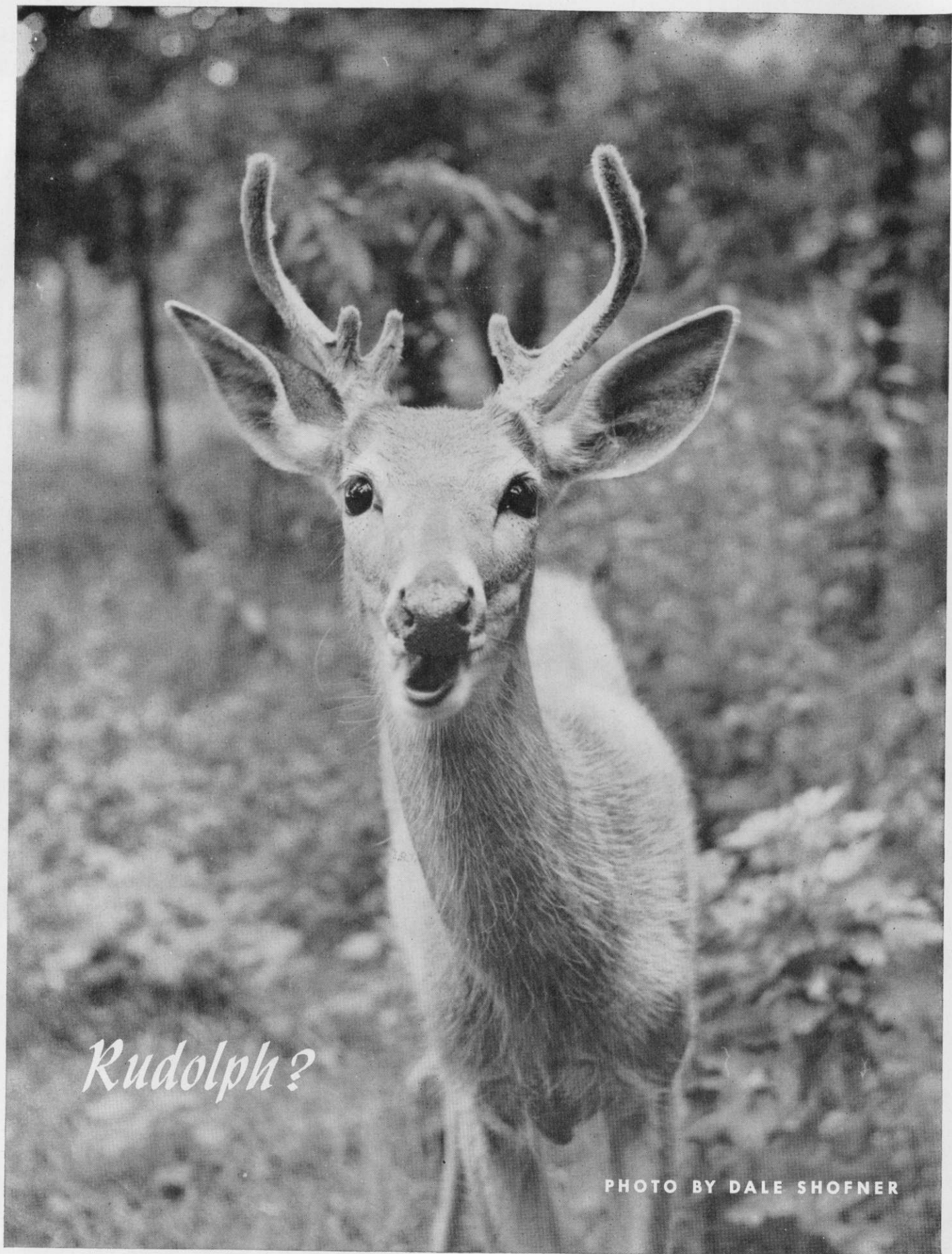


OUTDOOR INDIANA

December 1950



COASTING AT POKAGON



Rudolph?

PHOTO BY DALE SHOFNER

Letters to the Editor

Dear Sir:

Please accept my appreciation for adding my name to your mailing list. As a lover of nature its timely articles are interesting and as a member of the State Audubon Society the article "Songbirds of Indiana" is most welcome.

MRS. ALBERT PEINE, Brookville

The "Songbirds" article is one of the regular features of OUTDOOR INDIANA, Mrs. Peine. Mr. Hadley, its author, and the editors hope that you find each successive account of our birds interesting and helpful.

Dear Sir:

Just a letter of appreciation for sending me your wonderful magazine OUTDOOR INDIANA. Even though we live in California your magazine describes a state and people of a homelike nature.

Your wonderful descriptions and all the contents are enjoyed by my whole family.

JOHN W. REINER, Oakland, Calif.

Indiana has a homelike nature and we are proud that it shows through the pages of OUTDOOR INDIANA.

Dear Editor:

I have been reading OUTDOOR INDIANA for several years and have just spent an enjoyable evening with a recent issue in company with my faithful briar.

OUTDOOR INDIANA is very well bal-

anced and edited, for which I think you are entitled to take a bow, and it is my considered opinion that the magazine has done much to promote conservation, not only in Indiana, but in neighboring territory as well.

May your zeal never wane.

JAMES P. ALLEN, Chicago

In reply to your statement concerning the magazine's balance, we wish to thank you for that kind observation and at the same time extend credit and thanks to the various divisions of the Department which have cooperated most graciously during the past year.

As far as the editing is concerned, we must admit that we have found fault with ourselves for certain makeup mistakes but earnestly hope that past errors and future care will enable us to present an even better OUTDOOR INDIANA in 1951.

Dear Sir:

Many thanks for a swell magazine and especially thanks for the humorous cartoons that appear on its inside covers. I have clipped several of them out when I have finished reading the magazine and have had them framed.

PFC. MAX GREEN, USMC
Quantico, Virginia

The editors thank you, the writers thank you, and the cartoonists thank you!

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OUTDOOR



INDIANA

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CONTENTS

| | Page |
|---|------|
| LETTERS TO EDITOR..... | 1 |
| STRIP MINING IN INDIANA..... | 2 |
| THE SCIENCE OF OIL..... | 3 |
| HOW TO BUILD SMALL LAKES—Part 3 | 4 |
| BRIGHT SHRUBS ANSWER WINTER NEEDS | 6 |
| SONGBIRDS OF INDIANA..... | 8 |
| SEE HOOSIER PARKS..... | 9 |
| MEMORIAL TO "FRECKLES" AUTHOR | 10 |
| FOREST MANAGEMENT PRACTICES.... | 11 |
| KANKAKEE PROJECTS RESTORE NATURE'S BOUNTY | 12 |
| UNCLE JIM | 14 |
| AGRICULTURAL NOTES | 15 |
| HOW MUCH "LEAD" WITH A RIFLE? | 16 |
| SILOPANAI DNI | 17 |
| THE EDITOR'S PAGE..... | 24 |

Editor

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MARGARET LANAHAN

Director of Radio and Special Events

HENRY W. MOESCH, JR.

THE COVER

Winter's snow may be a headache to the city dweller, but to the inhabitants of wide-open spaces it brings a lot of fun, especially to those who are young or just "young in heart."

Snow is particularly essential on the night before Christmas, the night before a big rabbit hunt, or the night of a winter wedding. It does something to the atmosphere—charges it with silent, musing anticipation, gives everything a particular sparkle. It has the power to transform what might have been a dull, grey evening into a fabulous, glittering world of silver spangles, fraught with a breathless kind of beauty that is reflected in laughing eyes and bright, anticipating faces.

Part of that joy is revealed in the faces of our December cover girls. To them, the snow means sledding, sleigh-riding, maybe hot candied apples later. They have found fun in it, have met its glory eagerly and know it to be a sort of wonderful expression of nature's changing seasons.

Bill Palmer has again captured the Hoosier scene for us. One thing we like about his work is the fact that no explanations are necessary—the mood expresses itself sufficiently.

Strip Mining in Indiana

By CHARLES E. WEIR
Chief, Coal Section, Division of Geology



The dragline—modern method of mining strip beds—here removes the overburden from a coal vein. This piece of machinery costs from \$300,000 to \$1,000,000 and serves the purpose of digging a trench 40 to 50 feet wide with a depth of 10 to 90 feet. A ponderous instrument, the dragline awkwardly but efficiently swings its shovel back and forth carrying load after load of shale, stone and dirt away from the immediate mining area.

THE practice of mining coal by removing the soil and rocks from above the coal, rather than by digging a shaft to the seam, was begun on a commercial scale in Indiana shortly after the Civil War. Horses were used for power in early operations, and a small drag bucket was used to remove the overburden. This was a logical method of mining since, at that time, information as to location of coal consisted almost entirely of outcrop information, and it is a well known fact that the roof of shallow coal near the outcrop is usually soft and makes an ever-present hazard of falling roof to the underground miner.

Because of the early method of stripping, only coal with soft, unconsolidated material for overburden could be stripped, and these areas were usually small. When larger amounts of coal were needed, the operators turned to underground mining since that was the method of mining established in Europe and because the irregularity of the outcrops

made the location of large blocks of shallow, strippable coal hard to find without extensive drilling. With the advent of steam shovels and draglines, bulldozers, and the later Diesel and electric equipment, much more overburden could be handled, and the cost of mining per ton of coal was less for strip mines than for underground mines. As a result, total strip mine production increased from over one million tons, or about 5 per cent, in 1917 to more than 13 million tons, or about 60 per cent, in 1948.

Almost 50,000 acres of land in Indiana have been stripped for coal. Vermillion, Vigo, Clay, Owen, Sullivan, Greene, Pike, and Warrick counties account for 90 per cent of the stripped area. Pike county alone has 5 per cent of its area stripped out and contains about a quarter of the total stripped area in the state. Fountain, Parke, Knox, Daviess, Gibson, Dubois, and Spencer counties also contain a few acres of strip mined area.

Many persons in southwestern Indi-

ana have watched in fascination as huge draglines or shovels, resembling awkward, ugly, prehistoric monsters, removed the overburden from a coal bed. The modern strip mine uses a large dragline or shovel similar to the dragline shown in the accompanying picture and which costs from \$300,000 to \$1,000,000 to remove the overburden. The dragline simply digs a long trench 40 to 50 feet wide; the base of the trench is the top of the coal, and the depth of the trench ranges from 10 to 90 feet. The top of the coal is then cleaned off with either a bulldozer or a wire broom or with both.

A small loading shovel, which has a one- to three-yard bucket and costs \$10,000 to \$75,000, then digs up the coal and loads it into a 30-ton haulage truck. These trucks cost about \$30,000 each, and seven or eight are used in a pit. The truck hauls the coal along a company road to the preparation tippie. The tippie costs about \$1,000,000 and is used to

(Continued on Page 19)

The Science of Oil-

FROM DISCOVERY TO RECOVERY

ALTHOUGH petroleum geology is one of the younger sections of economic geology, it has attained a leading position during the past two decades and has attracted the largest group of geologists of any section of economic geology.

Observations on the origin of petroleum were made as early as 1788 when the German geologist Haquet suggested that petroleum came from organic matter such as mussels. From that day to this, geologists have turned their interests to the origin and activity of oil and oil products.

For more than two decades after petroleum geologists became actively engaged in geological work for oil companies, their most important work has been that of general reconnaissance of surface areas and detailed surface mapping. Since 1920, however, a progressive change from surface mapping to more specialized techniques including geology, geophysics and chemistry has developed the discovery process into a fine art based on science and the needs of industry.

Many geologists are well trained specialists in petroleum geology. Some specialize in micropaleontology, the study of minute fossils found in well samples. Some correlate sample logs and use paleontological data in the construction of subsurface structure maps, and others interpret geophysical data furnished by field crews. Many geologists direct the drilling and coring program of wildcat and field wells.

Geographic Distribution of Oil

The distribution of petroleum is quite irregular. The Western Hemisphere has produced 77 per cent and the Eastern Hemisphere 23 per cent of the world's oil production. Sixty-three per cent of the world's oil has been produced in the United States.

Because of its importance to our mechanized economy, we are quite fortunate that nature provided us with a goodly supply of the black fluid, but future commerce depends on the maintenance of that strong oil production, particularly since many foreign countries command ever-increasing supplies of oil from the east.

Stratigraphic Distribution of Oil

Oil is distributed in rock formations ranging through the geologic ages known

as pre-Cambrian to Quaternary. The amount of oil found in the different geological periods varies because of physical conditions and the amount of plant and animal life which existed. It has been found that the younger geological periods are more oil productive than older ones.

Chemical and Physical Properties of Petroleum

Petroleum is a complex mixture of gaseous, liquid, and solid hydrocarbons and, in addition, there are other compounds which contain oxygen, nitrogen and sulphur. Its color varies from a colorless liquid to a deep brownish-black. Paraffins and naphthenes are responsible for the agreeable odor of some crude oils while certain nitrogen compounds and sulphur cause the disagreeable stench.

Generally speaking, the lighter oils, those having a light specific gravity, are more valuable because they contain larger quantities of gasoline and associate products.

Petroleum's Organic Origin

Most scientists accept the organic theory of the origin of petroleum, be-

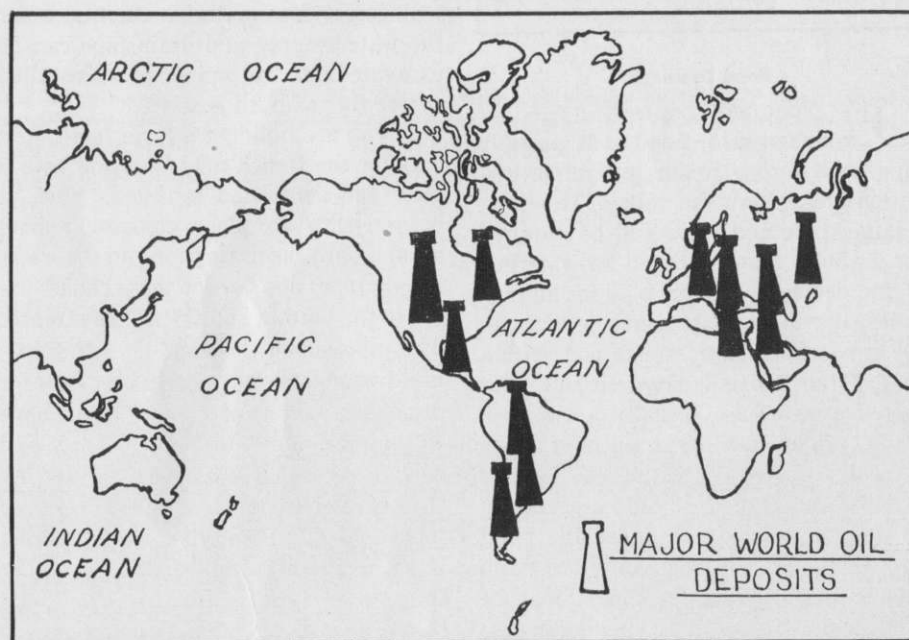
lieving that oil originated by a series of complex processes, from plant and animal matter. There is a wide divergence of opinion as to the type of organic material which can be changed into petroleum. But it is generally agreed that it develops from organic substances which have been deposited in shallow water marine sediments. The work of ZoBell has demonstrated that bacteria reduce the nitrogen, oxygen, sulphur and phosphorus content of this organic matter.

