

IOWA CONSERVATIONIST

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GAME FARM GETS NEW LOOK

Malcolm K. Johnson

Big things are afoot at the State Conservation Commission Game Farm located just south of the Ledges State Park near Boone. Along with a general face lifting, a change of program is in mind which will give visitors to the farm a much better opportunity to see the commission's stock of game

animals, game birds, and the exhibit animals that are kept there. As a matter of fact, if you time your visits just right by coming before work commences and after it is completed, a map will be needed to reorient yourself. If this sounds like a major alteration, that's right. It won't be an overnight process, but gradually as funds and availability of manpower permit, modifications should

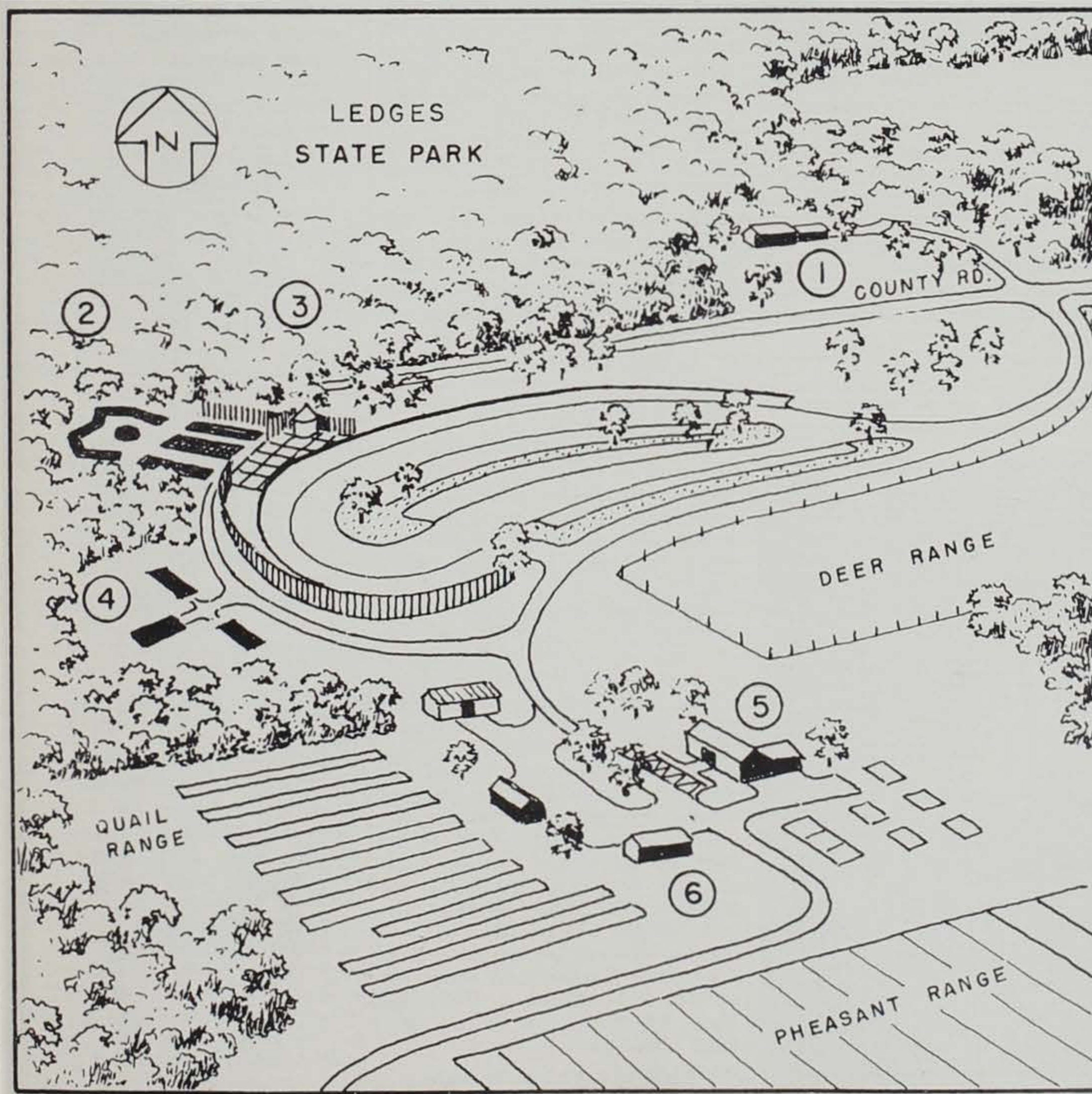
be completed within two or three years to give the people of this state a game farm unexcelled in the midwest.

The primary purpose of the establishment has been to hatch and raise pheasants and quail and to hold the animals not being shown in the commission's traveling exhibit. The young pheasants and quail are given to cooperative organizations that keep them for a

month and a half, between the ages of two and eight weeks, before banding and releasing them in areas where seed stock is low. The production of birds will be maintained at the present number as the program is scientifically adjusted to supply the necessary numbers of birds according to biologic conditions.

Since the commission decided to modernize the game farm, several things were noted as needing particular attention. The new pens will be designed for the best possible display qualities as well as for just holding the animals and they will be located by themselves away from critical areas. There will be approximately 56 pens and most of them will be ten feet square. The whole display area including the surfaced access road around it will cover about an acre. Land and aquatic animals and land birds will be represented with a possibility of waterfowl and snakes being added later. Among the headline attractions are an eagle and buzzard, hawks, owls, pheasants, quail, prairie dogs, skunks, badgers, opossums, raccoons, beavers, coyotes, deer, and wildcats. Many other native animals and birds will also be found there. An information booth will be provided so that visitors with questions can really learn something and go home satisfied. A parking lot is planned that will take care of all the people that can crowd around the cages and more in case of future expansion. The custodian's home will be

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Henry Merkel

The modernized game farm should look like this sketch when buildings and landscaping are completed. The numbers in the drawing are: 1. relocated custodian's home; 2. display pens; 3. information booth; 4. holding pens; 5. hatchery building; 6. quail building.

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LET'S GO CAMPING

From out of the damp woods these mornings a potent smell reaches out to tickle your olfactories. Boiling coffee and sizzling bacon have been transferred the past few months from the fancy chrome-trimmed breakfast nook to their natural habitat—a dew-streaked picnic table sporting a portable gas stove. And around the table you'll find people anticipating, for the first time this year, a hearty, good-to-be-alive breakfast.

Camping fever is here and it's fast reaching epidemic proportions. All over the country (and in Canada too) John Q. Vacationer is patchin' canvas and kicking trailer tires in preparation for this year's jaunt to exotic sounding places, a quarter of the way, half way, or all the way across the country. He'll burn up the highway thinking, "Can I get there



Set up at Pine Lake, this tent and trailer combination proves ideal for week-end park hopping before and after the regular vacation. The trailer and tent were purchased separately then put together with the tent floor cut out and extended as a canopy over the picnic table.

Editorially Speaking

WHAT'LL YOU HAVE?

