

BIRDS

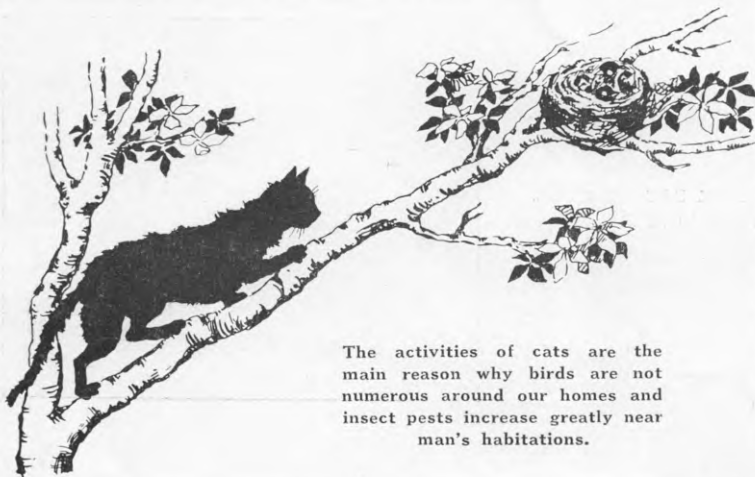
ISSUED BY

New Zealand Native Bird Protection Society

Head Office - - Box 631, Wellington

Otago Branch - - Box 672, Dunedin

Southland Branch: Box 400, Invercargill



The activities of cats are the main reason why birds are not numerous around our homes and insect pests increase greatly near man's habitations.

OBJECTS—To advocate and obtain the efficient protection and preservation of our native birds, a bird day for our schools, unity of control of all wild life, and the preservation of sanctuaries, scenic reserves, etc., in their native state.

Affiliated with the International Committee for the Protection of Wild Birds.

The foundation of true conservation is in the setting aside of sanctuaries efficiently and rigidly controlled by men who know how.

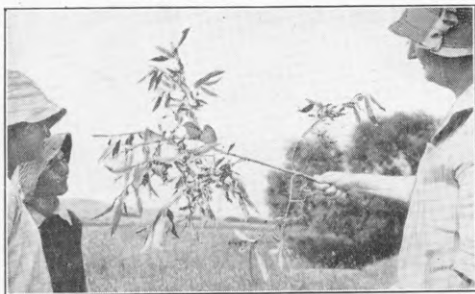
SUBSCRIPTIONS:

Life Members - £5.

Endowment Members, £1 per annum. Ordinary Members, 5/- per annum
Children - 1/- per annum.

(Membership open to all.)

New Zealanders! Protect Your Native Birds!



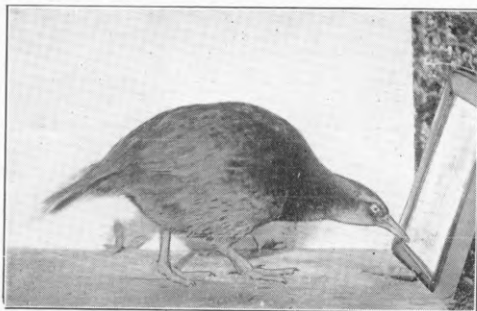
GOOD MORNING.

[Photo by Mrs. Gillanders]



BLACK BACKED GULL.

[Photo by A. S. Wilkinson]



CURIOSITY.

Weka at Looking Glass.



GANNETS.

White Island (February 27). Condenser house
on left side of rookery.

[Photo by Bernard Sladden.]

*M*OST of us are prone to hold the penny of to-day so closely to our eyes that we fail to see the pounds of to-morrow. Now are adequate means being taken to conserve our forests and birds by the nation for the nation, or are these merely being largely exploited in various forms for the benefit of a few for to-day instead of for the people of to-morrow? We appeal to all to realise the necessity for adequate and skilful conservation in that patriotic and broad-minded spirit which alone can be successful. It is stated by some of the best informed that owing to the resulting evil effects to Man in forest depletion and bird destruction civilisation must fail and Man succumb in an eroded and insect infested land. Adequate realisation by the nation of the value of birds and forests to Man alone can turn the scale in his favour.

NATIVE BIRDS AND INTRODUCED ANIMALS.