Geochemical Changes

Geophysicists have concluded that the chemical reactions which convert organic matter into petroleum occur after the plant and animal matter has been deeply buried. Heat, pressure, earth movement and evolutionary factors in addition to bacterial action compound these substances into the oily fluid known as petroleum. Once reduced to the fluid state, these beds of oil can be moved and rearranged by pressure, earth movement, and gravity. Conditions allowing, the pools of oil can flow from their source along

(Continued on Page 23)

The map below illustrates the principal petroleum areas of the world. In North America, Mexico produced 56,284,000 barrels in 1947 while the U. S. brought in 1,856,107,000 barrels. South America's principal petroleum regions are Colombia and Argentina, and this fuel was good reason for Hitler's interest in the latter during World War II. Europe's best petroleum region is Russia, followed by Rumania (remember the Ploesti oil fields of World War II?) and Poland. Iran and Saudi Arabia are Asia's biggest petroleum sources and Iraq shows a bigger potential than has to date been realized.





How to Build Small Lakes and Farm Ponds—Part 3

By DENZIL DOGGETT
Head of Surface Water Section
Division of Water Resources

This is the third and final article on constructing lakes and farm ponds. Further information and direction is available by contacting the Division of Water Resources, 311 W. Washington St., Indianapolis, Indiana.

Pond Drainage

ONE pipe may be used for either drainage of the pond or as a supply pipe for watering troughs and minor irrigation areas down the valley. However, a larger pipe and valve will be required for drainage than is needed for watering. If you decide to use this pipe for all purposes, it will be most convenient to set the valve at the downstream end, with a welded tap above it sized to suit your daily usage needs. Usually a two-inch collar welded into the drain pipe above the valve will serve the purpose. If this arrangement is used, it will be necessary to provide a headwall under the pond surface at the upstream end of the drain pipe so that sandbag "stoppers" may be lowered down to the pipe opening in case

repairs are necessary on the large outlet valve. Some type of filter screen which can be removed should be provided to prevent fish and vegetation from stopping the large drain pipe.

After the key trench has been refilled with impervious material, the trench for the water supply and drain pipe can be excavated and the pipe or pipes installed before the main fill is started.

If you are building a farm pond, first cuts for the trench may be made with a plow and completed by hand. Since it is necessary to place concrete collars around both the drain pipe and the water supply pipe, notches for these collars are cut in the bottom and sides of the trench. The pipe should be new, and of galvanized wrought iron or plain cast iron for protection against corrosion. If you have to use steel pipe, it should be new and galvanized, but it will have a shorter life than the other two varieties. If a larger pipe is used and the type of construction is such that a spirally-welded or other thin-walled type is used, it should be paved and coated with bituminous ma-

terial and wrapped to prevent corrosion. You should tamp clay soil firmly around the pipe until the trench is filled except for the portions around the notches. This backfill should be spread in six-inch layers to insure that it is thoroughly compacted by the tamping. The concrete collars are then poured according to plan. This pipe will serve as a drain while the dam is being built. If only a small water-supply pipe is installed in a farm pond, a two- or three-foot riser of perforated pipe should be installed on the upstream end of it. This riser, too, should be screened to prevent fish and aquatic growth from clogging it. A concrete box filled with sand and gravel may be placed around this riser to clarify and filter the water, and a cut-off valve should be placed at the end below the dam. From this valve the water may be piped anywhere you want it, provided the place is not above the pond's water level or where pipe friction will cut down the flow of water too much. You may have a float valve in the tank to shut off the water automatically when the tank

is full. This valve should be checked frequently. If it should stick or jam, it would result in considerable loss of water from the pond.

You should take great care in the installation of these pipes so that there will be no settlement when the earth fill is made over them.

If you are making a small farm pond, the pipe spillway, which connects the concrete, concrete block, or tile spillway with the overflow channel below the dam, should be laid in undisturbed soil on the side hill. Care should be taken in making the fill over this pipe in the core trench. This pipe should have collars of concrete built around it, similar to the method outlined above for the drain pipe.

The Side Spillway

The side spillway for a farm pond should be made while you are building the dam. The material excavated from the spillway may be used in the fill for the dam if it is suitable. If the sod or topsoil is not suitable it can be wasted in an area below the dam. This side spillway should lead around the end of the fill—not over it—and should be flared at the inlet or upstream end, then empty onto a well-sodded area. A level spreader located at the downstream end of the spillway will help in preventing erosion by spreading the water as it empties onto the grass.

If a side or run-around spillway is used on a larger pond or lake, it is imperative that it be located and constructed before the earth fill is completed. This will make it available in case of extra heavy run-off while the earth fill is freshly built and unprotected by any sort of cover. This type of spillway should be



The above photograph illustrates the final establishment of this artificial lake in Henry county near Greensburg. Although the water level was rather low at the time of this picture, the lake area normally carries more water and is faster flowing.

designed and its construction supervised by an engineer. Hydraulic construction requires experience and it is impossible to outline in a publication of this type all the circumstances that are possible. We can offer general information that may guide you in selecting an engineer. We will assist by inspecting any site that you feel is satisfactory and give an opinion as to its suitability for the construction of a dam and the formation of a lake or farm pond.

If, after inspection, we feel that another type of spillway (as mentioned under "type of spillway") would be more satisfactory, we will advise you of that fact.

Finishing the Job

Whether you are making a farm pond or a lake, the dam and spillway (if it is

to be sod) should be limed and fertilized, seeded with a good grass mixture, and mulched with manure, straw or similar material. For the protection of the dam, it is imperative that a good cover of grass be established quickly. A pond must not be allowed to fill with water until a good sod cover has been established in the emergency or side spillway. To get quick action, especially if the dam and spillway are not very large, you may want to cover them with sod taken from the lake bed area. This is expensive in labor but short cuts in using a tractor-drawn sod cutter and mechanical methods of handling and placing the sod may make it feasible.

If you are building a farm pond, all the edges of the pond should be graded before it fills with water. These edges

(Continued on Page 22)

Here is a farm pond built on the Donald C. Martin farm in Decatur county. Plenty of clean, fresh water is the result of careful planning, and as long as this pond is properly maintained, Mr. Martin won't have to worry about surrounding crop lands.



The lake shown below was erected by Dr. J. T. Morrison of Greensburg, Indiana, and fairly well illustrates the beauty as well as the usefulness of artificially built lakes.



Bright Shrubs Answer Winter Needs

By JOHN FAVINGER
Assistant Entomologist

THE word "evergreen" is a more or less generic term applied to all trees and shrubs with foliage that persists over winter. The more familiar of such plants are the various juniper, arborvitae, pine, spruce, hemlock, fir, and yew that make up a good share of the landscape plantings about Indiana homes. This group is usually designated as conifers although the junipers and yews do not bear cones like the different pines and spruces.

Most of these evergreens display pleasing foliage throughout the year and are valuable for relieving the barren branches of deciduous trees and shrubs in ornamental plantings during the winter. However, some of these plants will eventually become quite large, and since many of the houses built in recent years are small, or at least have low rooflines, these larger plants are out of proportion in foundation plantings. The need for plant material that is more dwarfed in nature as well as a desire on the part of the landscapers to incorporate different foliage types into foundation plantings has led to a considerable use of broad-leaved evergreens in recent years. Broad-leaved evergreens is the term applied to a plant with relatively broad evergreen leaves as distinguished from the cone-bearing plants which normally have narrow needle-like leaves.

A dainty little evergreen, with the long name of *Pachystima canbyi*, is occasionally employed around foundations and provides a touch of brightness to the winter drab.



Predominating the shrubbery illustrated above is the boxwood, a popular broad-leaved evergreen which has been used in hedges and topiary work since Roman times.

I have observed broad-leaved evergreens with interest for the past several years in nursery inspection work. It might be well to point out that most of this observation has been done in the southern two-thirds of Indiana, which has a climate more suitable for many of these plants than has the northern section of the state. It is not the purpose of this article to serve as a planting guide, but merely to point out the attractiveness of several of these broad-leaved evergreens I have observed doing well

over most of Indiana. Some of these shrubs can be planted in almost any situation while others require special attention and conditions in order to thrive or even survive. It is well to find out from your nurseryman what special requirements any plant may have before you spend a lot of time and money trying to grow a plant wholly unsuited to the conditions where it is planted.

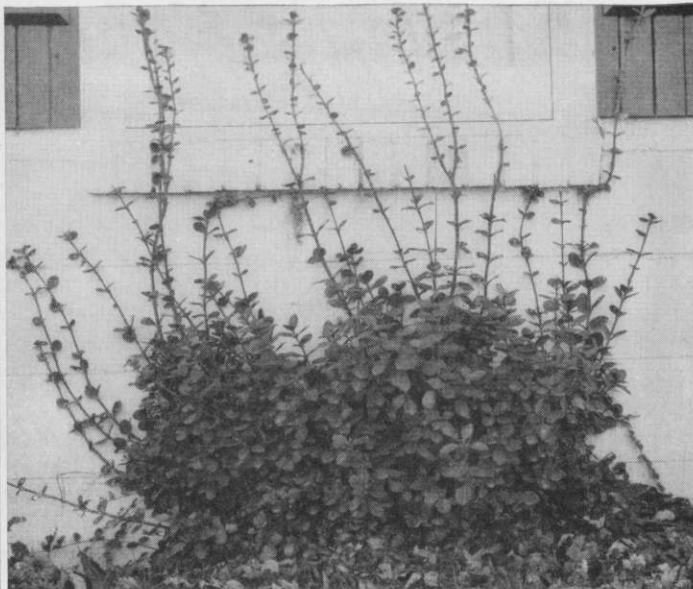
Among the most valuable of the broad-leaved evergreens are several species or varieties of euonymus which are members of the bittersweet family and many of which display bright red or orange seed coverings or arils like those of bittersweet.

Euonymus radicans and some of its several varieties are offered by many nurseries in Indiana, and these are probably the most useful of the several species that can be grown in this area. It is essentially a trailing shrub but it can be allowed to climb or trimmed into a bush, depending upon the type of plant desired. *Euonymus patens* is not as hardy as *radicans*, nor as evergreen in most locations, but it is more of a shrub and has more attractive arils.

Holly of one kind or another is more generally available in Indiana nurseries than a few years ago. The familiar American holly can be grown over most of Indiana with a minimum of protection—the greatest difficulty seems to be in transplanting. Some horticultural varieties of American holly are heavier berried and have better habits of growth



English ivy, another fine evergreen ground cover, is easily recognized. It flourishes in the damper spots and conceals border edges and foundations.



One of the very hardy broad-leaved evergreens is *Euonymus radicans*. It does have a tendency to climb but can be easily controlled if so desired.

than seedling plants. There are several types of small-leaved Japanese hollies with black berries available at some of the nurseries in southern and central Indiana that are worthy of mention. Burford holly, a form of Chinese holly, is being grown around Evansville with great success and is a very desirable plant where it is hardy. Inkberry is another species of holly with black berries that can be grown almost anywhere in Indiana, although it is not as evergreen in the north as it is in the south. Most hollies should be planted in groups with some male plants present to insure a set of fruit.

Boxwood has been used in hedges and topiary work for several hundred years and is probably the finest of all plants for this purpose. There are many horticultural forms and varieties of boxwood and these vary considerably in hardiness. For Indiana plantings it is best to buy plants grown in the area to assure a maximum of hardiness.

Mahonia or Oregon grape holly is apparently hardy throughout Indiana if planted in sheltered locations away from the winter winds and sun. This is a close relative of the barberries, which have at least one evergreen species, *Julianae* barberry, that is frequently grown in sheltered spots as far north as Indianapolis.

A neat little evergreen for rock gardens and borders of evergreen plantings is *Pachystima canbyi*, another member of the bittersweet family, but lacking a showy fruit. Almost any well-drained location will do for this dainty plant,

which seldom grows more than a foot high.

Pyracantha or firethorn is a very attractive evergreen shrub that can also be trained against a wall. Some splendid specimens of firethorn can be seen at the George Rogers Clark Memorial at Vincennes along the approach to Lincoln bridge spanning the Wabash. These particular bushes exhibit a profusion of orange-colored berries in huge clusters which remain for a greater part of the winter. There is also a red-berried form

that is sometimes seen in southern Indiana, but this plant does not appear to be as hardy as the orange-berried variety.

Some of the cotoneasters, or types of quince, are more or less evergreen, depending on conditions, and many of these have brilliant fruit that persists well into winter. This group varies in growth habit from almost vine-like prostrate shrubs to wide-spreading bushes, and are particularly well suited in foundation plantings around stone and brick buildings.

(Continued on Page 19)

The barberries are another easily-recognized shrub. The *Julianae* barberry, illustrated below, is colorful but a bit hard to handle since its spines often grow more than an inch long.



Songbirds of Indiana

By ALDEN H. HADLEY, Ornithologist

WITH the exception of the ruby-throated hummingbird, the golden-crowned kinglet is the smallest bird in eastern North America, for it is only from $3\frac{3}{4}$ to $4\frac{1}{4}$ inches in length. Its near of kin, the ruby-crowned kinglet, is but slightly longer, measuring from $3\frac{1}{4}$ to $4\frac{1}{2}$ inches in length.

