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Front Cover:

Tragopogon dubius (goat's beard) photo-Joe Clark



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The Apprentice

We who have looked at our times and have felt the clutch
of the nameless sadness that chills the heart, must own
ourselves the Sorcerer's Apprentice.

In our fragile world,
stumbling upon the secret abracadabra
that Newton dreamed of in his alchemy,
in our undisciplined ignorance, we have broken the seal
of magic, unwittingly, and now we find,
like the dismayed lout in the ancient legend,
our magic dazzlingly realized, past all fancies
of the **Arabian Nights** -- conversing with the lightning,
walking on the air, riding in a chariot of fire
to the Moon, in motion past the speed of sound --
and we, the Apprentice, confused by our own success,
unable to curb the powers we have loosed on the world:
the Four Rich Elements, each in its place a blessing,
perverted by the tactics of our bloated greed,
that know no law but that of wanton destruction
for a false gain that is an ultimate loss:
rivers and lakes slimy with foul effluvia;
our lovely woodlands, the dogwood hills with briar
and birdsong, mountain and valley stripped and ravaged;
the pitiful, beautiful, haunted, helpless wild things
that called the woods their home, hunted and dying.

Our children are now our heirs, but how shall they cherish
what we have destroyed on river and land and sea?
What can we say to them? What can we do to revoke
this raging ravening? How can we expiate
the wrongs that we have done?

Our sin is not in the magic, but in the use
to which we have put it.

Nature is the marvelous robe
the Creator, the Ultimate Magic, wears in our presence:
the Sorcerer of the Universe -- words in reverence
and awe of the Forces that have created three hundred
billions of galaxies greater than our own, whirling
in space beyond the reach of our puny minds:
the Power, the Meaning, the Mystery of all that is,
the Life Principle, hidden in stone and atom,
overt in the blade of grass and the flowering tree
and in ourselves, who call ourselves His children.

Our work is to dress the Garden.

"My Father worketh
hitherto, and I work," said One who saw the Mystery
more clearly than some of us -- a shining message!
Let this be our hope, that we, the fumbling Apprentice,
may learn to use our magic in reverence
for the beauty and wonder and majesty of life!

Lily Peter, Poet Laureate of Arkansas, for The Ozark Society Bulletin.

Ecological Impact of Changes In The Arkansas Delta Region

BY HAROLD E. ALEXANDER

Specialist-Resources Programs—Arkansas Planning Commission

A concern for changes in the ecology of the delta region in Arkansas is, essentially, based on the total impact of developments and land uses carried out by man and their effect on the total environment. Most of these changes have come about as the result of efforts to convert the original and climax timberlands to cleared lands intensively used for agricultural purposes.

In its original state or condition, this heavily forested region included climatic, land, and plant and animal associations which were complementary to each other, and which had varying but essentially balanced relationships. The plants and animals were adapted to the soils and the periodic overflows from lowland watercourses which spread out, seasonally, over the flood plains. The trees and lesser plant species, developing over many centuries of time, were adjusted to and flourished under these conditions. Many other indigenous plants and animals were, likewise, adapted to these habitats.

Original conditions in the delta country were described by the early explorers. Their observations give us a view of the appearance of the delta prior to man's occupancy of this lowland region.

Among the first of the early explorers, De Soto traveled across eastern Arkansas in 1539 and 1540. A description of his travels and what he saw reads as follows:

"After struggling through (canebrakes)---, De Soto's column emerged joyfully in northeast Arkansas. This was good country, higher, drier, and more level than any other along the river that had been seen until then. In the fields were many walnut trees, bearing tender shelled nuts in the shape of acorns (pecans?), many being stored in the (Indian) houses---. There were many mulberry trees, and trees of plums (persimmons), having fruit of vermillion hue, like one of Spain---. All the trees, the year round, were as green as if they stood in orchards, and the woods were open, (and)---there was no end of fish because all that country is flooded by the great river when it overflows its banks".

Thomas Nuttall, the naturalist, visited the delta near the mouth of the St. Francis River in 1819. An excerpt from his journals provides the following description of the country through which he traveled:

"The higher lands produced black

ash, elm (*Ulmus Americana*) hickory, walnut, maple, hackberry, (*Celtis integrifolia*)---honey locust, and coffee bean. On the river lands---grow platanus or buttonwood, upon the seeds of which flocks of screaming parrots were greedily feeding, also enormous cottonwood trees, (*Populus angulifolia*), commonly called yellow poplar, some of them more than six feet in diameter and occasionally festooned with the largest vines which I had ever beheld". Near the mouth of White River he noted that, "the trees and shrubs are chiefly of pecan, the black walnut, but very rarely swamp oak, cottonwood, white poplar (and) honey locust", and he saw the Grand Prairie as "a vast prairie---, like a shorn desert, but well covered with grass and herbaceous plants--- (which is) computed to be not less than 30 leagues in length by 10 to 15 in breadth---".

The prevalence of wildlife in the delta before the turn of the century was recorded by James A. Anderson, an early Methodist minister. He wrote:

"The abundant wildlife of Arkansas was one of the chief charms of its early days. It was spread throughout the state, but was most abundant in its eastern section. The region between the Mississippi and the St. Francis was a paradise for hunters, trappers and fishers. There were buffalo, bear and deer in herds, wild turkeys, ducks, geese, raccoons, opossums, mink, skunk, and almost every wild animal known to this latitude---. Boat loads of furs were carried out for many years after the country began to be settled. Wagon loads of venison and turkeys were carried into such places as, Memphis as late as 1880---, the venison selling for five cents a pound, and the turkeys for fifty cents each". He observed that single hunters often "brought in 125 ducks" per day, and describes "enormous canebrakes in that country---so thick and strong that a mat was formed on the top along which a man could walk". These latter observations were made in the late years of the 19th century, when Mr. Anderson preached in the parishes of northeast Arkansas.

The early settler gradually cleared and cultivated the original timberlands, but the means and incentives to clear and alter those vast acreages of delta country, from which most of the bayous and woods have been removed, were associated with the

development of the bulldozer, the drag line, and governmental agencies and subsidies which provided the landowner with incentives beyond those of the conventional systems of supply and demand for agricultural crops.

Changes

Early clearing of woodlands was accomplished with the axe, the crosscut saw and fire. Stumps were uprooted and the land was turned with the horsedrawn plow. Between the cleared openings planted to cotton, beans and other crops, there were extensive forested tracts which remained essentially unchanged. The settler found wildlife abundant in the forests, and the streams and lakes teemed with fish. Hunting and fishing furnished meat for the table, and sport. Life was relatively simple, and wagon roads between the small settlements were shaded by giant trees. On the higher lands above the flood plain tupelo, elm, ash, hickory, and various species of oaks were the dominant species. In the shallow swamps cypress, green ash, maple, overcup oaks and persimmon were among the principal tree species.

Each fall and winter, after the rains began, the lowlands were covered with water, and millions of ducks and geese wintered in the bottoms, feeding on the mast dropped from fruit and nut-bearing trees. With scoop, shovel, and hand labor, levees were built and channels straightened. The flood plains were narrowed, and the timberlands were cleared. Forests gave way to cultivated lands where cotton was king.