(By CAPTAIN E. V. SANDERSON.)

All life is evolved to suit the conditions appertaining, therefore it automatically follows that when the white man first landed in this country the then existing conditions were the ideal for the prosperity of the indigenous life (plant, bird, insect, etc.). Any successful attempts in acclimatising any species of plant, animal, or insect, etc., must, in a greater or lesser degree, tend to alter the conditions which were originally present and therefore be at the expense of existing species. It is for the reason that Nature chooses, by a long process of competition, the most suitable plant and other life that the most expert foresters pin their faith and activities mainly on the indigenous to the country in which they are operating.

It was essential to the white man in order that he could follow his practice of cultivating the land that large areas of forest must be destroyed and animals introduced to pasture on the open country thus made, together with birds suitable to operate against the enemies of his crops and cultivated products in the altered conditions, as the majority of the native birds were evolved only for forest protection. Large numbers of others also existed which operated in manners as water fowl, swamp, and costal inhabitants, etc., but few were then suited to agricultural purposes.

Thus it will be seen that a definite line of demarcation must be drawn between our cultivated lands and forest and other reservations. If we require these latter to prosper, which is of course the end sought when reserving them, then no introductions even local from one locality to another, except in those cases where a species is known to have formerly existed, should be permitted, lest competition is set up to the detriment of the species of plant and bird life already present. No animals except the native rat and dog were present when the white man first entered this country, and a forest and wild life had been evolved which was not adapted to compete with animals; especially herbivorous animals. These were ignorantly introduced in our reservations, and later more ignorantly fostered, against the advice of the best informed authorities largely for the sake of sport. Their presence, in that they destroy those indigenous forests which Nature so skilfully evolved for the prevention of erosion and the formation of soil on our hills and mountains, must be detrimental to the greater part of our indigenous forest-inhabiting birds, and indeed most of the existing life on land and

water. At the same time the prosperity of this country, owing to the devastating effects of erosion brought about by forest depletion is seriously menaced. Verily, in a land like New Zealand, which had been for countless ages widely separated from all other large land masses and had thus evolved its own special conditions, the attempted acclimatisation of any bird, animal, or insect should not be permitted without the keenest scrutiny. The best thing we can do now is to allow Nature to readjust her balance.

The efforts of those people whose constant desire is to introduce alien species to where they have never been known to exist can only be likened to children playing with fire, but unlike the baby they do not appear to learn after getting their fingers burnt. Perhaps, because, it is the general community's fingers which suffer most and not so much the fingers of the acclimatisator.



[Photo from "Bird Lore."]

A ROBIN'S HOME.

In Parkview Cemetery, Hastings, Nebr., in the lap of a brooding figure of "Sorrow," this nest was built securely and firmly.

HOW THE GULLS SAVED UTAH.

Why the State is a Sanctuary To-day.

An incident without precedent in history made the seagull sacred to 500,000 people, and outlined the confines of the State of Utah as a sanctuary to the bird. The monument recalls memories of bitter hardship and suffering, happiness and satisfaction in days when the Commonwealth of Utah was in its infancy.

The weather in Utah, U.S.A., during the winter of 1847-1848 was unusually mild. Some ploughing was done all winter, and in February farm work began in earnest. Plans were complete for the cultivation of 5,000 acres, 900 of which were already planted in winter wheat and rye.

Food at this time consisted mainly of sego and thistle roots, and thistle tops. Losses of cattle had been heavy and milk was scarce. Men, women and children were clad in garments of burlap, bed-ticking, or the skins of animals, and occasionally some relic of former finery was seen.

* * *

Early in May, 1848, the crops came up in abundance, inspiring hopes for a rich harvest. In the middle of that month hosts of Rocky Mountain crickets came from the direction of Arsenal Hill, devouring all the tender vegetation before them. The Saints despaired. The entire populace of 1,700 persons attacked the pests with flails, shovels and sticks. Trenches were dug, and fires were made in an effort to stop the onslaught of the insects. Their efforts were futile. No advantage was gained. All their hopes for a harvest, great or small, vanished. Other emigrants were coming into the valley and all depended on the growing crops. Now all appeared lost, and famine seemed imminent.

