

CONSERVATION

A WEEKLY COLUMN OF PRACTICAL OPINIONS ON THE VITAL ISSUES AFFECTING THE USES AND ABUSES OF NATURAL RESOURCES BY MR. LUDLOW JENKINS, MARSHFIELD.

PLANNING FOR WILDLIFE

An Editorial by Elliott S. Barker, State Game Warden

The Biblical Record of the creation of the universe sets forth clearly how the grasses and herbs, the trees and fruits were created upon the earth preparatory to the creation of the animal kingdom. Scientists confirm the record of that sequence in the world's development. The Almighty in his infinite wisdom planned the sequence of his creative endeavors so that animal life might have available a suitable habitat when it came into existence. Animal life still requires a suitable habitat, that is food and cover, just as it did in the days of Adam.

That all animal life is worth protecting and saving is also fully borne out by the record of the flood. Before the great flood destroyed the earth and all living things upon it, the Almighty commanded Noah to take with him into the ark male and female of every living creature and fowl that they might survive and replenish the earth. Subsequent actions of man have not always been so considerate. He has destroyed completely and forever numerous species of wildlife.

In nature there has ever been abundance and wise provision for the perpetuation of wildlife in order that it might be useful to mankind. In his primitive state man, using only the wildlife without disturbing its habitat, interfered little if at all with nature's elaborate scheme. With the advance of civilization and the universal upsetting of nature's controls and provisions all that has been changed.

Wildlife in plenty no longer occurs by accident. Nature's hand has been depleted—yes, wastefully exhausted—with little provision being made for replenishment. The history of wildlife in the United States during the past century is like unto a man who in need accepts a friend, then murders him and moves into his house.

The Pilgrims and the Spanish explorers alike were dependent upon wildlife for their very existence. Even more so the frontiersmen as colonization and civilization pushed westward, depended upon wild game for food. Not satisfied with the necessary use of game for food purposes, the decadent began and was carried to extreme limits through the slaughter of game for sale of both meat and skins. The great construction crews of most of our railroads penetrating into the middle west and into the west heralding modern civilization were fed upon buffalo, elk, antelope, deer, turkey and waterfowl. Up until a quarter of a century ago lumber operations, mining enterprises, and agriculturalists alike often depended upon wild meat of both fowl and beast where available.

The sportsmen often prostituted legitimate recreational pursuits by taking to excess of game and fish. With its habitat destroyed and its numbers reduced, wildlife has been helpless to protect itself against modern fire arms and modern transportation facilities as the Ethiopians were to withstand the advance of the Italian army. The assistance given wildlife by industry and the general public has been about as effective as the help given Ethiopia by the League of Nations.

The decimation of wildlife up until a few years ago was so extensive and so complete that we sometimes doubt if a deliberate plan of destruction could have more thoroughly accomplished the same result.

Not until the sportsmen and conservationists awoke a couple of decades ago and set out to protect and restore wildlife did any one realize the seriousness of the situation. Indeed full realization of the situation did not come until after efforts to restore game through protection and regulation have failed for a short time.

It was that that had happened before evident. Man whose very existence formerly depended on wildlife had ruthlessly continued its destruction and then moved in with his herds, his farms, his irrigation and drainage projects and his roads and not only usurped but destroyed his habitat. And all because in all of our avidness for progress, wisdom and civilization we have been smart enough to heed the trail in doing a little bit of planning to save some wildlife habitat.

NEWSY NOTES

BY AGHMOOLA

A THEORY OF BIRD MIGRATION

There are several theories put forward as to why our summer birds go south when the days shorten; the one which finds popular acceptance is that it is connected with a failure of the food supply. But, on the other hand, we notice that we have a number of winter residents which spend some weeks with us, and return to their sub-Arctic breeding grounds on the approach of Spring. It is never a question of food with these birds; they thrive on the weed-seeds they consume, but they just cannot stand the heat of our summer. Even those birds which come to us from the north are not necessarily discomfited when the thermometer creeps up towards the 80's. I was led to this observation when at Black Banks, on the very shore, I saw sparrows of unidentified species pottering about with their mouths open, and apparently panting, in a temperature officially recorded as 78 degrees. A few days previously I had noticed the grackles, hardy as they are, using the same means to cool off. Following this line of reasoning, it would seem that the securing of an optimum temperature is often more compelling than the question of food supply in these migrations.

