his "Phytogeographical Notes on the Coastal Plain of Arkan-



Traill's Flycatcher - from painting by John James Audubon

sas" including a description of the Grand Prairie and a list of 65 species of plants and several photographs all based on a four-mile walk and a 25-mile train ride! Seems Harper intended to publish more papers than a rival scientist and therefore had to skim over the details a bit. However, he gives some interesting and probably accurate general descriptions.

These sources provide little detailed information, but from them and from observation of what remains of the Grand Prairie, a history of the area begins to develop. The story probably begins during the age the geologists call the Pleistocene. As the glaciers advanced into areas north of what was to become the Grand Prairie, gouging out lakes, exposing rock outcrops and leaving a raw, desolate land as they withdrew, quieter forces were at work forming the Grand Prairie. The area had been covered by an extension of the Gulf of Mexico during Cretaceous and Tertiary times. After emergence from the gulf, the Mississippi had flowed through the land, its tremendous power eroding away many of the deposits from earlier ages. Now, however, the area was once again covered by water, this time quiet lakes and broad, sluggish rivers which deposited fine clay and silt over the land to a depth of a hundred feet or more. These deposits were probably glacial material brought south and reworked during its journey. As drainage of this part of the continent developed, the Grand Prairie came into being as a flat, poorly drained, grassy plain. Its limits were set more or less by developing drainages: Bayou Meto and Bayou Two Prairie on the West, the Arkansas River on the South, the White River and Big Bayou La Grue to the East, and Wattensaw Bayou to the North. About 65 miles long by a maximum of 25 miles wide; 1,000 square miles. Big enough to be called "Grand" by Arkansas standards.

Why grasses instead of trees? Only detailed study will tell for sure, but probably the answer lies in the thick mantle of clay underlying the surface. Often referred to as a "hardpan", it is, more properly speaking, an "impervious subsoil". In other words, it does not allow downward percolation of water. Combine the lack of drainage with the impervious clay subsoil and there is set up a combination of extremes (excess water and insufficient aeration after rain; insufficient water during drier periods) which grass seems better able to cope with than trees. An example of the extreme nature of the soil water conditions was shown in a series of soil samples I took on the Konecny Prairie last spring. The method used here is to screw a special auger into the soil to the desired depth, and to then withdraw it without turning so that a core of soil is pulled out. On this day everything went as planned until I tried to get a plug of soil from 18-24 inches deep. At this level, there was an accumulation of so much water that the soil turned to soft mud and simply ran out of the flutes of the auger. Below this level, samples showed decreasing water content until I tried to get a sample from a depth of 36-48 inches. The auger went in okay but became stuck in the dry, hard subsoil. I was afraid for awhile that the Konecny Prairie would forevermore carry a unique monument!

It is possible that this subsoil is hard enough that the rooting of tree species is inhibited by it. However, soil surveys of the area show that the subsoils of the grassland and forest areas of the Grand Prairie are similar in composition. The main differences between the soils seem to be in the topography and, consequently, drainage.

Another factor in the establishment of grass over the Grand Prairie may have been a period of much drier weather than now. Evidence for this may be found in the presence of "prairie pimples", mounds from one to three feet high and 10 to 100 feet in diameter, scattered over the surface of the Grand Prairie (and other eastern prairies). These are often thought by ecologists to indicate past desert-like conditions in which the vegetation was composed primarily of scattered shrubs. Wind would erode soil between these shrubs and simultaneously build up soil around their roots. This process may be seen operating today in Arizona and other dry, western states. If rainfall then increased, grass would cover the "mounds" thus formed, and, by stopping further erosion, preserve them indefinitely.

So for whatever reason, grass became established over the Grand Prairie. But the prairie was not static or permanent. It would exist only a short while in the time-scale of the earth.

The Grand Prairie began to change in character through development of drainage within it. Depressions in the original clay parent material held waters through much of the year and as soil from the higher prairies washed in, "waterloving trees", such as several species of ash, hickory and oak became established here. Areas of several square miles of such forest were referred to by the earlier settlers as "prairie islands". Stuttgart is apparently located in such an island. Smaller wide and shallow, but long depressions which were locally called "slashes" furnished most of the drainage on the prairie. The 20 acre grove on the Konecny farm is a part of such a slash. Water moved slowly through them, but large volumes moved just the same. Intermittent streams found their headwaters in these depressions.

Slowly, drainage was improving. The flat grassland was being cut into and replaced by trees. Already the land near the large bayous and rivers was occupied by characteristic upland type forest, called "pin oak flats" by the settlers.

In the flood plains, the soil was so altered by erosion of the old soil and deposition of new that it was no longer recognizable as "prairie" soil at all. But this process was slow. The prairie had "weapons" to defend itself from change. Erosion is slow under a vigorous growth of grass. "Invading" plants find it difficult to compete with the very efficient root systems of the grasses. Probably the most effective "weapon" grasslands have, though, is fire. Prairie grasses, like trees, are perennials, living up to twenty years. However, the leafy tops and flowering heads are replaced each year. The growing points of trees, however, are located at the tips of the stems. So when a fire rages through the "dead" grass of a prairie in late winter, the growing points of the

grass are damaged very little, but the growing points of tree seedlings are destroyed and the seedling is retarded in growth or killed. Similarly, a reasonable level of grazing does not harm grass, but stunts or kills invading tree seedlings.