But the big changes in the country began with the Flood Control Acts of 1936, and progressed as power tools, giant 'dozers and drag lines made possible the construction of more and higher levees and deeper and larger ditches. With authorization for Federal Agency participation in drainage programs, increasing appropriations for these agencies, and the advent of price supports, the assault on the streams and timberlands was rapidly accelerated. By the middle of the 1960's, only remnants remained of the original streams and bayous and their associated timberlands. The channeled streams no longer provided those age-old biological conditions essential to fish and the organisms supporting their life cycles. Ducks, deer and other wildlife were confined to the receding timberlands along

remaining stream channels, and to those blocks of timber as yet uncut or pushed down, or otherwise managed for timber production. On the cleared lands, conditions essential to many forms of plant and animal life were altered or destroyed. Where once ducks swarmed into the woodlands, cotton fields provided neither food nor essential habitats. Living conditions for man and animal were radically changed.

Of most significance in changing the ecology of the delta lands were channels which straightened the streams, accelerated the run-off, and made possible the extension of clearing operations into the lowest levels of the overflow bottoms. A large percent of meandering streams, with their clear waters, varying depths, and periodic overflows, are now straight and narrow ditches. Clearing and snagging operations have removed stream-side vegetation, and the "spoil" dredged from these ditches has been piled high upon the denuded banks. Pools and gravel bottoms are gone, and those habitats essential to the existence of bottom organisms and insects, providing food for fishes, have been destroyed. Ditches are uniform in depth, and spoil banks and silt from cultivated lands now cloud the once clear waters and cover spawning beds. Trees removed by clearing no longer shade the streams, and solar radiation heats the receding waters to temperatures adverse to many forms of life.

Recent studies demonstrate the changed conditions in channelled streams. Researchers in North Carolina have, for example, found that "reductions in the magnitude of 90% occurred both in the pounds of game fish, and in the number exceeding six inches in total length per acre (of water) following channelization". And there was no significant return toward the natural (original) fish populations in channelled streams within a forty-year period following channelization.

A pre-channeling study of the Tippah River in Mississippi showed a population of 240 pounds of game fish per acre in the natural stream. After channeling the per acre poundage dropped to only five (5) pounds.

Not only are the waters and character of streams changed through channeling, but the loss of stream-side vegetation destroys shrubs and trees essential to wildlife living along these streams, and waters shunted to or overflowing into lowland lakes reduce the quality of these waters for other uses and purposes. Muddy waters have, for example, destroyed the clarity and beauty of much of Lake Chicot in south Arkansas, eliminating fishing potential and drastically reducing the recreation potential of this lowland

lake.

Describing the effects of channeling on stream habitats, Allen (Georgia) commented in a recent report, "Stream channelization is the changing of a stream into a man-made ditch---(this) usually necessitates the removal of all trees and other woody vegetation along each bank for distances up to 100 feet to allow for the deposit of silt removed from the stream bed". And he notes that trees and shade are lost, logs and rocks are removed, and channeling destroys food and spawning areas and "shrinks" water tables, and the "overall effect on the ecology is unknown". Georgia comments further:

"The den tree where squirrels played is gone, even the log in the water where the catfish built its nest and along the banks now stripped of foliage there are no little boys with cane poles in their hands."

And in summing up the causes and effects of channeling Georgia has said, "During the last twenty (20) years, drainage projects, like those of the Soil Conservation Service, have destroyed three to four million acres of bottomland hardwoods in the southeast of significance to waterfowl".

Drainage has been and is the starting point of timberland clearance; with it go the streams themselves, and in this process many of the characteristics of the land and valuable resources are lost or degraded. Of particular significance for the future are the 3,500 miles of channels planned in projected developments for the White River. Since this major waterway and its tributaries drain part of the delta, the straightening and channeling of the River and its tributaries will

accelerate the elimination of the remaining hardwoods.

It is apparent that much drainage has been and is essential, but increasing agricultural land surpluses and subsidies, along with the losses of lowland streams and associated wetlands, indicate that a great deal in the way of other resources is being lost, and that the ecology and the quality of the habitat for man and animal in the delta have been altered and, in many ways, degraded.

There are other man-induced changes which have also brought about this situation. Let us examine some of them.

Effects Of Impoundments

Along the major rivers flowing into and across the delta are a series of major impoundments. With exception of those dams constructed for navigation purposes on the lower Arkansas, most of those straddling the streams flowing into the delta have been constructed in the hills above the alluvial plain. The delta, itself, does not provide the hills and valleys suitable for dam sites.

But one principal benefit postulated in justification for the construction of the large dams is the storage provided behind these structures to catch and hold water, and prevent the flooding of the lowlands. On the upper White, for example, four major dams capture part of the water which falls during the winter and spring rains and release this water gradually, reducing peak flows. But the slowing down of the runoff, the built-in hydropower features, and changes in temperatures induced by stratification of water behind the dams have their effects on the delta. Overflows

(Continued on Page 6)



Harold accepting plaque and check from Ray Grizzel. Virginia Alexander at left, President Joe Nix, Harold, Grizzel. (photo-John Heuston)

ECOLOGICAL IMPACT —

on the streams are reduced in height and velocity, but are sustained over a longer period. Stratification into upper and lower levels behind the dams results in releases of cold, deoxygenated water downstream. As a result, the biological relationships below major dams are changed. There are, for example, few native fishes for some 80 miles below Bull Shoals impoundment on the White River.

It should be noted that a number of other major dams are planned on the White, Spring, Strawberry and other streams and their tributaries. Of major significance are the plans for watershed developments on the lesser tributaries. These plans include many hundred of miles of channeling and some 800 small impoundments on the tributary streams. These small impoundments, in numbers, increase downstream temperatures and changes in stream ecology. Additional plans for the Cache, Languille, Bayou DeView and other delta streams will alter their hydrology and biology.

A principal effect noted in the streams of North Carolina was the increase in temperatures in streams below multiple impoundments. These temperatures and other water quality changes have created changes in ecology adverse to native fishes. Although of less significance than the channels, large and small impoundments on streams flowing through the delta do change stream flow patterns, water quality, and the ecology of the streams themselves.

Changes In Timber Types

Today, most of the large trees which made up the forest in an early day are gone. The rates of clearance and data on changes in types are recorded elsewhere in this report. But it should be noted that clearance of the lands, reduction and changes in overflow patterns to which delta species were adapted, lowering of water tables, and the combined effects of channels and other developments have radically changed the ecology of the region.

Such species as cypress and tupelo could not survive the drought, were cut, or their growth, reproduction and survival are prevented where acute changes in the hydrology of surface and subsurface waters has occurred. But beyond the clearance of vast acreages to create crop lands, channeling, snagging and clearing of streams has, perhaps, produced the greatest change in the biology of the region. Only on the higher lands outside the stream zone, and in well-preserved tracts where cutting and clearing has been moderate do

the original species associations dominate the flora. The increasing importance of the cottonwood as a commercial species has also, resulted in planting of extensive tracts in a monotype from which the wide variety of plants and animals characterizing the mixed forest stands have been eliminated.

Changes In Hydrology

The significance of the extensive systems of drainage ditches, the removal of timberlands and the conversion of woods to crops on the hydrology of the region, has not been fully evaluated. Channels and dams which accelerate or hold back the flow of surface waters, have had pronounced effects on the ecology of the region. Where there were dense stands of timber in the flood plains, the trees and lesser vegetation slowed the outflow of rising waters. From the swamps, bayous and lowland lakes, the standing water percolated downward into the alluvial soils, and from this underground aquifer the farmer has irrigated his croplands. The levels of lakes and lowland streams were, generally, contiguous with the delta water table. Observations and scientific investigations carried out by the U.S. Geological Survey do, however, demonstrate a pronounced lowering of the water tables in certain areas.

A report prepared by the United States Geological Survey in 1954 states that water tables had declined over 89% of an area in east Arkansas, extending from the Missouri line to Desha County, and that underground water levels had receded 10 to 20 feet below former levels. The area of greatest decline was in the Grand Prairie Region.