Lester F. Faber
Assistant Director
Iowa Conservation Commission

What is your outdoor recreation? The dictionary definition of recreation as "refreshment after toil" does not adequately apply to most outdoor activities because, basically, outdoor recreation is doing what you want to do, when you want to do it.

Ideas on outdoor recreation vary with the individual, depending on the person's likes and dislikes. Usually outdoor recreation is associated with the hunter or fisherman but there are many other activities taken up by people with the same amount of enjoyment.

As outdoor recreation is related to natural resources, there are several broad groups of interest. Some people like to hunt or fish or to seek their trophies or certificates of accomplishment in photographs, lists of birds identified, or collections of rocks. Others prefer only to be allowed to enjoy the feeling of isolation in a wilderness area completely away from any signs of man. Some individuals, and this is a growing group, find their enjoyment in nature study and in learning the relationship of plants and animals to each other. The major interest of a very large group is the contrast with "Monday-at-the-office" routine.

We do not now have the needed organized effort by all groups of outdoor interests to carry out a recreation program designed to fit the needs of all the citizens of Iowa. Each person with a different interest has a different answer

to the way the conservation program should be handled. The important first step to a well rounded program is that each group of interests must understand that people like their outdoor recreation in different ways.

The hunter must understand that the bird watcher is enjoying himself in his own way. The birder cannot hold the hunter in disdain because he kills. The fisherman must know that the boater is having fun. The boater must recognize that the fisherman is there because he is enjoying the outdoors by his own standards. The nature student is no longer depicted with the Frank Buck hat and butterfly net because his interest is now recognized as real and gratifying. The camping fraternity often seeks the solitude of natural and wild surroundings but cannot always find it because of more people having less outdoor space. Each of these groups must also recognize that there are thousands of people who want to enjoy the outdoors but have no definite desire or special interest.

Each interest group can be tolerant and understand the likes and dislikes of the other. If understanding can be reached then there is no reason why all outdoor recreationists cannot join forces and, by mutual support, make it possible to have an organized conservation program. There can be unity in diversity.

in plenty of time?" and a week or so later on the way home, "... overstayed—got to hurry back."

This attitude is fine for the man who's seriously trying to work up an ulcer, but is it worth it? Chances are, the reason for making a so-called relaxing trip was to cure the results of a year full of high pressure living. For the wise ones, mighty excursions aren't necessary for a little pure enjoyment of the outdoors. Year after year, the same people are drawn to the same places, pushing hard to get there and fighting big crowds of like-minded folks to see the popular sights. Tensions on the job keep them fumbling for cigarettes and when vacation time rolls around they try to salve their nervous systems by driving a hundred miles farther than Jones did on his trip. What a treadmill! They never consider what their local areas have to offer.

Iowa Is a Camper's State

Thirty-five of Iowa's 91 state parks and preserves offer tent and

NEW EDITOR



Beginning with this issue the IOWA CONSERVATIONIST magazine will be edited by Malcolm K. Johnson.

"Mac" attended the University of Iowa where he received a Bachelor of Arts degree with a major in geology. He spent an additional year at the university taking courses in geology and journalism.

New Hampton is Mac's home town, he is 27 years old, a navy veteran, married and has a son two years old.

Welcome to the Conservation Commission, Mac.—J.R.S.

trailer camping. Streams provide good fishing, vegetation is lush, and wildlife is bountiful for such a well-peopled region. Streams in northeast Iowa yield good fishing to the demanding angler with secluded spots for setting up camp. Cliffs and bluffs, chimney rocks and caves, provide scenery unknown to most of this state's week-end and year-end vagabonds. For the camper's family that is disinterested in extended periods on the stream, historic sites are usually within easy distance of the camp-site.

Camping Situation Has Changed

The big boom in camping includes a host of Iowans. Last year our state parks were used a total of 95,000 guest days, 30 per cent more than the year before. Ten years ago the number of campers was insignificant and these few were easily handled by the parks. Taking account of the increased interest in camping, the Iowa legislature this year appropriated \$150,250 for improvement of 23 of the 35 campgrounds. This is the first significant amount specifically earmarked for this purpose in recent years. Work will commence as soon as possible and part of the new facilities should be ready for use next spring. The improvements consist of expanding present areas to accommodate more units, providing modern toilets and show-

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IOWA'S BIGGEST (AND DRIEST) LAKE

George Schabillon

A 208,000 acre lake lies in the heart of east central Iowa. The reason it isn't a recreational haven is that it is a little low; actually it is bone-dry.

Extinct Lake Calvin can still be seen as a vast area of broad sandy flats. The lake was in the shape of a huge "V" which lay between Iowa City, Columbus Junction and Durant. The arms of this "V" were 24 and 28 miles long. At a spot near Lone Tree the lake was over 14 miles wide. The total shoreline was almost 500 miles, or about the distance between Council Bluffs and Chicago.

To appreciate the enormous size, try mentally to project the level of the flood pool of the Coralville Dam as continuing downstream to Columbus Junction. If the lake would fill today, towns like Conesville, Nichols, West Liberty, Atalissa, and Moscow would be completely covered by water. The business districts of Iowa City and Columbus Junction would disappear beneath the surface.

The airport at Iowa City sits on the bottom of this old lake while the bluffs to the north and west formed part of the shoreline. There were three islands in Lake Calvin. The town of Durant sits on one of them. The second is two miles east of Atalissa and the other is at the south edge of Iowa City with the newly relocated U.S. Highway 6 going over it.

The lake was formed when a giant glacier pushed into Iowa from the east, blocking the streams in that section. The Mississippi was forced to run west-

ward around this tremendous pile of ice and debris, presumably a thousand feet thick or more. There, the river filled up an interconnected valley system making Lake Calvin. The river then arched on southwesterly, eventually coming back into its present channel just south of Fort Madison.

The earth dam which was left when the glacier retreated eventually was breached by erosion in the vicinity of Columbus Junction. The life span of Lake Calvin is not exactly known. Some think it might have lasted only 10,000 to 15,000 years. Others say that it existed from the Illinoian Ice Age (approximately 150,000 years ago) until the Wisconsin Glaciation (about 30,000 years ago).

A very interesting feature of the lake is the tremendous amount of sand that was deposited around its edges. Most of it remains partially hidden in the flat terraces which are perched along the sides of the old lake bed. Some of it has been blown into dunes, the biggest of which are found along the eastern side of the lake.

The animals which were found at various times around the lake would astound even the most stout-hearted big-game hunter. What would you think if you came face to face with a beaver that was over 8 feet long, or a giant sloth 12 feet high? You could even hunt or be hunted by the terror of the ages, the saber-toothed tiger! Mastodons, muskox, elephants and camels were all fairly common at one time or another.



Jim Sherman Photo.

What better way to refresh and relax both body and spirit than to walk a winding path.



Photo and Map by Author.

Within the speckled area is the former bed of Lake Calvin, Iowa's largest recorded lake. If time were to slip back 300 centuries, the towns in the area would be covered by glacial melt-water, in some places more than 50 feet deep.