Inasmuch as these dainty little feathered sprites very closely resemble each other and have similar habits they are here treated together in this songbird series.

It is difficult to imagine more delicately beautiful and charming members of the feathered clan. Many years ago, Dr. Elliot Coues, the distinguished ornithologist, wrote with enthusiasm of the kinglets and spoke of the ruby-crown as follows: "One of the most remarkable things about the ruby-crown is its extraordinary powers of song. The lower larynx, the sound-producing organ, is not much bigger than a good-sized pin's head and the muscles that move it are almost microscopic shreds of flesh. If the strength of the human voice were in the same proportion to the size of the larynx,

we could converse with ease at a distance of a mile or more. The kinglet's exquisite vocalization defies description; we can only speak in general terms of the power, purity, and volume of the notes, their faultless modulation and long continuance. We hear the slender wiry note, and see the little creatures skipping nimbly about the smaller branches in endlessly varied attitudes, peering in the crevices of the bark for the minute insect food, taking nervous flights from one bough to another, twitching their wings as they alight, and always too busy to pay attention to what may be going on about them. They appear to be incessantly in motion. I know of no birds more active than these, presenting the very picture of restless, puny energy, making much ado about nothing."

Other naturalists have written with equal enthusiasm of the kinglets. John Burroughs has asked the question: "How does the ruby-crowned kinglet know that he has a brilliant bit of color on his crown which he can uncover at will, and that this has great charms for the female?"

From the first days of my acquaintance with the kinglets it has always been difficult to decide which of these feathered mid-gets possesses the greater charm. Of course both the male and female golden crowns are more conspicuous by reason of the fact that both possess the prominent crown patches, whereas only the male ruby-crown has this adornment and it is partially concealed. Both kinglets are common migrants in Indiana, usually arriving in late September. Occasionally a few individuals may winter in the extreme southern part of the state. Early spring migrants arrive in late March or the first week in April. Both species breed from northern United States northward into Canada.

The nest is of soft green mosses and feathers suspended from twigs in coniferous trees. The eggs of both species are from 6 to 9 and are creamy white, speckled with brown. Those of the ruby-crown are usually not so thickly speckled.

Golden-crowned and Ruby-crowned Kinglets



THE QUESTION BOX

Q. What do the "blind fish" look like and where are they located?

A. The "blind fish" are small and colorless, with a long, depressed head, large mouth, extremely small eyes which are concealed under the skin and irregularly arranged cycloid scales. They are known in Sibert's Well Cave, Harrison county; Clifty Cave in Washington county and Shawnee, Donelson's and Hamer's Caves near Spring Mill State Park.

Q. Where can I get a copy of the Indiana Seed Law covering clover seed?

A. You can obtain printed copies of the Seed Law by writing the Agricultural Experiment Station at Purdue University, Lafayette, Indiana.

Q. Do all rifles have the same rifling twist?

A. Rifling spirals vary from one complete turn in $6\frac{1}{2}$ inches to one turn in 60 inches. Bore twist decreases as cartridge velocity increases. Twenty-two short barrels have 24 twist; .22 long rifles and hornet barrels have 16 twist and .30" on government barrels have a 12 twist.

Q. What is the easiest way to pick ducks?

A. Experienced hunters recommend the following method: Dry pick all coarse feathers. Pour melted paraffin over the entire bird and dip in cold water. The paraffin, feathers and down can then be removed in large chunks. Wipe dry and singe.

Q. Do unusually heavy muskrat pelts forecast severe winter weather?

A. No. Furbearers cannot vary their pelage in anticipation of future weather, but the quality of their fur does reflect the abundance or scarcity of food during the preceding season.

Q. Why do zoologists tell us that birds are like reptiles?

A. Because birds resemble reptiles anatomically. Their feathers are more closely related to the scales of reptiles than to the external covering of other living vertebrates.

See Hoosier Parks for Outdoor Sport!

A COMBINATION of attractions draws visitors to Clifty Falls State Park during its winter season. Scenic, snow-covered hills, valleys, frozen waterfalls and winding trails beckon those who seek peace and quiet in the out-of-doors and the appetizing meals and overnight accommodations assure Clifty Inn guests a comfortable and reasonably-priced week end. Numerous rustic shelters with fireplaces and ovens are scattered through the park and ample supplies of firewood are situated near the shelters, regardless of season.

There's fun for the whole family at McCormick's Creek State Park located on State Road 46 near Spencer. Deep in McCormick's Creek Canyon winter guests can survey the icicle-draped walls and delve into the history of the old stone quarry that furnished the first stones for the State House. Overnight accommodations are provided by Canyon Inn and game rooms add to the enjoyment of the park's facilities.

Famous as Indiana's winter playground, Pokagon State Park stretches along the eastern shore of Lake James just north of Angola. Rolling hills offer a number of old Indian trails which can be explored and a herd of buffalo, deer and elk provide an additional attraction. Lake James is transformed by freezing



Everyone, amateur or professional, gets a kick out of skiing at Pokagon, and though the St. Bernard shown in the above photograph is not a standard rescue worker at this popular park, he looks like he would be ready to lend a hand to some woe-begotten skier should the occasion ever arise.

temperatures into a 1,677-acre skating rink. Ice boating and skating are popular sports here and those who enjoy skiing will find four marked ski trails whereon they can test their skill. A 1,700-foot toboggan slide, bobsleds and sleighs add to the wintertime fun at Pokagon, and Potawatomi Inn offers a variety of indoor sports as well as the excellent cuisine for which it is noted.

A pioneer village, complete with apothecary, grist mill, boot shop and still house, which has been restored to its original state, is one of the principal attractions at Spring Mill State Park. In addition, Spring Mill offers many scenic wonders including a

number of caves noted for the stalactite formation, and underground river which is inhabited by rare blind fish, nearly 100 acres of virgin timber and a 30-acre artificial lake. Located on State Road 60 near Mitchell, Spring Mill provides excellent accommodations for the overnight visitor at Spring Mill Inn.

Sunset Point at Turkey Run State Park offers a delightfully different spectacle in the wintertime. The snow-covered landscape and frost-flecked Sugar creek contrast sharply with Turkey Run's summertime scene.

Park guests here can take an invigorating hike through the hills and return in time to watch the animals being fed at the animal pens. The park museum is also open to guests and provides an in-

(Continued on Page 19)

Entering colorful McCormick's Creek State Park near Spencer, Indiana, the winter visitor finds every comfort offered to augment a pleasant stay.



Hiking gives you that old "out-of-doors" feeling of invigoration. It also develops an appetite — which can be fully indulged at Turkey Run Inn. Wherever the trail leads, there is one certain conclusion: it will be a pleasanter hike if it ends at a table loaded with savory, steaming food.



Memorial to "Freckles" Author Draws Interest to Old Limberlost

"ARTISTRY, integrity and devotion to nature." Of all the words written in description of Gene Stratton Porter, none more adequately suit her remarkable personality.

Born to Mary and Mark Stratton of Hopewell Farm in Wabash county, Geneva Stratton was the last of their twelve children and reached the highest pinnacle of renown. Perhaps it was from her father that she derived her love of beauty and perseverance, for he was a minister of God and a farmer, an avid reader, having the genius of large appreciation.

But every child's mother plays a role in the developing characteristics of human personality, and from Mary Stratton, Geneva learned of the flowers while working with the tulip bulbs which Mary so highly favored; the daffodils, star flowers, lilies, and blue bells from which she distilled such exquisite perfume.

As a young girl, Geneva Stratton



"Limberlost Cabin," Gene Stratton Porter's home at Geneva, Indiana. Mrs. Porter designed and landscaped the homesite and here completed her first book, "The Song of the Cardinal." A fourteen-room structure, the two-story log building has quarter-sawn oak panelling in the entrance hall and dining room, includes a conservatory, library and music room as well as ample living quarters.

The "Dream Girl's Porch" familiar to Porter readers is, in reality, a portion of Mrs. Porter's Geneva home. "Freckles' Window" is also a reality as is "The Harvester's Fireplace" and the "Dream Girl's Room." All may be seen at the Geneva memorial.



joined with her family in the work of their large household, sharing in their difficulties and coming to respect the beauties, not only of the natural world as it was manifested on their farm, but in that appreciation of human integrity which resulted in her fictional depictions of human life as happy, clean and strong.

She once wrote, "It is true that I write almost altogether of the *best* I know of human nature, and deliberately leave the worst to those who enjoy reproducing it; but it rather

frets me to be mistaken for a poor fool who does not even know that evil exists in the world. I do, truly! I merely refuse to discuss it intimately on the pages of a book which I design to interest people in the happiness and health to be found afield."

In 1880, Gene Stratton visited Sylvan lake at Rome City with her sisters Florence and Ada. The summer of 1883 found her again at this lovely lake, enjoying a summer holiday with her sister Florence and Florence's husband, Will Compton.

Although of striking appearance and graceful demeanor, Gene had no beaux to speak of, but on her third visit to Rome City in 1884, she was espied by a young druggist named Charles Porter who, with some trepidation, eventually addressed himself to her by letter and asked that she correspond. Her reply to his opening was a frank and rather inquisitive one, which led to an even more engrossing series of letters and eventually to marriage.

With her love of nature coupled to the luxuriant swamps that covered the Limberlost area at that time, Gene Stratton Porter found herself engrossed with the wildlife and wild flowers, called to the out-of-doors by that plaintive beckoning of birds from the forest.

(Continued on Page 23)

Forest Management Practices Clarified at Herrick Demonstration

FARM woodlands are no longer the "forgotten acres," judging from keen interest shown by farmers, timber owners, county agents, Soil Conservation Service farm planners, and industry men participating in the Herrick Forestry Demonstration near Hamilton, Indiana, in Steuben county.

Some 150 visitors from four states gave every detail of the four sessions their individual attention, proving again that there is a need for a program that emphasizes selective cutting and wise management of timber resources for permanent cropping. Attendance reached its peak the last two days with 17 firms represented by 47 operators and timber buyers. Forty-five public and private foresters were on hand for the final session. The first day's program was designed for county agents and Soil Conservation Service farm planners, while the second demonstration was planned for farmers and timber owners.

Prior to the demonstration, a timber cruise and analysis was made of the timber tract which contains 20 acres of mixed hardwoods, predominantly oak.

This included determining the board foot volume in harvest, reserve, and good growing trees, calculating the present growth rate, and developing a forest management plan governing operations for the next ten-year period.

The entire area was marked before any trees were cut. Trees marked for cutting were blazed in two places, about waist high on the trunk and also below stump height. Where possible, harvest trees marked for cutting were in locations that would not cause extremely large openings in the forest canopy. When this procedure was impossible, reserve trees were marked. All cull trees were marked (two blazes waist high) for girdling or they could be removed from the stand if the cutter so desired.

The cutting operation was confined to marked trees in 15 acres of the tract. Logs from trees cut were assembled along the woods road where they could easily be inspected. All trees in the remaining five acres were tagged as classified.

Bright-colored tags, indicating the various classifications, had been placed on the trees to aid in recognizing the trees at a distance and assist the groups in

quickly formulating a mental picture of the stand. Thus, orange tags represented harvest trees; white, reserve; light green, good growing stock; and yellow, cull. Those trees which will make up the next harvests were tagged with circular discs marked "second cut."

The various groups attending were taken to sections of the timber tract, each of which illustrated a particular phase in the development and management of the area.

One part of the Herrick tract represented the stand in its original condition before timber marking or cutting. Reasons for its present condition were explained together with the need for forest practices necessary to improve the growing capacity of the woodland.

In another section of the woods where each tree was tagged and harvest trees marked for cutting, information concerning the number of trees and volume per acre in the present stand, the recommended cut and the frequency of future harvest cuts was presented to the group in chart form. (See attached reproduction of chart used.)

Proper and improper girdling of cull

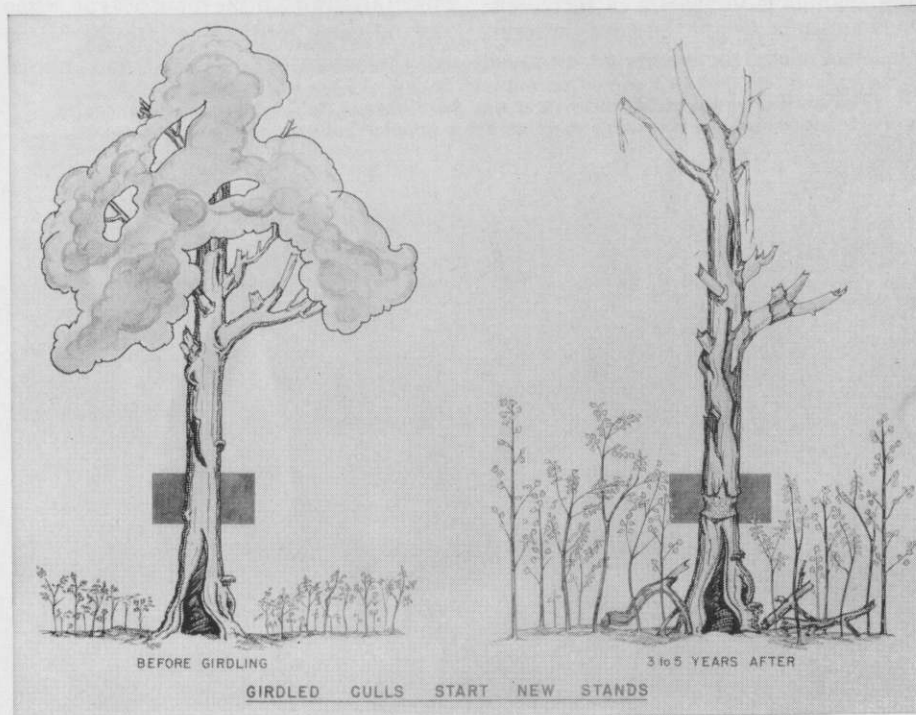
trees was demonstrated in another area. Emphasis was placed upon the need for girdling practices to rid the stand of cull trees and undesirable species. The attached chart was used to illustrate the desirable effects of girdling worthless trees, thus providing additional space for new growth of more valuable species.