A later report, dated 1962, lists two major areas of depression of the water table from Clarendon to west of Crowley's Ridge. It notes that water level declines are at a rate of one (1) foot per year, and up to nine (9) feet since 1953. In other areas levels had been reduced 16 feet over the same period. Insufficient recharge and withdrawals were listed as the major causes of reduction in water levels.

It is most evident that run-off is vastly accelerated by the ramifying channels as they increase in depth, length and number; and as more lands are cleared, run-off from the watershed is increased. As a result the water table is not fully replenished from surface waters and "cones of depression" develop about deepened channels and lowered lakes.

Since the ecology of the region was determined by the high rainfall and near-surface water tables, the bayous and overflows, and plant and animal species, were adapted to these

circumstances, the impact of various developments and changes in stream systems have had a marked influence on the changes in the ecology of the lowland country. Plants and animals have disappeared, and the lush vegetation has been replaced by cotton and soybeans. In certain ways the region has deteriorated for human use.

Over large areas habitat for fishes and wildlife is gone, and the quality and esthetic appeal of the land depreciated. Changes in underground and surface waters due to man's manipulations have been a major factor in altering the hydrologic systems and the land.

Effects Of Pollution

There are many forms of pollution from solid wastes dumped along roadsides to silt that erodes from ditch banks and clouds and degrades the quality of water. Where streams and bayous continue to meander through woodlands in a relatively unaltered condition, and excluding the probability of sheet erosion from nearby cultivated fields, waters may remain clear, of good quality, and suitable for native fishes. But few streams in east Arkansas remain unaltered and unpolluted. The ditches down which the waters course are, in themselves, major sources of silt. And where silt has covered stream bottoms or been deposited in lakes or in woodlands during high waters, these sediments destroy valuable timberlands, fish, wildlife and recreational and environmental values.

Industrial pollution is not a major element in degrading the quality of the lowland streams and lakes, excepting those industrial or municipal pollutants released into the Arkansas River. But pesticides which are sprayed on delta croplands, and agricultural chemicals have and do damage the quality of the land and waters of the area.

The total impact and effects of pesticides on living organisms in the delta are most significant. Although the amount and degree of contamination from these sources is not evaluated, the total effects of the thousands of pounds of agricultural poisons dumped on the land must be extensive. Such compounds as DDT, aldrin and dieldrin have proven to be toxic with long term and ramifying effects on biological organisms.

In a recent report, Dr. Clarence Cottam notes some of the detrimental effects of pesticides on mammals, birds and fishes. He commented as follows:

"With the mix of childish enthusiasm and arrogance typical of the technological revolution in

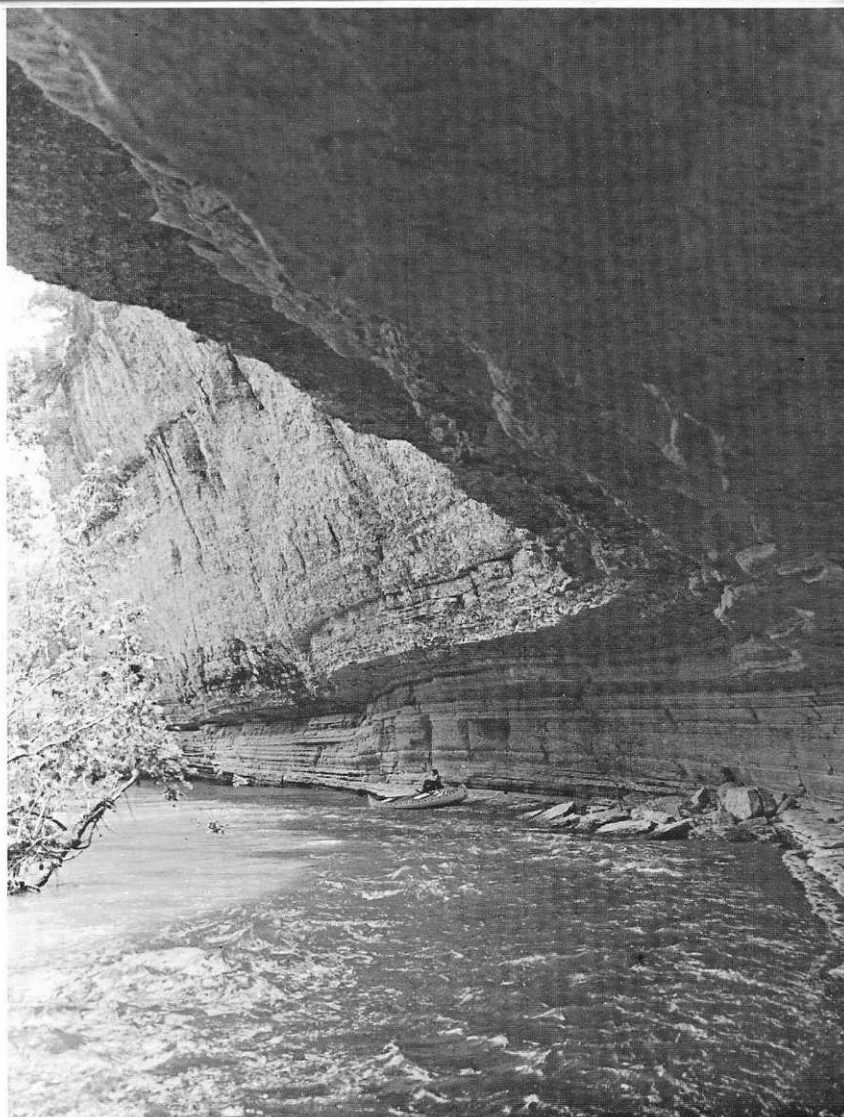
America, DDT by the thousands of tons was spewed on the surface of our planet" and comments further that ".... no member of a community of life or ecosystem is independent of the others". DDT and other chlorinated hydrocarbons run off the land and are concentrated in water. They are accumulated in plant plankton which are ingested in numbers by an animal plankton, and finally accumulate in the tissues of fishes and higher organisms, interfering with life processes and reproduction. The case of the Coho salmon in Lake Michigan, which were removed from the markets due to excessive levels of contamination by DDT, is a classic one. Other demonstrated effects of pesticides on pelicans which feed on fish, and to raptorial birds, whose eggs are made infertile through the accumulation of pesticides in their reproductive systems.

Dr. Joe Nix, in a paper reviewing factors influencing water quality listed reduced or excessive temperatures, turbidity, wastes (from many sources) pH levels, and insufficiencies in dissolved oxygen as factors degrading the quality of waters, and retarding or eliminating normal life processes.

All of these forms of pollution, from pesticides to reduced oxygen levels, affect the ecology of the surface and underground waters of the delta, and plants and animals respond adversely to these forms of pollution. Most of this pollution is due to man's activities, and clearance of woodlands, drainage, impoundments, agricultural chemicals and pesticides have accumulative effects on the land, waters and life of the delta.

In summing up, we can say that the multiple and total effects of man's developments on streams, bayous, swamps and timberlands in his efforts to convert the original woodlands to agricultural uses, have had both good and adverse effects on his (man's) total environment. Much of what has been done was necessary to the development of the economy of the region and the social welfare. But man's technological capabilities, and systems of evaluation which calculate benefits only in dollar terms, have ignored many elements of importance to the total scheme of things. Also overlooked has been the realization that "natural resources are not discrete, but occur in continuously interacting complexes", which means that those long established ecological relationships of climate, soils, waters, plants, animals and man, when disrupted by single or limited purpose developments, often produce chain reactions which reduce the quality of living conditions for people.

