Forest and Bird

Issued by FOREST AND BIRD PROTECTION SOCIETY OF NEW ZEALAND (Incorporated)

WHITE HERON OR KOTUKU WITH DOMESTIC DUCKS.

(Photo: Ellis Dudgeon, F.R.S.A., A.R.P.S., Nelson)

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Editorial

LACK OF ACTION

OUR MANAGEABLE NATURAL RESOURCES

NEW ZEALANDERS have frequently been referred to as a people lacking in vision and enterprise and prone to much talk without taking action. But certainly they cannot be justly accused in these directions when it comes to such matters as currency, wages, the day's takings, income, etc; which, in the long run, are all dependent upon the due conservation of natural resources. When it comes to the conservation of these resources, ample justification can be found for the accusation as to New Zealanders' lack of vision; for wages, income, the value of currency, and such like matters are dependent upon a continuance in perpetuity of the products from our great renewable natural resources such as the soil, the forests, the waters, yet the concern day by day is not about these, but with reference to monetary matters affecting our immediate sustenance. Unless, however, the main issue of conservation is attended to, all such ideals as a higher standard of living, social security, wages, incomes, must in the end be defeated and exist for the moment merely as fleeting hopes. Despite the war, other countries are not acting in the same manner as New Zealand. They recognise the war as being but a temporary happening to be followed by what must be a great effort to re-stabilize methods of existence. Thus in Cape Colony, a bill, "The Forest and Veld Conservation Bill," is before parliament, with a view to giving the government the power to arrest erosion. It is now contended by the supporters of this bill that the government will be enabled to stop one of the greatest dangers to the country by undertaking reclamation work on private lands whenever it is the opinion of the Governor-General that such steps should be taken. Private lands may even be expropriated if it is of public benefit to do so.

Innumerable instances occur in New Zealand where the land is being mined for the immediate benefit of the owner during his lifetime, to the detriment of neighbouring and lower lands and of posterity.

As from June 30, 1940, the United States Bureau of Biological Survey and United States Bureau of Fisheries, transferred respectively from the Department of Agriculture and the Department of Commerce under reorganization plans, were consolidated. The new agency is now known as the Fish and Wildlife Service of the Department of the Interior.

A similar step has long been advocated for New Zealand by the Forest and Bird Protection Society and others. Much talk and much argument has taken place for and against the proposal to form a department of conservation. Nothing, however, happens, while other countries grasp the necessity and take action.

Efforts to include in the new service the very efficient United States Forest Service which is now attached to the Department of Agriculture have so far not succeeded. Wild life and forestry are, however, so inter-allied that it is probably only a matter of time when they too will be transferred to the Department of the Interior and form a solid foundation upon which a Department of Conservation can be formed.

Perhaps, however, the proneness of New Zealanders to lack action in matters which really count is due to climatic influences. The Maori has similar failings. He holds many koreros without result.

HELP PREVENT FIRES . . .

. . . and thereby Save New Zealand from New Zealanders for New Zealanders!

"OLD HARRIER"

By Hugh Ross

THE mists which all that morning had clung in billowing folds above the valley floor were now drifting asunder, enabling the sun's rays to creep through, bringing comfort and cheer to the cold, clammy earth and its inhabitants. Forth from the thinning fog loomed the form of "Old Harrier," who with leisurely, even beat of big wings was making for his favourite perch. I saw him pass—watched him alight upon what was literally a "scrub-bush"—a diminutive growth about fourteen inches high, hideously deformed and growing in advance of its well-proportioned kindred on the face of a steep little hillock fronting the house. With not so much as a preliminary circle the hawk "pan-caked" on to his resting place. An awkward step or two, a flapping of his great wings ere assuring perfect equilibrium and settling down comfortably—probably the most contented hawk for miles around.

Watching the reposing bird I felt a genuine sympathy for the old fellow. Whence he had just come was no mystery, either. In a certain gully were the remains of a sheep upon which he had feasted to repletion, and now, well and truly gorged, he sought a little relaxation. While I watched he preened a feather or two, and then—he began to sing. His notes were those peculiar, glassy rolling warbles that one associates with friend starling. Indeed, so well did they match the starling's song that only a keen ear would have distinguished the difference. It may be, though, that "Old Harrier's" notes were a trifle louder. For the better part of two hours he remained upon his scrub-bush singing happily to himself or performing his daily toilet, while the sun's rays thawed the dank chill of the gully from his grateful body.

[Photo: Thos. M. Wainwright.

I doubt if I have ever known a more agreeably satisfied bird than that shrewd old hawk. To the best of my knowledge he has hung about the farmstead for several years now, and he does himself well. Very well indeed! There are odd sheep that die as well as waste parts from those killed for mutton to be shared with the dogs, also any number of rabbits both shot and trapped, not to mention those killed by his own skilful hunting. And he had those glorious days, too, after the chaff-cutter had departed when scores of bewildered mice scurried aimlessly amid the deserted stack bottoms. I know also, and without animosity, that hens' nests at times were filched.

The harrier hawk is more or less a scavenger, and "Old Harrier" is no exception. True he is no mean hunter, but at the same time he partakes cheerfully of that which the gods provide. For instance, there is a little scene I saw enacted not long ago. One still afternoon my attention was arrested by the loud squealing of a rabbit. A stoat must have been trailing its prey for some time, because when I became aware of the tragedy the hapless victim was firmly grasped by the back of the neck and the stoat was delivering the final coup-de-grace. A moment later the stoat himself narrowly missed "getting it in the neck!" "Old Harrier" had drifted on the scene. Not a second did he waste in unnecessary hovering, but, swooping down, struck viciously with his steel-like talons. The stoat's sharp hissing bark of fear as he hurled his lithe body to one side in order to avoid the clutch of death was audible at nearly a hundred yards. Like a yellow streak he "snaked" for the shelter of a gully. Later he returned to bark in helpless

fury at the unheeding hawk so complacently enjoying his poached meal.

A few days later one of a dozen pullets was missing. Promptly everyone blamed "Old Harrier," and soon was heard that time-worn cry "Chicken Thief." A positively damning statement! I knew full well that unless I could prove the hawk's innocence, and, what was more, do so quickly, the old fellow would haunt that farmstead no more. "Why!" exclaimed the boss suddenly "there is the old varmint now—out there on the hillside, and he is eating something . . . bet it is my pullet." Together we went to investigate. As we drew near the hawk flew off. With considerable relief I saw no sign of feathers. (The boss's threats en route had been singularly bloodthirsty). Something white lay on the ground, and for a horrible moment I feared that it might be an egg. But my fears were groundless. "Old Harrier" had not let me down. The "something white" was nothing more or less than the white front of a stoat! I shall never forget the boss's words as we examined the gory remains. "Well I'm blessed! The old cannibal. Fancy him eating THAT!" I think "Old Harrier's" life-long safety — from the hands of the boss at least—was assured from the moment of my discovering the pullet, minus half its head, dragged under a rotting log.