While the bones of all these animals have been found in sites around the lake area, there has been no concrete evidence that man was here too. It is possible, however, as recent finds have proved, that man was living in Iowa over 8,000 years ago.

The lake area was first noted in 1874 and was eventually named Lake Calvin after Dr. Samuel Calvin, the first director of the Iowa Geological Survey.



Layers of silt deposited in the lake area are being examined here. Often the number of years of deposition can be told from the alternation of light and dark strata.

The sage grouse was originally found wherever sage brush was plentiful.

WALKING

One of the most momentous lessons in life is when we first learn to walk. Then a child ceases to be a crawling baby, utterly dependent upon someone older, and becomes able to toddle toward what it wants.

A child is fortunate if it has a father or a grandfather who will teach the youngster how to walk properly: not with feet turned outward like a waddling duck, but with toes pointed straight ahead, like a fox—or slightly inward, like an Indian—and with a gripping spring from the toes after the heel and ball of each foot, lightly and almost simultaneously, have touched the ground. With the body relaxed and arms swinging freely, such a stride enables a person to walk long distances with a minimum of fatigue.

A child is doubly fortunate if that parent loves the out-of-doors, has a feeling of kinship with the soil, is familiar with the trees and smaller plants, knows the secret lives of wild creatures, and whose pathless ways of walking might be described by Arthur Sidgwick's verse:

*For us the path that twists at will
Through wood and field and up
the hill*

Then there will always be new things to see, bits of nature lore to treasure, and walking becomes one of the most rewarding pleasures in life.

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FROM WILDFLOWERS TO MIRACLE DRUGS

Charles Olofson
Conservation Officer

Today our lives are sheltered to a large degree by the miracle drugs of modern medicine. Since the day of the "hardy pioneer," whose life expectancy by the way was about forty years, there has been a considerable change in the average length of life. Insurance tables relate that modern man lives 67 years and his female counterpart extends this figure by a little more than six years. Between the two, an additional chunk of time 30 years long is given to us. What would they have said if this most precious gift had been bestowed to the people of that era? How happy many people of this age would be to have their lives nearly doubled! The key to this endeavor lies in medical techniques, armoring our bodies with invincible defenses which can eliminate the ravage of disease.

Looking back a couple of hundred years, we have reason to wonder how people made out as well as they did. Actually, they didn't do so well at all. A quick perusal of the old gravestones will show a high percentage of infant and adolescent mortality; deaths caused by minor diseases that today's doctors can cure quickly and easily. In the Civil War, for instance, there were more casualties than during both world conflicts of our time. This was due to the lack of modern medical methods, skills, and miracle drugs.

Does this make you wonder just how they treated ailments and wounds in the period of settlement? They certainly didn't have the drugs that are available today, nor the facilities to manufacture them. Living close to and depending on the soil for the livelihood made them much more conscious of the natural medicinal qualities of wild plants—Nature's Remedies.

To the American Indian must go first credit, the squaws applied a lot of know-how in taking care of illness and wounds and the medicine men also contributed much that the white man absorbed and improved upon. The pioneer combined some of these methods with those brought over from Europe to take care of family ills.

The surrounding land and forests provided the early simple medicines and drugs, wild plants and herbs that are still growing in our outdoors. Many of these are in the category of "wildflowers" which are favored by the populace for their picturesque quality along the roadside and in front of the camera. Although Iowa is not a great contributor to the drug trade, pin money may be earned by collecting some of the more valuable plants. In northeast Iowa the root of the ginseng can be found and sold to bring in an extra dollar or two.

FLOWER OF THE MONTH



BLAZING STAR

- Common Name:** Blazing Star
- Other Varieties:** Southern and Prairie Blazing Star
- Name Derivation:** The flowers are grouped in a loose fashion into the heads and are spread out giving a star-like appearance.
- Family:** Blazing Star is a member of the family Compositae along with the Asters, Thistles, Ironweed, and Goldenrod.
- Description:** Counted among the late summer and autumn blossoming flowers, it can be seen from July through October purpling the damp prairie areas from Wisconsin to South Dakota and south to Texas. The bright flower heads are on a coarse, narrow plant standing up to four feet high with close grass-like leaves.
- The Prairie Blazing Star grows in approximately the same area, but differs from the former in the arrangement of the flower heads. Small clumps of flowers numbering 12 to 15 are significant of the Prairie Blazing Star whereas the Blazing Star has many little flowers similar to a cattail.
- Where to Look:** The Blazing Stars show a definite preference for prairie soil, such as along railroad right-of-ways and roadsides.
- (Descriptive material obtained from the Mac-Millan Wildflower Book and from Wild Flowers of Missouri.)

There are many plants that were supposed to have medicinal value, and the following list represents only a small fraction of the possible total.

Bittersweet—used as a diaphoretic, mild narcotic, and insecticide.

Ginseng—root is collected in the fall and dried whole. Used as an aromatic bitter, mild stimulant, and stomach tonic. This plant has long been valued by the Chinese for its medical value and for its supposed power as an aphrodisiac.

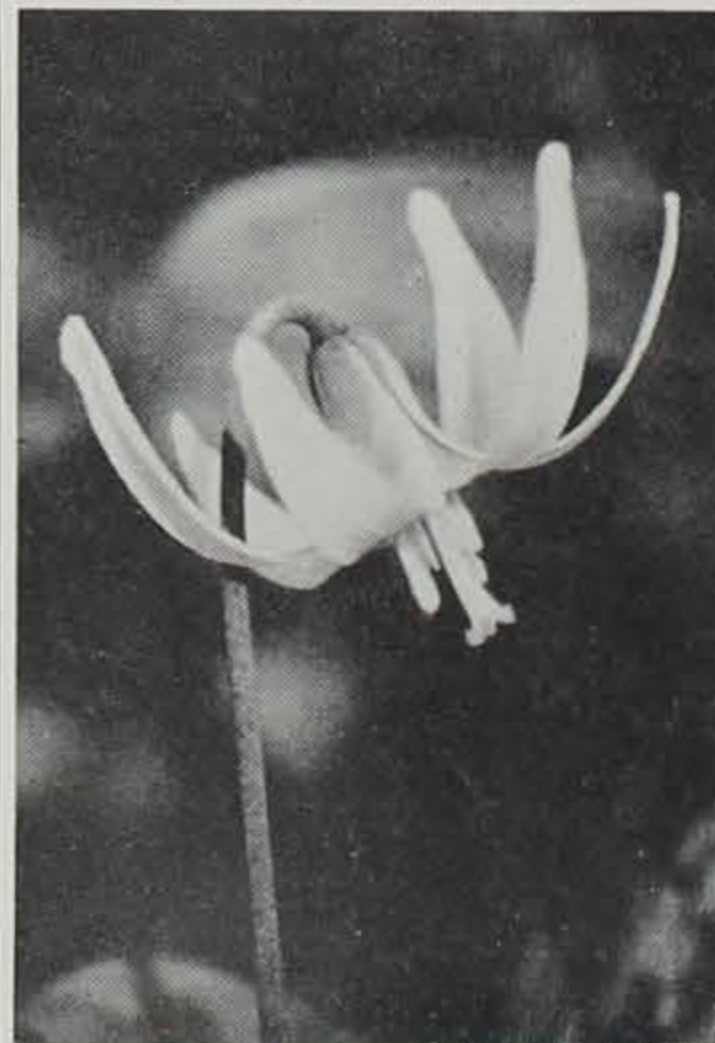
Witch Hazel—leaves, twigs, and bark were collected in autumn. Treatment for internal hemorrhage.

