



Forest and Bird

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BITTERN

FOREST AND BIRD PROTECTION SOCIETY

OF NEW ZEALAND (Inc.)

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NEW ZEALAND IN PERIL.

IT has been suggested that New Zealanders sometimes are not over-quick to see possibilities, that no matter how urgent a matter may be they take a long while and much persuasion before the necessity for action is apparent to them. Of course, such an allegation may be warmly resented by many New Zealanders, but it is a well-known fact that in certain vital matters the people, in the mass, are not easily roused. Indeed it has required a disaster occasionally to make them take notice.

The recent tragedy at Kopuawhara, where a great wave of water suddenly came down the river and engulfed the sleeping occupants of a Public Works camp can be cited as an instance. There is important evidence to indicate that the extraordinary sudden abnormal wave was traceable to the short-sighted cutting of the forest on the watershed of this river. The long-delayed sequel was a land-slide which, in combination with debris and logs, blocked the river for a time. Suddenly, however, the water overcame the obstruction and swept down the river bed in an overwhelming wave.

Like the wave of water, public opinion suddenly rose and in a similar manner quickly subsided. Will the Hawkes Bay lesson be also disregarded?

The possibilities of like disasters almost anywhere in this forest-denuded land, with its gorges and mountains, did not occur to the majority of people. Yet the way has been prepared for similar revenge of Mother Nature from one end of the country to the other.

Of course, persons who are interested in cutting down the remnant of the highland forests for their own particular ends will glibly say that floods have happened in New Zealand from time immemorial. So they have, but not in the same manner as they do to-day. When this country was forest-clad, rises and falls in rivers were slow; a longer time was taken to run surplus water away. What a change the blunders of man have made. Surely readers of the daily papers should begin to be alarmed by the frequent flooding of rivers, which quickly surge over their banks after heavy rain. Let us not forget, too, that it is this ten or fifteen per cent. of water which the river channel is unable to carry in flood time that causes the damage to the surrounding land, the destruction of bridges and much other loss.

It is well known by many observers that, if a survey of the erosion conditions in New Zealand was made by an expert not materially interested in local forest matters and in no manner influenced or trammelled by persons concerned in forest exploitation, the report would stagger New Zealanders and would show that Australia's erosion by wind and America's wind and water troubles, bad as they are, would be light in proportion to area.

At present many of the people of New Zealand are too prone to see the mote in the other person's eye and fail to realise that the bigger one is in theirs. In other words they do not see the possibilities, but some day they will be forced painfully to recognise the truth of these words of the great Leonard Cockayne: "When erosion assumes the mastery man is helpless." Will New Zealanders sleep on and continue to permit the destruction of the remnant of our upland forest, and then, like the lady driving a car

when danger looms ahead, put up both hands and scream and await the inevitable crash, or will the instinct of self-preservation move them to take drastic action, insisting that the forest covering on watersheds must be left untouched and replaced where now denuded?

AUGUST IS BIRD MONTH.

ONE GOOD TURN BRINGS ANOTHER.

PROBABLY not one reader of this Journal would be unwilling to offer food to friendly birds when winter makes it hard for them to pick up a living in the ordinary course of things. Some may intend to put up suitable feeding trays, but defer the good action until the need of it has passed by. Instead, they may throw out crumbs and scraps of other food in places where cunning cats may pounce on the birds, or may steal the meal. Rats, too, will be on the alert for such provender.

Well, dear procrastinators, now is the time to set up feeding trays where the birds will be able to eat without fear of their prowling enemies. This kindness to birds from May to October, especially in the hardest month of all, August, carries them in good health and strength through the winter, so that they will be able to raise sturdy families in the spring. It is really a case of one good turn bringing another, for the birds wage war on the hordes of insects and grubs which like to prey on man's vegetables and other crops in the spring.

Apart from this material reward for kindness to feathered friends, there is heart-warming pleasure in watching them in a front or back garden, flitting and fluttering in all manner of delightful ways.



KAKA AT FEEDING STATION.

Photo courtesy Mrs. A. S. Williamson, Kapiti Sanctuary.



THE BITTERN — MATUKU-HUREPO.

(*Botaurus poeciloptilus*.)

(By R. A. Falla.)

THE boom of the Bittern is a sound associated with marshlands in many parts of the world, and in New Zealand a representative species is still common in suitable districts. Indeed, the only reason why this morose-looking bird is not more frequently seen is that the colour of its plumage matches so closely the surrounding vegetation and the bird's behaviour is often such as to aid the deception.