When the settlers were in the depths of despair, the sky became over-clouded with seagulls which alighted in the fields, apparently to assist the insects in the destruction. The solid phalanx of crickets became broken, devastation was interrupted, and to the surprise of all, the gulls were devouring all the crickets, disgorging them at nearby streams, and coming back for more. The work of the birds continued from Monday morning until late Saturday evening. The crickets disappeared, and the birds returned to the lake. The incident was repeated in 1849 and 1850.

Preservation of the gulls became an unwritten law in Utah. In the Legislative Assembly of the old provisional State of Deseret it was made a felony to kill the bird. The law was later re-enacted by the Territorial Government of Utah, and was incorporated into the state laws when Utah was admitted into the Union.

Out of gratitude to God, whom the pioneers believed sent the gulls at the time of their distress, and to honour the bird, the Seagull Monument was erected by the Church of Jesus Christ of Latterday Saints at a cost of 12,000 dollars. It is said to be the only monument in the world erected to birds.

Tablets on each of three sides of the base, depict phases of the cricket plague, and a representation of the birds alighting in the fields is made on top of the shaft. On the remaining side is a brief inscription—all four sides being in bronze.

—“*Eastern Province Herald*,” *South Africa*.

WINTER FEEDING.

Some very interesting and apparently accurate observation work has recently been undertaken by the United States Biological Department with the object of ascertaining the difficulties birds have to overcome in passing through the winter.

Approximately 60 coveys of the Bob-white Quail, a bird closely allied to the Californian Quail at present in New Zealand, were kept under careful observation. The object of the field studies was to ascertain just how the coveys normally wintered under natural conditions. The most significant fact brought out in the season's studies was that every well-fed covey wintered with almost no loss either from cold or enemy attacks. The individuals in each covey were counted at least once a week and endeavours made to ascertain the fate of any missing. The favourite perch of a red-tailed hawk was situated in the tree above and about 200 yards from the very spot where a well-conditioned covey of 18 frequented in the hope of picking grain out of spread manure. This was a covey which to all appearances had lost no birds since allocated for study, pointing to the fact that hawks of the buzzard rodent-killing family, similar to our harrier, as a whole are not able to catch well-fed, healthy birds having access to suitable cover. On the other hand, it was ascertained that birds which had become weak owing to shortage of food became easy prey to all manner of predatory enemies, and in some cases fell dead off their roosts during cold weather.

Winter is a deciding factor in the preservation of most animals and birds, and the observations undertaken clearly demonstrate the ability of well-fed birds to care for themselves against enemies.

OBSERVATIONS FIFTY YEARS AGO.

(Extracts from Potts' "Out in the Open," 1882.)

PARROTS (Potts).—"It may be thought not out of place to make brief allusion to the influence which some of the habits of the *kaka* exercise on the condition of the forest; admitted amongst the *Trichoglossinae* as a honey-eating bird, in its search after this portion of its food, it may cause the fertilisation of the blossoms of trees, and thus assist in their propagation. Its love of insect food, and the toil which it undertakes for the sake of gratifying this appetite, which Nature has implanted in the bird, materially affect the economy of the timber forests it inhabits. Although so often accused of injuring trees by stripping down the bark, from careful observation we are unwilling to believe a flourishing tree is ever damaged by its beak; it is the apparently vigorous, but really unsound, tree that is attacked, already doomed by the presence of countless multitudes of insects of various species, of which it is at once the food and refuge, either in their perfect or larval state. . . .

"Living in trees, when disturbed it hops amongst the branches with much dexterity, beak and wings assisting its awkward-looking but rapid progress as it threads its way amongst leaves and sprays with unruffled plumage; the peculiar formation of its grasping feet enable it to execute wonderful feats of agile climbing.

"*Kakas* do not travel in large flocks, most frequently but two or three are to be seen in company, sometimes six or eight are noticed together, solitary wanderers are not unfrequently observed; when their cry is imitated it is often replied to. Their steady, slow, and somewhat laboured flight when journeying is not to be mistaken for that of any other native bird that we have observed on the wing; there is a methodical painstaking style that affords quite a contrast to their gay, rattling, offhand soaring and gliding about the bush; it exhibits the proper difference of behaviour to be assumed under business-like and pleasure-taking aspects; man is not the only biped enjoying the privilege of duality. In dull, moist weather, when the strange-voiced *tui* is silent, the *kaka* is perhaps more noisy than usual; its call is heard at the earliest dawn, even in the night it is not by any means a silent bird.