We must suppose that ages ago these migratory species lived in an equable climate, where food was plentiful and whose territory grazing either by cattle or sheep, but more so by goats. Antelope are tolerant of stock grazing unless the grazing is excessive. Except for high mountain areas and a few areas especially adapted to certain species of game jointed and servative use of ranges by game and livestock is desirable.

Fortunately, the most part liberal minded stockmen who are good game conservators. Many private lands are fairly well stocked through good game management on the part of the land owners. Yet the tendency to over-graze public and private lands has often seriously affected wildlife habitat as well as resulting in reduced carrying capacity for livestock causing financial loss to the stockmen.

A good example of planning for wildlife was worked out here in New Mexico in cooperation with the stickmen, sportsmen and other agencies in connection with a Taylor Grazing Act. We procured the promulgation of a rule satisfactory to all that reads as follows:

"Carrying Capacity to Provide for Game. In estimating carrying capacities of public domain ranges and in allotment of number of domestic stock to be grazed within any grazing district, allowance shall be made for reasonable utilization by wildlife."

If this rule should be the use of all public and private lands it would be a long step toward restoration of wildlife. It must be provided and saved. We are food and cover for game in our use to perpetuate creation.

Wildlife plans must embrace restoration and maintenance of habitat, predatory animal control, restoration of game to depleted areas, public education in wildlife conservation, prevention of illegal killing and provide for regulated use. Washed and stream bottom protection are essential in keeping trout streams in good condition to produce fish, even though regularly stocked. In all of this planning a large amount of investigative and research is necessary.

Habitat is the most important of all for both game and fish and is a public interest. Here effective and equitable planning cannot be done by one agency alone. All agencies concerned must be called in, and wildlife interests should be called in on practically all non-urban planning. As planning officials our job is to harmonize all interests, minimize conflicts, and put the principle of conservation into effect.

The importance of wildlife resources from both an recreational and planning officials developing serious attention to the fact. Even as we like to hunt and see wildlife in our natural environment so also our children and grandchildren require such recreation and we must provide for its perpetuation for them. If we fail to meet the essential needs of wildlife, planning our work will have been far short of success.

was spacious enough for all. As numbers increased it became necessary for the younger generation to move outward on all sides. We have seen this happen with two important birds, the House Sparrow and later, the Starling. At least the migratory birds found themselves in a region where cold weather prevailed in winter, and were driven back by it, to swell the ranks in the original starting-point of the race. With the return of Spring they took off again for the climate to which they had become accustomed.

Some years ago an attempt was made to naturalize a game bird called Pallas's sand-grouse in Britain; it was protected by Act of Parliament, and everything possible was done to establish it; but it had not been adapted by nature to the conditions into which it had been thrust, and the attempt was a failure. Early last year a group of naturalists went to consider the trouble, and more expense to try to add the White Stork to the British list of birds. Young birds were imported from the Continent of Europe, and liberated in Kent; but the importation of eggs for hatching, since it was thought to be a return to their birthplace, after their seasonal emigration. There is no evidence, however, that the White Stork ever bred in Britain, and it therefore starts its new career under the same handicap as the Pallas's stork, liberated in Kent. We were seen at the end of the summer, the Isle of Wight, they were supposed to be wandering southward to their winter quarters in Africa. I later read that only one egg hatched out and the experiment was abortive. It is responsible for the census returns!

The eggs were placed in the nests of herons (or as we called them "cranes") for hatching. As a final observation, the last paragraph recalls to mind that there is a small heronry near Black Banks, to add to the list given in the pamphlet "The Birds of Prince Edward Island."