This prairie, like all environments, existed as a whole. Each part, each organism fit into the whole. The dominant organisms were the grasses. The other plants and animals had to fit into a world of grass. The beautiful indian paintbrush existed as a parasite on grass roots. The prairie vole, bison and elk grazed on the leafy parts of the grass. The compass-plant sent its flowering heads above the grass into the light. The tiny Virginia spring beauty bloomed as early as January, before the new grass could overtop it. In fact, most of the flowers bloomed very early, contributing to seasonal variation in the appearance of the prairie. The spring is the time for flowers. According to Sookie McCoy's records 54 species begin to bloom in April and May, only 43 during the rest of the year. July through September is the time for grass. But not the same grass all the time. First, switch grass, then big bluestem, little bluestem and indian grass, finally a late bloom of broomsedge, a close relative of the bluestems which becomes more abundant on less fertile sites.

Grass, then, was what ecologists call the "dominant" organism—it modified the physical environment to such an extent that other organisms were adapted to the modified environment. Grass, however, was there because of the complex of factors making up the physical environment—climate, soil type, topography, etc.

The Grand Prairie, then, looked at from this perspective, was an area at the focus of forces, some for change, some for stability. The forces for change were winning; they always win, eventually. But it was not until this century that these forces culminated in a peak that effectively swept the Grand Prairie out of exsitence in one generation. The motivation for the change was a new industry: the production of rice.

The Grand Prairie area was one of the first parts of Arkansas to be settled. Arkansas Post was the first Territorial Capital. However, the adjacent forest land was long under cultivation before any significant amount of farming was attempted on the prairies. Until the latter part of the 19th century, the major industries on the prairie lands were grazing and haying. But, even this "light" use was not without effect. Lapham wrote in 1902: "The native grasses, from long pasturage and cutting, are beginning to fail, and it is believed that some of the tame grasses could be successfully substituted." Then, in the last decades of the 19th century, an influx of prairie farmers from Illinois, Missouri, Iowa and Indiana occurred. These farmers included many Bohemians, Slavs and Germans, and most of the patches of prairie left today are owned by the same families. They brought with them a "prairie agriculture" based on oats, corn, and dairying, and began to plow the grassland.

Around the turn of the century, experiments in rice production were started. By 1905 some 450 acres (primarily in Lonoke County) had been planted in rice, and in 1906, this figure jumped tenfold. Even as late as 1914, however, Roland Harper wrote that newspaper accounts "had given me the impression that the whole area was about to be given over to that industry (rice production), with the consequent destruction of the native vegetation. But the damage to the vegetation had been overestimated and there were (and probably still are even at this writing, two years later) still thousands of acres of undisturbed prairie within easy reach of railroad stations". In 1914, there were still "thousands of acres": 54 years later we were afraid there were none.

Sometime during these 54 years the dynamic set of processes I tried to sketch above, the processes which were in fact the Grand Prairie, ceased to control the area. Processes which control an area of a half-million acre may cease to exist in an area of 80 acres. An area this size may be surrounded by land whose drainage is completely altered. Herbicides and pesticides drift over and kill animals and plants. Indeed, 80 acres will not support one large predator (even if the farmer would allow his existence). A flock of prairie chickens might require 1,000 acres (according to tradition, the last prairie chicken reported on the Grand Prairie was shot on the Konecny tract, 1938). A herd of Bison might need the whole half-million and then some.

What we have left are a dozen patches of "prairie" which are not entirely representative of the Grand Prairie, either individually or together. Yet they are all we have. And if you squint your eyes just right you can almost see the prairie that way.

If you have read this far, maybe you're interested enough to go over and see the Grand Prairie with your own eyes. The easiest way is to go to Carlisle and drive along Highway 70 to De Vall's Bluff. For most of the distance you will be driving beside the Chicago, Rock Island and Pacific Railroad right-of-way. Now there is a peculiar thing about railroad rights-of-way and prairie. Seems railroads seldome plow their rights-of-way, but they don't like trees growing on 'em, so they **burn** 'em. That sound familar? Next time you're wondering whether there was prairie in an area, consult the local railroad track. Unfortunately, as all good things pass away, so also this: many railroads now dump oil or spray chemicals on the rights-of-way. 'Oh well.

If you have more time for sightseeing, go back and take highway 11 South to Stuttgart. Now you're passing right through the heart of the Grand Prairie. Not many trees, right? Not much native grass either, huh? Well, if you know a little about the prairie flora you can probably see a few species along the roadside. Keep an eye out though, because about three miles down the road is a prairie patch on the right. It is the largest one we have found, about 80 acres. It is owned by Mr. Ed Kocourek, and his house is about a half-mile down the road and on the left.

If you want to walk out on the prairie, stop, say "Hi" and ask. Remember that these prairie plots are private land owned by people to whom we owe a debt of gratitude. These people have been generous in sharing the enjoyment their prairies give and may be expected to in the future, provided that those who use the prairies are respectful of property rights.

Don't Pick the Flowers. I can't emphasize this enough. Some of these prairie patches, with easy access, have been picked nearly bare. Some species which originally were uncommon on the Grand Prairie may now be so rare that "picking a bouquet" could be disastrous. If you see an especially pretty flower, be generous. Leave it for the next person to enjoy. Wild things are never as pretty in a living room, anyway.

Now, head on south and watch the roadside some more. Heck of a lot of rice out there. **Was** a heck of a lot of prairie.