The total effects of thousands of



Scene on upper Kings River. (photo-Neil Compton)

miles of channels and straightened streams, of a landscape denuded of trees, of agricultural poisons, of vastly accelerated runoff of rainfall from watersheds, and of an over-production of agricultural lands have had effects, both economic and cultural, which are adverse to the total environment of man in the delta. Along with acknowledged benefits is the realization that opportunities for enjoyment, cultural and esthetic values, and other resources-fish and wildlife, timberlands, pure waters and recreational opportunities among others, have been lost in the process of developing the agricultural economy; and the total conversion of natural systems to man-made systems has had effects adverse to the welfare of the people of the region and to opportunities important to future generations.

In a total view, the impact of ecological changes is adverse to maintenance of an environment having all those potentials and opportunities of benefit to people. The preservation of natural streams, woods, overflow bottoms and recreational potentials would perpetuate a more suitable habitat for man in the delta, and provide for the continuation of those long-established ecological systems essential to survival.

CONSERVATION NEWS, a magazine sent out twice a month as a free educational service of the National Wildlife Federation will be mailed to you if you write for it. Your request should be addressed to the National Wildlife Federation, 1412, 16th St., Washington, D.C. 20036.

BLUE WATER

J. NIX AND W.W. EVERETT

Department of Chemistry

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(This article was first published in the Bulletin of Spring 1968. It is again presented because many questions arise on our outings regarding the cause and variation of the color of the water in the streams at various times.)

"It is now, I believe, generally admitted that the light which we receive from the clear sky is due, in one way, or another, to small suspended particles which divert the light from its regular course." Such was the beginning of Lord Rayleigh's (1) classic explanation of the blue sky. Further investigation of this phenomenon has led to the development of a very useful scientific tool as well as to furnish an adequate explanation for the color of many natural phenomena such as the blue color of some natural waters. The science which developed is referred to as light scattering.

When light is scattered by very small particles suspended in a medium, certain colors are diverted from the original direction to a greater amount than others. Light of a short wavelength (blue light) is scattered more than light of a longer wavelength (red light). This selective scattering of blue light in media containing small suspended particles causes the suspension to appear blue even though no blue pigment is present. This effect is generally referred to as the Tyndall effect and the color produced as Tyndall blue (2). A few relatively common examples of Tyndall blue are the blue of cigarette smoke, skimmed milk, blue eyes, and the blue of some bird feathers. (3)

In order to observe the Tyndall effect, the observer must view the scattering material from the same sides that the light enters. If the suspension is viewed from the back side, thus looking through the material toward the light, a reddish color can be produced. The red color can be seen since the blue light has been selectively scattered out and does not pass through the suspension. Thus a suspension of small particles dispersed in some medium appears blue if observed from the side of the incident light but if viewed from the side opposite the incident light the material can appear red.

The extent of the Tyndall effect is dependent on the size of the particles and the number of particles present in the media. Small particles cause a greater degree of color selection and hence produce a more intense blue. As the size of the particles increase the suspension begins to take on a grey to white color indicating very little or no selective scattering. Particles approximately

the same size as the wavelength of blue light ($5/1000,000$ cm) are generally accredited with the phenomenon. (3). An increase in the number of particles present also enhances the blue color. (3)

Some of the streams in the Ozark and Ouachita Mountain regions of Arkansas have been noted to possess a pale blue color during certain times of the year. There is little doubt that this coloration results from the Tyndall effect produced by very small particles suspended in the water medium. In this case the observer is viewing the stream from the same side as the light source. The effect would appear more pronounced if no light were originating from behind the suspension. Thus the blue color should be more intense if the stream is dark and does not reflect light from the bottom of the stream. If light is reflected from the bottom of the stream bed, the combination of light coming from both directions would tend to cancel out the Tyndall effect and the suspensions would appear milky and white.

Almost all natural waters contain some suspended matter. The water chemist measures the amounts of suspended matter in terms of turbidity of a water sample. The particulate matter present may have a variety of origins ranging from the erosion of soils to actual in situ formation of the particles from dissolved species in the water. The particles may be composed of silica, calcium carbonate, iron oxides, clay, organic matter, or simply rock which has been ground up by stream action and weathering processes. The time of year when the blue coloration is most evident in mountain streams

strongly suggests that the origin of the particular matter is the winter influx of surface runoff water. In areas where shale (and other aluminum silicate type rocks) are currently weathering, clay minerals can be formed in the weathering process is generally no larger than 0.0005 cm and ranges down to colloidal sizes. (4)

During periods of extended runoff clay particles are washed into the streams and are kept in suspension by the agitation of the moving water. In many cases the particles are small enough to produce the Tyndall effect and the stream takes on a blue coloration. If the clay particles are larger, there is no color selection and the stream appears milky white or grey. Some natural waters contain dissolved organic matter which imparts a yellow color to the water. If the blue due to light scattering by suspended particles is combined with this yellow pigment, it is possible that a green coloration of the stream could result. (3) This combination is known to be the cause of the non-iridescent green bird feathers.

Thus the phenomenon of light scattering contributes a great deal to the variety and aesthetics of a natural stream.

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3. Mason, Clyde W., J. Phys. Chem. 27, 201 (1923).
4. Mason, Brian, Principles of Geochemistry, John Wiley and Sons, Inc., New York (1962).



Botanical Notes

MAXINE CLARK

Have you ever walked across a stretch of virgin prairie, felt the gentle breezes on your face and looked in wonder at the myriad of flowers that stretches as far as you can see toward the horizon? We have succumbed to the beauty of this unbelievable sight and early in April make every attempt to visit two remaining plots we know in Benton County. For the botanist and photographer it is paradise. It is also frightening because each time we leave, we wonder if this irreplaceable plant community will still be there when we return. So we are studying the succession of bloom from the first birdfoot violets to the maturity of the fall grasses of autumn and making a photographic record of what we see.

To our knowledge there are only two virgin prairie plots, each of about forty acres, remaining of the original four major prairies described by Frederic W. Simonds and T.C. Hopkins in THE GEOLOGY OF BENTON COUNTY included in THE ANNUAL REPORT OF THE GEOLOGICAL SURVEY OF ARKANSAS FOR 1891, VOLUME II. The two plots are parts of Lindley's Prairie in the southwest portion of the county, northeast of Siloam Springs, which was formerly 5-6 miles long and over 4 miles wide. Other prairies described were Osage Prairie which extended for about ten miles in the area south of Bentonville. A few prairie flowers may still be seen on the Bentonville airfield. Beatie Prairie was an area of about six by two miles in Arkansas, extending into Indian Territory. We say remnants of this near Maysville; all but one little triangle by the road is gone now. Round Prairie was in the western part of the county between Bloomfield and Cherokee City. The Nature Conservancy Chapter in Fayetteville headed by Sam Dillenger and Neil Compton made a valiant attempt to save this prairie but national funds were not forthcoming and the area was bull-dozed. The Ozark Society evolved from this chapter in 1962.

Geologically the prairies of northwest Arkansas are upland and lie on the Springfield Plateau, the portion of the Ozark Uplift underlain by the Boone limestone and chert of Mississippian age. The lime dissolves leaving a layer of chert mixed with clay. A characteristic of these prairies is the prairie mounds, sometimes called "pimple hills". According to Quinn "Prairie mounds are low, naturally occurring hillocks, randomly distributed over level terrain. Nonetheless, similarity in



size, shape, orientation, and distribution of prairie mounds, regardless of locality, suggests a common mode of origin and furnishes an explanation of the way in which these mounds are formed.