Skunk Cabbage—roots were collected in spring. Used to control spasms.

Hollyhock—flower was used to soothe inflamed membranes.

Jack-in-the-pulpit—root was used as a stimulant, irritant and diaphoretic.

Yellow Dog's Tooth Violet—root used as an emetic, to induce vomiting.



Jim Sherman Photo.

Dog's Tooth Violet

WALKING—

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George Macauley Trevelyan's essay on walking begins with: "I have two doctors, my left leg and my right. When mind and body are out of gear . . . I know that I shall have only to call in my two doctors and I shall be well again." Physicians agree with him. They say that what a business or professional person, a "white collar" worker, a teacher or a student, needs at the end of a hard day—when he or she feels tense, nervous or irritable—is not a stimulant nor a tranquilizer pill but a brisk walk of two or three miles.

Walking in the fresh air, with legs and arms swinging freely, is one of the finest and most beneficial forms of general exercise. It pumps oxygen into the body and, in addition to purely physical benefits, rewards the walker with a sense of well-being and peace of mind. Further, it is known now that walking not only prevents certain kinds of heart ailments but can cure them. An eminent specialist, in a recent book, recommends daily walks: only two or three blocks in length at first but gradually increased until they cover, without undue fatigue, four or five miles.

Walking is the best and cheapest form of recreation.—Thompson and Mann Forest Preserve District of Cook County, *Nature Bulletin*.

Foxglove—an important source of digitalis used in the treatment of heart trouble. Leaves from the second year's growth are collected.

Slippery Elm—the inner white bark contains mucilage and is used to soothe inflamed membranes.

Of course it shouldn't be necessary to say that it is highly dangerous for the "do it yourselfer" to attempt to apply these remedies to himself or anyone else. Along with the beneficial qualities, many of the plants contain deadly poisonous substances which can be separated only by distillation processes. Any drugs, even plant drugs, should be administered only under the direction of a physician.

Sometimes an old medicine man's remedy receives the attention of the medical profession because a recent discovery of biochemistry leads back to the ancient way of curing a specific ailment. The arrow poison of South American Indians, used to kill animals because it left them quite wholesome, was found to be an excellent antispasmodic.

The Foxglove, used centuries ago in Europe to aid people with heart conditions, is a good source of the powerful cardiac stimulant, digitalis.

The story goes on and on with refinements steadily improving the production and effects of nature's original remedies. Perhaps Man's life span will again be doubled and make four generation families commonplace.



Jim Sherman Photo.

A rewarding moment. Among the many benefits that a farm pond yields is the never-ending delight of landing a bluegill for supper. Perhaps the next one will be a real whopper of a bass which would make an angler's day complete.

FARM PONDS AND FISH FARMING

Jim Mayhew
Fisheries Biologist

During the past decade Iowa has experienced a rapid growth in the construction of farm ponds. Soil Conservation Service personnel have estimated that 15,000 impoundments have been constructed within the state since 1938. Ponds in this category are designed primarily for a multitude of uses. The multipurpose pond must provide not only fish, but livestock water, boating, swimming, and a place where family and friends can relax and enjoy nature at its best. A farm pond should not only be a place to raise and store fish, but rather a product of mankind, a thing of esthetic value, and the center of family recreation.

Construction of farm ponds is usually, and by necessity, completed as economically as possible. Earthen dams and embankments with simple spillway and drainage outlets are most satisfactorily utilized if they will insure stability of the water level. If small streams, springs, or seeps are utilized for water supply, provisions for bypassing excessive runoff must be considered by the pond owner. Ponds that are constructed for trapping only rainfall and runoff are not as reliable as ponds with constant water supply, but are in-

deed superior in all respects to no pond at all. Runoff ponds should contain between 15 and 30 acres of well vegetated watershed for each surface acre of water impounded. The size of watershed should depend upon average annual precipitation and character of the watershed. Above all, the watershed must have good cover to prevent erosion and damage to the water quality by siltation.

In Iowa, depth is one of the most important factors to consider in farm pond development. There should be approximately eight feet of water over one-quarter of the pond. If for any reason the water level fluctuates to great degree, the depth should be greater to prevent excessive winter killing of fish. Size and shape of the pond is relatively unimportant although ponds one-quarter acre in size or larger are recommended.

Enhancing the beauty of a farm pond should be a family or, even better, a neighborhood project. Spoil banks and dams should be covered with sod or a similar type turf. These should extend twenty to thirty yards beyond the shoreline. Beyond this area a planting of low shrubs, trees or multiflora rose should be attractive and con-

ducive to game production. Livestock should never be allowed direct access to the water. They trample the banks, muddy the water, and are a general nuisance. Water for livestock purposes can easily be piped through troughs or similar devices to nearby watering tanks. If this is not desirable or feasible, fenced watering lanes should be provided for the animals to the margin of the pond.

Fish stocking in farm ponds is usually of individual owner choice or by a state or governmental agency. Best results in farm pond fish management can be obtained through stocking of predator and forage type fishes. Preferably the number of species introduced into small type impoundments should be kept to a minimum. The predators serve as a check on reproductive capacities of forage fishes, and in turn the forage fish furnish a vast supply of food to the predators. Without the presence of forage fishes, a large part of the food resources is not utilized. The basic principle of farm pond management is establishment and maintenance of a balance between predator and forage fishes so that neither gets out of hand. In a balanced pond the ratio between predator and forage fishes is in a constant state and each species obtains optimum growth and produces a maximum number of desirable fish for human consumption with the food supply available.

During the past few years many studies have been conducted to develop a suitable combination of species for farm pond stocking. A few of these are: largemouth bass and bluegill, largemouth bass, bullhead and channel catfish, largemouth bass and minnows, longnose gar and bluegill. Of all these