About a mile and a half south of the Kocourek prairie, you will cross Big Bayou La Grue, dammed below here to form Peckerwood Lake. This bayou forms a portion of the western boundary of the Grand Prairie, but here it existed as a tongue of forest stretching across the prairie. This forest, because of the good drainage along the high ground adjacent to the bayou, was an "upland" type, locally referred to as "pin oak flats". Today, on a large estate, further downstream, a beautiful "pin oak flat" still exists, representing another aspect of the total Grand Prairie environment. On that same estate is a 25 acre prairie relict which, in addition to never having been plowed, has not even been mowed for 15 to 20 years. Interestingly enough, it is not as "healthy" as some of the plots that have been mowed annually. Mowing in some ways simulates the effects of fire and helps prairie species eliminate their non-prairie competitors. It is possible to mow too often, but annual mowing is probably more beneficial than harmful on the Grand Prairie.

About five miles down the road from the Kocourek prairie, you'll see another patch, also on the right. This is the Sokora prairie. They live right next to this prairie; it makes a large

back yard. Ask. You'll know you missed the Sokora prairie if you come to the Highway 86 west junction without having seen it.

Several prairies are down Highway 86 in the neighborhood of Slovak, but they are harder to find. To continue your tour, keep on south through Stuttgart by any of the main roads to Arkansas Post.

Go when you can but remember that the "aspect" of the prairie varies during the year. May can be counted on for flowers: September is fine for grass. If the plot you're looking at has been recently mowed, take it in stride: that's what a hayfield is for. If you plan to walk around on the prairie in the spring, take plenty of mosquito repellent. I have never seen any venomous snakes on the prairie, but, in the spring, there are plenty of non-poisonous varieties to see. If you're going in the summer months, an air-conditioned car is nice: there's no shade and the humidity is **high**. One thing you'll notice though: out on the prairie the wind always blows. That helps.

Recognizing prairie when you see it is an art that comes with practice. A few hints might be helpful, though. Early in the season look for flowers. Not a carpet of yellow bitterweed, but a large variety of sizes and colors. Later, as the grass develops, flowers will still be evident. Variety is again a clue: prairies have high diversity. Look for "prairie pimples". While not always evident, especially when the grass is high, they can be spotted easily during the winter or just after the prairie has been mowed. Go with someone who is familar with the prairie if you can: that's the easy way.

We set out three years ago with a series of goals which, hopefully, would culminate in the positive perservation of at least some of the relicts. Well, we're still left with that goal. There are two big problems to be overcome in preserving some of the prairie. One is the everpresent "Who's going to put up the money?" This is especially a problem in this case because land values in the area are so high. Even though the prairie pieces are generally not on the best agricultural land, direct purchase will be an expensive affair. The Nature Conservancy has been contacted, but could promise only to "help look for potential donors". However, if sufficient interest in prairie preservation is aroused, a "local committee" could be organized which would receive help and support from the Conservancy. Thus, the project could have the "immediacy" that results from local participation along with the stability of the national organization. Funds would be obtained wherever they could be, of course, but someone has suggested that since rice was responsible for the destruction of the Grand Prairie, rice money should help preserve what is left (Riceland Foods, Inc., are you listening?).

Pale-purple Coneflower - **Echinacea pallida** Nutt.

The other problem lies in getting the landowners to part with their prairie land. The very feeling of being a part of the land which caused these farmers to keep patches of prairie also causes them to be reluctant to part with them. Additionally, they realize that it will be difficult to replace this land since so little land in the area is put up for sale each year. Their prairie provides an acreage reserve agains "bad times" which are always just around the corner. However, if money for purchase became available, these objections could probably be overcome. At present, preservation of the prairie plots is strictly at the "whim" of the owners. Therefore, everything possible should be done to encourage these people to keep their prairie lands unplowed. Of greatest importance is personal contact. This is what we have been trying to do. There are other approaches which have not been tried yet, however. One approach may be to provide public recognition to the landowners. In a sense, that is one thing this article can do. I am thinking more specifically, though, of two government programs which may help. The first is a state-federal program and the other operates on the state level only.

The State History Commission, in a program under the direction of Jack E. Porter, is currently searching Arkansas for sites of historic interest to be included in "The National Register of Historic Places", a National Park Service publication. Although this program has concentrated on buildings and archeological sites, areas of significance in natural history are also provided for. These prairie relicts, of course, are significant both to the natural history and man's history in the area; both are intertwined. If half of the purchase price of a prairie relict were obtained, federal matching funds could be applied for. This is probably thinking too far ahead, though. The main benefit from having one or more relicts included in the national register would be encouragement to the owner. Also encroachment on the area by any agency using federal money would be prohibited. For example, a highway could not run through the tract. Mr. Porter is aware of the existence of the prairie remnants but needs to be convinced of appreciable interest in them.

The state-level program is an inventory of the state's "natural areas" which was authorized by the Arkansas Legislature during its last session. The bill was conceived and lobbied for by Trusten Holder, an advocate of Arkansas' bottomland hardwood forests as well as its prairie land. Although the program does nothing directly to preserve the tracts, it will call attention to their existence. All the relicts will probably be included in this inventory.

A form of encouragement to owners which would not only help preserve the tracts we know about but would help locate others could be given by reducing or eliminating property taxes on unplowed prairie whose history could be authenticated.