It lays its four white eggs on the decayed wood, without any further supply of softer material by way of nest.

" We have never found the discovery of the nest a very easy matter to accomplish, unless mayhap it was disclosed

by pure accident; the old birds, with a wariness and wiliness well calculated to mislead the nest hunter, assume an air of utter indifference to the presence of intruders, as though they had no secret hiding-place to conceal from prying eyes; their work was to lick up honey from the nectaries of expanding blossoms, or to dig out with their strong mandibles, the dormant insect. . . . As an instance of devoted attachment to its young, it may be mentioned that we have found the old bird dead at the entrance of its nesting hole after a bush fire, in which it had perished rather than desert its helpless offspring, yet, from the nature of the locality, escape would have been easy.

" In September we have observed it poised on the slender bough of some tall *Panax*, luxuriating on the viscid nectar of its blossoms; happy enough it looks when thus seen through some opening through the trees; its deep red breast-feathers lit up by the slanting rays of the declining sun; sated at last, it cleanses its huge beak against a neighbouring bough, then with grateful chatter, glides off to join its fellows.

"Insects form no inconsiderable portion of its food, how diligently they are sought for may be judged from the heaps of bark chips that lie beneath decaying trees; often it may be noticed on the ground, tearing away the mossy clothing of the huge gnarled roots that spread around, even the soft rotten boughs are gnawed to obtain the larvae of some of the larger bush insects. . . ."

FLYCATCHERS (Potts).—"To the quiet observer of the habits of our bird-friends, but few sights can afford more gratification than watching the patient industry which is displayed by the very energetic and useful flycatcher, in the construction of its compactly-formed nest. The nest is to be found near its food supply (for the young will make incessant demands on the exertions of the parent birds), and it seeks a sheltered position where insects 'most do congregate'; it must at the same time afford 'ample room and verge enough' for the numberless evolutions to be performed by the rapid fluttering of two pairs of most active wings, which are soon to be constantly fanning the lazy air. To meet these indispensable requirements, the security offered by the densely tangled thicket is most commonly neglected for the retirement that is to be found beneath the high bank of some shady creek; the bough usually selected stands out well from the main stem, not too close to other branches. The foundation of the nest is laid by adroitly securing small slender chips of decayed wood with lines of cobweb to the spray selected; this delicate operation must of necessity be a work of great difficulty, *c'est le premier pas qui coute*; in places where splinters of decayed wood were not to be obtained, we have noticed that the glumes of a coarse grass have been

used instead. Who can fail to admire the persevering efforts of these little architects; what care, dexterity, and cleverness is employed in raising the frail platform on which is to be built the thick felted wall of the snug home? As the work advances, additional exertions are called forth; from the variety of materials required, longer flights become necessary for their collection, mossy stones and roots are scrutinised, and places frequented by live stock visited; fine grasses, thread-like roots, dead leaves or skeletons of leaves, hair, green tufts of moss with tiny imbricated leaves, and the down of tree ferns, are now wanted, crevices are searched, and the numerous holes before which 'the murderous spider,' lurking in the dark, has spread the treacherous net.

"It is whilst collecting cobwebs that the plumage of the fly-catchers is exhibited to the greatest advantage; hovering on the wing, the fan-like tail outspread to the utmost width, with rapid gyrations they move round the spot till enough has been secured for a load; the quantity made use of would surprise those who have not witnessed these labours; it is a most important element in felting; in fact, it is the mortar of the growing structure. Whilst building, the exterior of the wall is always kept higher than the centre of the nest, so that at an early stage of its progress it assumes a saucer-like shape; the birds (for both join in the labour, although the female appears to undertake the greatest share) try the strength of their work in every way; it is well trampled, the webs are carried from the interior to the outside in festoons from left to right, and right to left, as far down as the beak can reach; this working in of the web is persevered with throughout the entire building of the fabric, thus the materials are repeatedly braced together. As the wall rises, the bird, with tail elevated, is itself the mould by which the rounded cavity is beautifully shaped; seated in the centre of the rising structure, it turns round repeatedly, fluttering the wings, which action keeps the curving of the wall to its proper shape, the head and chin are pressed on the top or rim, the materials pulled in towards the centre; this manoeuvre is repeated at frequent intervals. So earnest are these little workers that they scarcely rest for hours; sometimes, by a sudden flutter, they obtain a few insects, or the creek is visited for water; . . .