An inspection of the cut area (15 acres) gave visitors an opportunity to see the growing stock left and the logs obtained after the cutting operation. Farmers, and particularly the operators, were surprised to find that the cutting operation had caused so little damage to the trees left standing. All visitors were impressed by the fact that after the present harvest cutting (approximately 50,000 board feet or an average of 2,120 board feet per acre), the growing stock left would produce annual harvests of 10,000 board feet for the next ten years. Beginning with the eleventh year, periodic harvests can be made which will yield 6,000 board feet every two years or 15,000 board feet each five-year period thereafter.

It was pointed out that if the area had

(Continued on Page 20)

The illustration below shows the effects of girdling cull trees so new stands can spring up. It has often been remarked that for every successful full-grown tree, 100 to 1,000 saplings must die. Culling out the larger trees which have market imperfections allows the saplings to thrive and produce a better woods crop.



Kankakee Projects Restore Nature's Bounty

SOME 24 years ago, in 1926 to be exact, two public spirited citizens from LaPorte, Indiana, decided it would be a good thing to give the state a large tract of land along the Kankakee and Yellow rivers.

This particular acreage was once a part of the bountiful marshland that spread from South Bend to Momence, Illinois, a distance of 240 river miles ranging 30 miles wide. The area was rich in historical value as well as natural value, for the French voyageur of two centuries ago knew the region as the Grand Marsh and sportsmen from all over the world traveled to America just to hunt in this wildlife paradise.

In the late 1860's and early 70's, however, the white man crossed the Wabash river and began his invasion of the northlands, building levees, setting aside small acreages for farming and draining the bottom lands. Great land companies moved in and formed drainage districts, promising their customers rich benefits from the land which had laid fallow and submerged for so long a time.

Just prior to World War I, the wholesale drainage of the old Kankakee got well under way and by 1917 dredging of the fish-choked river had reached the Illinois state line. The bottom lands were uncovered and a great deal of agricultural soil brought into use. The good soil produced rich harvests and returned through the ensuing years, several hundred thousands of dollars in merchantable foodstuffs. But at the same time, certain areas along the watercourse proved



Wintertime once more finds flights of ducks rising from the marshlands of northern Indiana. The old Kankakee waterways provided nesting areas for countless varieties of wildlife and waterfowl. Under the restoration and sanctuary projects it again harbors our better game birds.

irretrievable and those who attempted to reap crops from this poor land were financially disappointed.

At the same time this agricultural development was taking place, the disappearance of the migratory waterfowl and major game species commenced. No more did the beaver work his trade. To other haunts fled the Canada goose, the teal and scaup. No more did the mink slip into the Kankakee waterways and swim smoothly through the glades. True, some upland game birds came into the region as the migrators left, but the animal

population was sparse and the nesting possibilities poor.

Sportsmen began to realize that the prime sporting game had moved westward as a result of the wholesale drainage of the Kankakee. Simultaneously, it became apparent that not all the Kankakee bottom land was producing benefits. With these thoughts in mind, the 2,300 acres of land was given to the state in a public trust for the establishment of what is now known as the Kankakee Game Preserve.

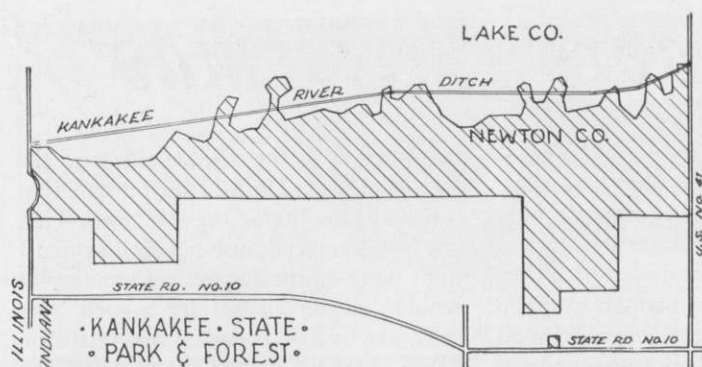
Immediately upon its donation to the state, the gift tract along the two rivers was closed to hunters and trappers by the terms of this donation. Soon the spoil banks along the river's edge were leveled, a water intake established, a stabilizing dam constructed and the 1,000 acres just above the junction of the Kankakee and Yellow rivers was flooded and returned to marshland.

The restoration of a swampy nesting ground brought the return of wild game—not the vast flights of ducks and geese that once fed and nested there, but many thousands, nonetheless. The gaudily-colored wood duck is back; the beaver builds his dams and gnaws on aspen saplings; osprey flit and dart above the trees, and the sedges and pondweed once more hide the American bittern—"the thunder-pumper"—with his guttural call.

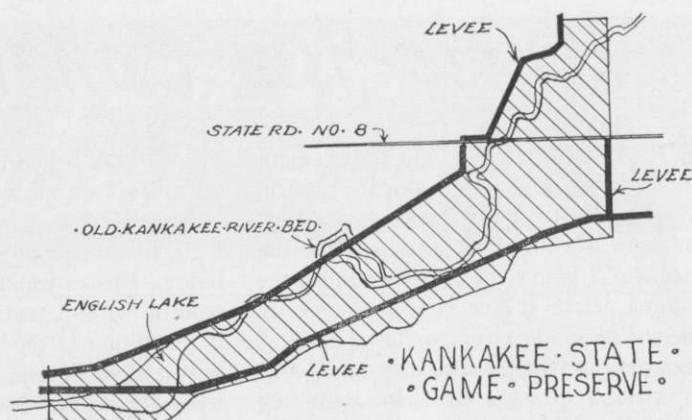
The restored Kankakee is far different

The muskrat puts in for the winter and here are several of his den entrances to prove that the Kankakee marshes are a popular habitat for the fur-bearer.





The plans outlined above show the development project now underway in Newton county. Here the Department of Conservation is establishing a park and forest area as well as a wildlife refuge.



The restored marshland just north of the Yellow river and around the old Kankakee river bed is now a game preserve. Breeding areas and wild plant foods provide our game birds with ample security and assure them of good propagation.

from the Grand Marsh. It is man-made and man has yet to come close to duplicating the natural state. But the bayous and marsh pockets are filled with water and a degree in the balance of nature restored.

Sportsmen all over the state realize that the establishment of this game refuge has returned well over its cost to the state. With the restoration of waterfowl hunting comes the monetary return from shells, guns, hunting clothes, duck stamps, equipment, and the countless gadgets that make a day in the field interesting and exciting.

The marshy preserve has provided a way-station for migrating waterfowl and consequently has brought an ever-increasing flight of colorful birds eastward from the Mississippi into Indiana. Its land may be uncultivated and the loam again submerged, but its values are apparent in a wider appreciation of the out-of-doors by many who might not have had opportunity to enjoy the game harvests provided indirectly by such a sanctuary.

Although hunting and fishing are not allowed within the limits of the Kankakee Game Preserve, sportsmen can follow their interests in the outlying area. Heavy flights of geese patrol the preserve and winter's cold sends orderly columns of ducks into the air heading for warmer climates. Pheasant, quail and furbearers range into the river bottoms in search of food, and thus make meat on the hunter's table.

It would not be wise to return the entire Kankakee basin to its former state for much of its drained land is good agricultural property, but the Department of Conservation hopes to reclaim more of the nonproductive land and put it to use as a state park and forest.

This project is located in Newton

county and was partially made possible by another gift of land, this time from Murray Baker of Peoria, Illinois. The state park and forest will include a wildlife refuge, complete park building facilities, picnic and camping sites and a forest of native trees.

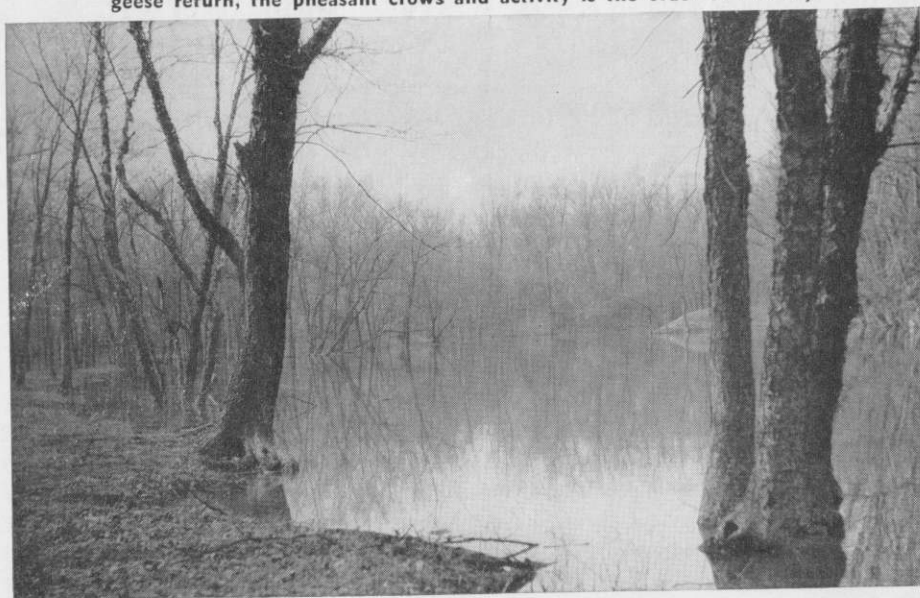
The purchase of an adjoining 200 to 300 acres from Dr. Ray Churchill of Chicago has enlarged this original 800-acre plot and the state is currently undertaking the acquisition of additional land. It is hoped that a major portion of this purchase program will be concluded within the next few months.

Completion of this land acquisition program will open the way to full development of the proposed park and forest area, thereby hastening its utilization, for, unlike the game preserve, the Kankakee State Park and Forest (excepting the area set aside as a wildlife refuge) will be classed as a public use property.

Almost all phases of conservation in Indiana will come into play on the Kankakee restoration program. The Soil Conservation Service will test top and subsoils and check forest planting projects. The Division of State Parks, Lands and Waters will erect buildings and lay out trails planned by the Division of Engineering. Seed patches and marsh food plants will be provided by the Division of Fish and Game, which will also aid in the restoration of nesting areas. And water levels and flood control measures will be established by the Division of Water Resources.

Experienced technicians are already at work on Kankakee reclamation and the realization of their full-scale program will again return a bounty from the once mighty marshland, thereby enriching the Hoosier state and adding to its natural wealth.

Although wintertime finds the Kankakee marsh a desolate area, spring and summer months set a far different picture. Now the animals are hibernating or have headed south, but when warmer days return, the beaver begins to build, the ducks and geese return, the pheasant crows and activity is the order of the day.



Uncle Jim Considers Christmas

FUNNY thing, I jest got my elementary set-up tickin' agin after eatin' some vittles I cooked myself last month an' here is Christmas starin' me in the face. An' I hain't got a pesky thing done toward gettin' a few gifts fer some uv them I'm kinda close to down here. I wuz down to the big city last week lookin' around in some uv them there big stores fer a thing er two an' while I wuz in town I poked around a little. I never seen so many places in all my born days where they ain't no buildings where they used to be big ones, er at least tolerable so. They is jest parkin' lots. I jest got thinkin' that iffen they don't quit tearin' them buildings down an' makin' parkin' lots that purty soon there ain't gonna be nothin' to come downtown an' put your car on a parkin' lot to go see. When I wuz a little urchin hangin' on to my Mom's hand, at least when some uv my brothers wasn't, an' kinda watchin' out that I didn't step on her skirt er bump into her bustle, we used to ride a mule car from the Union Station up Illinois street to the Bates House. An' the driver would stop anyplace an' let you off er on. We'd go through a place they called a transfer car right near Illinois an' Washington streets an' get a bunch uv paper slips that'd take you anyplace in town the mule cars went. Mom would take us kids out to Eureka avenue an' East Tenth street an' then we'd get offen the car an' walk down to the Boot an' Shoe Factory at Pogue's Run an' git us all new shoes. We'd wear 'em 'bout a week an' then they'd begin to squeak an' Pop would have to drive a nail through the sole on the old shoe last he had on a board in the summer kitchen. Iffen he didn't

you couldn't hear in the house, that is if all uv us had 'em on at the same time. Sounded like tree frogs in a state park. I got to thinkin' how different things is today. Busses whizzin' down the street, scootin' 'cross street corners an' stoppin' in the middle of the block, where we used to hitch our horses. 'Tain't no wonder a feller never sees a horse in town no more. Why, a horse wouldn't have a chance. He'd end up in a glue factory in no time. Guess that's the reason so many envelopes has got them metal catches on 'em instead a glue. No horses. While I wuz

furniture that the clerk said wuz the ex-treem nuts. He said if you had that in your home it wuz the last word. That guy wuz keerect 'cause not so long ago I went down to the Layaway Cemetery at Knobby Knoll an' set fer a spell 'side the grave uv a ol' friend. I wuz settin' on a iron settee an' when I got up I felt like I'd been sittin' on a waffle iron. When I got home I could still see the imprint of Gates Ajar on the seat of my corderoys in a mirror on my bookcase. People used to put funny things on gravestones. While I was a settin' back there at Lay-

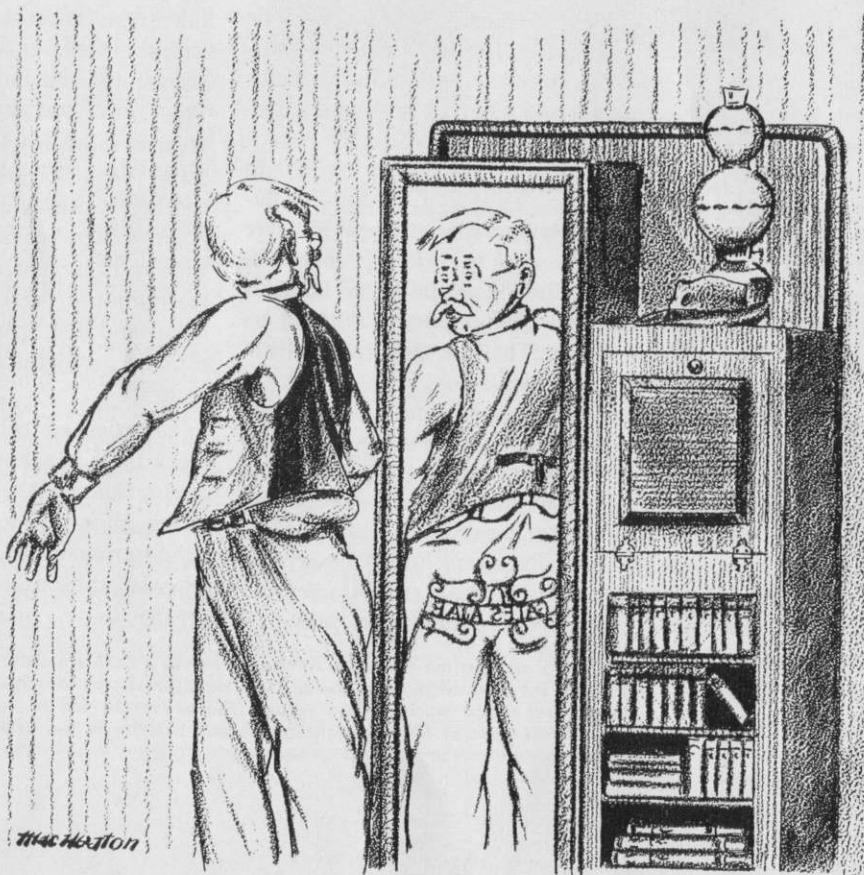
away I seen a epytaff on a grave that made me sorta smile even though I did feel awful bad about my friend. This one said:

"Here lieth Matthew Hollingsbed Who passed from cold caught in his head. It brought on fever and Rheumatiz Which ended him and here he is."