"Mounds range from 20 - 60 feet in diameter and from 2 - 8 feet high. They are slightly asymmetrical, somewhat elongated and steepened on the leeward side. All are similarly oriented. The pattern of distribution is random but in northwest Arkansas, the most abundant mounds, those composed completely of eolian windblown material, occupy flat or level surfaces."

According to Quinn, the mounds are formed on a blanket of loessal material. Loess is rock ground to silt size particles by glaciers during their advances into the upper Mississippi valley. The loess was carried southward away from the glaciers by water and wind. During long dry periods it was carried by wind and redeposited in large quantities along the banks of the rivers of the Mississippi Valley.

Notable in Arkansas are the deposits of loess on Crowleys Ridge which acted as a "dust fence". This

material was dropped across the landscape and on the prairies after the last retreat of the ice, 10 to 20 thousand years ago. However, the prairies had been forming over a much longer period.

The loess was concentrated around clumps of vegetation forming the mounds; soil derived from the humus of non-woody plants formed over the loess. The loess and layers of humus resulted in the tall grass prairies of big and little blue stems, Indian grass, switch grass, etc. with which are associated perennial forbs or flowering plants.

The mounds have often been called "Indian Mounds" and have been thought by many to contain burials or to have been built to form high, dry spots for the placement of teepees. No artifacts have been found in the mounds of northwest Arkansas. There are many more theories of origin, some of which are not applicable to the area.

A descriptive plant list will be printed in the autumn Issue of the Bulletin.

Quinn, J.H. 1968 "Prairie Mounds" The Encyclopedia of Geomorphology

The Fourth Annual Cossatot Pilgrimage— May 5 and 6

A Memorial to Russell Harper
Organized and led by members of the Bayou Chapter
(an account from the May 1973 issue of Paddle Trails, Pulaski Chapter.)

FAREWELL TO AN OLD FRIEND

It was a strange wild scene, resembling a technological Dante's Inferno.

A moment before it had been the murmur of running water against stone, birdsong in the willow-decked shoreline, and the lull of a quiet pool between foaming rapids. Now, as we rounded a bend of the Cossatot River above the dam site of Gillham Reservoir, giant earthmoving machinery snorted and shuffled back and forth across a denuded landscape. Smoke from piles of burning trees, scraped into jagged piles by the dozers, shrouded the buglike machines as they scuttled back and forth in frenzied determination. As they backed up, a nerve-rattling BEEP, BA-BEEP alarm was emitted so that the other machines could scramble to safety if they happened to get in the way.

Few people spoke as the canoes threaded by the destruction of the last significant mountain recreational river in the Ouachita Mountains of Arkansas. It was, indeed, the last Cossatot River Pilgrimage. Soon, Duckett Falls and Warren Rock will be only memories to the hundreds of canoeists who annually come to this river from as far away as Colorado, Wisconsin and Florida.

But Arkansans will be the biggest losers of all. What once had the potential for developing into the finest river-oriented recreational attraction in western Arkansas will soon be replaced by a small, wildly-fluctuating reservoir that at best will offer a common form of lake recreation easily duplicated almost anywhere. The unique and valuable was traded for the commonplace.

But the Cossatot put on a grand show for its curtain call. The weather was sunny and clear and 200 to 300 canoeists from 12 states whooped it up through the rapids, sunned themselves on the vari-colored gravel bars and, perhaps most important for the future of river preservation, poured a flood of silver dollars on the area to demonstrate convincingly that river recreationists have a beneficial economic impact on the area they visit.

Our late friend Russell Harper, may he rest in peace, would have enjoyed it more than anybody.

Pilgrimage Televised On KATV Channel 7

KATV News Director Jim Pitcock and staffer Don Tomlinson (Channel 7, Little Rock) braved the river, complete with cameras and sound gear, to film this final festival. The Cossatot was an 8-minute segment of the excellent "Arkansas-May" feature documentary and shown at 9 p.m., Wed., May 30th. All the footage was excellent and this was an outstanding program. Maybe most of Arkansas can now see what attractions they are being hoodwinked out of in the spurious name of "flood control," even when there is nothing to be flooded.

Incidentally, we commend Channel 7 for the Arkansas-May program concept, which is the finest locally produced show we've ever seen. And this was true even before the Cossatot.

This material will be available for local TV stations.

Films Available for Loan

The Ozark Society now has two films available which may be ordered from Box 2914, Little Rock, Arkansas 72203. There needs to be an alternative date given for scheduling so that if a film is already booked for the first date, it can probably be had for the second. They can be used for three days and then must be returned.

The films are:

Downstream, an excellent film of canoeing on Missouri and Arkansas Ozark streams by Charles and Elizabeth Swartz for the Missouri Conservation Commission - 16mm. color and sound.

The Flooding River: A Study in Riverine Ecology. An intensive scientific documentation of the spring flooding cycle of the Connecticut River in relation to its flora, fauna, and geology, the general conclusion is reached that rivers from their headwaters to the sea are self-sustaining and dynamic ecosystems which owe their existence to the natural phenomenon of flooding. The film also implies how man's plans to build extensive systems of dams would be done at vast costs to the whole riverine environment. 34 minutes, 16 mm. color, sound.

—10—

Illinois River Campfire Program Series

The 1973 Illinois River Campfire Program Series began May 26 and extends through September 15. The series, originating in 1971, goes into its third summer season. It was initiated by the Oklahoma Department of Wildlife Conservation and Oklahoma Scenic Rivers Association in an effort to emphasize and encourage environmental awareness.

Programs will again be held at the Round Hollow Public Access Area, and will begin approximately at 9 P.M., or shortly after sunset. The Campfire Programs will be presented by guest speakers at the outdoor theater located at Round Hollow. Round Hollow is located along the banks of the Illinois River, approximately 17 miles north of the Highway 51-10 junction (near Tahlequah) along Highway 10.

Should you desire copies of the 1973 Illinois River Campfire Program brochure please address your request to the Oklahoma Department of Wildlife Conservation, 1801 N. Lincoln, P.O. Box 53465, Oklahoma City, Oklahoma 73105.

The following is the portion of the program which remains:

August 4 - Oklahoma's Last Wilderness River - David Strickland and Richard Garrity - Oklahoma Scenic Rivers Association

August 11 - Birds Along the Illinois River - Jim Norman - Oklahoma Ornithological Society

August 18 - Oklahoma's Environmental Status - Byron Moser - Oklahoma Department of Wildlife Conservation

August 25 - Preserving Our Scenic Rivers - George Harrington and Warren Ballard - Bureau of Sport Fisheries and Wildlife

September 1 - Environmental Quality and the Oklahoma Legislature - Rep. James Townsend - Oklahoma Legislature (House)

September 8 - National Wildlife Refuges in Oklahoma - Phil Norton - Bureau of Sport Fisheries and Wildlife

September 15 - The River and Its Floodplain - Jim Smith - Oklahoma Department of Wildlife Conservation

IT IS SAID THAT CRICKETS CAN TELL YOU THE TEMPERATURE. Count the number of chirps per minute, divide by four and add 40. This column accepts no responsibility for out-of sync crickets.

Mo. Conservationist

Glover Environmental Assessment Available

As a class project for Geography 4213, **Conservation Problems**, under the direction of Dr. Joseph B. Schiel, Jr., University of Oklahoma, an Environmental Assessment of the Glover River has been prepared and is available to the public through the Scenic Rivers Association of Oklahoma.