In the cover illustration published with this article attention is focused on the details of the bird, but an observer who has come across Bitterns in their native haunts will know how difficult it is to make out the details of the bird's shape and plumage. As a means of protection, the Bittern has a curious way of assuming the shape of a stick or stump with its beak pointing upwards and feathers close pressed to its sides. Should it happen to be amongst long grass or rushes it becomes almost indistinguishable. Occasionally, however, this attitude is adopted in the open, and apart from looking rather like a stump of wood, the bird is then quite conspicuous.

The Bittern obtains all its food from the swamp or from the moist lands adjacent. While the reduction in the area of swamp country must have considerably decreased the total number of Bitterns during the past century, a plentiful food supply has done something to offset the decrease. There seems little doubt that the comparatively large numbers of Bitterns still to be seen on very small areas of swamp must be due to the abundant food supply furnished by the introduced Australian frog which now forms a very large part of the bird's diet. Native fish and small eels are also eaten, and the Bittern has no scruples also about taking the young of other water-fowl when it gets the chance.

Like practically all native birds, it is included in the list of protected species, and is at present not in any danger of molestation except from irresponsible shooters and some few anglers who labour under a delusion that trout can be most easily lured with an artificial fly made from Bittern feathers, or "Matuku" feathers as they are called in this connection.

There is also some danger that inexperienced people may mistake the Bittern for the Harrier Hawk. It is about the same colour and size, and, when it rises with heavy flight and its neck drawn in, is not unlike a hawk at first glance.

The nesting season begins about September and is a fairly long one, as nests are sometimes still being made in December. They are substantial rafts of sticks and broken rushes, always well hidden in the surrounding vegetation. Indeed, a Bittern sitting closely on its nest has a very good chance of escaping detection.

The eggs are a very pale greenish colour, almost white, and five is the number most usually laid. If they escape the attention of passing Hawks or prowling Pukekos, all the eggs are usually hatched and the five chicks sprawl rather helplessly on the nest at first, protected by one of the parents while the other brings the large quantity of food necessary for their nourishment. They are not quite as ugly as other nestlings of the heron family and have a fair covering of buffy down. Their throats are enormous and of great elasticity, and each chick can, without difficulty, swallow the frog or other morsel almost as large as itself, which suggests that the rest of the body is just as elastic as the throat.

As they grow older they develop defensive habits and look most ferocious as they spread their half-sprouted wings and glare defiance. When fairly well feathered, but still unable to fly, they adopt other means of protection by leaving the nest when danger threatens and hiding themselves in the surrounding rushes. If the water is deep enough they will even slide entirely out of sight, gripping the base of the reeds with their feet and leaving only the tip of the bill exposed above the water. Still later, when they have left the nest finally, they use similar devices for protection, as well as adopting the frozen attitude so characteristic of adults.

The deep-throated boom of the Bittern is heard generally only in the spring. At other times the bird is silent except for an occasional croak of alarm or annoyance uttered when on the wing.

"BURNING OFF." A SCANDALOUS WASTE OF TIMBER.

IT is no exaggeration to describe as criminal the practice which still continues of felling and burning indigenous forest in order to replace it with grass. It is a crime against the country; the landowner or the lessee of Crown land or Native land who deliberately sets fire to bush simply to clear the land is not only guilty of destroying valuable property but is committing a grave anti-social offence. There may be no law to prevent it; it is none the less a crime against the wellbeing of a land which is already in great need of the timber and is far too sparsely forested.

It seems extraordinary after all that has been spoken and written about the folly of the crude "burning-off" methods, that the ignorant and uneconomic practice is still carried on in some places, as if the native bush were just a cumbering of the ground.

The occurrence reported from Dargaville in the middle of January appears to call for action by the Government. In spite of warning by the Forest Service, a block of some seventy acres of felled bush adjoining the southern side of the Waipoua Kauri Forest was set fire to, with the result that twenty men under the officer in charge of the State Forest spent two strenuous days fighting the flames and preventing the fire from crossing the boundary. It was stated that the owner of the felled timber had been refused permission to light any bush within an area contiguous to Waipoua, because of the dry weather and the consequent danger to the kauri forest. All settlers there, in fact, had been warned not to set the bush on fire. Yet someone did, with very grave danger to the national forest.

Apart from the obvious risk of damage to the Waipoua State Forest—which should long ago have been proclaimed a national sanctuary—there is the injury to the country's indigenous timber resources involved in this bad old habit of chop-saw-and-burn. If the felled timber were milled and turned to account in that way, there would be some sense in it, some justification for the felling. But simply to destroy everything, to make a clean sweep of the bush with fire, is simply wicked waste.