Another observation concerning "Old Harrier" is worth relating. The world over hawks are known by sportsmen as notorious game-bird killers, and the big New Zealand harrier hawk comes in for more than his fair share of this unjust accusation. Now, it so chanced that I had been keeping a close watch on "Old Harrier's" home life. I noted the time the three eggs took in hatching, and, later, assisted with odd chunks of meat in the raising of the yellow-eyed husky youngsters. One morning while wading through the big tussocks surrounding the nest, a grey duck flapped wildly forth from beneath my feet. There was a nest there containing a dozen or more eggs. I didn't look too closely for fear the mother duck would not return to her brooding. But, this is the point: if the harrier hawks carry out the ruthless destruction alleged against game-birds in general, why did that duck make her nest scarcely a chain distant from that of "Old Harrier?" Proof that the hawk had nested prior to the grey duck was shown in his almost fully fledged family against the other's unhatched eggs. That the big clumsy harrier hawks do obtain odd game-birds is beyond dispute. Nine times out of ten, however, the captured victims are those which have escaped the dogs after being wounded by sportsmen's guns.

So . . . "Old Harrier" lives on. His "scrub-bush" is squashed flat with constant use. Almost every morning his chuckling music can be heard. Whether this singing is unique in "Old Harrier" I do not know, for he is the only one of his kind I have ever had the opportunity of studying closely. But sing he does. And why shouldn't he? For no one molests him.

HARRIER CHICKS. [Photo: Thos. M. Wainwright.

The Late W. H. Guthrie-Smith of Tutira

By R. A. Falla.

BY the death of William Herbert Guthrie-Smith at Tutira on July 4th New Zealand has sustained a national loss. His achievements as a pioneer sheep farmer, skill and patience as a naturalist, and gifts as an author, outstanding as they would have been in themselves, were unique in their combination. It may be said of him that he not only found for himself the real and lasting values of life in a new land, but has shown our own generation and posterity how to find them too.

H. Guthrie-Smith was born in Scotland, and shortly after his schooldays at Rugby came to New Zealand in the early 'eighties. With a schoolmate he served a short cadetship in South Canterbury, but shortly afterwards, in 1882, became part-owner and then sole owner of Tutira, in Hawke's Bay. The story of early hardships and disappointments is told in his greatest book "Tutira," a work rightly to be regarded as a New Zealand classic, and in the best sense monumental. "Tutira" is first of all an inspired book. Its author wrote, and credited the sentiment first in courtesy to the original Maori owners, that "there are some spots on earth that seem to inspire in their owners a very special affection, as if, perchance, there might exist an occult sympathy betwixt the elementals of the soil and those who touch its surface with their feet." And of the book, "if there is anything of value in this volume, it is because of the author's affection for the spot where he has lived so long." Not often has affection been so aptly translated into interpretation : certainly never in so typical a New Zealand setting. In "Tutira" we have recorded not only the story of fifty years of development on a sheep-run, but also a vivid picture of every phase of change in the face of Nature under the hand of man.

Historically and scientifically the value of "Tutira" and of "Birds of Water, Wood, and Waste" lies in the fact that Guthrie Smith, like Gilbert White in an earlier century and another land, has written therein of observations made in one area from day to day, month to month, and year to year, and if we of to-day should fail to recoginse in "Tutira" the counterpart of Selbourne, later generations of New Zealanders will certainly do so. In his other delightful bird books Guthrie-Smith has taken his readers adventuring further afield. His pen pictures and photographs are from island sanctuaries, from forgotten corners of the mainland, and from those more remote islands that fringe the polar seas to the south and the sub-tropics northward. In each of them is found the same rare literary quality, irrepressible and whimsical humour, love of wild creatures and all living things, and a generous appreciation of his fellow men. It is not without significance that his last writing for publication was an appreciation of the late Frank Hutchinson prepared for "Forest and Bird" and printed in the August issue.

Revealing something of his character and sense of values in all his books, Guthrie-Smith did so more than any other in "Sorrows and Joys of a New Zealand Naturalist." A product of his ripe judgment and experience it presents a balanced and classic picture of the stages by which a lovely land rapidly became "little better than a home for white men." Its revelation of joy is that of the patient observer of Nature who is also unselfish enough to be an interpreter.

Mr. Guthrie-Smith was a pioneer and practical exponent of all that the Forest and Bird Society stands for. As a naturalist he combined wide knowledge with keen powers of observation. New Zealanders owe him a debt of gratitude for the interpretation of Nature contained in his books : many hundreds will cherish more personal memory of his helpfulness, hospitality and humour; and all will wish that some lasting and appropriate way may be found to honour the memory of a great man.

THE MEDDLERS.... *The Things They Would Acclimatise* *(By "Ahu-Whenua")*

WE have for ever with us those people who must busy themselves with efforts to introduce animals, birds, even crawlers, which for some reason or other are claimed to be desirable immigrants. Not only acclimatisation societies, but individuals are included in the general term busybodies. Example — the southern people who, per medium of a society, attempted to bring into the country a type of snail (ostensibly for wild duck-feed), which is known to harbour a sheep pest, the fluke. The Canterbury Sheepowners' Union strongly and successfully opposed the proposal because the snail was konwn to be a danger; the sheep liver-fluke had caused huge losses of flocks in other countries.

Fortunately there is a vigilant government department, Internal Affairs, which is on the watch to prevent such mischievous proposals going any further.

We have sufficient plagues of our own without importing more. Millions of slugs are reported from Wellington to be causing a great amount of damage to grass paddocks in the Marton district.

Woodpecker Wanted?

Now there is a man who has suggested that a woodpecker should be acclimatised in New Zealand in order to peck into native trees and kill the wood-boring insects and grubs. There was a poem we used to learn in our school days, with a line which sticks in the memory about the woodpecker tapping the hollow oak tree. Possibly the proposal for introduction was prompted by a sentimental desire to bring a little Northern-Hemisphere life into our comparatively unpecked bush. The fact is that we have a perfectly good and useful woodpecker of our own, the kaka parrot; and we would have another beneficial pecker-out of noxious borer grubs had not our alleged bird-lovers in the past killed out the beautiful and useful huia to fill glass cases.

No More Fur-Bearers.