The 148-page assessment has brought together what is probably the most complete set of facts and figures available on the Glover River and the proposed Lukfata Dam. The assessment is divided into six chapters and three appendices, and contains many maps, charts, and diagrams.

The assessment describes the basic geography of the Glover Basin; its hydrology, biology, geology, and human factors. It discusses the economic, environmental, and social impacts of the Lukfata Dam proposal, including a list of ten alternatives to the proposed dam.

The 25-member class did a commendable job and the result is a very professional-like piece of work. Of particular interest to many will be the complete lists of birds, mammals, fish, reptiles, amphibians, and plants prepared by Drs. John Taylor and Frank Wade of Southeastern State College after nearly a year of field work.

Copies of this Environmental Assessment will be available in early August from the Scenic Rivers Association of Oklahoma at \$3.50 per copy. If you would like a personal copy, please send your check, payable to the Scenic Rivers Association, **before September 1, 1973**. Immediately after that date, a special second printing will be made (the original 50 copies of the first printing were quickly snapped up, almost before they were off the press.) Although a few extra copies may be printed, the number of copies printed in the second printing will be determined largely by the number of requests received before the first of August.

This is your opportunity to receive the results of literally thousands of man-hours of research and field work about one of our region's most controversial Corps projects. For your copy, please send your name and address (please print), together with a check for \$3.50, to the Scenic Rivers Association of Oklahoma, 1509 North Main Street, Muskogee, Oklahoma 74401.

Editors Note:

An article about the Glover River appeared in the Spring, 1972 issue of the OZARK SOCIETY BULLETIN. The Glover in Oklahoma, like the Cossatot in Arkansas, is the last significant free-flowing Ouachita Mountain river remaining in the state.

Bartlett Seeks 211-Mile Trail System in State

WASHINGTON—Sen. Dewey Bartlett, R-Okla., Monday introduced a bill to authorize a federal study of an Indian Nations Trail for hiking, bicycling and backpacking within the National Trails system. The Federal Bureau of Outdoor Recreation will be the lead agency in making the study.

The bill, co-authored by fellow Oklahoma Republican Sen. Henry Bellmon, suggests a trail extending from the Red River in Oklahoma approximately 211 miles northward through former Indian Nations land to the Oklahoma-Kansas boundary.

According to Bartlett, "There is a rising interest all over the country for hiking, bicycling and backpacking. This is a recreation facility we don't have in Oklahoma at the present time - and we need it."

Bartlett added that he hoped that the BOR would expedite the study and that the state government and private citizens will work with the federal agencies to bring about the project.

Trails such as the one proposed in Bartlett's bill are from 1½ to several feet wide, constructed over wooded and scenic federally owned land around Corps of Engineer reservoirs and national forest land.

The proposal by Bartlett would be studied within the context of several other trails under study by the corps in Oklahoma.

Whenever the land is privately owned, the federal government acquires the right for public use through either outright purchase or payments of easements.

Organizations such as the Oklahoma Sierra Club and the Oklahoma chapter of the Ozark Society have favored this type of trail.

There are two trails, the Appalachian National Scenic Trail and the Pacific Crest National Scenic Trail, which have already received congressional authorization with 14 more under study.

Bob Ferris of Tulsa has worked closely with Bartlett in preparing the bill.

Ferris is a member of the Sierra Club, the Tulsa Canoe Club, the Backpackers, the Oxark Society and a bicycling club.

The above clipping was accompanied by a letter from Bob Ferris from which are taken the following paragraphs:

It would be hoped that these trail segments eventually could be joined in a continuous trail of over 200 miles in Oklahoma and linking with similar trails in Arkansas.

It would help more than you might realize if you would write to

Senator Bartlett endorsing his "Indian Nations Trail" study bill. If you belong to an organization that is outdoor recreation oriented, please have the organization let Senator Bartlett know of its interest and support. I would greatly appreciate receiving a copy of any letter sent to Senator Bartlett.

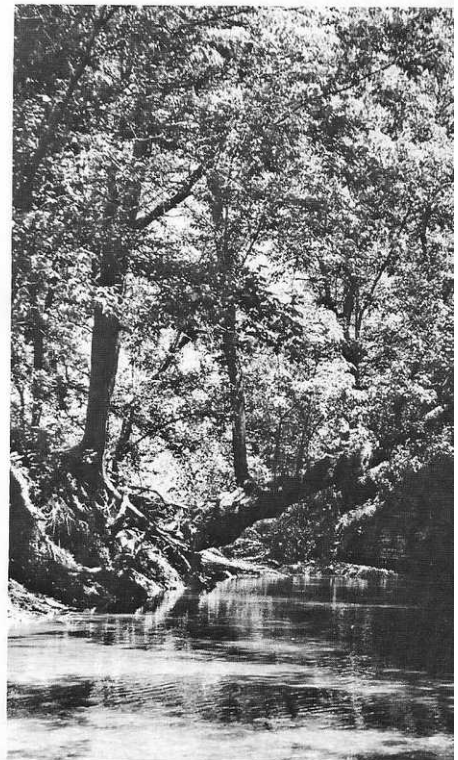
Address letters to Hon. Dewey Bartlett, 140 Russell Senate Office Building, Washington, D.C. 20510.

Robert A. Ferris, Attorney
2811 East 22nd Street
Tulsa, Oklahoma 74114

New Decals Now Available

Those long awaited Ozark Society emblem decals, in color, are now available from the various chapters. The 7" size for canoes and kayaks are \$1.50 each. The 3½" size for inside auto window display only (stickum is on front) are \$1, and the small 2" size for camera cases, rod cases, etc. are 50 cents.

If you are not a member of a chapter, order from the one near you. Only bulk orders will be handled by Rose Hogan, Secretary of The Ozark Society. The decals may also be purchased at the Annual Fall Meeting. Patches will be available soon.



The Gasconade

You Can Help Save the Gasconade, Big Piney, Little Piney and Osage Fork of Missouri as Federally Protected Scenic Rivers If You Act Now!

During the past year, the Bureau of Outdoor Recreation has been coordinating a study of the Gasconade River and the above tributaries in Missouri, because the entire Gasconade was designated in the Wild and Scenic Rivers Act as a potential addition to the wild and scenic river system. Unfortunately, users of the river (canoeists in particular) have paid little attention to this or have not even been informed of it. However, the opponents of scenic rivers in the area have been well informed and organized. They have let their congressman, Richard Ichord, know of their opposition with the result that he has had mail only **against** scenic river status. It is very important that Ichord and our other people in Congress hear from those of us who **support** scenic river status for the Gasconade and its tributaries. Every letter counts. Here's how and whom to write:

Simply express your support of scenic river status for these streams in your own words. One paragraph will do but if you can add some personal note, it helps. If you've never been on one of these streams, you might look them up in **Missouri Ozark Waterways** to check their special features. For example, you might mention that the Gasconade is a varied stream, safe for family groups, etc. With its tributaries it could provide as much as 405 additional miles of protected rivers in the midwest. **Priority 1--a letter to your own Congressman with a carbon to Ichord.** If you live outside Missouri, do the same. This is a **NATIONAL** issue and out-of-state letters help show more than local interest.

The Honorable Richard Ichord
House Post Office
Washington, D.C. 20515

Letters to Senators Thomas F. Eagleton and Stuart Symington are also needed. This will need strong support from them if we are to succeed. Even Legislators who promote dams should be willing to support scenic river status for the Gasconade since, in January, the Corps of Engineers announced that dams on the Gasconade and its tributaries "are all infeasible from an economic standpoint". But this doesn't protect this beautiful river from development.