It does not matter whether it is privately owned or not. No landowner or occupier can be allowed to be a law unto himself. There is

some antiquated legislative provision about giving notice to neighbours before burning off. That is absurdly inadequate and out of date now. Notice or no notice, felling timber simply to reduce it to ashes is a relic of the bad old past settlement of New Zealand. There is a vast amount of tree waste in the ordinary operations of the sawmillers. There is an infinitely more deplorable spectacle when a tract of bush is given over to fire-raisers. "A good burn-off"—too familiar phrase—stands for a disgraceful squandering of the country's natural wealth.

FORESTRY IN ENGLAND.

One who should openly follow our "cut out and get out" method for the sake only of money getting would be considered unpatriotic, disloyal, and undesirable for social recognition. Private ownership as a public trust is widely recognised in England.—Philip W. Ayres, in "American Forests."

ROADS *versus* WILD-LIFE.

To build a road is so much simpler than to think of what the country really needs. A roadless marsh is seemingly as worthless to the alphabetical conservationists as an undrained one was to the empire-builders. Solitude, the one natural resource still undowered of alphabets, is so far recognised as valuable only by ornithologists and cranes.

Thus always does history, whether of marsh or market-place, mice or men, end in paradox. The ultimate value in these marshes is wildness, and the crane is wildness incarnate. But all conservation of wildness is self-defeating, for to cherish we must see and fondle, and when enough have seen and fondled, there is nothing left to cherish.

Some day, perhaps in the very process of our benefactions, perhaps in the fulness of geologic time, the last crane will trumpet his farewell and spiral skyward from the great marsh. High out of the clouds will fall the sound of hunting horns, the baying of the phantom pack, the tinkle of little bells, and then a silence never to be broken, unless perchance in some far pasture of the Milky Way.—Aldo Leopold, in "American Forests."

HIS CLAIM TO HEAVEN.

DR. Axel Munthe, the author of "The Story of San Michele," recently confessed that for three years he has been pondering over the filming of his immortal bird story.

The great question that caused the delay was whether a love story should be added. The film people who negotiated with Dr. Munthe did not know whether they could sell birds. They knew they could sell love.

"They complimented me," writes Dr. Munthe, "on having kissed the beautiful young nun in cholera-stricken Naples, but they could not get over it that I had not run away with her. Breaking it to me as gently as possible, they finally informed me that they were at a complete loss to know what to do with me in their scenario. I seemed to be everywhere and nowhere. To show them my goodwill, I offered to run away with any woman they liked if, more lucky than I, they could persuade somebody to run away with me. As for the lack of murders, I suggested a compromise. I told them that, having been a hard-working doctor for twenty-five years, I might at least see my way to supply their scenario with a few cases of manslaughter."

But the negotiations with the film people who wanted love, or murder, or sex appeal finally broke down, and Dr. Munthe goes on to say:

"After three years of hard thinking, I have now at last consented to have the book filmed by another company at their own risk and peril, on the sole condition that the film should become a gospel of kindness to all animals. I have loved animals all my life; all that is best in me I have given to them, and I mean to stand by them to the last."

"What solace and pure joy have I not derived from my beloved birds. How could I live without them? Is there anything more moving than the rhythmic beating of the wings of the migratory birds high overhead? Is there in the whole world's literature a greater lyric poet than the skylark pouring out his very heart to heaven and earth in his immortal hymn to the rising sun?"

Munthe Relies on the Birds.

"Capri was known to the Romans as a favourite resting-place for the migratory birds. In the Middle Ages the island was for centuries the seat of a bishop entirely financed by the sale of the netted and trapped birds of passage; the quail-bishop he was called in Rome. Not many years ago I counted over two thousand migratory birds caught during one single night in the nets spread over the mountain slope behind San Michele before the mountain became mine. Shortly after the publication of the Italian translation of 'The Story of San Michele,' the whole island of Capri was declared a bird sanctuary by a Government decree."

"It was worth writing a book for such a price; it is, besides, the only thing I have achieved during my long and useless life that has given me any lasting satisfaction. It will be the only thing I shall have to say in my defence to my stern judges when the day of reckoning comes. But perhaps it would be better to bend one's head and say nothing and leave it all to the birds. I have always had luck, and maybe when all seems lost a blackcap will fly past and sing into the ear of the nearest angel to put in a kind word for me if nobody else will. I am sure God must be a great lover of birds, or He would not have given them the same pair of wings He gave to His own angels."



FOREST AND BIRD SOCIETY BADGES.

Metal badges nicely designed in gilt and nephrite green enamel are now being issued by the Society, at the price of 1/6, or in silver and paua shells at 7/6 each. These latter make handsome brooches.