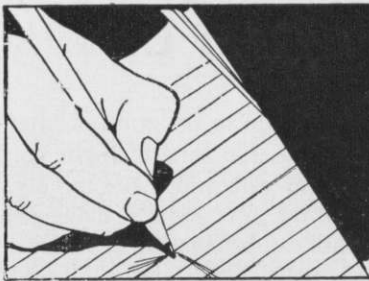
You know I got it figured out that if a guy loses out on bein' able to laugh even once in a while he better git in touch with his fav'rit undertaker. I seen a nice steerin' wheel cover down at the Wee Towem garage at Skids Turn t'other day an' I purt near bought it fer Aunt Myrtle Currier but

I happened to think she didn't have no car so I changed my mind an' bought her a lecktrick toaster she kin use as soon as we get lecktricity down our way. While I wuz still lookin' 'round fer a gift I happened to look in a rear vision mirror that wuz fixed on a rack at the Towem garage. I seen my face in it and at the same time I could back into another big wall mirror an' see myself behind me agin. I could see out the big front window at the same time. It jest made me think of how life stretches

(Continued on Page 19)



lookin' around fer somethin' to buy I seen in a store that they wuz usin' summer furniture the year 'round. Well, that sorta stumped me, fer where I come from we use the furniture we got the year 'round an' year in an' year out. We kin eat offen a table er squat in a chair just as good in the winter time as we kin in the summer. Maybe your red flannels do crowd you a little bit er your huntin' coat makes you fit a little tighter but we make 'er. Could be a summer meal gets colder quicker on a table that's only fer winter use. I dunno. They had some



Notes from the Agricultural Field



THE FARM LEASE

The farm community is becoming more conscious of production and living problems which concern the many Indiana tenant farmers and their landlords. Tenants sometimes fail to take a proprietary interest in problems of school, church and community because they have no feeling of continuing security in their current tenure, but solutions to some of these problems can be solved by a feeling of mutual trust and respect between landowner and tenant.

The immediate objective of a farm lease contract is to maintain workable and satisfactory relationships which encourage better farming as well as to improve rural living conditions.

Many renters believe that lease contracts written at the present time place heavier burdens on renters than on landowners and a comparison of costs bears out this contention.

In 1939 the distribution of farm expenses and costs as contained in the usual 50-50 share lease contract was evenly borne by renter and owner. In 1949, however, the renter was carrying far more than half the costs. Under the present situation, a contract whereby the renter receives 60 per cent of the income may represent a better balance.

Costs of hired labor, machinery and feed have increased rapidly during the past few years—more so than have building costs, taxes, insurance rates and interest charges. This means that renter costs under a stock share system, which is one of the most common lease arrangements, have increased more than the owner's upkeep costs.

Labor share agreements have been entered into occasionally where the landowner owns all the operating capital, and wishes to maintain control over production and breeding programs. The advantage to renters is that they share in the income of the farm with a minimum of out-of-pocket costs to themselves. Such

arrangements usually stipulate that from one-fourth to one-half the net income goes to the renter.

Written leases are particularly desirable where arrangements are intricate, because the lease is a contract as well as a memorandum of understanding. It should be complete in every detail or it will fail to meet the critical needs of the situation.

A division of the risks of crop failure or unusually heavy livestock losses between renter and owner is another reason for using a share leasing agreement. An exceedingly poor crop year might so reduce the income or so increase the costs of operation as to force a renter with little resources off the farm; whereas, if half the loss were borne by the owner, the tenant might be able to "carry over" for another year.

SHEEP RAISING

Modern methods of sheep production make Hoosier flocks more successful than ever before, and since an increase in sheep raising is justified due to the declining market supply, any farmer who is considering the expansion of his livestock herds might do well to look to sheep and their market demand.

The idea that sheep and cattle cannot be grazed together on the same pasture with good results is a false one. And the widespread notion that grazing animals, especially sheep, cause erosion is without basis. It has probably come about because they have been permitted to graze too closely, but close grazing is neither good pasture nor good livestock management.

For farm flock purposes, mature ewes weighing 125 to 175 pounds when in good flesh are suitable. Moderately short-legged ewes having deep, wide, roomy bodies are better producers than narrow, shallow ewes. Generally, except when they are pure breeds, ewes should not be kept after they are seven years old, and

ages from two to seven show best production.

Several medium-wool breeds are popular in Indiana at the present time, and these include Hampshires, Shropshires, Oxfords, Southdowns, Suffolks, Corriedales, Dorsets, Cheviots and Columbias.

Shropshires are a medium-sized breed and produce fleeces of medium fineness and length that average 9 to 10 pounds. Some Shropshires are considered too small and have too much wool about the face. Also, some ewes do not breed early in the fall.

Hampshires are popular because of their large size and rapid growth pattern. They are coarser than Shropshires and usually shear fleeces two to three pounds lighter.

Oxfords, the largest of the medium wool breeds, yield heavy fleeces of fairly coarse wool. They do produce rapid-growing lambs which, if they are fat but not overly heavy, satisfy market demand.

Southdowns are small and generally refined. They are low-set and compact but are slower in reaching 85 to 90-pound marketable weights. Southdown rams crossed on large, heavy milking ewes of other breeds produce good market lambs.

Suffolks are rated low as wool producers and are used primarily for crossing purposes. The ewes are good mothers and their lambs grow fast.

Dorsets differ in that many of the ewes produce out-of-season lambs and in certain instances, lamb twice a year. They do not produce the heavy fleeces, but their lambs grow as fast as Shropshires.

Corriedales have been actively promoted in recent years but not all the claims made for them are true. Their lambs neither grow nor fatten any faster than others but they do produce a large amount of good-quality wool.

Columbias are a large, white-faced crossbreed developed for the western range country, but many have found their way into the Central States. They yield heavy fleeces and when the ewes are bred to well-made rams they usually are credited with high lamb production.

HOW MUCH "LEAD" WITH A RIFLE?

"How much should I lead a running deer?" Here is a question over which every woods-roving hunter has pondered.

The shotgun shooter, who seldom shoots at a stationary target, is fully aware of the importance of "lead" in his shooting. He realizes that if he were to aim directly at the moving bird and fail to allow for the length of time it takes the shot to reach the target, his shot string would pass far to the rear of the object at which he is shooting. Hence he aims in front of the target in such a way that the line of flight of the bird and the trajectory of the shot charge intersect not only in space, but also in time.

"Much emphasis is given to this subject of lead in shotgun shooting and the ballistic literature contains many references concerning the proper amount of lead for various ranges and various kinds of game," says Dr. C. S. Cummings, supervisor of physics and ballistics research, Remington Arms Company, Inc., in his forthcoming book, "Everyday Ballistics" (Stackpole and Heck).

The sporting rifle shooter is many

times faced with the same problem, yet relatively little information appears available to the rifle shooter to allow him properly to estimate the lead necessary in the case where he is firing at a moving target. Although ballistic tables will never be a substitute for practice in the field, they can, nevertheless, serve a useful purpose to the serious shooter. It is, therefore, desirable to fill this gap in ballistic literature with figures on lead applicable to rifle cartridges. These figures, incidentally, are based on some very recent exterior ballistic experiments on commercial rifle items.

"First of all the shooter must understand what is meant by lead and how it is calculated. By 'lead' we mean the distance between the moving target and the point at which we aim at the instant of firing in order that the trajectory of the bullet and the 'trajectory' of the moving target shall intersect at the proper time, or rather so that the bullet and target will arrive at the same point at the same time. In order to calculate the lead properly one must know the length of time that it takes the bullet to go from the

muzzle of the gun to the point of intersection, that is, the time of flight, and also the speed with which the target is moving and the direction it is moving so that its path can be calculated. This calculation is not difficult, once the speeds are known. If the target is assumed to move at a constant speed, at right angles to the line of fire, the distance it will travel in a given time can be determined from the fact that velocity equals distance divided by time. If we let this distance be represented by the letter L (standing for lead), the letter S represent the speed of the target in feet per second, and the letter T represent the time of flight in seconds of the bullet over the given distance, then our equation becomes $L = ST$.

"To cite an actual example: let us fire a .30-.06 180-grain bullet from a distance of 100 yards at a target moving 10 miles per hour at right angles to the line of fire. First of all we must convert 10 miles per hour into feet per second. This is 14.7 feet per second. From ballistic tables we find that the bullet we are con-

(Continued on Page 21)



Silopanaidni

By MARGARET LANAHAN

TIME fashions many things, among which are men and nations, customs and states; and through the days that make up the years of growth and change about us, a heritage is wrought into the roads of our countryside and the pavement of our streets.

When this state stood, a stripling, knocking at the gates of Congress for admission into the Union, it was decided by that august body of legislators that the lands must be surveyed, the citizens counted and all things made ready for maturity.

Measures were taken by the government to extinguish the Indian titles laying claim to the land and conflicting claims and uncertain boundary lines necessitated minor treaties and land purchases in order to set things aright.

In 1809 General Harrison had bought a tract west of the Wabash from the Kickapoos and in 1816 Benjamin Parke made a treaty with the Kickapoos and Weas for the same land. In September of 1817, Lewis Cass and Duncan McArthur made a treaty with the Wyandottes for a tract in northwestern Ohio and northeastern Indiana, connecting Fort Wayne with Lake Erie and the ceded lands in Ohio.

The important treaty for Indiana, however, was made at St. Mary's in October, 1818, by Jonathan Jennings, Lewis Cass and Benjamin Parke, wherein the Wea Indians released all their lands in Indiana except a reservation seven miles square fronting on the Wabash and running north from the mouth of Big Raccoon creek. On the same day the Potawatomis released all claims to the land south of the Wabash, and a strip 25 miles wide north of that river, extending from the Vermillion to the Tippecanoe. The Delawares likewise released their land claims and the Miamis sold all but a few small reservations and a large one between the Salamonie and Eel rivers.

Thus it was that the "New Purchase" came into Indiana history and opened Wayne county to division.

Although they followed the same system of division, the Indiana surveys were entirely independent of the Ohio surveys, except in the triangular tract in the southeastern part of the state, which is known as "the Gore."

The first large survey in Indiana was that of the Vincennes Tract originally given by the Indians to the French in 1742, and ceded to the United States by the Treaty of Greenville. In 1801 Governor Harrison wrote to the Secretary of War that the difficulty of keeping squatters off the Indian lands was increased by the fact that the tract had not been surveyed and the boundaries established. Thomas Freeman, a government surveyor, was appointed to run the line on the Vincennes Tract.

This tract was 24 leagues wide, up and down the Wabash, from White river to Pointe Coupee and extending on both sides of the Wabash. Freeman made the survey in 1802 and the two Indiana corners, the northeastern in Orange county, and the southeastern in Perry county, are still known as "Freeman's Corners."

In 1804, Ebenezer Buckingham, Jr., began the main survey of Indiana lands, and he took Freeman's southeast corner for his starting point. He ran the base line east and west from this point and intended to run the second meridian through this point, but in 1805, he threw this twelve miles east, presumably to take it out of the Vincennes Tract, allowing it to run through Freeman's northeast corner. In consequence, all land descriptions in Indiana refer back, by township and range numbers, to Freeman's Corners.

The treaties of 1818 gave opportunity for the location of a permanent capital and by an act of the legislature, ten commissioners were appointed in 1820 to select a site.

Meeting at the William Conner farm four miles south of Noblesville, the men examined the land for 30 or 40 miles along White river and agreed to locate at the mouth of Fall creek, but as the survey of the township in which this lay was not completed, they adjourned for a week and on June 7, 1820, made the selection by exact description.

As everyone had expected, the selection was ratified by the legislature and three commissioners named to lay out the town. It provided that they, "or a majority of them," should meet on the town site, on the first Monday in April, 1821, and lay out a town, "on such plan as they may conceive will be advantageous to the

state and to the prosperity of said town, having specially in view the health, utility and beauty of the place."

The commissioners chosen were James W. Jones, Samuel P. Booker and Christopher Harrison, but only Harrison appeared at the time and place designated. Holding himself a majority of those present and voting, he went ahead with the work, employing Alexander Ralston, a surveyor who had helped Major l'Enfant lay out Washington, D. C., and Elias Pym Fordham, an Englishman from Birkbeck's Illinois colony, to make the survey.

The design was Ralston's and was a modification of the Washington plan, the plat covering a mile square, ten blocks in each direction, with diagonal streets running to each of the four corners; and Ralston asserted that "it would make a beautiful city, if it were ever built."

The act for the appointment of the commissioners also gave the name Indianapolis to the new capital, and this point caused almost as much discussion as all the remainder of the bill. The controversy was a household story in Indiana, but nearly half a century passed before anyone knew who actually suggested the name.

Judge Jeremiah Sullivan, in answer to an inquiry from Governor Baker, admitted that he originated it and went to Corydon to propose it.