However, such encouragement provides only a temporary "solution" to the problem of preservation. Though this generation of landowners will do whatever is necessary to protect their prairies from the plow, the next generation may not have the same involvement with their land. Therefore, the plots can't be considered "preserved" until binding agreements are reached. In this respect, it might be possible to obtain easements to the railroad rights-of-way which run through the Grand Prairie. The Chicago, Rock Island and

(Continued on Page 11)

Project Extent of the Threat Posed by Channelization in Arkansas

No one can pretend to know the full long range effects of this massive tampering with our waterways. For example, in Arkansas over 3,500 miles of channelization are planned in the White River Basin alone. During the 16 years from 1954 to 1970, work was completed in 273 P. L. 566 watershed projects. Far too many of these 273 projects involved insensitive channelization. During that time span planning assistance was authorized for another 1,561 watersheds, and construction was in progress on 1,001. Another 8,904 watersheds were reported needing attention before the year 2000 A. D. Unless corrective action is taken, channelization will become even more widespread and hundreds of additional streams will be degraded and destroyed. P. L. 566 was not intended to be an instrument of destruction. Ecologically damaging channelization need not and should not be a part of P. L. 566 projects.

Adverse Environmental Effects of Channelization

Elimination of fish habitat and lowered production of aquatic life—A study of 23 North Carolina streams dredged as a W. P. A. project 40 years ago showed that 90 per cent of the fish population was lost, and there has been no recovery of habitat. Prior to channelization the Tippah River in Mississippi contained 240 lbs. of game fish per acre, whereas after channelization only 5 lbs. of tiny game fish per acre were produced. The stream beds does not naturally recover and bottom habitat for fish is ruined.

Destruction of wildlife habitat—Channelization eliminates streamside habitat for small game, waterfowl and furbearing mammals. Eventually after channelization, tangled briars and honeysuckle grow back but the vegetation is too thick to support wildlife. Herbicides are even used in some places to keep the growth cut back.

Degradation of water quality, increased erosion and siltation—With vegetation alongside the stream bank stripped away, more erosion can occur in a few days than would occur naturally over many years. Water becomes turbid, banks slump into the stream, and water temperatures are increased due to removal of shade cover.

Increased floods and damages downstream—Minnesota experienced all-time record floods in 1965 and 1969. The more than 70,000 miles of ditches can be blamed for accelerated runoff, compounding the downstream problems.

Lowered water tables—Channelization destroys swamps, wetlands, and floodplains which act as natural reservoirs to store nutrients, sediments, and flood waters and to recharge aquifers.

Destruction of valuable hardwood trees—Arkansas has lost over 1 million acres of valuable delta hardwoods during the past decade. Of the original 10 million acres, now less than 2 million remain. Similar losses are occuring in other states.

Destruction of archeological sites—In Texas alone hundreds of sites have been destroyed by channelization. Valuable scientific data has been lost concerning prehistoric geology, fauna, soils and climate.

Complete loss of aesthetic values—No longer does the stream meander along. It has been turned into a ditch practically devoid of life.

Destruction of the habitat for rare and interesting creatures—Several Alabama projects have destroyed the habitat for some rare and unique mollusks and a declining salamander. Other rare species such as blind fish are threatened by a channelization project in Indiana.

Basic Contradictions Involved in Channelization Projects

Channelization enables more land to be put into agriculture at a time when taxpayers are paying almost one billion dollars a year to keep land out of cultivation. After streams are channelized, adjacent lands will flood less frequently and swamps can be drained. This land can then be farmed with less risk. The fact that additional land is being put into agriculture is often disguised under the heading of reduction and prevention of flood damage.

By rushing water rapidly off downstream channelization violates a basic motto of the Soil Conservation Service: "Hold the raindrop where it falls." It is contradictory for an agency established to conserve soil and water to be aggravating downstream erosion, flood, and sediment problems by accelerating the removal of upstream water through channelization.

The States and the Department of the Interior with limited funds are trying hard to save important aquatic areas like swamps and wetlands. At the same time millions of taxpayer dollars are made available to federal agencies to promote channelization of streams and drainage of swamps and wetlands. Only since December, 1970, has the Department of Agriculture through the Water Bank Act developed a direct program to maintain essential aquatic areas. It is contradictory for the same Department, having recognized the importance of saving these aquatic areas, to continue financing their drainage.

THE GRAND PRAIRIE—

Pacific and the Saint Louis-Southwestern railroads have lines which provide both East-West and North-South transects of the Prairie.

It is hoped that some who read this will have other ideas and let them be known.

What I have tried to do in this discussion is to provide readers with not only an introduction to the Grand Prairie but also an introduction to a situation which is desperately in need of interested and involved people. This is not a story to read: it is an invitation to **join**. The Grand Prairie has been almost entirely lost because of "lack of interest". Today, there is tremendous national interest in our vanishing prairie land with annual national conferences and even plans for a Prairie National Park. Yet this enthusiasm hasn't communicated itself to Arkansas. Most Arkansans, probably even most Arkansas conservationists, are not aware of the large amount of prairie we once had. It's not surprising, then, that two recent books, meant to acquaint the general public with the extent and significance of prairie in the United States, **The Life of Prairie and Plains**, by Durward Allen, and **Prairie World**, by David F. Costello, do not even recognize that the Grand Prairie ever existed. Yet the truth is that Arkansas was literally dotted with grasslands, ranging in size from an acre or less to the half-million or so acres of the Grand Prairie. Arkansas should recognize their prairie heritage and take steps to preserve what remains. Without involved people, the remaining remnants of prairie will be plowed and all that was the Grand Prairie will be gone. But if people become interested and make their interest known, a part of the Grand Prairie could be kept so that the memory of it, at least, could remain.

Even on one of these small patches, if you squint your eyes **just right**. . .

The Environmental Protection Agency (EPA) has warned citizens and the government of the District of Columbia against touching the water of the Potomac River. Also covered in the warning were the Potomac tributaries Rock Creek and the Anacostia River.