The stock of albums depicting 24 forest-inhabiting birds in colour is now nearing exhaustion. Those wishing to secure copies should therefore make immediate application. Each picture is 9in. by 6in. and is accompanied by an adequate description or lecturette of the bird depicted.—Price 12/6 per copy.

BIRD FACES FIRING SQUAD.

MR. PARRY, THE GREY DUCK, AND CULTURE.

"NO other countries," writes Eric Hardy in "Contemporary Review," "take such pains over their bird-life as do the Anglo-Saxons."

Now, is this true? Do the Anglo-Saxons (that is to say, the people of Britain and the Dominions, and the people of English-speaking North America) lead the world in protection of bird-life? One would like to answer "Yes" to that question, because bird-protection (when real and not a pretence) is a sign of human culture. And we all like to think that we are a cultured people.

We in New Zealand particularly like to think that we are more than usually cultured. Some of us also say that politically we lead the world. But can we say (except with our tongue in our cheek) that we lead the world in bird-protection?

UTAH'S SANCTUARY EXAMPLE.

Probably the "Contemporary Review" writer was never in New Zealand. If he came here and if he found out all about the species we have lost, and the species that are in danger, and the pigeon-poaching that some parts of New Zealand are almost proud of, it is doubtful whether he would include New Zealanders among those Anglo-Saxons whose bird-consciousness he praises.

For instance, could he pay us any compliment whatever for our treatment—past and present—of the grey duck? This magnificent native bird carries the gunners and the Acclimatisation Societies on his back, and they are killing him as surely as the Americans of fifty years ago killed their game species. But there is the difference—while the gospel of bird-protection has at last reached the Americans and other English-speaking peoples, that gospel has so little penetrated New Zealanders that, even in this year of grace 1938, it is carrying to the grey duck no real help. The grey duck has his back to the wall. But there is no Government in New Zealand courageous enough to call off the firing squad permanently; or alternatively, to

provide the grey duck with sanctuaries in the land that was his long before the white man reached it.

The remedy is being pointed out to us in Utah, the American territory that erected a monument at Salt Lake City to the gulls that saved the pioneers' crops from insect attack, incidentally saving the lives of the early Utah settlers. It is fitting that Utah should utilise for a wildfowl sanctuary its alkaline wastes. And it is to be hoped that readers of the February issue of "Forest and Bird" will have read the article on Utah sanctuary measures in the light of an example to New Zealand.

WATER-FOWL AND WASTE LANDS.

A Government survey of waste or almost worthless areas containing swamps suitable for water-fowl sanctuaries would almost certainly reveal that—without any serious or costly expropriation of private land—a chain of such sanctuaries could be established throughout New Zealand. "The small administrative staff" mentioned in the Utah article would of course be required. The sanctuaries would cost something in up-keep, even if it cost little to acquire the areas. And it is no use shutting one's eyes to the fact that money would have to be spent. But if taxation is to be so heavily and permanently increased in New Zealand as the figures of recent years reveal, why not expend some of the money in bird-culture, which, as shown above, is taken to be evidence of human culture? New Zealand is not leading the world when she can spend so many extra millions in railwaying and roading the back-country, bringing motor cars and guns into the haunts of wild-life, and yet cannot spend anything on bird sanctuaries, and very little on rangers. Probably in the whole of New Zealand there are not more than ten paid rangers.

The alleged ascendancy of Anglo-Saxons in bird-consciousness may or may not be a fact, but New Zealand's cultural contribution to it is poor indeed.



LACK OF RANGING; THE LIGHT HE ABHORS, BUT RARELY MEETS IN
NEW ZEALAND,

EXIT HAWK—ENTER MOUSE.

RODENT PLAGUES COMING.

AS a nuisance to agriculture, the meadow mouse ranks high and its work is far more insidious than that of most animals or insects, as its depredations usually go on completely unsuspected in hay, clover and alfalfa fields. Tests have shown that it actually takes 23 lbs. of green food a year to support one meadow mouse, not to mention what is cut down and not fully eaten. As 100 meadow mice to the acre is not unusual (during "mouse plagues" they have been estimated at over 1,000 to the acre) it is easy to see that this number will reduce the crop yield by a ton of green or a half-ton of dry hay per acre. The U.S. Department of Agriculture estimates that on the assumption that probably no farm land to-day averages less than 10 meadow mice per acre, the loss on the 65,000,000 acres of hay fields in the country runs to a minimum of 3,000,000 tons of hay a year, and more if predator destruction allows mouse populations to rise above the 10-per-acre figure.