"As the nest approaches completion, it assumes a cup-like form, a still more abundant use of cobweb may be noticed, the festoons are multiplied, the wall being finished off with numberless ties and braces; the interior is now lined with fern-down, the slender fruit stalks of moss, or other soft material other than feathers, and the structure is complete, and admirably finished; it is warm, strong, and elastic, and so well felted that it is not easily pressed out of shape; it is a marvel of construction, effected by the beaks of two small birds which have had numberless other offices to perform."

BELLBIRD (Potts.)—"It is at the grey break of dawn, and in the still hour that closes in the day, that its chimes strike clearest on the ear. It is comparatively silent during the noon-tide heat, unless some few individuals meet on a tree or shrub that offers, it may be, a tempting show of honey-bearing blossoms, a note or two is briefly sounded, the numbers rapidly increase, after much noisy fluttering of wings a gush of clanging melody bursts forth from a score of quivering throats, forming a concert of inharmonious, yet most pleasing sounds. Nor is the ear alone gratified, for the actions and postures of the melodists are extremely quaint and droll during this performance, which seems to be only undertaken by cock birds; it is usually commenced by two of them that perch opposite to each other, now with swelling throat and puffed out feathers they deliver note for note with curious precision of time and swaying action.

"Probably Cook indicated the bell-bird, then in a comparatively unmolested state, when he wrote 'the ship lay at the distance of somewhat less than a quarter of a mile from the shore, and in the morning we were awakened by the singing of the birds; the number was incredible, and they seemed to strain their throats in emulation of each other. This wild melody was infinitely superior to any that we had ever heard of the same kind; it seemed to be like small bells, most exquisitely tuned, and perhaps the distance and the water between might be of no small advantage to the sound.'

"This cheerful bird does not confine itself to forests and their deep and gloomy shades, it rather affects shrubby gullies, and is a constant and well loved inmate of our gardens and plantations, and vastly doth it delight in ransacking the sweets yielded by the blossoms of the acacia, fuchsia, tritoma, etc. The berries of the *konini*, of various species of coprosma, ripening early, furnish some part of its food supply, later on in the year the bead-like seeds of the ti palm are laid under contribution. . . .

"Placed among the *Meliphagidae* or honey-eaters by ornithologists, it nevertheless shows an accommodating appetite for many kinds of food. We have already pointed to some of the numerous kinds of drupes and berries on which it luxuriates; yet as an insect eater it is not without its value to the culturist; in twisting and turning amongst the leaves, as spray by spray it searches for the living hordes housed in barky crevices, it exhibits habits and ways that may be likened to those of a true creeper. In dull foggy weather we well remember to have seen numbers of this bird twirling and climbing about the rampant intertwined cords of the *muhlenbeckia* that hung almost from the very top of a lofty tree—here the bellbirds were most busy in their insect search, fluttering with half spread wings and swaying on the slender lians that hung pendant from the outspread branches. After moths and large insects on the wing we have often seen it

fluttering heavily, noisily it may be said, yet wheeling with sufficient speed to ensure frequent captures. . . .

"To return for a moment to its position amongst the honey-eaters, when the phormium in the months of early spring sends up its lofty flower stems ranged around with tiers of orange tinted blossoms, then the bell-bird and *tui* indulge in ample honey feasts. . . .