When the name was announced, the *Vincennes Sentinel* remarked as follows: "Such a name, kind readers, you would never find by searching from Dan to Beersheba; nor in all the libraries, museums, and patent offices in the world. It is like nothing in heaven, nor on earth, nor in the waters under the earth. It is not a name for man, woman or child; for empire, city, mountain or morass; for bird, beast, fish, nor creeping thing; and nothing mortal or immortal could have thought of it, except the wise men of the East who were congregated at Corydon."

This vein of joshing humor continued in the following week's editorial which reads: "Should you require the etymology of the word itself, I beg leave to refer you to the Pataphreazely (a new work and very rare) under the head 'Sil.' (This work serves as a Lexicon to the ancient

(Continued on Page 22)

FIELD TRIAL WINNERS NAMED



The above photograph shows Slinkard's Doctor Arigan on point at the Marion County Field Trials events held September 30. Winner in the all-age stake, Doctor Arigan, owned by Geeorge A. Slinkard of Anderson, Indiana, outclassed all other entries at this Versailles Park meet.

The Indiana Field Trial Association meets held November 4 and 5 at Versailles State Park saw Wayrielson cop top honors in the all-age stake, with Ace's Deuce taking second place and Knight's Mohawk Lassie winning third-prize ribbons.

From a field of 22 entries, Wayrielson, a pointer owned by Joe Cooper of Bedford, showed the most outstanding class of the day. Ace's Deuce, an out-of-state competitor, is owned by J. B. Cooper of Dayton, Ohio, and Knight's Mohawk

Lassie is from the kennels of C. W. Knight, Milan, Ind. Tanglewoodian, a pointer owned by Lewis Sheets of Pendleton, took first prize in the Amateur Breeders' Stake and in the Puppy Stake, Dick, a pointer owned by Richard Rummel, Mooresville, tallied for top honors.

Lester Hertle and Morris Ash judged the annual Field Trials. Officers of the Indiana Association are Farrell Tolen, president; Heber Cassidy, vice-president; Leo Brown, secretary; and Richard Rummel, chairman.

?? HAVE YOU HEARD ??

SWANS are noted for their long life, some having lived for 70 years.

THE NERVE CENTER of the octopus is in its eyes. For centuries, native Hawaiians have killed these creatures by piercing their eyes, knowing that this causes quick death.

INSECTS, when walking or running, move their legs in two sets of threes, so that at each step they are supported by a tripod made of the first and third legs on one side and the second leg on the other side.

THE FOOD eaten by birds affects their colors. Canaries and parrots are well-known examples of birds whose feathers change color with changes in diet.

THE KILLER WHALE, known as "the tiger of the sea," will attack anything that swims. They even eat the tongues of living whales. The male killer has a scimitar-shaped dorsal fin six feet high and as the beast swims, the waving fin looks like the neck of one of those legendary sea serpents.

THE IRIDESCENT COLOR of a duck's wing is due, not to pigment, but to submicroscopic prisms breaking the light on the surface of the feathers.

Try and Find These in *Webster's*

Bore—Something by means of which some big shots show their caliber.

Candidate—A person who stands for what he thinks people will fall for.

Capitalist—One who continues to spend less than his income.

Automobile—What, in the early days, you could find more drivers than pedestrians under.

Streamlining—What is incorporated in cars to confuse a person as to whether he has been run over or backed into.

Re-take—A Hollywood wedding.

Saxophone—An ill wind which nobody blows good.

Newlywed—One who tells his wife everything.

Old-timer—A person who can remember when a bureau was a piece of furniture.

Parolee—A cell-out.

Paunch—Waist food.

Pawnbroker—He who liveth on the flat of the land.

Summer Resort—A spot where oftentimes men are stuffed shirts and women are stuffed shorts.

Accidents—What you get into when you hug curves.

Guests—Those who come after dinner and those who come after dinner.

Gunpowder—A black substance used in marking the boundaries of nations.

Strip Mining in Indiana

(Continued from Page 2)

wash and screen the coal. Many coals which would be undesirable because of a high percentage of sulphur and ash become premium coals upon removal of such impurities in the preparation plant. The coal goes through several sizes of screens in the tippie and down the proper chute into a railroad car. If more coal of the smaller sizes is desired, the larger chunks are routed onto a conveyor belt, through a crusher, and back through the screens.

Meanwhile the dragline operates continuously back and forth, making cuts of varying widths. After the coal has been removed from one end of a cut, the dragline dumps the spoil from the new adjacent cut into the old one. This leaves the area in a series of parallel ridges of rubble, which are 19 to 40 feet above the surface of the unstripped land and are about 40 to 50 feet apart. The valleys between the ridges are quite shallow, and in many localities less than 20 feet of relief is shown between the ridge tops and the inter valleys. The spoil which makes up these ridges is a heterogenous mixture of clay, sandstone, shale, and limestone. Thus the kinds of rocks that overlie the coal affect the nature of the spoil and create a problem of land utilization.

Several strip mine operators started to reforest the spoil banks as early as 1918, but it was somewhat of a hit or miss proposition. Some of the trees grew, but many died. The difficulty is that this spoil may range from strongly acidic to strongly basic, and certain plants grow best in acidic soils while others will not grow at all in acidic soils. The Division of Forestry, Indiana Department of Conservation, and the Coal Producers Association have experimented with various kinds of trees in various kinds of soils and are now able to test spoil banks and recommend to the operators the kind of tree that will flourish best. Red pine, white pine, jack pine, spruce, black locust, and black walnut are some of the more popular trees for the plantings.

While watching the modern machinery at work one wonders just how coal producers know to start stripping for coal in a particular spot. Considerable time and money are spent in investigation of the coal before stripping is started. The coal geologist or land man with geological experience makes a check of the area and finds several widely spaced outcrops. If the coal seems thick enough to be

stripped and the adjacent hills are not too high to make stripping impossible, he will check the company files for isolated drill hole information. Company records show a few isolated drill holes which contained some coal. The land man then leases the land from the local owners and the company begins a program of exploratory drilling. After a few drill holes are made, the prospects may look pretty good, and a more detailed drilling program, which determines the extent of outcrop of the coal, is started.

After the thickness of coal is determined from drill holes and the extent or size of the area of the coal is estimated, the company can calculate the approximate tonnage to be obtained from the property. This is quite simple. From past experience the company has discovered that they do not recover the total 1,770 tons of coal per acre foot but only about 1,450 tons. If the coal is four feet thick and they have leased 500 acres, $4 \times 500 \times 1,450$ equals 2,900,000 tons, which is the expected recovery for the particular block of coal. The average depth of overburden and the cost per cubic yard of overburden are calculated. These factors are then weighed with accessibility to preparation tippie, accessibility to the market, sales value of the coal, etc. From these figures the coal company decides if the coal can be profitably mined. If the coal is strip mined by a large company, the pit will produce as much as 4,000 tons of coal on good days and from 500,000 to 1,000,000 tons per year. In the above example the coal would be mined out in three to six years. Meanwhile the geologist is finding other blocks of coal.

See Hoosier Parks

(Continued from Page 9)

teresting survey of history and nature.

Turkey Run Inn accommodates approximately 200 guests in comfortable, modern rooms and assures guests a variety of indoor sports and amusements. Dancing, ping-pong, checkers, chess and other table games make a visit to the inn's game rooms enjoyably relaxing. A selection of good books is also available.

To assure your accommodations at any one of the five year-'round parks, make reservations now at the inn of your choice by writing to the inn manager.

And for a winter—or a summer—vacation, remember Indiana's state parks and park hotels.

Uncle Jim

(Continued from Page 14)

out ahead of a feller like lookin' through the windshield uv a car at the road ahead uv him. An' then you look in the rear vision mirror. You kin see what you jest passed and what wuz your future, streakin' past you into the beyond. I never drove no car but I have monkeyed with the rear vision mirror on my side so I could see alright. An' if a person don't look in that rear vision mirror once in a while to see his shortcomin's go by an' watch what may be comin' up on him from the rear then that guy ain't goin' far. Better watch ahead, too, fer it's the future. Well, I gotta go out an' milk Susie. She's been bawlin' fer quite a spell. The stars sure are bright tonight. Makes me think uv a night a long time ago when the shepherds tended their flocks. They moved on into Jerusalem with the wise men an' they had a star to guide 'em. Merry Christmas.

UNCLE JIM.

Broad-Leaved Evergreens

(Continued from Page 7)

In a discussion of broad-leaved evergreens it would not do to overlook English ivy, one of the most valuable of all evergreen vines. This plant can be grown over most of Indiana under proper conditions. It does best in partial shade where plenty of moisture is available. It can be allowed to trail or climb and is useful as a ground cover where grass does not do well.

The above do not constitute all the broad-leaved evergreens that can be grown in Indiana, but represent some of the best that can be grown without a great amount of special care. In placing such plants it is well to remember that a certain amount of transpiration will take place during the winter and the plants should not be exposed to severe winter winds. Broad-leaved evergreens, and coniferous plants as well, often suffer from winter drought, so it is a good practice to see that the soil around the roots is well moistened before the ground freezes. A light mulch of leaves or peat moss is advisable in most cases.

Girls, when they went out to swim,
Once dressed like Mother Hubbard,
But now they have a bolder whim
And dress more like her cupboard.

Forest Management Clarified at Herrick Demonstration

(Continued from Page 11)

been clear cut, as many such areas are today, both the owner (farmers and timberland owners) and the operators (all operators and timber buyers) would be out of business on this area for the next 150 years. Clear cutting would yield approximately 178,000 board feet; however, under our plan of management the area will yield the present harvest of 50,000 board feet plus 100,000 board feet in the next ten years for a total of 150,000 board feet in the year 1960. Periodic harvests of 15,000 feet each five-year period for the next 140 years amounts to 420,000 board feet. Both the owner and the timber operators remain in business on this area which under a plan of management produces over a half-million board feet during a 150-year period. Which practice do you prefer?

Losses from Cutting Immature Trees

Afternoon sessions consisted primarily in demonstrating the losses incurred to both timber owners and mill operators when small immature trees are sold or cut. Returns from various size logs were demonstrated by displaying the lumber cut from two trees, one containing three 12-foot logs, the other tree had two logs,

one 16-foot butt cut and a 10-foot top log. The lumber sawed from each log was placed on the ground by the stump in the same position as the logs in the tree at the time the tree was bucked into log lengths. The grade and footage of each board was clearly indicated.

Farmers and timber owners are often confused as to a tree's size, especially after talking with a forester and then a timber buyer. Foresters identify a tree size with reference to its D. B. H. (diameter breast high—4½ feet above ground) while operators refer to the D. I. B. (diameter inside bark) at the top end of the butt log. For example, a forester informs a farmer that he has a 22" white oak. A buyer examines the same tree and calls it an 18" white oak. Naturally, the owner is confused and thinks the buyer crooked.

To clarify this misunderstanding concerning tree size, the stump height, D. B. H. (22") and D. I. B. (18"), at 16'3" was painted on one tree which had these actual measurements. Foresters and industry men were encouraged to understand the confusion arising from their respective methods of determining tree size even though both arrived at approximately the same volume in estimating footage. Farmers were advised that both measurements were correct.

These demonstrations, conducted by

your industry forester, were made possible through the combined efforts and cooperation of individuals; principally, D. O. Holmes, of Holmes & Company, Kendallville, Indiana, sawmill operator and owner of the Herrick timber tract; C. B. Goetzen and L. O. Grapp, foresters with the Division of State and Private Forestry, U. S. Forest Service, Region 9, Milwaukee; and District Forester Floyd B. Kelsey, Indiana Department of Conservation, Division of Forestry, Auburn, Indiana.

Seedlings Provided Coal Producers Association

Approximately 1,400,000 seedlings ordered from Indiana state nurseries three years ago have been allocated to member companies of the Indiana Coal Producers Association for next spring's planting, according to L. E. Sawyer, director of the association's land-use activities.





The stock, grown in nurseries at Medaryville, Vallonia and Henryville, will add approximately 2,000 acres to the forest holdings of the mining companies, and will increase the number of trees they have planted in a quarter of a century to nearly 28 million.

Almost half of the trees to be used next spring will be native hardwood (deciduous) species. These include maple, sycamore, ash, tulip poplar, walnut, locust, chestnut oak, and willow. The conifers include red, white, jack, pitch and Virginia pines.

Results of experimental plantings made for several years in cooperation with Purdue University, the U. S. Central States Forest Experiment Station and the Indiana Department of Conservation show that the hardwood species are excellently adapted to most of the sites from which coal has been removed by open-cut mining. Their use is being expanded as rapidly as planting stock can be obtained from the state nurseries, Sawyer said.

Indiana law requires open-cut coal mining companies to plant areas slightly in excess of those mined the previous year. While this law has been in effect only nine years, the association's planting program dates back to 1926. Its adoption followed the success of experimental plantings made in 1918.

The chart below was presented to viewers at the Herrick demonstration and explained to them the forest practices used in good management. Volume was presented as "board feet" since that is the market measurement for lumber.

| NUMBER OF TREES and VOLUME PER ACRE | | | | | |
|--|--|--|---|---|---------------------------|
| HARDWOOD TREE CLASSES → |  HARVEST |  RESERVE |  GOOD GROWING |  CULL | TOTAL |
| PRESENT STAND | 21 Trees 2,190 bd. ft. | 42 Trees 4,760 bd. ft. | 12 Trees 1,990 bd. ft. | 1 Cull | 76 Trees 8,940 bd. ft. |
| RECOMMENDED CUT | 6 Trees 1,555 bd. ft. | 5 Trees 565 bd. ft. | NONE | 1 Girdle | 12 Trees 2,120 bd. ft. |
| GROWING STOCK | 15 Trees 635 bd. ft. | 37 Trees 4,195 bd. ft. | 12 Trees 1,990 bd. ft. | NONE | 64 Trees 6,820 bd. ft. |
| SECOND HARVEST CUT | 2 Trees 467 bd. ft. | 2 Trees 451 bd. ft. | NONE | NONE | 4 Trees 918 bd. ft. |

HIS DEEDS WILL LIVE

With the passing of Ivar Hennings, nationally known conservationist, the Indiana Department of Conservation has lost one of its staunchest supporters. Not alone is the Conservation Department in its deep sorrow over his death. The conservation-minded people of the state and nation also have lost a homey friend who never was too busy to stop for a chat or to discuss this or that in regard to hunting and fishing. Ivar Hennings wasn't a formal guy. Far from it. He preferred to be addressed by his first name. He was a big shot. That is not to be denied, but he had that certain something about him which put a visitor at ease within a few moments. His fellow associates simply could not be formal with him. He wouldn't stand for it. The man got at the heart of things. To sit in his office was not for him. He liked to get out in the factory in South Bend where the hundreds of lures made famous by the South Bend Bait Company, which he headed, were manufactured. He well deserved the name of "Mr. Conservation" bestowed upon him as a natural ensuement. Born in Stockholm in 1883, he came to this country when he was ten years old. Assuming the management of the South Bend Bait Company in 1910, he continued in his tireless efforts to spread the gospel of conservation in all ways possible until just a few days prior to his death. A sick man, he braced himself against the speakers' table at a recent Izaak Walton League meeting in northern Indiana to present a certain angle of a matter pending.