Extracts From Ozark National Forest Storm Damage Report

(of special interest to many of us because of our frequent hikes into the areas)

On the morning of April 20, 1973, a tornado touched down in Section 2, T13N R24W, about three miles NW of Fallsville, Arkansas in Newton County. From that point, it traced a nearly straight path to the northeast, for a distance of approximately 60 miles, the first nine miles of which were on National Forest land (Buffalo Ranger District - Ozark-St. Francis National Forests.) The storm destroyed houses and barns all along its path, with extensive property damage in the heavily populated area south and east of Harrison. One life was lost and numerous injuries were reported.

The area of National Forest land crossed was a nine mile long path between Arkansas Highway 16 NW of Fallsville and Arkansas Highway 21 north of Mossville. The storm influenced an area varying from $\frac{3}{4}$ to 1 mile wide. The path of the storm crossed the center of the Proposed Upper Buffalo River Wilderness Study Area and the Boen Gulf Timber Sale Area, causing severe damage within both areas. The extent and intensity of damage within this area increased from southwest to northeast. Rather than skipping from ridge to ridge as the storm crossed the rough terrain, it rose and fell with the land and seemed to have caused the most severe damage in the low-lying hollows.

Damage Estimates:

(a) Area affected: An estimated 5000 acres of land inside the National Forest boundary was affected by the storm, including 4000 acres of National Forest land and 1000 acres of private land. About 2000 acres of National Forest land received light-to-moderate damage (scattered trees, broken and wind-thrown) and 2000 acres of National Forest land received heavy damage, with most of the trees within the areas being windthrown, broken, twisted or split.

Within the boundary of the proposed Upper Buffalo River Wilderness Study Area, a total area of

1700 acres was damaged, with 1200 acres of this being heavy damage.

About 120 acres of the Boen Gulf Sale Area received heavy damage.

(b) Volume damaged: An estimated two million board feet of merchantable timber was damaged on National Forest land. Ninety-nine percent of this volume is Hardwood sawtimber, since there is very little Shortleaf pine in this area. Only about 1 MMBF of the damaged timber is salvageable, due to breakage, twisted and split trees and the inaccessibility of part of the affected area. Most of the damaged timber (est. 1.5 MMBF) is within the proposed Upper Buffalo River Wilderness Study Area boundaries. Both sides of the River received intensive damage in Sections 9 and 16, T14N R23W.

On the Boen Gulf Sale Area, an estimated 327 MBF of timber was damaged and about 166 MBF of this is salvageable. Units 1, 2 and 3 of this sale were affected by the storm. This sale now qualifies for "Termination for Catastrophe" under the Timber Sale Contract. The purchaser has been advised of the damage, but has made no request for termination.

FROM "MISSOURI OZARK WATERWAYS", BY Oz Hawksley

"One should not paddle alone. Many dangers are greatly minimized by having companions and at least one other boat in a party. Cold water is one of the greatest hazards. Water below 50° doubles the danger. 'Safe' immersion time before onset of muscular weakness has been estimated as follows ---

Temp. F.	Minutes
Below 40	Under 10
40 - 50	5 - 20
50 - 60	15 - 40
Above 60	60 or more

However, the author has observed cases in which strong swimmers were unable to help themselves after much less time in cold water than indicated above. Cold water causes a listlessness which may result in an inability to take such simple action as grabbing a line which is thrown to the victim.

Any river in flood stage is dangerous. Stay off swollen streams unless you are very experienced.

Address Senators:

The Honorable _____
Senate Office Building
Washington, D.C. 20510

Don't Lose the Gasconade by Default!

Buffalo River Float, April 21 & 22

BY RICHARD GARRITY
O K CANOERS NEWSLETTER, MAY 1973

Tornadoes, rain, and the "O K CANOERS" arrived at the Buffalo River for a canoe trip on the Easter weekend.

The river was high Friday, but there was hope that it might be at a lower level on Saturday. Friday night it rained some more, but camp was dry. This rain raised the river some more, thus making it impossible to canoe. Water was over all the low-water bridges. Rain continued at intervals all day Saturday, but it did not stop the hiking to Goat Bluff and Lost Valley. Dogwood in bloom filled the woods with pink and white color.

Saturday afternoon moved from Lost Valley State Park to a roadside campground. A gentle rain was still falling, and continued until bed time. Darkness came early because of the rain and mist.

During the night the rain increased in intensity with lightning flashing and thunder rolling. About one o'clock Carl checked the creek and found that it was eighteen inches

from the top of the bank and camp. This branch had risen eight feet and was still rising, covering the lower part of the camp with a foot of water. It was time to leave!

Amid the storm, camp was quickly struck, the cars loaded and taken to high ground. Sleeping bags were dry, but the tents became wet in the takedown, and were loaded dripping into the cars. All other gear was packed where it landed in the cars.

There was a quick exodus south over Mossville Mountain. Rockslides caused by the water cascading the mountainside covered the road in part. The amount of water pouring over the brink above us was frightening. This appeared as wide waterfalls, frothing white, roaring and crashing to the paving below. Rocks that had not been washed off the paving, were causing many dams which forced the water upward in water spouts. These were massive,

depending upon the boulder beneath them. Some of the crests were two to three feet above the road.

By the light of the rain-dimmed headlights, it looked as if the water was boiling from the ground. The scattered rocks made it necessary to drive a crooked course which, at times, came very close to the brink. At any time the outside edge could collapse and tumble everyone into the valley below. A tree which had fallen across the road was nudged aside by the impatient cars.

The blinding rain was unending, and the lightning often revealed the awesome rock walls and falling water. Six cars, Carl leading, slowly groped their way to the top of the mountain and safety. There was a quietly thankful group in the cars. In contrast, the balance of the trip was an easy run to the water-washed Clarksville.

Involved were 22 people at this spot, but similar happenings were occurring all along the river.

Richland Creek Falls — photo Neil Compton



Ozark Society Activity Schedule Listed By Chapter Name

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.

HAROLD HEDGES, OUTING CHAIRMAN

Activities listed before the mailing of the Bulletin are given for the record.

JULY 6,7,8, CAROLINE DORMAN: Camp out on Richland Creek for hiking, exploring, swimming, fishing and sight seeing.

JULY 7,8, BAYOU: Exploratory caving in central Texas. Cave locations are NW of Austin.

JULY 12, SCHOOLCRAFT: Bicycle trip from Park Central Square in Springfield, Mo. to Dickerson Park Zoo-an evening trip of 6 miles.

JULY 14, 15, INDIAN NATIONS: Campout at Sizmore Landing on Lake Tenkiller.

JULY 15, SCHOOLCRAFT: Canoe Clinic, Part I-Basic canoe and/or kayak instruction on the North Fork-Bryant river system.

JULY 21, SCHOOLCRAFT: Bicycle tour of Springfield's historical land marks. Phelps Grove Park to Park Central Square - a day tour of 7 miles.

JULY 21,22, BAYOU: Exploratory caving in North Arkansas. Several cave locations on and around the Buffalo River area.

JULY 28, BAYOU: Sandbar party. Ride 65 ft. Stern Wheeler around the port of Shreve and then up the Red River above Shreveport for Weenie roast.

AUGUST 5, SCHOOLCRAFT: Canoe clinic Part II-Intermediate instruction in canoe and/or kayak on Northfork-Bryant River System. Float Sat. and/or Sun. Contact leaders Dudley Murphey or Greg Bruff, 723 E. Delmar, Springfield, MO ph. 417-831-0391

AUGUST 18,19, DELTA: Canoe the North Fork (Mo.) - a two day float, camping on the river. This is one of Missouri's loveliest streams, cool and spring fed, a pleasant respite from the summer heat. Meet at Hammond Campground, east of Dora at 10 a.m. Sat. Tom and Jane Parsons, trip leaders, 4009 Fir St., Pine Bluff, Ar 71601 ph. 535-2775 or 534-3400.