"In the busy breeding season, both sexes work at nest building; placed at no great elevation from the ground, the structure may be found in a variety of positions, but we have noticed it very frequently beneath a sheltering canopy of bush lawyer (*rubus*), near the top of some moderate sized shrub or bush; very often under a thatch of the persistent leaves of the ti palm that hang down the tall stem. It is rather flat, loosely yet strongly built of sprays, grass, moss, etc., well lined with feathers; on examining the foundation of a nest, we have several times found green sprays of *manuka* amongst the interlaced materials, a fact which disclosed a pretty good proof of the power of the bill in breaking off twigs from so tough a plant. From wall to wall across the top, the nest measures about five inches; diameter of cavity, two inches, nine lines; depth inside, about two inches. We fancy that the lining feathers are often selected in such a manner as to afford some evidence in their disposal and arrangement of the bird's love of harmony of colour; as, for instance, we have noted specimens with the inner lining red, as the feathers used have been those of the *kaka*, another has been ornamented with the bright green plumes of the parroquet. . . . The eggs, four in number, are of the most delicate white, sometimes flushed slightly with the faintest glow of a pink tinge. They are marked principally towards the larger end with a profusion of reddish brown spots; rarely they are found of a pure white, sometimes they are speckled with a few spots or blotches, or marked with fine hair-like lines. . . . The breeding season extends through spring and summer, the young are fed till long after they are well fledged."

HARRIER HAWK (*Kahu*) (Potts).—"The big hawk soars aloft noiselessly; it performs its aerial evolutions with a vast amount of ease and freedom; it seldom appears to be hurried, but floats calmly in ascending circles, with its wings so apparently motionless, that it might be saluted as the albatross of the plains.

"Heinous offences are laid to its charge, many of them true; but they are often exaggerated, frequently shared by other criminals, who are allowed to go scot free. . . . The harrier feeds on offal or garbage, and in his visits to the lambing ground, the object is not to kill and destroy the young stock, but to feed on the *cleansing* of the ewes. . . .

Lizards and the larger insects, such as cicadas, grasshoppers, and crickets, furnish it with some portion of its provender. To the introduced rodents, rabbits, rats, and mice, it is winged destruction; pick up some of the castings from one of its favourite haunts, these will tell of its doing in checking undue increase in the number of the animals mentioned. The writer has some of these castings, which are compact masses of rabbit fur. . . . ; these harriers are daily, hourly, on and about the ricks of oaten hay, keenly alive to the expediency of making rats and mice contribute to their support.

"They usually select a breeding-place in a low-lying situation, among swamps or by the margins of lagoons; The nest, nearly always built on the ground, is made of coarse grasses, such as *tohe-tohe*, or the leaves of raupo form part of the material; When its breeding place is approached, it makes not a resolute defence of its eggs, like the falcon, but, if incubating, with shrill squeal of alarm, darts off with its long legs dangling below during the first few beats of its wings.

"... . Above the gorge of the Ashburton we have found the nest partly built with sprays of the thorny discaria, and the dead flower-stems of the large alpine form of *Aciphylla Colensoi*; above this dreadful bed of thorns, grass was carefully placed ; the eggs, usually four in number, are not glossy, but of a pure white; The months of November and December appear to be the height of the breeding season. . . .

"Nothing extenuate,
Nor set down aught in malice."



WEKA.

The policeman of the forests. A wise and extremely valuable bird economically.

[Photo by Mrs. P. Moncrieff.]

MARVELS OF PLANT LIFE.

More than a century ago Erasmus Darwin wrote "The Loves of the Plants" which provoked Canning's famous satire, "The Loves of the Triangles." Now we discover from some remarkable researches that the distinction long supposed to exist between the animal and the vegetable world is not a fact.

A demonstration effected by the aid of some delicate instruments invented by Sir J. C. Bose has given records of the heart-beat of plants. Moreover, these same instruments diagnosed the health of the plants whether they were in good or failing health, even providing a record of their death agonies.

It is thus a proven and astonishing fact that the life-mechanism of the plant is practically identical with that of the animal. The flower's "nervous system" is shown by the throbbing pulsation which takes the place of the animal heart-beat, and this pulsation gives a violent spasm at the moment of death.

By the use of a delicate optical device of great power the experimentalist can picture the activity of the living cells in the plant, and another apparatus serves to make the plant automatically record its own responses to various signals. The sensitivity of some varieties of the vegetable world is estimated in this way to be ten times greater than that of man.

The invention of Bose's "optical lever" shows the activity of living cells in the propulsion of sap from the roots of the tree to its highest leaves, thus solving a problem which had puzzled botanists for the last two hundred years. The actual position of the "heart" of the plant is found by the electric probe and galvanometer.