That meadow mouse populations are generally above this figure of 10 per acre (and tending to increase) is apparent in many regions, as the continued killing of rodent predators (Hawks, Owls, snakes and carnivorous mammals) reduces the mouse's "natural enemies." The meadow mouse has often been called the "staff of life" for carnivores (meat eaters) because it transforms annually an enormous amount of vegetable food into animal food which is then available to support a great variety of carnivorous birds and mammals. So long as the meadow mice are here we need all those species that prey upon them, although, of course, meadow mice themselves in certain numbers do have their own important role to play in nature's scheme.

Attempts at artificial control of meadow mice, through poison, appear little short of ridiculous when one considers the reproductive rate with which nature has endowed the meadow mouse, presumably so that it might survive in a world where it normally is preyed upon by so many "enemies." If provided with an abundance of food they have been found to produce 17 litters a year from 2 to 9 young, the average being 5.

As the young are ready to breed at the age of 25 days, the potential increase of one pair exceeds a million individuals in a year's time.*

Many people simply cannot believe this figure until they work it out for themselves, and one wonders how anything is able to keep meadow mice in check. The answer, though, seems to be that under normal conditions the rate at which they breed just equals and balances the rate at which predators catch and eat them. For this to be true, predators and other causes must destroy 43 mice a year for every mouse of the normal, average population; that is, they must crop 430 mice a year on each acre, on the basis of a normal breeding population of 10 per acre as assumed above, if the average mouse population of that area is not to rise.

Of course, many factors tend to vary this. A high population level leads to a greater availability of mice to natural enemies (assuming there are some left), or as is often said, the mice become more vulnerable to predation, and as a result the number taken exceeds the number raised and the population level tends to be reduced. On the other hand, nature has ways of looking out for all her wild animals and should the meadow mouse population be lower than normal they will be more difficult to find and catch, causing some predators to eat fewer and causing many to move to other regions where the food supply is better.

The ability to move about is a characteristic of most animals. Among the species that prey on others it reaches its highest development as an adaptation to fluctuations in available food. In this way they save themselves from death if their normal food becomes difficult to obtain in a certain area, as it may from time to time, as a result of many possible causes.

The extent to which animals move varies greatly, but birds as a group represent the maximum of mobility, and because of their ability to shift rapidly over long distances, they are outstandingly effective as controls on plant-

* Breeding, Feeding and Other Life Habits of Meadow Mice," Vernon Bailey, Journal of Agricultural Research, February 23, 1924.

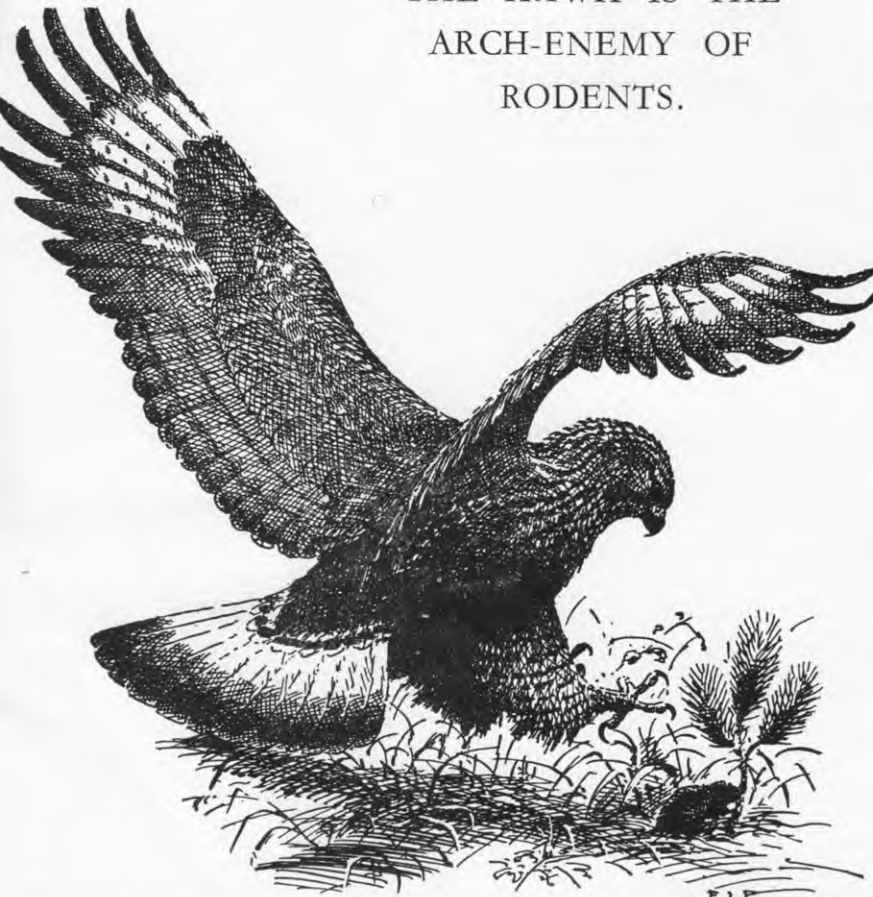
eating species that tend at times to assume the proportions of a plague. Certain examples of this sort are famous. The appearance of the tremendous flocks of Franklin's Gulls that saved the crops of the early Mormon Settlers in Utah from grasshoppers, is now commemorated by a monument. The appearance of great numbers of not only Hawks and Owls, but Crows, Herons, Jays and Shrikes, has invariably been noted at times of mouse or vole plagues both in America and Europe.