Yet another would-be improver of our forest life is an English fur-farmer who called at Auckland some time ago and advocated the introduction of the mink and other furry creatures for breeding and building up the skin trade, in the interests of the business that provides lovely women with the pelts of wild animals. This proposal, of course, was not prompted by anything but commercial reasons; its author scouted a suggestion that the mink might become a great nuisance. Nothing doing; New Zealand has had enough of the accursed opossum and doesn't want anything more in the fur department. Except, of course, those people concerned in the business. The orchardists, the gardeners, and bushmen who know the habits of the opossum have repeatedly urged that the creatures be declared a noxious animal, with all State protection removed. It is as great a curse to the trees and the native birds as the rabbit is to the grass lands. The Government still hesitates to take this obviously necessary step because the opossum produces a bit of revenue, but it is not likely to give any encouragement to more fur-bearing animals.

Beaver and Silver Fox.

There was a man a few years ago who advocated the introduction of the beaver for the South Island forest rivers, especially for those of Westland and Fiordland. Our bush streams, he declared, would be just the place for beaver farms, and it would be so interesting to see the colonies of those bright-eyed little creatures. No doubt, also, our young trees would be exactly to the taste of the beaver tribe.

There were others who wanted this and that foreign animal acclimatised here, on one pretext and another. The squirrel was one creature that would be welcome because it was so English and would give a more "Home"-like air to our colonial bush. Still another urged that the silver fox be brought from North America to make free of the Southern forest for fur-trappers' sake.

Once again, nothing doing. The public has been put on its guard against such attempts to bastardize the bush life of New Zealand, and the Department of Internal Affairs consistently declines requests from interested people and from faddists to bring these nuisances into the country. The biological value of scientific

advice is appreciated in official quarters, and the rod-and-gun clubs which call themselves by another name do not carry things their own way as in the past. The Forest and Bird Protection Society gives the Government its stout support in resisting proposals that would interfere undesirably with the bush and bird life.

THE MUSK RAT OR MUSQUASH

By Odonatra.

NOW that our country is at war and every effort is being made to increase production and add to the national wealth, it may confidently be expected that once again some misinformed but well-meainng person will advocate the introduction into New Zealand of the American musk rat or musquash, on the assumption that profit and advantage might result thereby. Its fur is certainly valuable, but the cost to our country, were this animal imported, would be incalculable.

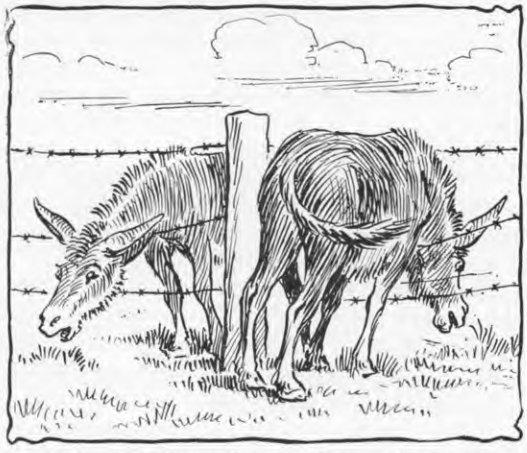
In those parts of North America to which it is native its numbers are kept more or less constant by carnivorous natural enemies, such as the mink; but here there are no such predators which would check its increase. Furthermore, ours is just the type of country, with its warm climate and numerous waterways, in which this animal would rapidly multiply and in which it would be impossible to check its spread. The musk rat infests waterways of all kinds, and does immense damage by burrowing into banks. River banks and dams, etc., are undermined and collapse. Meadow lands bordering waterways are tunnelled into and they ultimately collapse; costly works of irrigation, drainage, embankments and canals are in constant danger. Even in America, in parts lacking the musk rat's natural enemies, great damage has been caused—in some places even enormous concrete structures such as dams have subsided and in others large timber structures have been completely washed away as the result of its activities.

The musk rat's food is both vegetable and animal. It eats vegetable growth on the banks of streams, but is also very partial to corn, potatoes, turnips, carrots, etc.; it also eats molluses, frogs, fish, the eggs and nestlings of ground-nesting birds, and has been known to attack small livestock. It is a prolific breeder, having from three to five litters a year, each litter consisting of from 6 to 8 young. In Germany investigations showed that its numbers were multiplied by ten each year, so that 10,000 this year meant 100,000 next year and a million the following year and so on. No wonder Central Europe had an estimated population of 100,000,000 musk rats twenty years after they were introduced!

Although Central Europe has suffered so severely from this experiment in introducing a foreign animal in the interests of commerce, the musk rat was for the same reasons introduced into England and Scotland in 1927. These animals were not long in responding to their wanderlust and in 1932 their progeny were so plentiful and widespread that the Destructive Imported Animals Act was passed empowering the Ministry of Agriculture and Fisheries and the Secretary of State for Scotland to provide for control and extermination.

Gassing, poison, explosives, and disease are not effective methods in eradicating this pest; the only method lies in a highly specialised trapping technique.

Although England and Scotland have spent thousands of pounds a year since 1932 in an attempt to eradicate this animal, complete success is not yet in sight though the pest has to a certain degree been checked. But the cost is not to be reckoned merely in money spent in control measures; the real cost is to be looked for in the irreparable damage done to river banks, canals, embankments, dams, etc., to crops destroyed, and to fish and other aquatic life eaten.



THE OTHER SIDE OF THE FENCE IS ALWAYS THE BEST.

DISEASE IN BIRDS

A POTENT CONTROLLER

By E. V. Sanderson

DISEASE is a much more potent factor in checking the overpopulation of an area by any particular species of plant or animal than most people realise. Diseases introduced from outside sources in particular may assume plague-like proportions simply because the need to establish reasonable immunity has not been necessary in the past. Thus a simple malady to the white man like measles may play sad havoc when introduced into a race amongst which it has never been known.

The native birds of New Zealand are stated to have suddenly decreased in a wholesale manner before acclimatised foreign predators such as weasles, stoats and rats were established and before the bush was destroyed.

The only apparent reason for this is introduced disease. It is suggested by some that the huia, for instance, was attacked by a tick which was imported with this bird's cousin, the Indian minah.

When the possibilities of introducing new grave diseases are considered, one shudders to think of the danger of introducing some of the virulent diseases with which American waterfowl have to contend. Yet mallard are still occasionally being imported from the United States despite the fact that there are large numbers in this country. Presumably the other side of the fence is looked upon as being the better. Also, numbers of various species of birds are constantly being imported for cage enthusiasts, and here again we have a situation comparable to that of children playing with fire.

Endemic diseases are one of nature's methods of preventing any one species dominating an area, and of eliminating individuals lacking the necessary virility to prosper under existing conditions.