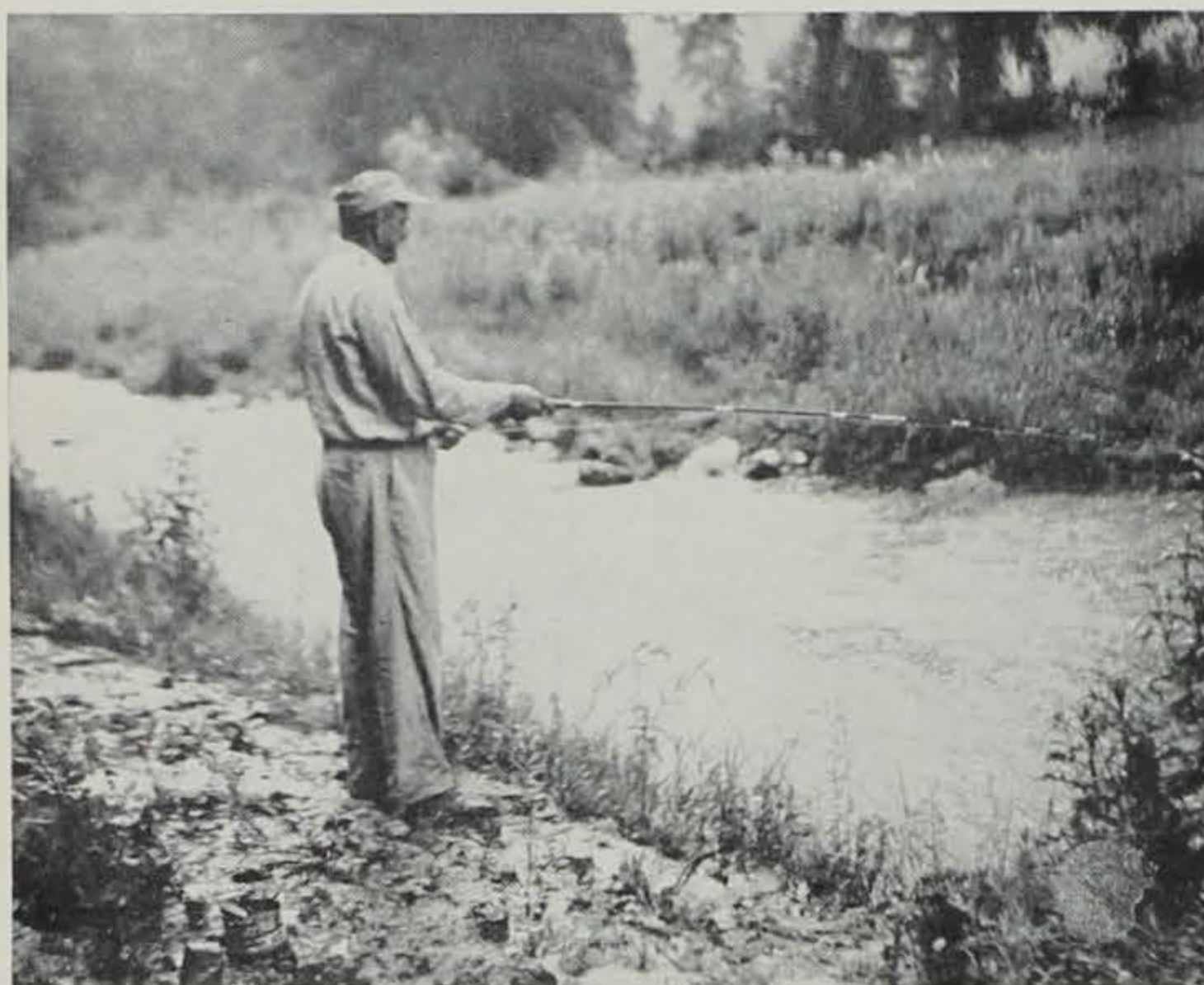
combinations that have been tried, the largemouth bass and bluegill combination remains the most successful.

The largemouth bass makes extremely satisfactory predator fish, since it grows rapidly in small ponds and because of its voracious appetite and predacious habits. It is also one of the best fish for gaminess and table quality. A few experimental stockings of a bass-channel catfish combination have been relative successful, but the catfish must be perpetuated by routine plantings.

Any forage fish could serve as food for bass, but the bluegill possesses certain special qualities that make it desirable for small ponds. It does not compete at the same food level as do largemouth bass, feeding mostly on small insects and crustaceans. In addition to this the bluegill has a relatively long spawning period which produces a continuous food supply through the critical early summer period. The undesirable aspect of bluegills is its reproductive capacity. An eight ounce female bluegill is capable of producing 35,000 offspring. The bluegill is also a fine game fish, furnishing many hours of enjoyment to young and old alike. The proper ratio in stocking bass and bluegill in farm ponds is extremely important. The Iowa Conservation Commission recommends the stocking ratio of 200 fingerling largemouth bass, and 10 pair of adult bluegill per acre. The Fish and Wildlife Service increases the ratio to 200 bass and 1,000 bluegill fingerling per acre. If the ratio is increased beyond that point, the ponds frequently become over-populated by bluegill. Fingerling largemouth bass will spawn in Iowa during

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Fishin' in the rain. Officer Daubendiek demonstrates his affinity for angling in any kind of weather and not long after this photograph was made, three trout were landed for supper.

WHEN OTHERS FAIL—TRY SMALL BAIT

R. W. Daubendiek
Conservation Officer

Large bait and empty creels seem to go together these days on the trout stream. If you are one of the victims of the unhappy circumstance, read on for a possible solution to your troubles.

There is no denying that the four inch spoon (or larger) is an excellent spring and winter lure for the large fat trout that has spent some time chasing minnows under a large, iced over pool and the bass size fly will take a brookie at the riffle. But the whole night-crawler and the large gob of worms just will not consistently take limits of fish in short order as they once did for the bait fisherman. This takes the kick out of trout fishing.

Our methods of feeding, year around stocking and stream conditions have changed the "best trout bait" picture a great deal. These changes have not in my opinion tended to reduce the quality of our trout program—one of the finest in the midwest—but the fisherman who is onto the changes and knows how to use them to his advantage will find trout fishing supreme and many new thrills to the sport.

Our trout are fed all of the food it takes to grow them, entirely different from the usual concept of fish or game living off the land and eating what and where they find something digestible. This food once consisted of large quantities of ground meat, fish, and wet, cooked cereal, which, though excellently prepared, was of necessity often fed in large gobs, chunks, spoonfuls or patties. The fish were accustomed to receiving their food in large pieces as many of them were an ounce or more in weight.

Today's trout are fed mainly a



METHOD OF HOOKING— (A) PIECE OF WORM (B) SALMON EGG

For best results, take a piece of worm or salmon egg and place it on the hook so that the barb is exposed outside of the skin. This way it isn't necessary for the fish to swallow the bait, just take it in his mouth.

high protein, finely balanced ration of commercially prepared, dried pellets. These are of various sizes, none larger than the tip of the eraser on a common pencil and are supplemented only occasionally with fresh finely ground meat. The trout receive a diet superior to all. I will never forget the reaction I received while speaking on the trout program at a banquet when I happened to make this statement just as the waitresses were bringing in the plates of creamed chicken and peas.

Being raised on small particles of food in a world where it is necessary for the trout to grab the particles fast because of a hundred others fighting for the same piece, it naturally follows that when placed in the stream, the fish are unacquainted with large bait. In contrast to catfish, for instance, the trout lives by sight and feel, not by scent. He will at times pick up bait from the bottom, but is usually much too wary and sporting for that.