The delicacy of the instruments necessary to measure the heart-beat of a plant, which is less than a millionth of an inch, can be imagined. The beat is magnified some millions of times, and the result thrown on a screen or film. By this method one can see how such a drug as chloroform at first excites the plant, stimulating it to intense vigour. Then comes less rapid and spasmodic beats until they come to a total stop. We know that means the death of the plant.

—From "*Wonders of Plant Life*," Sir J. C. Bose.

WAKE UP, NEW ZEALANDERS!

A member of the New Zealand Native Bird Protection Society, now resident in Canada, writes:—"I was pleased when passing my forest home here to see the birds feeding on the trays I left. I pinned a note inside when leaving asking the next tenants to feed the birds. In New Zealand the next tenants would likely say 'Queer!' but here the people understand."

BIRDS AND THE FARMER.

The findings of the Central States Forest Experiment Station at Columbus, Ohio, will come somewhat as a shock to those wrestling with our many farm problems. Misuse of farm woodlots, the experiment station finds, is speeding the departure if not the extermination of birds most valuable in preying upon the farmers' enemy—insect pests.

In the Corn Belt and other extensively cultivated regions of the Central States, the experiment station has found that the farm woodlots are the birds' main hope of perpetuating themselves since practically all the rest of the land is tilled or in pastures. The woodlot alone offers sanctuary and natural breeding habitat for bird life, provided the woods are kept attractive to birds. Unfortunately this is just what the average farmer is not doing. Ninety per cent. of the woodlots in the Corn Belt country, it is revealed, are used for grazing and are so heavily grazed as to make them unfit and unattractive for birds. According to Mr. Day, more than half the bird life of the woodlot nest on the ground or in the undergrowth of the woods, and this half includes practically all the insectivorous species important to the farmer and fruit grower. Heavy grazing as practised by most farmers is thus destroying the nesting and breeding places of birds most important to him. Elimination of the undergrowth in the woodlots is likewise destroying an important source of food for birds.

The findings of the experiment station are of tremendous importance and significance not only to the farmer but to the farm states and to the nation. Millions of dollars are spent every year to fight insects preying upon farm crops. The practice of overgrazing woodlands in the Central States and thereby exterminating bird life is simply encouraging the insect hordes and making the problem of crop production more difficult, hazardous and expensive. In times of drought the insect hazard is raised to a high degree, but with bird life lacking it becomes a menace of national potentialities.

It is to be hoped that the facts and conditions revealed by the study in question will be seized upon by agricultural agencies in the States concerned and by the Federal Government to the end that the farmer may be made to realise that abuse of his woodlots contributes to his farm problems.

STEEL TRAPS BARRED.

In one of the greatest demonstrations of public feeling for animals ever registered at the polls, citizens of Massachusetts overwhelmingly passed the anti-steel trap bill by their referendum, November 4, 1930. The vote was 589,013 in favour of the restrictive measure, and 259,014 against. With the counting of the final ballots, the steel trap made its last bow in the Bay State. Led by Francis H. Rowley, president, Howard Noble, managing director, and, principally, Mrs. Edward Breck, widow of the late Lt.-Commander Breck, who founded the national league, the Anti-Steel Trap League, Massachusetts Division, performed a lion's share of the work to bring victory. Massachusetts did herself proud at the ballot-box, and other states may without fear follow her example.—*American Nature Magazine*.

AN INTERESTING OBSERVATION.

On the morning of October 1st my sister and I happened to rise early, and when we went outside we saw hundreds of birds with backs and wings of dark green, and with breasts striped with dark brown and fawny coloured bars. We were greatly excited. The teacher lived at our place, so we rushed in and called him, and he soon joined us. The birds seemed to be very tired. They were perched on the fences, trees, and sheds, and did not move till we almost touched them. The teacher said that they must have just arrived. Close to the cowshed there was a drain. We got some pieces of sack and started to beat the sides of it, and so disturbed the flies and gnats. The cuckoos flew round and round us, quite close, catching the insects. The poor birds were very hungry. They stayed about for a few hours and then disappeared.—*Edna Smith, Maunganui, in "N.Z. Children's Newspaper."*

HAWKS.