Foresters in other countries are well aware of the danger of planting large pure stands of timber trees. What is the position when animals are crowded together? It is only necessary to look at the keeping of poultry in a confined area. Almost anyone can manage a dozen or so fowls, but directly poultry-farming on a large scale is attempted grave troubles arise. Disease germs in animals are found mostly in a creature's excreta. When, with a desire to help the birds in their time of need during the winter months, we feed them, and in the summer provide artificial baths, we are causing undue concentrations and unless care and cleanliness are exercised, we may do more harm than good, so far as the birds are concerned. A bird bath, for instance, should have a constant trickle of fresh water entering it, and be cleaned out daily. Sponge cake tins, as used by the late Mr. Robert Nelson on Little Barrier to contain sweetened porridge and milk, are probably the best receptacles for bird food, more especially if placed on a wire platform some height above the ground. The birds feed standing on the edges of the tins and the droppings go below on to the ground.

Last summer, for some reason or other, possibly shelter, large numbers of birds, including hundreds of sparrows, decided that the small grounds around my home were a suitable place for a district dormitory. Soon the place began to take on the odour of a fowl yard, but the satisfaction of procuring such a lot of guano without charge made me overlook this. Suddenly the birds deserted for pastures new and clean.

Nature demands, as we all know, that man, too, has to contend with disease, but what would the result be if, for instance, the sanitary arrangements of a community broke down or were destroyed by war or if we were unable to bury the dead. War is generally followed by famine and at times plague. Perhaps after all, these dreadful happenings of war are merely Nature's means of cleansing mankind and reducing his numbers in order that a limited number of his species may survive. With his efficient sanitary arrangements man is able to defy Nature's restriction of population by disease, at any rate for a time, and to go on his evil ways of destroying the source of his main food supplies—the soil. Nature, however, cannot be defeated. She is well able to look after her own and save man from himself. Her inevitable day of reckoning will come sooner or later. Is it here now?

THE FUTURE OF THE WANGANUI

T. W. DOWNES' RIVER

(By J.C.)

THE change in the administration of the Wanganui River will be followed with much interest by the people, pakeha and Maori, who live on the banks of that long waterway, and those who have occasion to use it for travel. It was announced recently that the river will no longer be dealt with by the Trust Board, which will now cease to exist. The Public Works Department will in future undertake the expenditure of any funds voted for maintenance and improvement of the river as a navigable channel, and the Lands Department will manage the Domain lands, over 30,000 acres, which border the river. Some £500 per annum is produced in revenue from the leased lands on the sides of the Wanganui. This has heretofore been spent on improvements to the channel and the care of the banks. Now there will be no special revenue available for the river; all the money will go into the Consolidated Fund.

This change—though it is not so stated—is, I think, a consequence of the death two years ago of Mr. T. W. Downes, of Wanganui, who was the life and soul of all the work undertaken for the preservation of the scenic beauty and the maintenance of the channel of navigation. For many years he was supervisor for the River Trust and principal moving spirit. He lived on the riverside; he cruised up and down the river in his motor launch, and at an earlier period he made many long canoe journeys. He knew every elbow and every curve, cliff and cave from Wanganui town to Taumarunui, a distance of 136 miles. He gathered its history from the Maoris who lived in the many villages, and who had fought against or for the white Government. He wrote about the Wanganui—he preferred to give it its correct spelling, Whanganui, with the "h" and published several books about it. He grieved to see how settlement and bushfelling had despoiled it in the upper parts and spoiled the navigable channel by causing landslips, accumulation of shoals, and aggravating the alternate heavy floods with a rapid run-off and the silting up in the lower parts. It may rightly be said that Downes' life was bound up with the preservation of the river and the bush that gave it its chief landscape value, and with the work of keeping it open as the most beautiful and useful waterway in New Zealand.

Now that T. W. Downes no longer cruises and watches his beloved river, it is a question whether any strong guardianship will operate in his place.

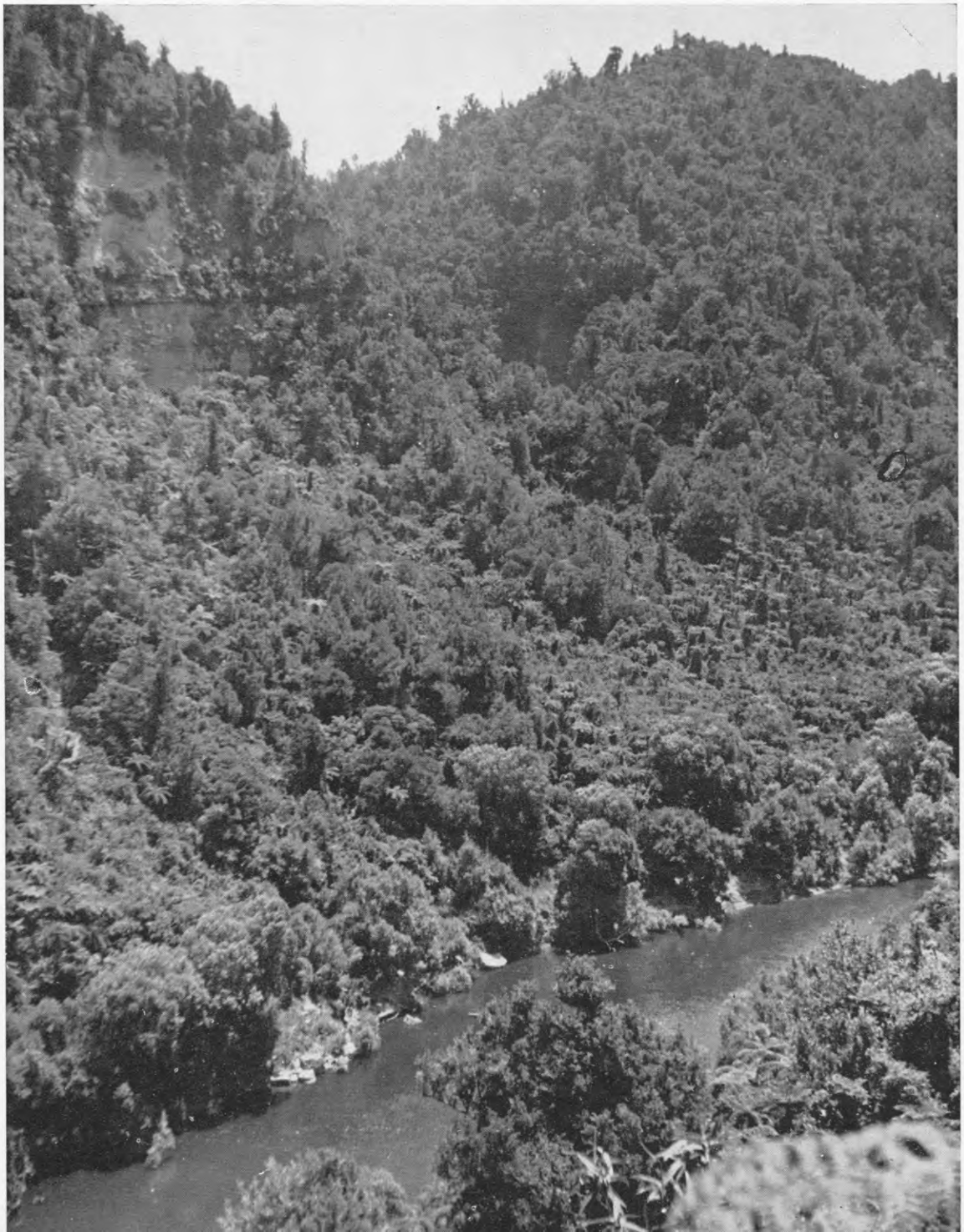
The Wanganui is a far more valuable river than most people realise. Not merely is it a tourist route; it is a natural channel into the forested heart of the North Island, the road which cost nothing for upkeep until the pakeha came to spoil it. Rivers are the most economical of roads, and they should be used to the full. The problem of maintaining the Wanganui lies first in its head to watershed stripped of bush by timber companies and the operations of struggling settlers who should never have been placed there at all. The erosion of land which is becoming more serious every year is particularly marked in the Wanganui river system.