The story of the meadow mouse and the way its presence affects all other living things, plant and animal, that occur in the same surroundings with it, is just a typical example of the complicated interrelationships that exist in the world of nature. These are gradually being unravelled by men known as ecologists, whose interest is in knowing how each living thing is

affected by and affects the surroundings in which it lives, and the other living things that inhabit these surroundings with it. Gradually these ecologists are learning that every native species fits into the great pattern of life. Each occupies a vital niche in the structure that supported the varied and abundant wild life that once inhabited this Continent. Unquestionably, this wild life would be more abundant to-day if man would only understand nature's mechanisms and instead of needlessly upsetting them, turn them to his own uses by allowing them to continue to maintain those natural checks and balances that we are finding so necessary to the healthy adjustment of the relative abundance of all species of living things.

—Richard H. Pough, National Association of Audubon Societies.

THE HAWK IS THE ARCH-ENEMY OF RODENTS.



Mice and rats eat nestlings, eggs and seeds. They also girdle seedlings and exact a heavy toll from our food supplies, besides carrying disease, yet we wage war on their real enemy.

THE WRYBILL REMEMBERS.

WISDOM-LINK WITH REMOTE PAST.

As a challenge to New Zealand youth to take up bird-watching, with all its charms and hardships and risks, the veteran Guthrie-Smith's latest (and, he says, his last) book is of inestimable value. It is called "Sorrows and Joys of a New Zealand Naturalist." It shows the veteran getting into camera range of nests and young birds at all levels from ground to fifty feet, and in all sorts of positions by sea and land. The bush canary nests in the highland nothofagus (beech) forest of the Nelson hinterland at heights of frequently over forty-feet, in knot-holes of the beech. To observe the coming and going of the birds, a wooden stage is built at equivalent height in a near-by beech, and there the observer waits with his camera. The stage-material must be hoisted to this great height and secured there, and everything must be done in a way not to scare the birds into nest-desertion. After the hard work come weary vigils in all weathers. Is not this the finest and most unrewarded (financially) of all national services? Who will take up the work from which the veteran naturalist is retiring? Who will pay the price, in time and labour, of wrestling domestic secrets from native bird-life?

Down by the sea, the reader of this book sees the naturalist seeking the blue heron on rocky islets, and spying on the nest and young in spray-sprinkled caves, where the waves sing romantic tunes, but where smugglers come not. The scene changes to the shifting rivers of Canterbury (distinct from gorge-bound rivers), and here is found the nest of the wrybill, unapproachable by vermin (stoats, weasels, etc.), unless they can swim the swift channels into which a river like the Rakaia divides. With such channels on either side, the nest is defended by Nature. But a hundred years ago the wrybill had no stoats or weasels to fear. How, then, did the wrybill learn this secret of water-defences? Does the wrybill's wisdom date back to some earlier period of predatory risks of which history knows nothing?

Mr. Guthrie-Smith thinks it does. "This racial wisdom of the wrybill—though superfluous for centuries, for what had the wrybill to fear from the indigines of old New Zealand, the bat and frog, its harmless neighbours of the immediate past?—may in one period have been a trait of cardinal consequence inherited from ancestral types living millions and millions of years ago, in other times, when other more predatory beasts were prevalent."

Whatever the reason, the wrybill remembers that it is a bird of the bifurcated stream; and now that vermin are here, the Rakaia's water-courses are barriers that safeguard the wrybill's nest. Wrybill wisdom has found a purpose—but no thanks to the white man!

Some day it will be recognised that Mr. Guthrie-Smith is one of the most charming writers who have ever succeeded in gaining intimate touch with Nature. Pages 61 to 66—early morning in the forest, the daily miracle of dew and sun and wind—are in themselves worth all the money this book is sold for. Nature-lovers and all the world can join in reverence to this beautiful piece of Nature-worship.