Paul L. Errington, writing in "American Game," a publication set apart to advocate the interests of sportsmen, says, "What if a Red-tailed Hawk does drive a quail covey into an open corn-shock now and then? The hawk enjoys all the more the meadow mouse that he gets half-an-hour later and the quail are keener birds for the experience.

"We don't want our game to soften in an unnatural atmosphere of man-made security, like chickens in a coop. The birds we want in our coverts are the topnotch northern Bob-white, plump, fit, danger-tempered and—given an even break—equal to looking out for themselves. If the desire of the sportsman,

or farmer, or whoever it may be, is to protect his upland game from predators, he can best accomplish this by providing the cover in which the game can seek its own safety, and by providing the food which enables the game to reach that cover when it has to."

GAME MANAGEMENT IN THE NATIONAL FORESTS.

(By ALDO LEOPOLD.)

(Extracted from *American Forests and Forest Life*.)

The administration of the National Forests of America has for its real purpose the perpetuation of life—human, plant and animal life. Of first importance is human life, and so closely related is this to tree and plant life, so vital are the influences of the forest, that their problems have been fashioned into the major problems of forest management and administration.

Of next importance—and ever increasing—is the problem of animal and bird life. Driven from their once great range by civilisation the wild life that was at one time America's most, picturesque heritage has found refuge in the National Forests. Under protection their numbers have multiplied, and with it has come a new responsibility and a greater problem for the administrators of the National Forests. The wild life census of 1928 indicated there were nearly one million game animals within the boundaries of the National Forests.

The National Forests were placed under management in 1905. Up to that time the game-conservation movement had given birth to two major ideas. The first was the reservation or park idea—withdrawing samples of game range from economic development with a view to the perpetuation of threatened species. This has since grown to include the refuge idea. The second was the idea of limiting the annual kill on hunting grounds to the annual increment or "natural increase" of the game thereon. This idea of limitation of kill was really contemporaneous with National Forests, and part of its development may be credited to the foresters who had them in charge. In the interim, however, one additional major idea has emerged. This idea is corollary to the idea of limiting the kill to the annual increase. It asserts that the annual increment of any given game population may be increased at will by manipulating its environment. Such increase is limited only by the carrying capacity of the range, or, more rarely, by the unimpeded increase rate or "breeding potential" of the species.

Environmental control, in its essence, and as applied to hunting grounds, is in effect the shifting of mortality from natural enemies to human hunters. It is not a new idea. In

various empirical forms it has been practised in Europe since the Middle Ages, and in Asia since the days of Genghis Khan. The biological equation responsible for its success was probably not understood, but this did not worry the Great Khan as long as his hunting was good.

It should, however, worry us. Environmental control, like every other really potent idea, is a two-edged sword. It is the only possible way of keeping alive the sport of hunting in the face of unregulated human population growth. This is one edge of the sword. The other is that overcontrol is open to many abuses. A case in point is the bitterness which European nature-lovers feel towards the excessive and indiscriminate predator control practised on private hunting preserves. This should be a lesson to managers of both private and public hunting grounds in this country. Moreover, excessive manipulation of environment tends to artificialise sport, and thus destroy the very recreational values which the conservation movement seeks to retain.

Intelligent manipulation of game environments is impossible without research. In only a few cases are the main factors affecting National Forest game as yet known. This is no reason for a do-nothing attitude, but it is a powerful reason for a radical expansion in the game research programme.

The "reservation" idea has enjoyed a satisfactory growth, and requires no lengthy comment. A far-flung system of refuges is gradually being built up. These, to be sure, differ somewhat from the original idea of preserving a sample of threatened species. Refuges are a machine to feed breeding stock to the adjoining range; reservations are a museum where specimens are set away for safe keeping.

THE FOREST.

In gracious friendliness the forest stands
With arms outspread to shield from sun and rain
And beckons us into a quiet lane
As one who welcomes friends with outstretched hands,
And proffers freedom of his house and lands.
Though filled with voices one cannot explain,
A quietness pervades the vast domain
As when one enters some cathedral grand.
On entering we feel beneath our feet
Luxurious carpetings of moss and leaf,
As, reverently, down arching aisles we pace.
With majesty the woodland seems replete;
Enchanting, wondrous, strengthening our belief
That sylvan gods are dwellers of the place.

—Conrad Sedgewick.

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