This erosion has been assisted by a road which was made some years ago up along the steep east bank of the Wanganui as far as Pipiriki. In its making much forest was destroyed, and the bank was ruined in many places; the road continually slipped away, and it is still slipping after rain. It must have cost a lot of money for maintenance; the water-road on that lower part of the river costs nothing. Such a river would be rightly valued in any other country. It is of more value at less cost than many a road, and travel along it is infinitely more pleasant. But there is always a call for a road for motor travel, and in the road goes at whatever cost in destruction of the bush and erosion of the banks.

The bird life of our islands is a priceless possession. We can enrich it if we will by preserving and fostering those birds that are established residents or regular visitors and by extending a hospitable welcome to all feathered wayfarers that reach our shores. This should be our pride and our boast, for the old era that worshipped stuffed skins in glass cases and cabinets full of empty egg shells is passing away, and in the new era which has already begun, we are lovers of living, free-winged birds."—Charles S. Baque.

A Remnant of the Scenic Beauty of the Wanganui River

[Photo: M. J. Lang.



MUTTON BIRDS

THEIR ARDUOUS LIFE

(By Rosaline Redwood.)

IN September they come—thousands of dusky-winged mutton-birds, flying in mass formation like a black cloud suspended between heaven and earth. From distant Northern Asiatic shores they make their graceful flight, covering an almost incredible distance, to New Zealand's Mutton Bird Islands, a straggly, scattered formation of bush-clad islands lying off the coast of Stewart Island.

When the long migratory trip is almost over and the islands come in sight, some uncanny instinct guides them to their old nesting ground, where year after year the same birds and their families nest. The flocks wheel and scream in winged excitement, and when each bird is above the right area of land it closes its dusky wings and simply drops to earth. This is certainly a strange method of landing. Some birds are killed by the fall, while the others lie for a moment as if stunned, then scuttle down their empty burrows.

It is stated that the birds know the burrows which they occupied the previous year, and these they commence to clean out, preparatory to laying. The burrows, which extend usually a few feet into the spongy ground of the islands, are so numerous that they fairly honeycomb the surface in many places. It may be necessary for the younger birds to make fresh burrows, but, whatever the case may be, both male and female birds share in the labour, working tirelessly without thought of food until the task is accomplished. Leaves of the mutton-bird tree are used to line the nest.

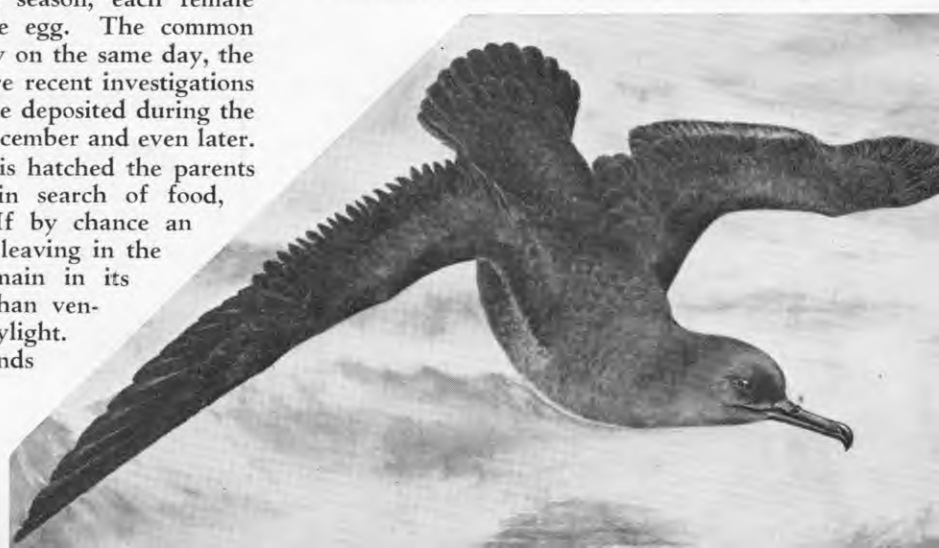
Following the mating season, each female lays its one large, white egg. The common belief is that all birds lay on the same day, the 25th November, but more recent investigations have proved that eggs are deposited during the months of November, December and even later.

When the young one is hatched the parents leave before daybreak in search of food, returning after dusk. If by chance an adult bird is delayed in leaving in the early hours, it will remain in its burrow all day rather than venture out in broad daylight. The birds leave their islands in mass formation, fishing in flocks, sometimes many miles from land. It is fascinating to watch these dense black clouds of birds. The leaders of the flock swoop gracefully ahead of shoals of small fish, heading them off, and then diving commences. Although the mutton-bird is practically helpless on land, it is a strong swimmer and fast flier, and small fish fall an easy prey to its sharp beak.

All day the birds gorge on fish, and at dusk bear down on their home islands again, the noise of thousands of wings being deafening.