A Waltonian of the first water, he served as president of the Izaak Walton League of America for several years. In addition to that, he was a former member of the Indiana Conservation Commission and the Kankakee Advisory Committee, an organization formulated to further the progress of the Kankakee State Park and Forest. His memberships in fraternal organizations were many. In 1949 he was named to the Fishing Hall of Fame by the Sportsman's Club of America. In May of this year he provided funds for the purchase of forty-eight acres adjoining the present South Bend Walton League grounds. In his forty years of service to his state and his ideals, Ivar has builded a monument which will perpetuate his many deeds. Generations to come will profit through his untiring efforts.

Forester Has Proof Many Light Cuts Pay

Light, frequent cuttings in a woodlot pay off over heavy, infrequent cuttings.

This was proved in an experiment conducted in southern Indiana by Purdue University over the 11-year period from 1937 to 1948. The figure in favor of the cut plots amounted to 188 board feet of

lumber increase per acre per year over uncut plots.

Here are the details: The cut plots grew 100 board feet per acre and ingrowth accounted for 188 board feet each of the 11 years. Total annual gross volume increase amounted to 288 board feet per acre. The uncut plots grew 40 board feet per acre, and ingrowth was only 60 board feet. The total annual

gross volume increase was 100 board feet per acre.

Purdue forester Daniel DenUyl collected data for the experiment. The project extended over part of an 80-acre tract of timber divided into two-acre plots. The stand was representative of the black oak, chestnut oak woods of southern Indiana.

How Much "Lead" with Your Rifle?

(Continued from Page 16)

sidering requires a time of 0.115 seconds to travel 100 yards. Hence multiplying 14.7 feet per second by 0.115 seconds, we find that the required lead is 1.7 feet.

"Of course, we cannot expect a hurried hunter to engage in any mental arithmetic gymnastics every time he has a snap shot at a deer. But we do believe the following table will give him some heretofore unavailable information of considerable interest and, we hope, real value. For target speeds of 5 miles per hour the figures in the table should be divided by 2, for 15 miles per hour they should be multiplied by $1\frac{1}{2}$, for 20 miles per hour they should be multiplied by 2, etc.

"It is extremely important, of course, for the shooter to realize that tables such as these can be used only as guides, as there are many variables that enter the picture. However, the figures should be helpful to the shooter who may have little or no idea of the order of magnitude of lead that is necessary. This, combined with practice, should help him to bag more game. The table follows:

APPROXIMATE LEAD IN FEET REQUIRED TO STRIKE A TARGET MOVING 10 MPH PERPENDICULARLY TO LINE OF FIRE

| Cartridge | Distance in Yards | | | |
|-----------------------|-------------------|-----|-----|--|
| | 100 | 150 | 200 | |
| .22 Hornet—45 | 1.9 | 3.1 | 4.5 | |
| .22 Savage—70 | 1.7 | 2.7 | 3.8 | |
| .220 Swift—48 | 1.2 | 1.8 | 2.6 | |
| .222 Remington—50 | 1.5 | 2.4 | 3.4 | |
| .257 Roberts—117 | 1.8 | 2.8 | 3.9 | |
| .250 Savage—100 | 1.7 | 2.7 | 3.7 | |
| .270 Winchester—130 | 1.5 | 2.4 | 3.3 | |
| .270 Winchester—150 | 1.7 | 2.6 | 3.6 | |
| .30-30 Winchester—170 | 2.2 | 3.4 | 4.7 | |
| .30 Remington—170 | 2.2 | 3.4 | 4.7 | |
| .30-40 Krag—180 | 1.9 | 3.0 | 4.1 | |
| .30-40 Krag—220 | 2.1 | 3.3 | 4.6 | |
| .30-06—180 | 1.7 | 2.7 | 3.7 | |
| .30-06—220 | 1.9 | 3.0 | 4.2 | |
| .300 Savage—180 | 2.0 | 3.1 | 4.3 | |
| .300 Savage—150 | 1.8 | 2.7 | 3.7 | |
| .348 Winchester—200 | 1.9 | 3.0 | 4.2 | |
| .35 Remington—200 | 2.2 | 3.5 | 4.9 | |

How to Build Small Lakes

(Continued from Page 5)

need a two-to-one slope and the grading should extend about three feet below the normal water level—the line which was staked out when your engineer made his survey.

On larger lakes, this work is impractical due to the extra expense involved. It will hardly be advantageous to do it at the upper end due to the amount of silt that washes into this area from the watershed, for this area is difficult to protect against erosion and there is bound to be some silt in the incoming water.

A farm pond, its dam and spillway, should be protected from damage by livestock by fencing, set 40 to 50 feet from the pond. Stock can do much damage to a fresh fill or other new earth construction.

It will be of considerable value to the dam if the normal water line, and a space 1½ feet above and below it, is protected by a stone or boulder blanket. This will prevent wave action from damaging the dam.

In the larger pond, the dam should be protected in the same way except that the blanket of stone or boulder paving should be placed to a greater height. This distance will depend on the freeboard that the engineer computes for the structure. It is not necessary to carry it entirely to the top of the area that will be covered with run-off water which comes once in a hundred years, but should be high enough to protect against flood heights that result once in five or ten years.

The pond, dam and spillway areas not protected by paving should be planted to grass or sodded. Grass and shrub borders around ponds and small lakes help prevent damage from erosion and silting, helps to insure a clean supply of water and provide a suitable home for wildlife attracted to the water area.

It is an advantage to plant as much of the area that drains into the pond in grass as is possible because any soil that washes into the pond cuts down its capacity for water. This means also that if you cannot have the watershed in grass or forest, the cultivated area should have adequate soil conservation measures taken to prevent washing.

Maintenance of the Pond or Lake

All reservoirs should be properly maintained. Check the pond and its dam and spillway frequently. You should act promptly to correct any threat of damage

by silting due to erosion in the watershed, by wave action, burrowing animals, livestock, undercutting of banks or spillway, overflow, or from any other source.

Management of the Pond

If you build your pond for raising fish, in addition to its water supply function, it will be necessary for you to use some fish management principles to insure best results. For information on this phase of pond usage, consult "Farm Fishponds for Food and Good Land Use," noted in the following paragraphs.

Acknowledgements

In the preparation of this material we are indebted to the following pamphlets and booklets for information and material, in addition to that within our own experience.

"How to Build a Farm Pond" by Walter S. Atkinson, Chief, Engineering Division, Northeastern Region, Soil Conservation Service, Leaflet No. 259, U. S. Department of Agriculture. For sale by Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price, 5 cents.

"Farm Fishponds for Food and Good Land Use" by Verne E. Davison, Senior Biologist, Biology Division, Soil Conservation Service. Farmers' Bulletin 1983, U. S. Department of Agriculture. For sale by Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C.

"Engineering for Dams," Vol. 1, by Creager, Justin and Hinds. John Wiley and Sons, Inc., New York.

"Low Dams," National Resources Board. For sale by Superintendent of Documents, U. S. Government Printing Office, Washington, D. C. Price, \$1.50.

Silopanaidni

(Continued from Page 17)

Hindu language!) and reversing the letters you have Silopanaidni, which signifies 'A Head Without Brains.'"

But despite the aspersions and jibes, the citizenry took a fancy to the name and it has not only had many imitations, but also has been appropriated bodily for towns in Texas, Colorado, Iowa and Oklahoma. Such duplication of names caused so much miscarriage of mails that the postal authorities had all of them changed except the Oklahoma town.

And so it was that a state was divided and apportioned, its capital city laid out and its name made known to all posterity.

Single Federal Aid Branch to Handle Both Fishery and Wildlife Restoration Program

Secretary of the Interior Oscar L. Chapman announced today that the administration of the Dingell-Johnson program, which provides federal aid for state sport fisheries beginning July 1, 1951, will be handled by the Branch of Federal Aid of the Fish and Wildlife Service.

The new work will be merged with the administrative activities now performed by the Service under the Pittman-Robertson federal aid to wildlife program which has been in operation since 1938. The Federal Aid Branch is headed by Robert M. Rutherford.

"By placing the responsibility of handling both these cooperative programs in a single federal-aid organization, augmented by fishery specialists qualified to appraise the various projects submitted by the states, we believe that the two lines of endeavor can be administered with the greatest economy and efficiency," Albert M. Day, Service director, said.

Mr. Day also said that plans are being worked out for a series of meetings between Service officials and groups of officials and groups of officials responsible for fishery work in the states for the purpose of discussing the new law and the types of activities which will be approvable under the language of the law. This same procedure was followed prior to inauguration of work under the Pittman-Robertson Act.

"Growing out of these discussions, rules and regulations required by the law for adoption by the Secretary of the Interior will be drafted and a fishery policy manual prepared for issuance to the cooperating states. We expect to have all this accomplished by early spring."

The Dingell-Johnson Federal Aid to Fisheries Act (Public Law 681, 81st Congress) was approved by the President on August 9, 1950. Funds to carry out the purposes of the act, however, will not be available until an appropriation is made by the Congress for the fiscal year beginning July 1, 1951.

Beneath the spreading chestnut tree
The smith works like the deuce,
For now he's selling gasoline,
Hot dogs and orange juice.

Memorial to "Freckles" Author Draws Interest to Old Limberlost

(Continued from Page 10)

Charles Porter encouraged his wife in her interests and soon Gene Porter was preparing nature study materials for magazines. A large publishing house suggested that she intermingle the nature studies with fiction and from this happy alliance emerged "The Song of the Cardinal," "Freckles," "Music of the Wild" and "The Harvester."

In 1913, when the swampy area surrounding the Porter home was drained to make way for celery, onion and sugar beet beds, Gene Porter swept before the oil seekers and loggers, snatching the wild flowering plants from under their feet. She acquired a new home on Sylvan lake near Rome City which she named Wild Flower Woods and here it was that she brought the exquisite orchids, great swamp ferns, ginseng, rosemary, lilies, pitcher plants — all the specimens she could rescue.

At Wild Flower Woods she built a cabin of cedar logs and redwood. She selected wild cherry cut from the site of the cabin for interior finishing and collected many of the stones used in the two great fireplaces. An ardent woman, she found in her work the satisfaction of interesting study enthusiastically performed.

"I have waded shallow rivers, fought the quicksand of lake shores, worked for days in the slime of swamps and marshes, in high trees" she wrote. I have carried forty-pound cameras and ten-foot ladders across plowed fields from the first dove of March to the latest migrant of October, and through the snow and ice, picturing winter birds in any location, but strictly in accordance with their natures, taking sufficient time and patience until they became so accustomed to me that they would live out their lives before my lenses."

Her photographs make records of such intimate character studies of wild songbirds as no one else ever has acquired or attempted. She always compounded her chemicals, developed and dried her plates, printed her pictures, made the book dummies and undertook watercoloring as a means of enlivening the illustrations.

Despite this strenuous and time-consuming labor, Gene Porter never went to the fields, darkroom or typewriter until she had finished the housework and at-

tended to the physical requirements of her family. The time she used was what was left. She also wrote "With me, life means work . . . work is all there is of life."

At last this work became so well known that it required a secretary, a heavy automobile; a corps of field men, expensive cameras, field paraphernalia, and the purchase of research works from all quarters of the globe. A strict disciplinarian, she devoted a certain number of hours to writing and refused to be interrupted or diverted from this course.

Numerous stories by Gene Stratton Porter were published in *McCall's* magazine, *Good Housekeeping*, the *Ladies' Home Journal* and others, and she had an estimated following of fifty million readers. Today her works have been translated into seven languages as well as braille.

Not since Audubon has America known such an ardent naturalist as Gene Stratton Porter, and following her removal to California in 1923 and her tragic death in 1924, the Porter home at Wild Flower Woods and the one in Geneva in the old Limberlost were taken over for maintenance as state memorials.

Today, hundreds of her readers enjoy the serenity and beauty created at these homes by the authoress and leave her workrooms amazed by the vigor and perseverance evinced by this truly extraordinary woman.

The Science of Oil

(Continued from Page 3)

an even course or into a lower bed. The structure of earth formations through which oil may flow determines the distance any given quantity of the fluid may move and so, depending on the subsurface structure, oil may travel from a few feet to a hundred miles and more.

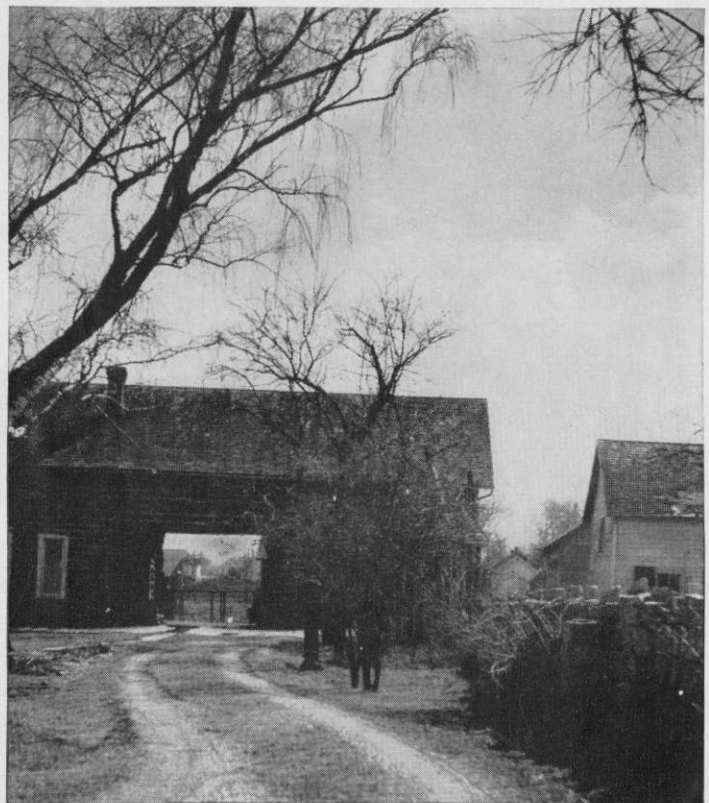
Development of Discovery Methods

Recent methods of oil discovery include subsurface contour rock samples and the electric and radioactivity well logs. This subsurface reference data has provided the U. S. with more new oil fields than has any other method of discovery. Aerial photographs, too, have played their role in the discovery of oil.