A QUESTION IN PHYSICS

When you pull out the plug in the bath-tub you will notice that first the water lowers quickly and steadily. After a while, a free vortex (as the scientists call it) forms; the plug-hole; a sort of miniature whirlpool that drains the tub with a swirling movement and a protesting gurgle. Now, if the lecturer on physics at the University of Sydney, Australia, is correct in his inferences, a swirl of your bath-tub should register an anti-clockwise motion. Equator. If you lived south of the equator, such a vortex would appear to swirl with a clockwise movement, says the professor, and he asks people to report their observations on the direction of the swirl. The theory is that the diurnal rotation of the earth, the fastest-moving part of the earth's surface, and the centrifugal force thus engendered, carries the side of the whirlpool nearest the equator, in the same direction as the earth's movement. This would naturally give an anti-clockwise vortex north of the equator, and British engineers have photographed such an occurrence which took place at some drainage operations in Loch Trig, Scotland; while New Zealand shows, photographs obtained at the draining of the Arapuni power-scheme reservoir, in which a strong clockwise vortex developed, as indicated its position south of the equator.

The theory, however, is still "under fire," which is a good reason for readers to give their experience in the matter.

WEATHER CYCLES

Lord Bacon (I think it was) once wrote that the people of his district believed that the weather repeated itself after a period of thirty years "which they called a prime." That was over three hundred years ago so that the notion of weather cycles is by no means a new one. Since Bacon's time the science of meteorology has arisen, and for the memorizing records of illiterate rustics, the nations have substituted the exact observations of "weather bureaus." The testimony of all these observers goes to support the theory that the weather repeats itself in definite cycles.

The best-known cycle is that of the sunspots, which have a recurring maximum every eleven years, or thereabouts. British scientists find a similarity in 23 year periods and 85 year periods as well. (These will be observed, are merely multiples of the eleven year cycle.) An astonishing resemblance has been found between the weather of 1836 and that of 1901.

Some odd happenings have been laid to the charge of these cycles. The thirty-five year cycle has been traced in the rainfall of Britain, the temperature of Rome and Stockholm, and even in the excellence of the vintage in certain districts of Europe. It is established beyond doubt that the Northern Lights are connected with the maximum sunspot years, and it is now believed that the rise of the waters of the Nile has some connection with the same cycle. The last maximum appearance of sunspots took place in 1927-8, so that in the usual sequence the next maximum ought to be in 1938-9; as irregularities in the cycle sometimes occur, it may be that the present year is the maximum. Coastal districts in such years have cooler weather with abundant rainfall, and this year "fills the bill."

GERALD THE WELSHMAN (5)

This week I conclude with a brief review of Gerald's "Description of Wales"—a description of Wales. There are two lively prefaces to the work, both addressed to Stephen Langton, who, as your historians will tell, was that great Archbishop of Canterbury who headed the league against King John. Geraldus for years did all he could to keep Wales free from English ecclesiastical influence, so that it is the more amusing when he selects his antagonist as patron.

The actual description or geography is very short, and the fifty-odd pages of the work are mostly taken up with the characteristics of the Welsh people themselves. The country in Gerald's time was divided into North Wales—the ancient Venedotia—Powys and the middle or eastern districts. Something of these divisions has persisted to the present day. I am told; and in Boyer's "Wild Wales" (published in 1862) very interesting accounts are given of the dislike which existed between the people of North and South Wales. The rivers of Wales are described in the somewhat lengthy fifth chapter; particularly the Teivy—the only river in Wales which produces beavers. North Wales is better defended by nature, is more productive for men distinguished for bodily strength, and skilled in the use of long spears, says Gerald; the natives of South Wales excelled in the management of the bow. There have not been wanting historians (Welsh of course) who have claimed that the victories of Crecy and Agincourt were won by Welsh archers.