AUGUST 18, 19, BAYOU: Canoe Red River above Shreveport. Some moonlight canoeing if weather and moonlight permit. Camping on sandbar Sat. night. For details contact leader John Axford, 511 McCormick, Shreveport, La. 71104, ph 869-1259 or 861-4295

AUGUST 25,26, ALL CHAPTERS SEVENTH ANNUAL CLEAN UP CANOE TRIP ON THE BUFFALO RIVER - GILBERT TO BUFFALO RIVER STATE PARK. Prizes will be offered again this year. Meet at Gilbert gravel bar Fri. eve, the 24th or very early Sat. the 25th for 8 a.m. car shuttle. Sat. night camp at Maumee with cars. Leader Dick Murray, 2006 Austin Dr., Fayetteville, Ar. 72701 ph. 442-8995

SEPT. 1,2,3, BAYOU: Canoe the Buffalo River - State Park to White River - camping along the river. For details contact leader George Armstrong, 311 E. 76th, Shreveport, La 71106 ph. 318-865-8302

SEPT. 1,2, INDIAN NATIONS: Campout (basecamp) at Lake Wedington and float the upper Illinois River. For details contact trip leader, Paul Kendall, 4813 E. 26th, Tulsa, Ok. 74114 ph. 918-939-1839

SEPT. 15, 16, INDIAN NATIONS: Annual cleanup of the Illinois River. Base camp at Round Hollow on Hiway 10 north of Tahlequah. All canoers invited including OK Canoers, OWWC and all Ozark Society. For details contact leader Bob Rench, ph. 918-838-1261

SEPT. 15, 16, SCHOOLCRAFT: Meramec River Float, overnight trip on the section above Meramec State Park - water permitting. Contact leader Tony Alberty, 1644 South St., Springfield, Mo. ph. 417-865-1181

SEPT. 15, 16, BAYOU: Caving in North Ark. or Central Texas. Details to be worked out later. All participants must be properly equipped. Contact leaders, Frank Hampson, 236 Carrollton, Shreveport, La. 71105 ph. 422-4572 or Al Horn, 310 Coleman, Bossier City, La. 71010 ph. 746-5284

SEPT. 20, (Thurs.) INDIAN NATIONS: Annual picnic at Camp Loughridge. For details contact Bob Rench, ph. 918-838-1261

SEPT. 22,23, OZARK SOCIETY FALL MEETING to be held at Mountain View, Ark. Details elsewhere in this Bulletin.

SEPT. 22, 23, BAYOU: Campout at Cossatot Falls, Base camp for hiking and exploring the immediate area. A family outing for swimming, etc. For details contact leader Bill Meier, 257 Rutherford St., Shreveport, La. 71104. Ph 686-5357 or 868-2982

SEPT. 29, 30, BAYOU: Exploratory camping and hiking in the mountains of SE Okla., Glover River, area. For details contact leaders Arnold Yukelson, 102 Duncan Rd., Marshall, Texas or Bill Stevenson, 9534 Overlook Dr., Shreveport, La. 71108 ph. 686-2658

ANNUAL MEETING

Mark your calendar now to attend the annual fall meeting of The Ozark Society on September 22-23 at the fantastic new Ozark Folk Cultural Center, Mountain View, Arkansas. Focus is on scenic rivers and wilderness by outstanding speakers. Hosted by members of the Pulaski Chapter

Details to be given in separate mailing.

Seventh Annual Buffalo River Cleanup, August 25-26, 1973

The cleanup will start at Gilbert on Saturday, run to Maumee Landing for overnight camp, and end Sunday afternoon at Buffalo River State Park. Car shuttling will begin each day at 8 a.m. promptly. Prizes will be offered to teams collecting the most trash according to the rules below. **EACH CHAPTER IS REQUESTED TO PROVIDE AT LEAST ONE PRIZE. Provision has been made for a canoe as first prize.**

RULES

1. Only members of the Ozark Society are eligible to win prizes. Others may participate in the float and will be welcome.

2. Not more than two members in a canoe can qualify as a team. Extras cannot aid in any way, including collecting of trash and paddling. Courtesy shifting of load to less laden canoes will be permitted.

3. Three judges are to be designated among the participants before leaving Gilbert. One participant will be designated to keep score.

4. Prizes will be awarded for total points for the two-day tour.

5. Cleanup each day will start with a signal from the leader and end at sunset on the first day, and at 3:30 p.m. on Sunday at the State Park. Any trash collected before or after the time limits will be confiscated and not counted.

6. Point values:

A - One point for a bag full of trash and fractional points for fractional bags full.

B - One-fourth point for each truck or auto tire of any size.

C - Value of any other eye-sore trash to be determined by the judges.

J.W. Barnes of the Buffalo River

National Award to Conway Conservationist

Harold E. Alexander of Conway, a leading Arkansas conservationist and an adviser on environmental affairs with the state Planning Department, received a 1973 American Motors Conservation Award Tuesday night, June 26, at a dinner at the Coachman's Inn.

The appreciation dinner was sponsored by the Ozark Society, a conservation organization active in wilderness preservation.

Alexander is one of the 17 men and four women in the nation who received this year's American Motors awards. The winners each received \$500 and a bronze sculptured medallion. The award to Alexander was presented by R.M. Grizzell, sales promotion manager of American Motors Sales Corporation at Memphis.

The awards have been given annually since 1953 to professional and nonprofessional conservationists for outstanding contributions in the field of natural resources.

Two framed enlargements of Buffalo River scenes by Neil Compton were presented to Harold by the Ozark Society.

Alexander, one of the leaders in the campaign to make the Buffalo River a protected wilderness stream, was chairman of the Southeast Water Use Committee of the Wildlife Society for 12 years, and is a director of the state Wildlife Federation.

More than 110 persons attended the appreciation dinner.

Fishing Resort is again furnishing a dinner to all contestants the first evening at Maumee. Last year's dinner will be remembered as a gastronomic treat.

Dick Murray, Leader



Consolation Prize, First Cleanup Float 1967, designed by Dick Murray (photo-Neil Compton)

Proposed By-Laws Change

The following change in the by-laws is proposed in order to allow the society to have its fall meeting earlier than November as specified in the current by-laws. This proposed change will be voted on at the fall meeting this year.

ARTICLE IX (9). Meeting of the General Membership. Section I. Present wording - Annual meeting. The annual meeting shall be held in November each year at a time and place to be designated by the President.

Proposed wording - Annual Meeting. The annual meeting shall be held in the fall of each year at a time and place to be designated by the President.

PAY YOUR 1973 DUES NOW!

Ozark Society dues for 1973 are payable now. Please fill out the blank below and send it, along with your check to Margaret Hedges, Box 2914, Little Rock, Ark. 72203. Your promptness in paying dues eliminates much work for your membership chairman.

Dues are for the calendar year. They are regular (and family), \$5; contributing, \$10; sustaining, \$25; life, \$100; Student, courtesy membership, \$1.00.

Please check: new member; _____ renewal _____ Date _____

Last name _____ first names of husband and wife _____

Address _____ City _____ State _____ Zip _____

Telephone _____ If Student-name of school _____



Magnolia tripetala (umbrella magnolia) upper Buffalo River; leaves to 20 inches in length. (photo-Neil Compton)