Following EPA's warning the District government said it would seek a legal ban on water-skiing, swimming and wading. And although city and federal officials agreed that boating and fishing should be allowed, they stressed that anyone touching river water, or even being splashed by it, should wash thoroughly.

Caprock Separating at Kings Bluff - Ozark National Forest - Joe M. Clark.

The Origin of Pedestal Rocks

Joe Marsh Clark

Pulaski Chapter has scheduled a hike in the Pedestal Rocks area on November 20. The area lies approximately one mile south of Hwy. 16, six miles east of Pelsor (Sand Gap) and Hwy. 7, just south of the Newton-Pope County line. It is approximately eight miles southwest, as the crow flies, from the confluence of Falling Water and Richland Creeks where many of us have camped in the National Forest Campground. The area is along the bluff overlooking the headwaters of the North Fork of Illinois Bayou. The topographical setting can best be seen on the Treat Quadrangle of the United States Geological Survey (obtainable from the Arkansas Geological Commission, Little Rock, price 50 cents). A mile north of Pedestal Rocks is Kings Bluff; both areas are within the Ozark National Forest. Neither area is safe for children, and it is recommended that hikers use extreme caution when climbing over the rocks and crevices. The turn-off to Pedestal Rocks is indicated by a Forest Service marker and may be traversed by cars having good clearance to within a short distance of the bluff, leaving the steep grade to be traveled on foot. Kings Bluff has not been publicized and no road is planned in to the area. Hiking is the only way to fully enjoy the small pools and crevices in the cap rock. Walking over the beautiful carpet of lichens and mosses covering the rock surface seems like a sacrilege; they would soon be destroyed by vehicular traffic or too many visitors. Camp fires should not be built on the rock outcrop near the bluff as ugly fire scars result.

The pedestal rocks and columns standing in the two areas are of sandstone. They appear to be about 75 feet in height, approximately the same as the cliff faces opposite them. At Kings Bluff there is a hundred foot "pour-off" or wet weather waterfall. The elevation is between 1500 and 1750 feet above sea-level with a local relief of about 750 feet. The area is rugged and scenic.

Anticipating questions concerning the origins of the pedestals, an explanation is given to counteract unscientific theories which usually arise to explain most natural phenomena. For example, we have all heard that the big springs of Missouri originate in the Pacific Northwest although it has been proven that they draw their flows of water from short distances.

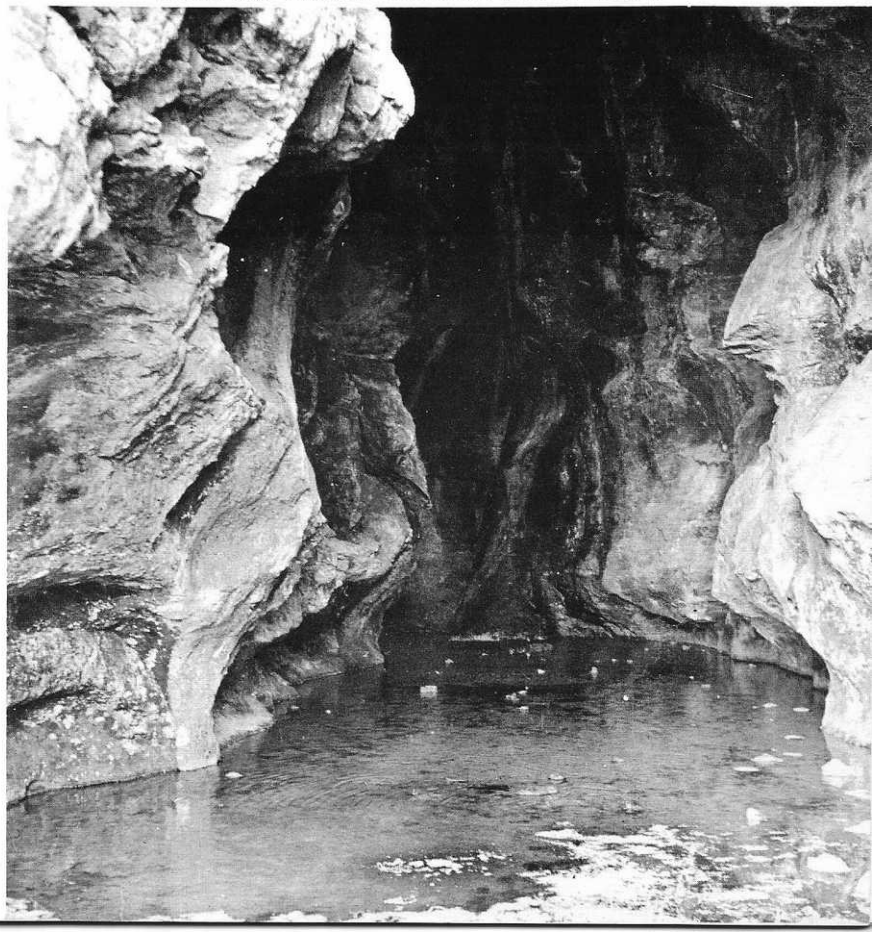
To understand the development of pedestals, a few simple facts should be known. A pre-requisite is a capping stratum of hard rock underlain by a softer or crumbly formation, and a favorable system of joints.