There is great excitement in the burrows. The young one pushes its beak inside that of the parent, and the partly digested bits of fish on which the parent has been feeding all day are vomited up. On this fare the young one soon becomes very fat, and by April is often larger and fatter than its parents. In appearance it resembles a soft grey fluffy ball. However, the Maori mutton-birders, who commence their annual killing season in April, are not deceived by the young bird's apparent softness, for they wear protection on their hands and arms before reaching into the burrows. The bird has a sharp beak and can also use its feet to advantage, and as the scratches it inflicts often fester badly, the natives take necessary precautions.

About May some of the old birds leave, but a few always remain behind for another month or so to guide the numerous young ones which escape the mutton-birders, back to the place whither they and their ancestors have gone for



THE MUTTON BIRD.

centuries. In the meantime the young birds are gathering strength for their first long flight. The oil which is secreted in their crops becomes stronger, and is the main source of nourishment on which they must rely. With the parents gone and no food supply available, the chicks live on their store of fat. They become thinner and more vigorous, and adult plumage appears. At night they flop out of their burrows and test their wings awkwardly, flapping them aimlessly.

And then the great day arrives when they congregate on suitable ledges of rocks from which they are able to leave with ease, and the first flight lasts until the young wings are tired, when the bird comes to rest on the water. After a short spell off it goes again, this time for a longer flight—and so on until it reaches its distant destination.

The mollymawk and other vultures of the deep know exactly when the mutton-birds will leave their islands, and they come from far and wide to gather in the locality of the Mutton-Bird Islands, there to wait for the prey that is theirs. Many birds are drowned each year, and some are blown out of their course by strong winds and left to perish, but it is certain from the number that return that most of them reach their migratory land safely.

Such is the arduous life of one of the most fascinating and remarkable of New Zealand's migratory birds.

BIRDERS HUTS ON A MUTTON-BIRDING ISLAND.

THE COVER PICTURE—WHITE HERON OR KOTUKU.

THESE birds have always been exceedingly rare in New Zealand, their only breeding ground, so far as is known, being on the West Coast of the South Island.

However, the birds make their appearance in many parts of New Zealand and a pair have appeared on the Waimea mudflats in Nelson and stayed throughout the winter months for the last five years. The bird in the photograph was snapped at a farm near Nelson, where it had arrived early in the morning. When the fowls were fed it walked among the poultry and, with a lightning-like dart of its dagger-shaped bill, impaled a luckless sparrow, which, after much shaking, it swallowed whole, feathers and all, the shape of the sparrow being plainly visible as it slipped down the long slender neck of the Heron.

NATIVE GREY DUCK

By Ahu-Whenua.

There is one important measure of protection which is still awaiting the approval of the authorities. This is the complete protection of the native grey duck for a period of years; three years is the shortest term likely to be of any use in arresting the diminution of the species, which is being brought about mainly by overshooting, with perhaps the destruction of its feeding grounds, and the depredations of rats as other important factors. One careful observer reports that 90 per cent. of the grey ducklings on his property are killed by these rodents.

There is an acclimatised bird that could with benefit take the place of the grey duck for sport, and that is the swan, both the black and the white. Swan are greedy feeders, and their increase means the decrease of the duck and also of the pukeko and grebe in the lakes and lagoons.

It may be laid down as a safe principle in forest and in lake and river life that any foreign wild creature is injurious to our native birds and bush. And it may also be accepted as a principle of control that every native creature is of some use or other in the scheme of Nature if unspoiled by acclimatised animals. That the shags and even the hawks that arouse the rage of acclimatisation societies have their place in the balance of Nature is supported by scientific evidence.

[Photo : Rangi Webber.

BIRD PHOTOGRAPHY

By Roger T. Peterson in "Bird Lore."

SOME psychologists would insist that our pursuit of birds is a remote survival from primitive times, when every man had to hunt to keep alive. This would seem to be most true of bird-listing, where the sport lies in bagging birds with a glass, especially new or rare species. For that matter any earnest occupation could be regarded as a civilized substitution for hunting. Although few men now need to hunt for food, the urge is there in modified form. Millions still shoot for sport; others, with a distaste for the taking of life, subconsciously enjoy the thrills of the chase by shooting their quarry with a camera. This takes greater skill than handling firearms but there are not so many prohibitions and limitations. There are no open or closed seasons; no protected species; no bag limits. The same bird can be "shot" again and again, yet live to give pleasure to others beside the photographer. . . . No photographic activity that endangers the lives of birds, their eggs or young is worth risking. . . . In photographing a nest, do not disturb it too much. Tie back obstructing foliage temporarily, but do not break it off or remove it. In photographing nests on the ground, be especially careful not to cause too much disturbance, as a well-defined trail attracts the attention of cats and other ground predators. . . . Under normal conditions between 50 and 65 per cent. of the nests of small birds are destined to failure through natural causes. Bird photography should not impose an additional strain on the natural mortality. . . . Without a sense of responsibility or a code of ideals when we photograph birds, we are not fulfilling our obligations as good conservationists.

PREDATORS

Campaigns of predator control are inspired by an unfortunate misunderstanding, or lack of knowledge, of the whole subject. Indiscriminate campaigns are launched against hawks, ignoring the now general recognition, even among sportsmen, that the majority of these species are beneficial. Other so-called predators are the object of vendettas with utter disregard for scientific justification for such control. Any predator control activity should be based upon conclusive scientific evidence and practised by trained personnel under competent supervision. Furthermore, killing campaigns are no way to teach young people conservation.—"Nature Magazine."

CONTRASTS IN NATURE)))))))) *By Waiatua*

((((((((((((((RAIN-FOREST RIOT ABOVE, ARID LANDS BELOW

EXTREMES of climate are not usually found placed side by side. If you have a hot and dry desert restricted to vegetation that loves arid country, you do not find a cold and intensely wet dense forest within five miles of it, on the same plane. Such contrasts do not exist horizontally, but they do exist vertically. If your five miles of travel be upward and not merely horizontal or sideways, you can enter at noon a climate diametrically opposite to the climate you quitted at dawn. In few cases is this fact illustrated so amazingly as in the Cloud Forest of the San Juancito mountains, in tropical Honduras, Central America.

The Cloud Forest looks directly down a hot, arid valley as remote (in climate) from the Cloud Forest as the Equator is from the Pole.

From the cold shade of a forest ledge the traveller looks down a steep canyon side "to an arid land of acacias and cacti." In the evening "the temperature drops into the low forties—can this be the tropics in July?" And higher up in the Cloud Forest it is still colder.