Two of the best baits I found are the single salmon egg and the inch long piece of nightcrawler fished on small hooks and light leader. Most any small piece of bait will work, preferably with a bit of shine to it and not hard or brittle. This fishing is *fast* as it seems the trout either take the bait on the way down or hit it as it is pulled back from the bottom. A favorite of mine is a number 14 hook on a two pound test flexible leader baited with one salmon egg. To a pound trout, the eight or twelve pound leader, by comparison of size to man, would look like a pork chop hanging at the end of a one inch rope. The size eight hook weighs several times the amount of the proper size bait and will often be spit out instantly by the trout. The small brown buds from the gooseberry bushes in spring are an excellent bait as they seem to resemble the small snails commonly found in abundance in the watercress of our trout streams. Cut open the stomach of most any trout and you will find a multitude of small particles of food, very seldom larger than a pea. The "goose worm," long a favorite with the trout fisherman, is today failing often to fill the bill. I have seen this bait actually scare trout in clear water when the fish would rush out to take small bait.

Year round stocking has also changed the bait picture to a certain extent. Many will recall the opening days when the freshly stocked streams were full of fish

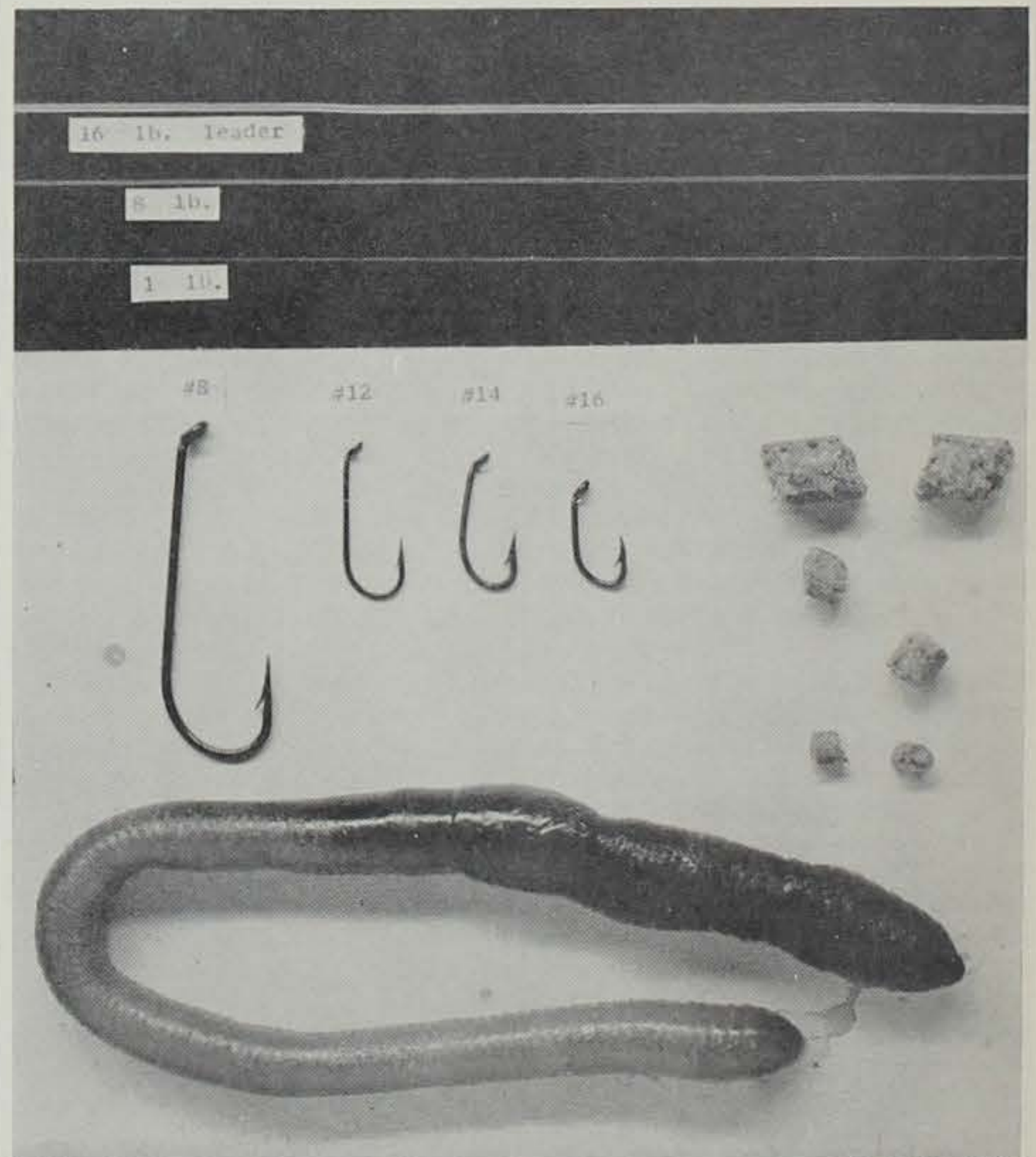
that would take anything and perhaps this was just as well because many that were not caught at once were washed downstream by heavy spring rains.

Our fishing pressure and stocking is now well balanced so that ample numbers of trout of several different stocking dates are almost always present in any stream. This levels off the old spring glut of the streams with a number of fish that are wary enough not to swallow the large unnatural bait on the heavy hook and line.

Lack of moisture in the trout territory the past several seasons has the streams in a low and extremely clear condition. Trout feed almost entirely by sight and you might say a good bit of their survival is due to this keen sense. The fish can easily see the small gnat hovering inches above the water (an excellent food) and he can also readily see any suspicious looking thing attached to a morsel of food. Greed will often overcome caution and in case of a large bait it will usually result in a small nip at the bait which can still be several inches away from the hook. With a small bait, the chances are that the small nibble will require the trout to also take the hook into its mouth where, with fast manipulation of the rod, it can be quickly and solidly set.

I have occasionally found clear, heavily fished pools with trout too wary to take one egg on a 14 hook on a two pound leader, but would take a size 16 hook on one

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Slightly enlarged, these are the relative sizes of the food pellets, hooks and leaders along with the commonly used whole night crawler. With a portion of the worm hooked as shown in the drawing, the bait wiggles enticingly when pulled through the water.

George Tovey Photo.

GAME MANAGEMENT—BY ACCIDENT AND DESIGN

"We've got more deer today than when Columbus set foot. And rabbits—we've got a lot more cottontails, too. These and other major changes in supply are a result of game management, but a lot of it was unintentional. It was management by accident," says Dr. J. P. Linduska, director of wildlife management for Remington Arms Company, Inc.

"Knowing a little of the requirements of wildlife, it's not hard to unravel the chain of circumstances which brought about major population shifts. First off, it's elementary knowledge that no two species of game have precisely the same requirements to prosper. A cedar swamp might be home-sweet-home to a snowshoe hare, but to a cottontail it would be a nightmarish experience. Conversely, a brushy fencerow bordering farmland is first-class housing to cottontails, but the snowshoe—well, he *would* be found dead in a joint like that.

"Or take wild turkeys. They like big woods—big for trees and big for area. And they like to stroll *way* in. But quail hang around the edges. Like a skittish school boy, the bobwhite feels heavy foreboding in the dark middle of the deep forest.