VANISHING KITE.

A PREDATOR THAT IS WANTED BACK.

THE British kite, like the New Zealand shag, is a bird of prey. The British kite was once abundant, as our shag still is. But owing to the policies of man—not merely his direct enmity, but the changes he has wrought in the British countryside—this century has seen the numbers of kites that nest in the British Isles reduced almost to vanishing point. "The nesting haunts of the kite in Britain are now confined to about half-a-dozen pairs in the wooded dells of Radnor and Brecon in mid-Wales."

To prevent the little Welsh colony of kites from dying through in-breeding, some English naturalists paid peasant egg-collectors in Spain to send to England fresh eggs from the nests of Spanish kites. To make this experiment succeed it was necessary:—

- (1) To keep close watch on the Spanish kite nests so that the eggs should be taken when fresh, and before being incubated by the bird.
- (2) To turn the collected eggs regularly, so as to keep them fresh.
- (3) To avoid packing them on end.
- (4) To send them to England by the speediest means—that is, by air.

In 1934 thirteen kite eggs were conveyed from Coria to Seville, where a German air service took them to Madrid and Barcelona, after which Air France took charge of them, and the eggs flew to England. But that was the last flying they were destined to do, because the Spanish senders had broken condition No. 3 (do not pack on end).

Other batches of kite eggs arrived in good condition in 1934 and 1935, and were placed in the nests of Welsh buzzards, where some of them hatched out.

So far the result of this attempted reintroduction of the kite is uncertain, particularly as the Spanish war prevented the collecting in Spain from being continued after 1935.

Is it not better that we New Zealanders should allow the shag to remain unmolested in

his natural home—he is a much older New Zealander than we are—than reduce him to one in-breeding rookery? Perhaps a future, wiser generation will spend much money and labour in reintroduction experiments if the present generation of gunmen does succeed in decimating our shag. But the lesson of the British kite is that predators have their purposes, and that, in dealing with native birds we should leave well alone.

"The laws of Nature (writes 'Bird Lore') demand the sacrifice of life that it itself may live. If we attempt to control the numbers of those animals which prey upon other animals we should ourselves become the greatest of destroyers. If we favour one form of life it is probable that we shall do so at the expense of other forms of life. It behoves us, therefore, to use our power with extreme caution, always remembering that it is far greater for evil than it is for good. We can destroy where we cannot create."

In "The Natural Enemies of Birds" Forbush states: "Natural enemies of birds are necessary and desirable as they tend to maintain within proper bounds the number of species on which they prey; organised attempts to increase the number of birds over large areas by destroying indiscriminately all natural enemies are undesirable; under certain circumstances enemies which have been able to adapt themselves to man and his works and have become unduly numerous may require reduction in numbers; individuals of useful species which may become particularly destructive should be eliminated."

"To those who know a bird's spirit it is plain that a mere suspension of hostile action on our part would have the effect of altering their shy habits, and bringing them in crowds about us. Not only in the orchard and grove and garden walks would they be with us, but even in our house." —W. H. Hudson.

THE DEER MENACE.

Timely Warnings Unheeded.

Attention to the menace of plant-eating animals in our native forests has frequently been drawn in the past by various authorities, such as Dr. L. Cockayne, but it was not until the Forest and Bird Protection Society took the matter in hand and broadcasted the gravity of the question throughout the land, that corrective measures were begun.

The following paper by the Rev. P. Walsh, which was read before the Auckland Institute, in August, 1892, is an instance of many such unheeded warnings:

With the exception of that of the domestic animals, most of the attempts at acclimatisation that have been made in this country have been unfortunate. The small birds are a severe tax on the farmer; the rabbits threaten to break up the estates of the large landholders, who are said to have celebrated their introduction with a champagne lunch; while the stoats and weasels, from which so much was expected, have not only failed to accomplish the object desired, but are already, in the destruction of native birds, and in their depredations in the fowl-yard, proving themselves an intolerable nuisance.

Still, though the mistake is now generally admitted, the attempt in these cases was somewhat justified by the hope, delusive though it soon proved to be, of some tangible benefit that would more than compensate for any attendant evil. This justification, however, can hardly be allowed in the case of deer, unless their introduction be accompanied by certain restrictions that have not hitherto been observed. For, although there may be few forms of enjoyment to equal that which would be found in stalking the grand game amongst our forest-clad mountains, still those in a position to enjoy the sport would necessarily form but a fraction of our population, while even the keenest sportsman would hardly be content to purchase his own gratification by the destruction of that forest which is the glory of his country and the birthright of the community at large.