The geological term "joint" is a fracture or parting which interrupts the continuity of a rock mass. Joints are originally tightly closed, but are opened by the rock moving apart and may be widened by solution or mechanical erosion. Joints occur in sets. A set of joints runs parallel in one direction, but usually another set will run across it at almost any angle to form squares, rectangles, or parallelograms on the surface of a rock bed or stratum. These cut through the rock forming blocks. Other sets may occur causing the rock to disintegrate more readily, eliminating the possibility of pedestals being formed. The simpler the joint system, the better the chance of the occurrence of pedestals which may develop when two sets of closely paralleling joints cross forming comparatively small squares or rectangles.

Joints in a stratum of hard rock extending down through the underlying softer rock may open allowing surface water to percolate down to enlarge them. The portion of the joints in the softer rock are enlarged more rapidly to form small tunnels and caves. At the same time, the joints are widened to a lesser extent in the cap rock and the water gradually increases its rate of flow causing the erosion to become more rapid. Caves have been formed under the edge of Kings Bluff and, to some extent, at Pedestal Rocks. When we were scouting the area on February 26, this year, we found a pool of water in one of the caves and were noisely greeted by a large number of "peepers" or small frogs. If the underlying rock is very soft, such as in shale, it will disintegrate to let the hard cap fall to the hillside or valley floor.

In both areas, it was noticed that pedestals form along the cliffs where the strata dip or slope from the upland areas causing a slight tilt toward the valleys, thereby causing an easier separation by gravity than if the beds were level. Because of this the rocks lean away from the cliffs as there is no support on the valley side. At Kings Bluff, there is also an updip outcrop and cliff where pedestal rocks and columns do not form. Here gravity holds the rock together.

"Peepers" Cave - Kings Bluff - Ozark National Forest - Joe M. Clark



Game Commission Joins Suit to Halt Drainage

Tucker Steinmetz of the Gazette Staff

The state Game and Fish Commission, which adopted a statement in July saying there was "little to be gained through blatant opposition" to the Cache River-Bayou DeView Drainage Project, has voted to join the plaintiffs in a lawsuit that seeks to permanently enjoin the Army Engineers from proceeding with the project.

After hearing two representatives from the Arkansas Ecology Center explain what they contended would be the irreparable environmental damage resulting from the channelization project in Northeast Arkansas, the Commission voted Monday to join the suit.

A spokesman for an environmental organization at Washington said it was possible that the Arkansas Commission would be the first state agency to participate as a plaintiff in a lawsuit against the Engineers.

Andrew Hulsey, the Commission director, said Tuesday that before the Commission meeting Monday and Tuesday at Cherokee Village, each commissioner had received a letter from Richard S. Arnold, the Texarkana lawyer who filed the suit October 6, inviting the Commission to participate.

The Environmental Defense Fund, Inc., a national organization and one of the plaintiffs, is underwriting the costs of the court action. Hulsey said Arnold's letter advised the commissioners that it would not cost the state anything to participate.

Arnold filed the suit in federal District Court at Little Rock for the Environmental Defense Fund, the Ecology Center, the Arkansas Wildlife Federation, the American Duck Hunters Association and two individuals—Pratt Remmel, Jr., executive director of the Ecology Center, and Mrs. Gale Eddins, a Center employe.

Remmel and Mrs. Eddins met with the Commission Monday.

Mitigation Plan Quiets Opposition

The Commission has opposed the drainage project informally since it was first approved—but not funded—by Congress in 1950. In July, the Commission agreed not to oppose the project actively after the Engineers proposed a Fish and Wildlife Mitigation Plan involving the purchase by the Engineers of 32,000 timberland bottomland and acres to be left undisturbed and under Commission control. The land would be used for public fishing, hunting and other outdoor recreation.

Last month, however, the Commission learned that the Engineers were about to take bids on the first phase of the project before Congress approved the Mitigation Plan. Consequently, at its September meeting, the Commission withdrew its support and appeared headed toward active opposition.

The project consists of dredging, clearing and realigning about 140 miles of the Cache River channel from Clarendon upstream, about 15 miles of the Cache's upper tributaries and about 77 miles of Bayou DeView, the Cache's principal tributary, at a cost of about $35 million.

The Engineers say it will relieve flooding problems and facilitate the draining and clearing of wooded lands to provide more space for row crops. The environmentalists and the Commission fear damage to the wildlife habitat and other elements of the environment.

The suit says the project would "convert 232 miles of free-flowing streams, a recreational, aesthetic and ecological resource that is increasingly rare, into ditches."

Bids are to be opened November 9 for channel clearing and excavation on about 6 2-3 miles of the Cache River in Monroe County. The Engineers estimate the cost of the first phase at between $1 and $5 million.

The call for bids was apparently a major factor in the Commission's decision. Also, Hulsey said that at the September meeting, the commisioners took another close look at the entire project and concluded that the Mitigation Plan, even if funded by Congress, would not be sufficient to balance the environmental damage the project would cause.

ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF THE ADMINISTRATOR

The Ozark Society
c/o Dr. Neil Compton, President
1724 Rockwood
Fayetteville, Arkansas 72701

Dear Members:

Your active participation in the Arkansas conservation movement over the past years has been brought to my attention, and I want to commend you for this humanitarian enterprise.

Not only have you worked to expose the people of your state to the pollution difficulties we are facing, and what they as individuals, can do about them. You have also been aggressive in your efforts to preserve the natural beauty of Arkansas by attempting to influence the passage of protective legislation. Your dedication to these goals is an example for others all over the country.

Without the cooperation of citizens throughout the nation, there will be little meaningful progress in our fight to enhance the quality of our environment. I am always encouraged when I hear of groups like yours which are so committed to this achievement. People who care can accomplish wonders!

Best wishes to each and every one of the Ozark Society membership. I am extremely grateful for your support in our mutual endeavor.