Fiercy patriot as he was, Gerald never hesitates to take his countrymen to task over their shortcomings. In this age and region any objection to actions which are sent at once as the malicious personal attack on the individual; so that it has become the fashion to soft-pedal all lapses from the observance of the Decalogue, with the result that our moral progress is slow, as compared with some other pieces. Had Gerald lived now and here he would have been called a "knocker" by some critics! But how is one to improve if kept in ignorance of one's faults? Gerald sometimes is over-zealous; he calls his compatriots to account for what he considers incestuous marriages. These turn out to be nothing more censurable than the marriage of first, second, or third cousins; fourth cousins are considered to be of another family. Some other details of Welsh customs furnish rather curious reading.

In warfare the Welsh, he says, are brave in attack, but cannot bear a repulse; "in their first attack they are more than men, in the second less than women." (And by the way when our historian does mention the ladies he makes some entertaining reflections on their foibles.) "This nation is, above all others, addicted to the digging up of boundary ditches, removing the limits, transgressing the land marks, and extending their territory by every possible means." Hence, he says, arise law-suits, contentions, murders, fratricides and conflagrations! "Like other nations in a barbarous state" (I quite the very words) "this people, although they are strangers to the principles of honor, yet above all things desire to be honored; and approve and respect in others that truth which they themselves do not profess." They never scruple at taking a false oath for the sake of any temporary emolument or advantage. Not so different from the modern world after all. I had hoped to finish with Gerald this issue, but there are notes on the music of Wales which must wait till next week.

ANIMAL HUSBANDRY

INJURIOUS INSECTS

Fruit Worms

There are several related species of these fruit worms or "green" fruit worms attacking the apple. These caterpillars are for the most part, green in their early stages and faintly marked with white. The fully grown larva in our commonest species is slate-gray, others are heavily striped with brown, while others are green with white markings. About three quarters of the fruit into which they bite drops to the ground. The picked fruit may be badly malformed, the wound healing over and leaving a russet scar, or in less severe cases there may be simply a russet scar without severe malformation. A large percentage of apples found among the culls are due to the work of this insect.

The fruit worms are the larvae of string flying moths that winter over, beneath rubbish, grass, or in similar shelters, appearing with the warmth of the spring and flying in the early hours of the night. The eggs are laid singly in some species, in irregular masses in others, on the twigs of the outer limbs about a month after the moths appear, between two and three weeks being spent in this stage. Egg laying occurs throughout the month of May. The greatest emergence of our commonest species of fruit worms occurs about the time the apple blossoms of the early varieties are showing pink.

At first the caterpillar feeds on leaves and blossoms, but when the young fruit is formed, it changes its feeding habits and eats large holes out of the sides of the young apples. As it usually makes a single new apple for each meal, a single caterpillar may do considerable injury. The caterpillars return to their diet of leaves for about a week previous to preparation, which takes place during the last half of July to about the end of the first week in August, the caterpillar is first descending to the ground and forming a silken web an inch or two below the surface. The pupal stage lasts about two months, the moths appearing the second half of September and the early part of October and wintering over in the adult stage.

Poison sprays or dusts applied just before the opening of the blossoms and just after they are effective in controlling the worms if well and thoroughly done. 1 lb. of lead arsenate (powder) or 3-4 lb. of arsenate of lime to 40 gals. of spray is usually sufficient. Used with the ordinary Bordeaux sprays or dusts the poison is not so effective as in sulphur spray or dusts and it may be necessary to increase the poison content of the spray or to change the mixture used when the insect becomes over abundant.

The Cigar Case-Beater. In almost every orchard careful examination during the month of June will reveal, projecting from the leaves, small brown cigar-shaped bodies about 5-16 of an inch long. If watched for a while some of them may be observed moving. Further examination will reveal the fact that each case is inhabited by a tiny caterpillar which protrudes its head and thorax from the case, and eating a tiny hole through the skin of the leaf, mines out the pulp as far as it can reach. The small mines are thus formed, form small brown blotches on the surface of the leaf and when the insects are very numerous, as they sometimes are in neglected orchards, these mines will run together and may involve almost the entire leaf, so that it scorches and may appear as if scorched with a fire. Such severe outbreaks, however, are rare and the insect never assumes such importance in orchards that are regularly sprayed or dusted. The worst outbreaks are found in very closely planted unpruned orchards.