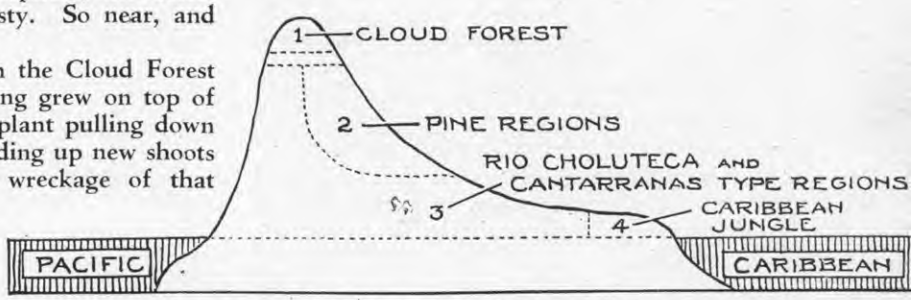
The quoted sentences are from C. Brooke Worth's article in "Bird Lore" on his Honduras wanderings. The clouds of the Cloud Forest are formed, in intense wetness, on the mountain ridges where meet the air-currents of two oceans—the Pacific and the Atlantic, or the Caribbean branch of the Atlantic. "Great masses of vapour are condensed, drenching the jungle with cold torrents of water, or penetrating the saturated jungle-depths as an even more frigid fog. My shoes squish on the rotting floor of the jungle. Gushing streams spring from the ground as from a sponge, to cascade down the mountain and evaporate in the desert below." For, however much the Cloud Forest above drinks from the atmosphere, the desert below remains hot and thirsty. So near, and yet so different!

The "mass of verdure" in the Cloud Forest is thus described: "Everything grew on top of everything else, one tree or plant pulling down the other and constantly sending up new shoots which scrambled over the wreckage of that which had fallen."

Now compare this with a passage from our famous New Zealand botanist Cockayne: "The New Zealand forest as a whole differs greatly from nearly all forests of the Temperate Zones, in so much as it comes into the same class as that type of tropical lands known as rain forest. . . . That complex of conditions induced by the forest itself is manifest in the life-forms—shrubs which, in the open, would be rounded and symmetrical, or extremely dense, put forth long, slender stems; and saplings have often much reduced branches and long main stems, or they may mimic scrambling leaves. In short, the forest exhibits extreme luxuriance of growth, and Nature, as it were, runs riot."

In those last seven words the late Dr. Cockayne sums up the vegetative vitality of our rain-forest, and shows that it compares in principle, if not in detail, with the riot of Nature in the Cloud Forest of San Juancito. Therefore much of what C. Brooke Worth writes in "Bird Lore" will appeal to a New Zealand reader, although we cannot look down from our mountain ledges on "arid land of acacias and cacti." But we can look down from our rain-forest on many rich contrasts offered by the lower lands. We can look upward, too, and note the contrasts of the tussock lands and the mountain meadows. Our Cloud Forests — for cloud is a thing to which New Zealand mountains are well accustomed, both below the bush-line and above—are rich and wonderful, as Cockayne has shown.

But how many New Zealanders read Cockayne; and who shall take up Cockayne's work of instruction?



ZONAL DISTINCTIONS IN HONDURAS. The lower belt of the cloud forest may be subdivided into a region of second growth. Notice the much steeper gradient and lack of coastal jungles on the Pacific side.

THE PROBLEM OF SOIL CONSERVATION

Condensed and adapted from an article by Dr. G. V. Jacks, Rothamsted, England, in "Trees," July-September, 1940.

IT has been said that "Nature treats the Earth kindly, man treats her harshly." The truth of this statement becomes apparent when we realise that the necessities of life all come from the soil, and that Nature takes care that every member of the community of life, whether animal or plant, plays its part in keeping the soil healthy, but that man often destroys the soil by means of over-grazing or over-cultivating grassland and burning or over-cutting the forest.

As a result of any or all of these activities of man, there are large areas of the world in which the soil has lost its stability and has become liable to be washed or blown away by rain or wind, or, in other words, is eroded. This type of erosion is not to be confused with the natural process of denudation also called "soil erosion." This natural process is an extremely slow one and has always, throughout the ages, taken place; its effect is to enrich, not to destroy, the soil.

Destructive soil erosion has reached immense proportions in many parts of the world during the last 20 years. Untold millions of acres have been destroyed. Once started it rapidly, very rapidly, spreads. Usually "sheet erosion" is the first state; that is, after every rain thin layers of soil are washed away. Soon, the whole fabric of the land is so weakened that gullies begin to form; "gully erosion," as it is called, has started. These gullies spread fanwise with great rapidity and unless the erosive process is checked these gullies will ultimately meet and the land will then be entirely useless. Also, as there is by this time little soil or vegetative covering to absorb rainfall, uncontrollable floods are caused in the rivers fed by this land. Well-known examples of recurrent disastrous floods caused by soil erosion over vast areas are those of the Mississippi and Yellow Rivers. Huge dykes built to enclose the channels of these rivers often burst with disastrous results, and it is a fact that often the beds of such rivers are in places so filled with eroded soil that they are raised above the level of the surrounding plain.

Where the land is level and treeless the effects of wind can be as destructive as those of water if the plant covering has been removed and the soil pulverized by cultivation. Everyone has heard stories of American farms in the "Dust Bowl" having all their soil blown away in a single dust storm.

It is more than possible that the disappearance of many former civilisations has been due to mismanagement of the soil, or as Dr. Jacks expresses it "to the cumulative effects of human greed which caused men to pay too much attention to the satisfaction of their desires and too little to the maintenance of their defences against the forces of nature." The sands of many a desert cover the remains of numerous ancient cities, many of which must have been thriving and luxurious; but in our own time American farmers in the "Dust Bowl" are being driven off once prosperous farms which, in a few months or even weeks, are converted into sandy deserts.

Dr. Jacks entirely disagrees with the oft expressed view that man is a harmful parasite on the earth, upsetting the smiling face of nature, and considers that no other form of life can, or does, raise the productivity of the earth higher than does civilised man. He cites the case of scientific agriculture in Britain in support of his statement.

In Europe the demands of closely populated towns raised the productivity of the land to a high level and when these demands were such that they exceeded the limit of productivity of the land, supplies of food from abroad were made available by the opening up of virgin land. These virgin soils were in no condition to stand an increased and, for them, unnatural production. In Europe the *productivity* of the soil was increased before extra production was attempted; in these virgin soils productivity was not increased and they were soon exhausted and then eroded. Soil exhaustion appears to be the real cause of soil erosion of cultivated land.