Sincerely yours,

William D. Ruckelshaus

William D. Ruckelshaus
Administrator

ACTIVITY SCHEDULE

Those wishing to participate in any activity are requested to contact the leader at least one week in advance. It is often necessary to make changes in plans. Telephone or send a self addressed envelope to leader, chapter chairman, or secretary for final details and instructions.

Nov. 20—PULASKI: Hike Pedestal Rock area in National Forest. Length of hike will not exceed 1 mile. Not recommended for children under 12. Meet at Pelsor (Sand Gap) on Hwy. 7 at 9:00 a.m. Leader, Joe Clark, 1724 Rockwood Trail, Fayetteville, Ph. 442-2404.

Nov. 20—DELTA: Tour White River Refuge; Leader, Kathy Gosnell, Pine Bluff Commercial, Ph. (501) 534-3400.

Nov. 20-21—SCHOOLCRAFT: Long Creek hike. An overnight campout in the glade country of Mo. (Ava District—Mark Twain Nat'l Forest). Lots of pretty scenery and rugged country in its natural state. Leader: Bill Bates, 1713 Madaline, Springfield, Mo. 65804. Ph. (417) 883-5199.

Nov. 25, 26, 27, 28—BAYOU: Series of floats on the Ouachita River. Base camp in the new Fulton Branch Forest service campground. An excellent river for intermediate canoeists. Some runs good for beginners under George's able leadership. Leader: George Armstrong, Ph. (318) 865-8302. Ass't leader: Bob Hightower.

Dec. 4-5—DELTA: Hike Sylamore Creek; Leader, Tom Parsons c-o Pine Bluff Commercial, Ph. 501-534-3400.

Dec. 4-5—PULASKI & UALR: Hike (overnight) into Twin Falls of the Devils Fork. Trip leader: Jim Allen, 22 Alameda Dr., Little Rock, Ark. 72204 Ph. (501) 565-1363 or (501) 565-7531-Ext. 258.

Dec. 4-5—INDIAN NATIONS: Elk River Float, Campout at Huckleberry Ridge, Trip leader: George Savage, 6904 S. Birmingham, Tulsa, Okla. 74105. Ph. (918) 743-2755.

Dec. 4-5—BAYOU: Hike into Big Thicket of Texas. The Big Thicket is big—nearly as big as all of East Texas. Here is more of it shown to day hikers by a Texas member. Leader: J. R. Brannon. Local contact: Jack Austin, Ph. (318) 424-7201.

Dec. 4-5—SCHOOLCRAFT: Current River float and hike. Akers to Pulltight—9.5 miles. One day of hiking in the Sunklands and a short float on the upper Current. Leader, D. F. Darby, 1903 Maryland, Springfield, Mo. Ph. (417) 883-5685.

Dec. 11—HIGHLANDS: Hike down Dismal Creek (not Hollow) from State Hiway 16 to Walnut on Big Piney Creek in search of another "Hole in the Rock" Waterfall. This is a four mile hike over very rugged terrain, requiring physical fitness and stamina. Children under 12 not recommended. Meet at Fallsville at 8:30 a.m. for car shuttle. Leader: Dick Murray.

Dec. 11—PULASKI: Mike Falling Water Creek area. Meet at Richland Creek campground on Sat. morning at 9 a.m. John Heuston-Chick Harris, trip leaders.

Dec. 11-12—BAYOU: Float on the Cossatot. We expect our favorite River to be up. Leaders: Wellborn Jack, Jr. (318) 865-3303 and George Armstrong (318) 865-8302.

Dec. 18-19—DELTA: Hike Devil's Fork and Pedestal Rock east of Pelsor: Leader, Chalmers Davis, Altheimer 72004, Ph. 501-766-8301.

Dec. 19—SCHOOLCRAFT: Jam-up Bluff hike. A short hike to this unique cave located on the Jacks Fork River, will run thru a steep valley to the lower cave entrance which is one of the largest entrances in the state. Leader: Bill Bates, 1713 Madaline, Springfield, Mo. 65804, Ph. (417) 883-5199.

Dec. 31, Jan. 1, 1972—OZARK SOCIETY **all chapter New Year's float** on the Buffalo River. Our second annual New Year's overnight canoe trip. Meet at Gilbert at 8:30 a.m. Fri., Dec. 31 for car shuttle. New Year's Eve party at Maumee Landing gravel bar. Leader: Harold Hedges, Ponca, Ark.

Jan. 1, 2, 3 (1972)—BAYOU: Wellborn Jack's New Year Hangover Cure—Cossatot Mountain and River Float. Leader: Wellborn Jack.

Jan. 8—DELTA: Float upper Caddo River, Leader, Tom Parsons, c-o Pine Bluff Commercial, 71601, Ph. 501-534-3400 or Chalmers Davis.

Jan. 15 (1972)—HIGHLANDS: Hike down Big Piney canyon, Walnut to Limestone. This will be a rugged hike requiring crossing and recrossing of Big Piney numerous times. Hikers should be in excellent physical condition and with heavy foot wear. Children under 12 not recommended. Meet at Edwards Junction at 8:30 a.m. for car shuttle. Leader: Harold Hedges, Ponca, Ark.

Jan. 15 (1972)—INDIAN NATIONS: Hike and Chili Supper, Camp Garland, Okla. Marion Gainey, leader, 5754 E. 24th, Tulsa, Okla. 74114. Ph. (918) 835-3631.