"Now put two and two together. Before our ancestors arrived to change things with axe and plow, it was mostly a country of forest and prairie—big continuous forest and big continuous prairie. Wild species that liked the tall timber had elbow room aplenty. Others, like the buffalo and prairie chicken, preferred the wide open plains. They, too, had endless miles of specialized habitat in which to flourish by the millions.

"Other species were more finicky. They required some of each—woods *and* openings. Originally, they found such combinations where prairie and the tall timber met. That's where the quail and cottontails of yore held out. Even white-tailed deer, browsers that they are, were happiest on these edgelands where brush growth was present.

"Came the loggers 200 years ago and they changed things—over millions of acres," continues Dr. Linduska. "Their purpose wasn't deer management but it couldn't have been more effective had they planned it that way. With the tall timber off, the brush came on and with it the deer. It's still happening and the deer are still cooperating to give us the biggest herds ever.

"Farming followed on logged-off and deliberately-burned areas. The once uniform landscape of forest and prairie became diversified under agricultural use. Fence rows, brush patches and small woodlots were interspersed on farmland. It was accidental, but the cottontails, quail, fox squirrels and others were just as happy as though it had been done on purpose.

"And the change made way for an import, too. It's a cinch the ringnecked pheasant couldn't have made a go of it in the undisturbed prairie or virgin forests. It's doubtful that its requirements for seeds-of-a-type would have been found at the crossroads of prairie and woods. But farming is grain production and the conversion created pheasant habitat—accidentally.

"Of course, 'change' is not to the liking of all men or animals. And the revolutionary land changes



Jim Sherman Photo.

Multiflora rose provides excellent protective cover and emergency winter food for all game birds and animals. It also promotes nesting by beneficial song birds that help control destructive insects. Beautiful while blooming in early June, the dense bush is used the year around for travel lanes between fields and between sources of food.

that fostered some types of wildlife reduced and even destroyed others. Prairie chickens once numbered in the millions. Now they're down to a remnant. It's doubtful that their status would be different if the first one had never been shot. Because the prairie is no more.

"'Lo, the poor buffalo.' They, too, were slaughtered wantonly—by the millions. But bemoaning their loss is significant only in respect to method and time. They were shot one by one, but an adverse change in habitat is a raking blast at the species. And the conversion of prairie land to corn and wheat would have spelled an end to buffalo affairs as surely as the hide-hunters.

"Yes, national changes in land-use have produced startling changes in the populations of wild things. Whether we accept the change for better or worse is mostly beside the point. As they say on TV, 'It happened that way moving west,' and was accidental and incidental to meeting human needs.

"One thing is sure," concludes the well known authority. "All of this demonstrates a fundamental of game management that modern-day programs must heed: Game management is habitat management. Historically, populations of some species have prospered and

spread, others have dwindled and disappeared, purely as a side occurrence to human activities. It has been done accidentally. Certainly, then, with good hunting as the reward, more of it can be done by design."—*Remington News Letter*.

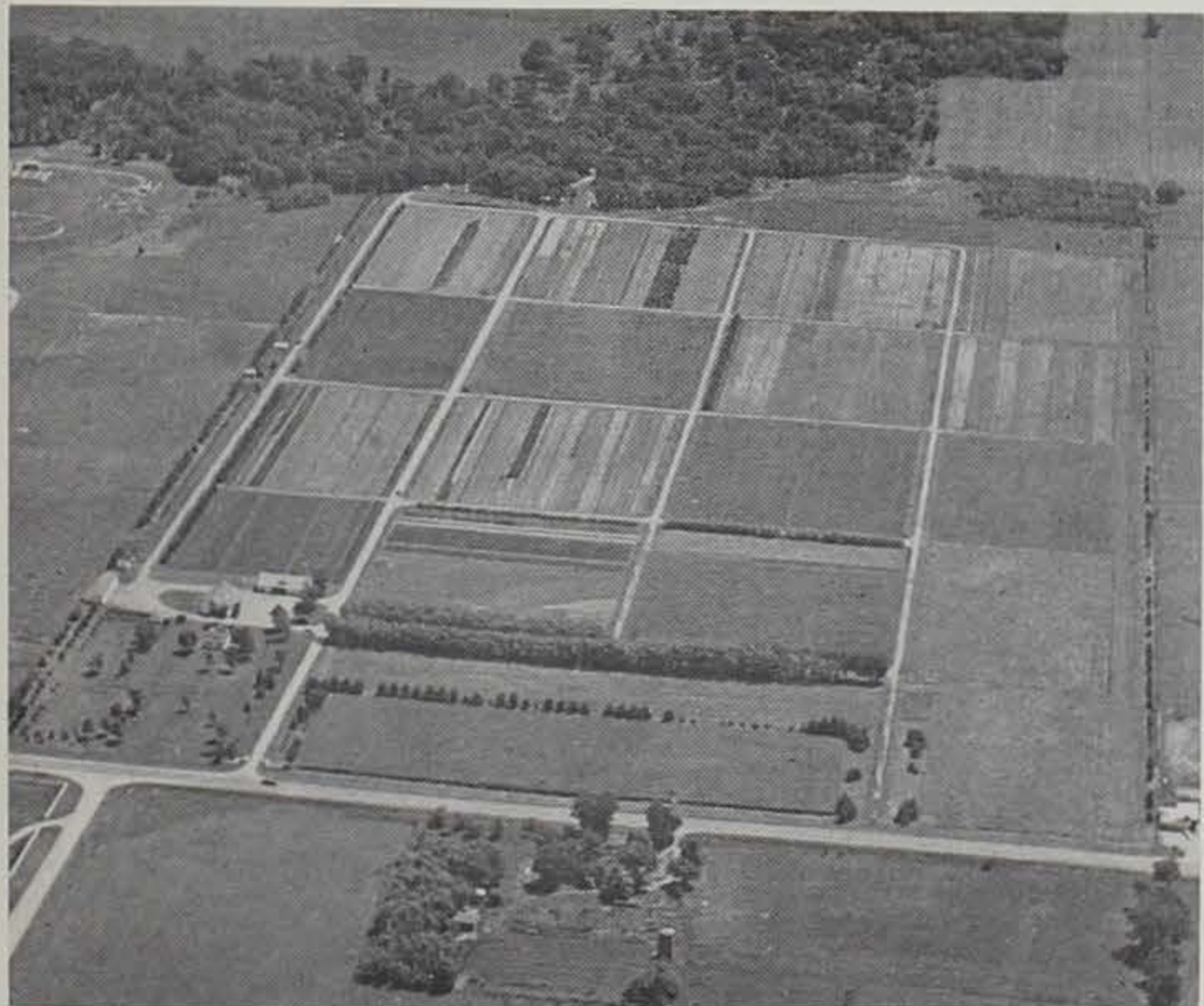
Moose prefer regions where lakes and streams furnish them with the aquatic plant life which forms an important part of their summer diet and where forests and shrubbery insure a winter food supply.

TROUT—

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pound or ¾ pound leader. Getting the fish to bite is of course the primary move in trout fishing. Then comes the job of hooking and, finally, landing them. To get the job done on this tackle is sport supreme and I have on occasion landed a two pound trout with this tackle in places that made one fish per trip well worth while.