In the latter part of June or early in July the caterpillars fasten down their cases to leaves or branches and still inside its case, transform to prepare emerging three weeks later as tiny steel-gray moths. The females of these

moths lay tiny yellow eggs among the hairs of the leaves. These hatch into caterpillars that, for about three weeks live and feed as true leaf miners between the upper and lower skin. They then build small curved cases from portions of the skin of the leaf and about the middle of September leave the foliage for the twigs, where they prefer to pass the winter. Here they remain inactive until the buds begin to expand in the spring when they attack the buds, the unfolding leaves, flowers and fruit stalks and even, in some cases, the young fruit itself. From time to time they make additional cases, but in a month after emergence they make their typical cigar-shaped area of the leaf and in this they dwell until emerging as a moth.

Little trouble need be anticipated from this pest in orchards that are regularly sprayed or dusted, the two applications (one as the petals are unfolding and one when the petals are showing pink) ordinarily applied before the blossoms open being apparently sufficient to keep it in check. Arsenate of lead 1 lb. (powder) to 40 gals. of Bordeaux or lime sulphur, or any of the standard fungicides, or any of the chemical dust mixtures may be used.

AGRICULTURIST. SCHOOL CLOSING AND EXAMINATION. The annual examination of Kelvin Grove School was attended by a large number of parents and visitors, showing the keen interest taken in education in this district. The pupils were thoroughly examined in their different classes by their teacher, Mr. George Cairns and showed that they had been carefully trained and taught. After the lessons the following programme was well carried out. Mr. Hubert MacNeill acting as chairman: Recitations by Duncan MacKay, Eleanor MacMurdo, Irving Millar, Leslie Waugh, Edna Blanchard, Vernon Millar, Roy Slaver and Mary Forbes. Monologue by Keith Thompson. Recitation by Barbara Forbes, Ruth MacNeill, Leigh MacKay, Duet by Ella and Keith Thompson. Recitation by Edgar Millar and Helen Blanchard.

Chorus by school. Ella Hogg received the school leaving certificate. Prizes were awarded to Duncan MacKay, Leigh MacKay and Eleanor MacMurdo for highest marks in their different subjects their teacher. At the conclusion of the programme complimentary remarks were made by Messrs Hubert MacNeill and John Cotton, Mrs. Hubert MacNeill and Mrs. John MacKay. The teacher treated the pupils to home made candy and the Women's Institute to fruit. A pleasant afternoon was brought to a close by singing "God Save the King." — B.

GRAND TRACADIE SCHOOL. Primary Department. MacLean Writing Certificate were awarded to the following pupils. Junior Certificates—Virginia Sparks; Rose Robison; Pearl Watters and Rose McIntyre. Improvement Certificates: Jack MacDonald; Anna MacKinnon and Bertie Gibbs. Primary Certificates: Agnes McAllan; Jack MacDonald; Bertie Gibbs; Anna MacKinnon; Michael Robison; Alvera Watters; Margaret Watters; John Leo MacDonald; Duncan MacKinnon; Mabel Watters; Leah Watters and Lester Roberts. Proficiency Certificates: Grade V—Virginia Sparks. Grade IV—Rose McIntyre. Grade III—Agnes McAllan. Grade II—Michelle Robison. Grade I (a)—Alvera Watters. Grade (b) Duncan MacKinnon. The following prizes were awarded: Prize for Attendance—Cairns Watters. Prize for General Proficiency—Pearl Watters. Prize for Improvement in Reading—Jack MacDonald. Catechism Prize—Roderick MacKinnon. Prizes for most improvement in Writing during the year—Rose McIntyre and Bertie Gibbs. Rita F. Martin, Teacher.

for SPRAINS. Rub Minard's in gently. It penetrates sore ligaments, relieves inflammation, soothes, heals you on your feet! MINARD'S "KING OF PAIN" LINIMENT. Chorus by school. Ella Hogg received the school leaving certificate. Prizes were awarded to Duncan MacKay, Leigh MacKay and Eleanor MacMurdo for highest



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BRINGING UP FATHER



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