It has been shown experimentally that a crumb structure enables a soil to resist erosion

best. A healthy soil consists of particles aggregated into crumbs of various shapes and sizes according to the condition of its formation, and this structure is formed chiefly by the action of the roots of vegetation and of humus. Forest gives more protection, by itself, against erosion than grass; but compensating for this the crumb structure is most highly developed under grass. Chiefly for this reason grassland can often be intensely cultivated for some years before erosion becomes manifest, whereas cleared forest land may begin to be eroded long before the soil is exhausted. To prevent erosion on cultivated land, care must be taken that no deficiencies, especially in humus and nitrogen, develop; and the utilizers of the land must enter into such a relationship with the land that the stability of the soil is preserved and its fertility increased.

It will become apparent that erosion prevention and control is largely a social question as well as a scientific one. In the United States, where a soil conservation technique is well established, there is a definite trend away from extreme individualism towards co-operation, not only between individuals but also between states. Amongst primitive peoples, however, the problem is different. Erosion is usually caused among them by overgrazing and wasteful cultivation, and it is exceedingly difficult to persuade or even to force them to adopt a system of agriculture which means changes, often drastic changes, in their agricultural habits. And when a change in agricultural habits will often mean revising and re-ordering the local system of land tenure and ownership (in parts of Africa such a change may even involve inter-tribal relationships), the control of erosion passes from the soil chemist to the sociologist. So the problem is more than merely that of the structure and composition of any particular soil and its covering; it is a problem deeply concerned with the attitude of mind of the users of the land respecting the function and purpose of the land. Given the correct mental attitude towards the land plus a sound scientific knowledge of the soil much of the now waste or wasting exhausted land may be reclaimed, but scientific knowledge alone can accomplish very little. Sad to relate, this aspect of the problem is not restricted to primitive peoples.

STAGES LEADING TO EROSION

[Photo : Thos. M. Wainwright.

[Photo : K. H. Barfoot.

[Photo : D. Allan.

CHILDREN'S PAGE

FRIENDSHIP WITH BIRDS

By Flora Patie

THE possibility of cultivating the friendship of our own native birds is proved by the stories of some bird-lovers who, with infinite patience and sympathetic understanding, have succeeded in gaining the confidence of their little feathered friends.

Usually the secret is in providing suitable food regularly throughout the winter months when the birds are hungry, but occasionally an injured bird or an orphaned baby bird has given the opportunity to show what kindness and care can do in the way of winning the trust of the little stranger.

There is always the temptation to take advantage of a little bird's helplessness and to keep it as a pet, in captivity, but this usually results in the bird's pining for its liberty and dying, in spite of the good intentions of its captors. The ideal method of giving an injured native bird perfect freedom brings its own reward as is shown in the following story from Southland.

Four years ago last March bush-fellers at work in the bush at Tokanui heard the cries of a native pigeon as she circled round a fallen tree. One of them, Mr. Lionel McEwan, hunting around for the cause of the alarm, found a young grey pigeon that had dropped out of its nest. It was impossible to restore it either to the nest or to the mother bird, and, noticing that it was injured, he rolled it up in his jersey and took it home to his wife. The little bird was carefully tended and later was given to Mr. McEwan's mother.

"He was just starting to grow his feathers when we got him," writes Mrs. R. McEwan. So the baby bird's kind friends had the pleasure of watching its down give place to the beautiful gay plumage of the New Zealand native pigeon.

The hungry bird refused nothing in the way of food: "Bread, tea and sugar, cake, butter, wheat or anything" offered was acceptable to him and for two years he was content to live in his adopted home. Then for the first time he ventured out into the world in search of his own kind.

Some months later there was a flutter at the back door and the pet pigeon flew in, sure of a warm welcome. "Yes, we can handle him," says Mrs. McEwan, and," she added, "he coos just like any other wild pigeon."

Periodically, at the call of the wild, the pigeon flies off to the forest—once he remained away for nine months—but always he returns to the home that sheltered him in babyhood. As if to prove to the forest birds the truth of the tale that he had told them, he sometimes brings with him other native pigeons, from three to seven in number, which come close to the house but do not venture inside as the pet pigeon does. "He taps on the door when wanting entry and flies right in on to the table and he comes once or twice a day for his meals."

To have been the means of saving the life of this young pigeon and rearing it successfully would be reward enough to any bird-lover, even should the bird choose to remain in his forest home, but to see him returning again and again of his own free will and claiming them as his friends must bring a thrill of pleasure to Mrs. McEwan and her family.

For those who take the trouble to befriend the birds, there is many a glad surprise as well as much entertainment and enjoyment.

W. H. GUTHRIE-SMITH WITH HIS TAME PIGEON.

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FOREST AND BIRD PROTECTION SOCIETY

OF NEW ZEALAND (Inc.)

APPEAL FOR BEQUESTS.

Is there any cause more worthy of bequests by public-spirited citizens than the objectives of the Forest and Bird Protection Society, which is working wholly and solely for the welfare of New Zealand, present and future? Here is a suggested form of bequest:—

"I give and bequeath the sum of ..... to the Forest and Bird Protection Society of New Zealand (Incorporated), and I declare that the receipt of the Treasurer for the time being of the said Society shall be a complete discharge to my executors for the legacy hereby given to such Society.

The work and record of the Society, the personnel of its membership and Executive are a good guarantee that the best possible use will be made of such bequests.

CALL FOR SANCTUARIES.

The Society would also welcome the responsibility of administering suitable sanctuaries for land or sea birds, provided that a small annuity is added for the payment of a caretaker. *Such sanctuaries could be named after the donor, and would thus be a perpetuation of his name as a saviour of New Zealand's forest and bird life.* It is suggested that such sanctuaries should be administered in a manner to ensure their return to their original and natural conditions as nearly as possible.

OBJECTS.

To advocate and obtain the efficient protection and preservation of our native forests and birds, enlisting the natural sympathy of our young, unity of control of all wild life, and the preservation of sanctuaries, scenic reserves, etc., in the native state.

Affiliated with the Society for the Preservation of the Fauna of the British Empire (Patron, His Majesty King George VI.) and with the International Committee for the Protection of Wild Birds.

The Forest and Bird Protection Society (of N.Z. Inc.), invites all those who have respect for our wonderful and unique native birds, all those who realise the great economic and aesthetic value of birds, all those who wish to preserve our unrivalled scenic beauties, to band together with the Society in an earnest endeavour to fully awaken public interest and secure efficient preservation, conservation and intelligent utilisation of our great heritage.

The subscriptions are—Life members £5, Endowment members £1 per annum, Ordinary members: Adults 5/-, Children 1/-. Endowment members comprise those who desire to contribute in a more helpful manner towards the preservation of our birds and forests. Besides this, we ask for your co-operation in assisting to conserve your own heritage. Is it not worth while? This Magazine is issued quarterly to all subscribers without further charge.

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