Jan. 15-16—BAYOU: Blaylock Mountain hike. Camp at Albert Pike on the Little Mo. River. Leader: George Armstrong. Ass't. Leader: Bill Meier. Ph. (318) 865-2982.

Jan. 16 (1972)—SCHOOLCRAFT: Devil's Den, Smallen Cave, Finley Falls Drive. Three natural scenic areas located within a short distance of Springfield. This will be a good outing and requires only short distance walking. For details contact leader, Paul DeRigne, 1420 S. Pickwick, Springfield, Mo. 65804, Ph. (417) 866-7033.

Jan. 29—DELTA: Spelunking in Beauty Cave; Leader Jane Parsons; contact Tom at address given above or Chalmers Davis at Altheimer.

Jan. 29-30 (1972) — UALR: Hike on the headwaters of the Buffalo River. Trip Leader, Robert Booth, 6911 Skywood Rd., Little Rock., Ark. 72207. Ph. (501) 664-5419.

Jan. 30 (1972)—BAYOU: Cow Creek Canyon near Mena, Ark. and Okla. line. Leader: Barney Gibbs. Ph. (318) 868-9570. Ass't leader: Wellborn Jack, Jr.

THE OZARK SOCIETY

P.O. Box 38 **Fayetteville, Ark. 72701**

New Memberships are good for the remainder of this year and 1972.

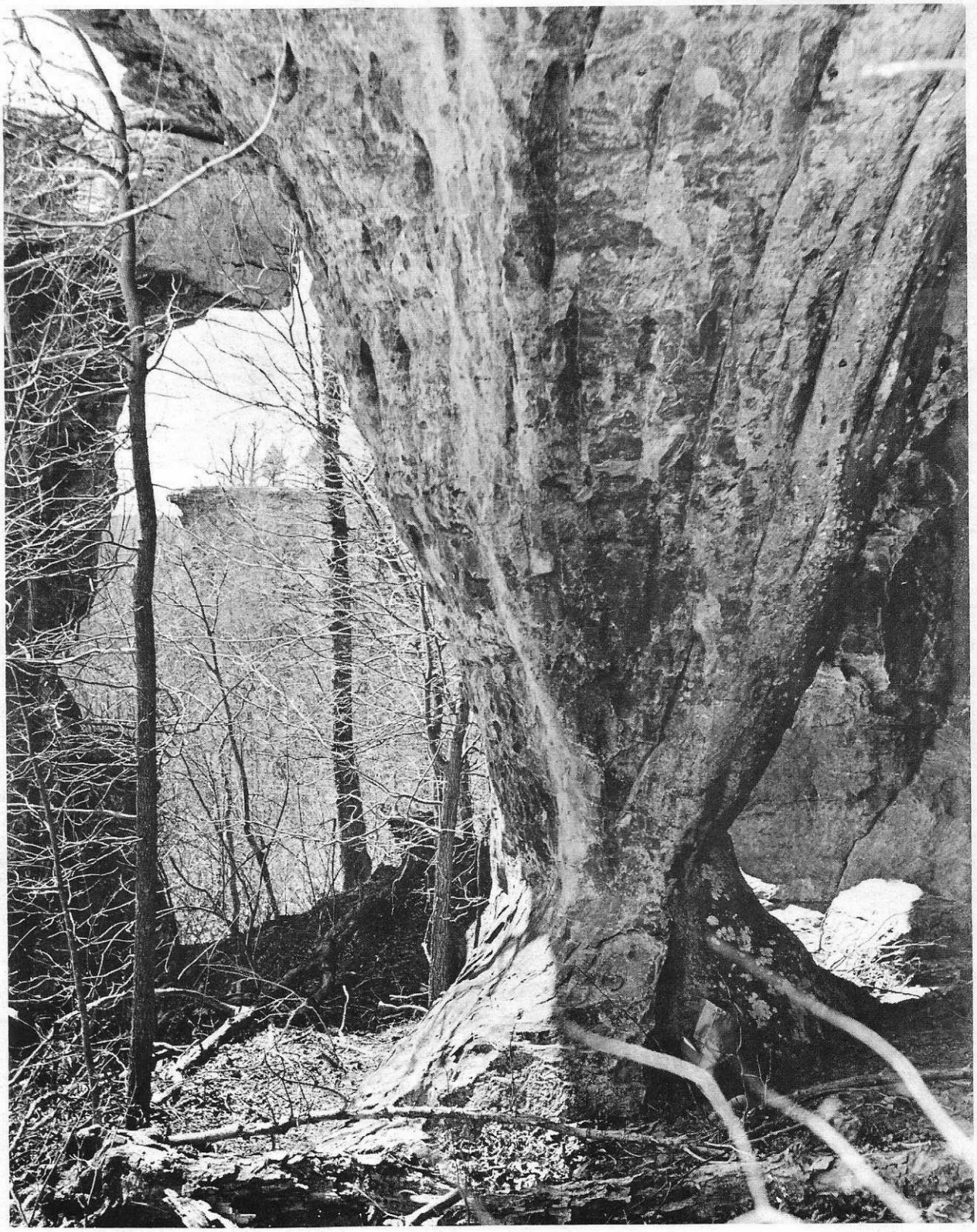
Dues are for the calendar year. They are: regular (and family), $5; contributing, $10; sustaining, $25; life, $100; student, $1.

Please check: new member____; renewal____. Date _____

Last Name _____ First names of husband and wife _____

Address _____ City _____ State _____ Zip_____

Telephone _____ If Student - name of School _____
(Include Area Code)



Pedestal Rocks - Ozark National Forest - Joe M. Clark.