Surface discovery methods include seepages of oil, mud hills or volcanoes that erupt small amounts of the fluid, or, more commonly, natural gas and paraffin dirt.

All these discovery methods lead to the eventual drawing and processing of oil and its by-products. All lead to a better understanding of the elements and compounds that provide fuel and energy. All, therefore, lead to the harnessing of natural power for the advancement of commerce and man's control of nature's strength. With that control, man must have understanding. Science and knowledge provide the starter and the brake. Both are necessary.

Mrs. Porter kept many of her plants and pressed flowers in the upper rooms of Limberlost Cabin's barn; and here, too, she kept her carriage and horse — perhaps the same carriage used by Freckles' Bird Woman as she rode through the woodlands in search of interesting bits of bird lore.





Merry Christmas, Readers

The editors of OUTDOOR INDIANA, along with the entire staff and every member of the Indiana Department of Conservation, wish to take this opportunity to say, "A very Merry Christmas and happy holiday season."

We wish to thank you for your kind indulgence the past twelve months, and assure you that in the months to come we will attempt to bring you a bigger and better OUTDOOR INDIANA.

CONSERVATION OFFICER LEAVES FOR SERVICE

Conservation Officer Parvin Shelton of Boonville, Indiana, turns in his uniform, badge and gun to Col. Millard Davis of the Division of Fish and Game.

Shelton was called to army service the 25th of October and in turning in his equipment, told Col. Davis he would be back for it just as soon as his army stint was done.

Officer Shelton is one of five brothers educated at the Masonic Home in Franklin. Parvin joined the Indiana force of conservation officers just after his 21st birthday and received training at McCormick's Creek Training School.

Youngest conservation officer in the field, Officer Shelton served in Warrick county enforcement work for two years.



"Trees" Book Available at Conservation Department

Publication of 50,000 copies of the popular booklet "Fifty Trees of Indiana" was announced recently by the Department of Conservation's forestry division.

Ralph Wilcox, state forester, stated that the booklet is aimed at pre-high-school-age youngsters, and attempts to distinguish the varieties of trees common to Indiana, illustrating their leaves and flowers.

Issued under the joint cooperation of the Department of Forestry and Conservation of Purdue University and the Division of Forestry, Indiana Department of Conservation, the booklet was prepared by Prof. T. E. Shaw of Purdue and is available at 20 cents a copy to teachers, 10 to 16-year-old boys and girls, boy scouts, girl scouts and other nature study organizations.

The current issue is a revision of a similar booklet published last year which won the blue ribbon award at the national meeting of extension editors at Cornell University.

"Fifty Trees of Indiana" is available at Department of Conservation offices, 311 W. Washington Street, Indianapolis.

Now They Tell Us!

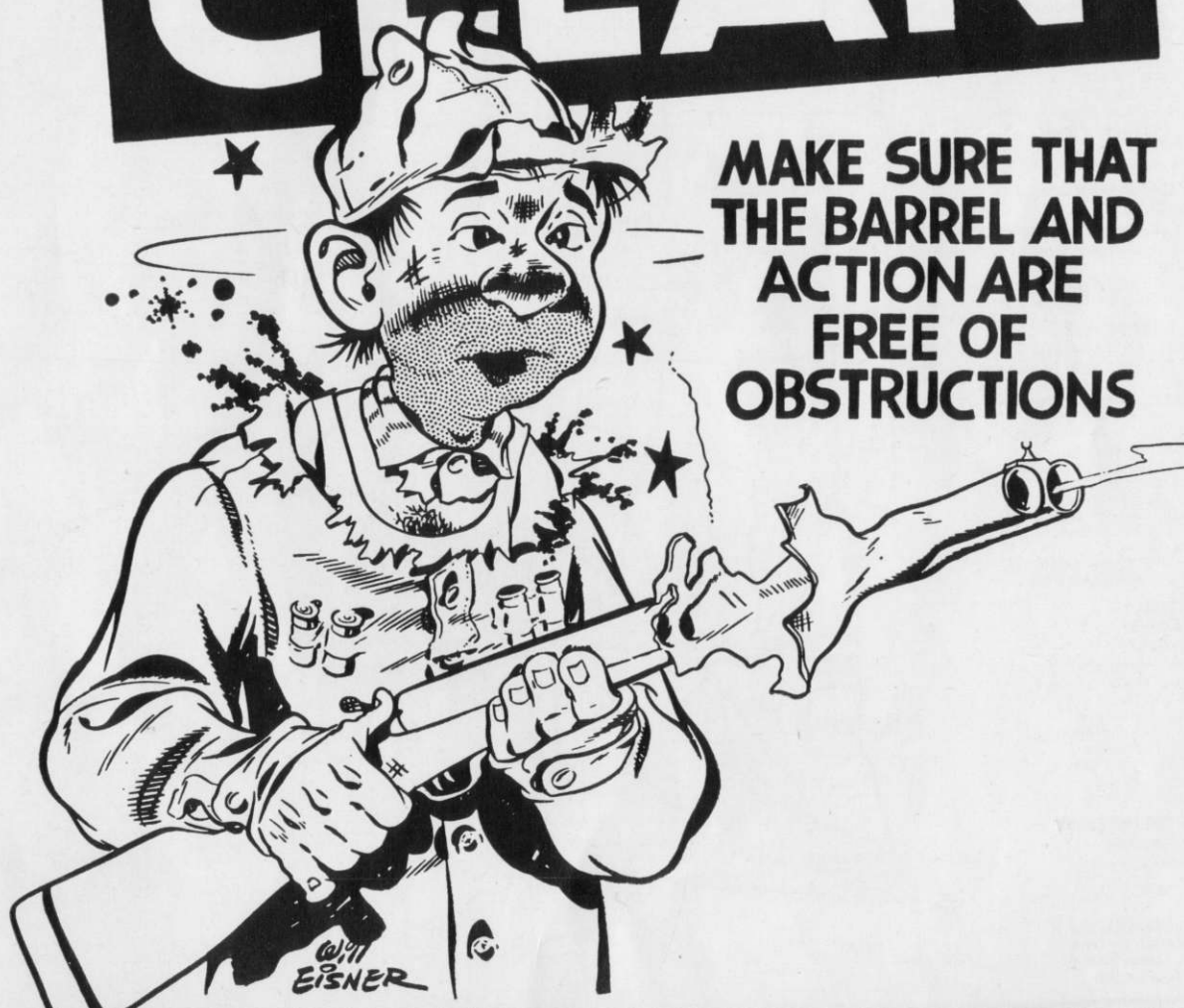
What a hunter wears may be a matter of life and death, the American Optometric Association pointed out in recent warning on color-blindness.

To be sure you are seen by fellow hunters, wear a cap or jacket in a bold pattern of black and white, for, contrary to general belief, a bright color is not the best safeguard because about 140,000 licensed hunters are color blind.

Some part of a hunter's costume should contrast sharply with the mottled visual effect of the autumn landscape. Squares, bold stripes or circles best meet the requirements.

Color blindness is inherited and is five or six times as common among men as women. Most other visual shortcomings can be corrected, and a visual checkup for both safety and success in hunting is recommended.

KEEP YOUR GUN CLEAN



MAKE SURE THAT
THE BARREL AND
ACTION ARE
FREE OF
OBSTRUCTIONS

SHOOTING IS FUN FOR THOSE WHO ARE
CAREFUL

PREVENT FOREST & GRASS FIRES!

DR CHARLES F. DEAN
STATE GEOLOGICAL SURVEY
OWEN
BLOOM

PROPERTY GUIDE

STATE PARKS

- Bass Lake Beach State Park
- Brown County State Park
- *Clifty Falls State Park
- Indiana Dunes State Park
- Lincoln State Park
- *McCormick's Creek State Park
- Mounds State Park
- Muscatauck State Park
- *Pokagon State Park
- Shades State Park
- Shakamak State Park
- *Spring Mill State Park
- Tippecanoe River State Park
- *Turkey Run State Park
- Versailles State Park

STATE FORESTS—NURSERIES

- Clark State Forest and Nursery
- Frances Slocum State Forest
- Ferdinand State Forest
- Greene-Sullivan State Forest
- Harrison State Forest
- Jackson State Forest and Nursery
- Jasper-Pulaski State Nursery
- Kankakee State Park and Forest
- Morgan-Monroe State Forest
- Martin State Forest
- Owen State Forest
- Pike State Forest
- Salamonie River State Forest
- Scales Lake State Forest
- Selmer State Forest
- Yellowwood State Forest

STATE GAME FARMS—PRESERVES

- Hovey Lake State Game Preserve
- Jasper-Pulaski State Game Farm and Preserve
- Kankakee State Game Preserve
- Wells State Game Farm and Preserve

STATE MEMORIALS

- Angel Mounds Memorial
- George Rogers Clark Memorial
- Corydon Capitol Memorial
- Gene Stratton Porter Memorial
- Goshen Church Memorial
- James F. D. Lanier Memorial
- Limberlost Memorial
- Nancy Hanks Lincoln Memorial
- Pigeon Roost Memorial
- T. C. Steele Memorial
- Territorial Capitol Memorial
- Tippecanoe Battlefield Memorial
- Whitewater Canal Memorial
- Wilbur Wright Memorial

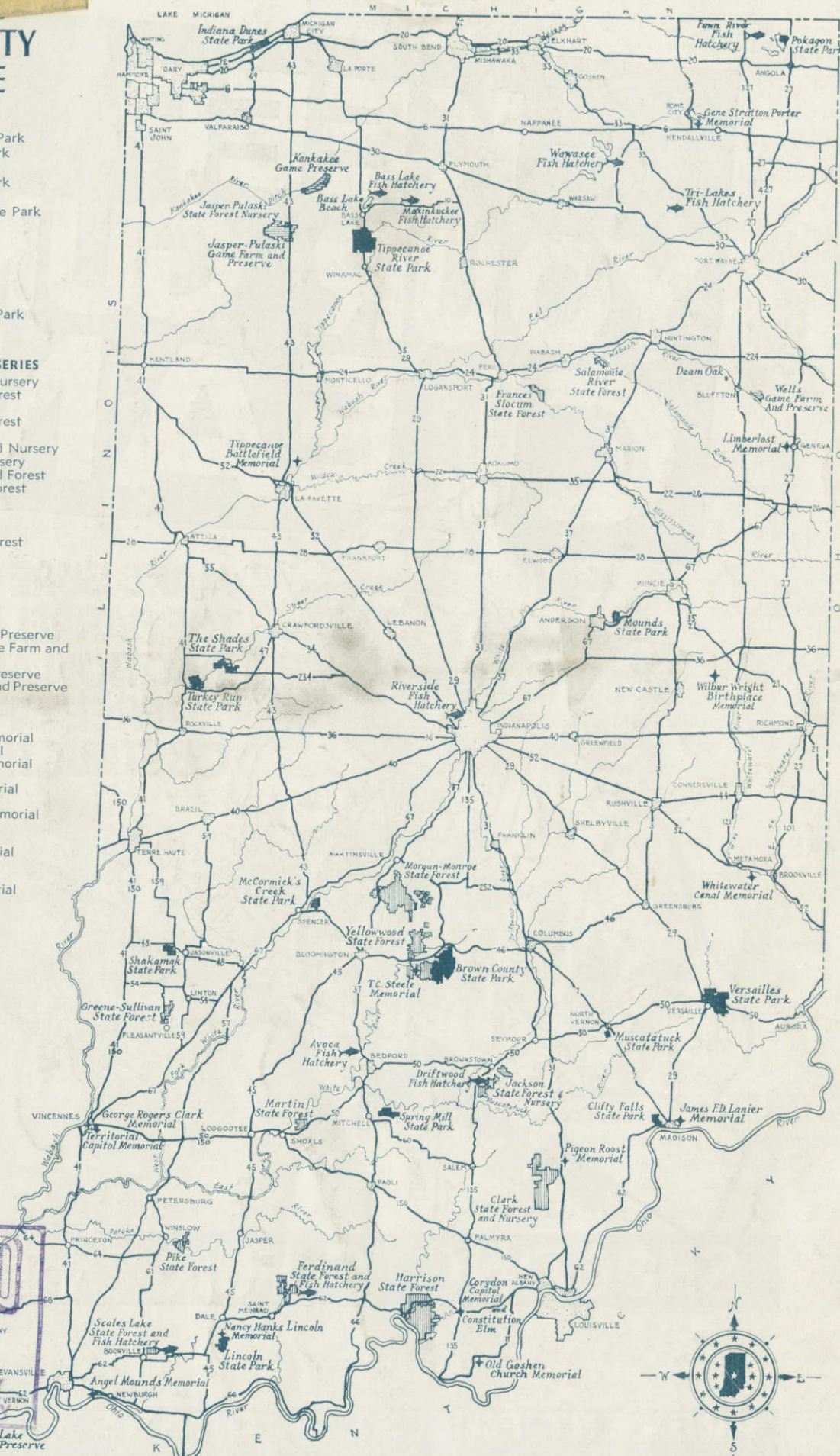
STATE FISH HATCHERIES

- Avoca Hatchery
- Bass Lake Hatchery
- Driftwood Hatchery
- Fawn River Hatchery
- Ferdinand Hatchery
- Maxinkuckee Hatchery
- Riverside Hatchery
- Scales Lake Hatchery
- Tri-Lakes Hatchery
- Wawasee Hatchery

POINTS OF INTEREST

- Constitution Elm
- Deam Oak

These properties are administered by the Indiana Department of Conservation



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