Bait fishing for trout is not always the most productive method in either amount of fish caught or sporting fun obtained. No thought in this article is bent toward replacing the fly or other artificial lure with bait. But if you are using bait, try the smaller pieces and have fun.



Jim Sherman Photo.

The State Forest Nursery at Ames furnishes about 2½ million trees and shrubs annually to farmers and state owned areas desiring them. With the development of wildlife habitat being highly stressed to improve survival and growth of animals and birds, the plants supplied here do a great deal to aid the movement.

FARM PONDS—

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the second year, whereas the adult bluegill will furnish forage for young bass the first year. Usually the average size of fish will vary in proportion to the number originally stocked during the first year.

In the creation of new waters, growth of all species of fish is extremely rapid. Largemouth bass easily attain ten inches within two summers after they are first introduced. Bluegill growth is naturally much slower, but six inch fish should be produced during the third summer. The potential production of fish in Iowa farm ponds is astounding. Acre per acre, water will produce many more pounds of fish than can the best land produce beef or mutton. Experimental work with Iowa farm ponds revealed the standing crop of fish ranged between 150 and 1,200 pounds per acre. The harvestable surplus from the crop could easily be 100 to 1,000 pounds of fish without overfishing. Reproduction potentials of our finny friends are second to no animal on earth. An example, in a one acre pond if two largemouth bass of each sex were planted and hatching and survival were successful, the potential would be in excess of 20,000 bass. During the next year if all of these fish reproduced, and survival was 100 per cent, not only would the pond be full of fish, but would extend several hundred feet above the water level. It is utterly impossible to reduce, by hook and line, the population of fish from a farm pond to the point where the species could not propagate itself. This would be comparable to catching all the rabbits from a briar patch, with a piece of string and a carrot.

Regardless of favorable conditions, the "balance" between predator and forage fish may be upset sooner or later. Many exterior factors such as rainfall, turbidity, and vegetation growth may directly or indirectly control this balance. In the bass-bluegill combination, it is the bluegills that frequently over-populate the pond. When this situation occurs the bluegill crop must be reduced and the proper balance restored. Severe cases of over-balance and stunting may warrant chemical eradication of the fish population and restocking with the proper ratio. If the population balance is to be maintained it is recommended that for each pound of bass removed, five pounds of bluegill be also caught and removed. There is little danger of over fishing a farm pond in Iowa, since up to 75 per cent of the total crop can be removed annually.

Simple tests have been developed by the Soil Conservation Service to determine if ponds are balanced or not. A pond is considered to be in balance if a minnow seine haul produces young-of-the-year bass and a few bluegill two or three

SMOKEY BEAR AT STATE FAIR

George Tovey Photo.

Smokey Bear, our ubiquitous big brother of the forests, has notified us that he will be present at the forthcoming Iowa State Fair to champion the cause of fire safety in the woods. Pausing for a moment to lecture one of his junior assistants on the various uses of a shovel, he demonstrates a fundamental stance, leaning on it. Hastily informing us that he concerns himself with other phases of conservation (besides conservation of energy) he says that he'll be happy to answer any questions posed by the fair-goers. Little Smokey will be on hand too for the benefit of the youngsters.

inches long. If the seine haul produces few young bass and many small bluegill the pond is considered unbalanced.

Frequently the balance in a pond may become upset by the introduction of other species of fish. The source of these intrusions are usually from overflowing water or a careless angler using undesirable bait and allowing it to escape.

An important factor in maintaining the balance between predator and forage is the elimination of pond weeds. The abundance of plants provides shelter and cover for young bluegills and in turn protects them from predation. This results in increased survival and unbalanced populations. Pondweed control is usually accomplished by mechanical or chemical means. Many new chemicals are now available for control of undesirable plants. If the pond owner prefers, mechanical control can be attained by drawing a length of cable or rope through the vegetated areas. However, chemical control methods are much more efficient and economical.

A commonly asked question of farm pond management experts is concerned with fertilization. Treatment of ponds with a nitrogen-

phosphate fertilizer will produce a bloom of scum or algae, and in turn increase the basic productivity of the water. Fertilization in non-productive ponds will increase the standing crop of fish, but in general will be detrimental rather than advantageous. Only if the pond is at peak production, and increased production is desired should fertilization be considered in Iowa ponds.

The vast increase in the number of farm ponds is a simple endorsement of its popularity. A pond on any farm is of great economic and recreational value. It is, and should be, the center of family recreation and relaxation. Like the wise adage, spoken so truly, "The good Lord put twice as much water on the earth as he did land. Therefore we should fish twice as much as we plow."

CAMP—

(Continued from page 154)
er houses in major camping areas, and the addition of minimum facilities such as water and toilets in the smaller areas not adequately serviced by these utilities.

Parks scheduled for improvement are Backbone, Clear Lake, Dolliver Memorial, Fort Defiance, George Wyth Memorial, Gull Point,

Lacey-Keosauqua, Lake Ahquabi, Lake Darling, Lake Keomah, Lake Macbride, Lake of Three Fires, Lake Wapello, Ledges, Lewis and Clark, McIntosh Woods, Nine Eagles, Palisades-Kepler, Red Haw Lake, Rock Creek, Springbrook, Stone Park and Waubonsie.

Several of the present campgrounds will be moved to larger areas to provide greater privacy and allow greater numbers of campers. In many cases the campground has been a part of a picnic area in order to use the sanitary facilities already present. Additional facilities are now being built for use with the expanded campgrounds.

Some Reasons for the Increase

There are several factors which account for the change in vacation habits. The gradually shortening work week allows more time for leisure. Roads have increased and improved along with automobiles. The great variety of camping materials and aids encourage many people to try outdoor living. And too, a family can go for a much longer time on limited funds if they carry their own shelter and cook for themselves, with just an occasional stop at restaurants and motels. A family unit (members of a single household) can stop overnight in a state park for a buck—without making advance reservations. They need only to contact the park officer who will assist them in locating a campsite and other available facilities.

A rude alarm clock awakening followed by a hurried cup of coffee and slice of toast to start the day certainly holds no match to rising with the birds and breakfasting on a freshly caught bass. Campings got it—let's go!—M. K. J.

GAME FARM—

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moved out of the central part of the area over near the entrance and landscaping will be done to beautify and render an atmosphere of naturalness about the buildings. Henry Merkel, the landscape architect for the commission, made this design and lay-out for the buildings and pens which can be seen in the accompanying sketch. Other states may spend more on similar institutions, but they'll be hard pressed to beat this one!

BONANZA WHEN THE WATER IS LOW

Nearby angling enthusiasts usually hit a bait bonanza downstream when gates in dams are closed. Oahe Dam in South Dakota recently was shut down to permit a three-hour inspection. We hear that one angling enthusiast retrieved 28 lures, 80 sinkers, 60 leaders, more than 100 hooks and a like number of snap swivels—equipment valued at \$50.

The Hungarian partridge is a plump bird with short, rounded wings and a short tail. It is smaller than the chukar partridge.