To those who are unacquainted with the New Zealand bush it may seem strange to associate the idea of destruction with a few head of these innocent-looking creatures. They are perhaps familiar with the idea of an Old Country deer-park, where the animals wander harmlessly among the sylvan glades with no other effect than that of giving life and beauty to the

landscape; and they would be surprised to learn that the presence of the deer would prove more injurious to a rata or a kauri than to an elm or an oak. And, indeed, if they made the comparison at all, their conclusion would probably be in favour of the giant growth and the massive density of our own forest. The two conditions, however, are entirely different, and the comparison is not so easily disposed of. The European forest or deer-park, it must be recollected, has grown up *subject to the presence of ruminants of various kinds*—that is to say, the several species of trees and shrubs composing it have overcome (perhaps with artificial assistance) any struggle they may have had when young and weak, and the whole is now able to take care of itself. Again, the understuff in a great part consists of seedlings from the older trees, of which, though many may have been cropped or broken, a sufficient number have survived to replace the older growth. And, besides this, the floor of the forest is generally covered with a quantity of grasses, fern, and brambles, which spring up every year, and which amply supply the wants of the animals.

But in the New Zealand bush the case is quite opposite to all this. The forest has grown up through the course of ages undisturbed by any four-footed enemy whatever. In its virgin state there is no grass, properly speaking, at all, while the undergrowth of ferns, shrubs, and seedling plants, once destroyed, can never be restored. And, moreover, the constituent portions are so dependent on each other for nourishment and protection that, once the balance has been disturbed, the entire growth rapidly suffers.

It may seem incredible that the towering kauri or the giant rata, whose twisted limbs, loaded with a fairy garden of epiphytes and climbing plants, have weathered a thousand

storms, should be in any way affected by the removal of a few insignificant plants from about their base. But so it is. They, and all, or nearly all, of the larger trees in our bush, are dependent for their very life upon the growth which is so thoughtlessly allowed to be destroyed. As may be easily seen after a bush-burn, or where a tree has been overturned by the wind, the principal roots scarcely penetrate the ground. Running like a network of tangled snakes along the surface, they are protected by a sort of humus composed of decaying vegetable matter, which is kept in a moist condition by the multitude of ferns, mosses, and small plants of every kind which occupy every inch of space wherever the forest is undisturbed. Once this growth has been destroyed, which very soon happens when a browsing animal is admitted, a change begins to pass over the scene. The larger trees, deprived of the shelter at their feet, gradually grow thin and open at the top. The cathedral gloom and the damp solitude in which flourished the palm-like nikau and the stately fern-tree are penetrated by the burning sun, and invaded by fierce and parching winds. All the magic profusion of grace and beauty begins to shrivel and die; and as further desiccation takes place the unprotected roots can no longer support the strain they have to bear, and every here and there some hoary patriarch falls crashing amid an acre of ruin. And thus the game goes on: each step in the chain of destruction preparing the way for the next at an accelerated rate of progression until the ruin is complete, when sooner or later the desolated region is swept by the fire from some neighbouring clearing, and at last a few charred stumps and bleaching skeletons are all that is left to mark the irretrievable loss of a paradise of beauty.

That this destruction is constantly going on may be seen in all the older settlements, where it may be observed in the rapidly-shrinking area of the standing forest and in the prevailing grey and brown tones of the tree-tops, which, with the dry and lifeless branches, impart an air of gloomy monotony to the portions which still remain. In some districts whole families of trees are fast disappearing. Of the tawa, a tree of very wide distribution and one whose value is just beginning to be recognised, it is now in many places a rare thing to find a perfect speci-

men.* The thin bark on its slender superficial roots bleeds to death on the slightest injury, and the tree rapidly perishes. The mahoe and the ngaio, once found in abundance on the Auckland isthmus, are now almost a thing of the past; and the whau, a handsome broad-leaved shrub which flourished in rich volcanic situations, is, in most settled districts, practically extinct.† Other trees make a longer struggle for life; but, sooner or later, with few exceptions and under more than usually favourable circumstances, they all succumb to their change of condition.

* See Kirk's "Forest Flora of New Zealand, article "Tawa."

† L.c., article "Whau."

NOBLE PERHAPS; BUT DISASTROUS IN NEW ZEALAND.

(From a drawing by R. Bruce Horsfall in "Nature Magazine.")



DEERSKINS.

THEIR PREPARATION AND SALE.

(Extract from *New Zealand Gazette*, No. 42, 17th June, 1937.)

THERE is no protection on deer in any part of New Zealand. The animals may be destroyed at any time, but it is, of course, necessary to have the consent of the owner or controlling authority to go on land.

Deer-skins are marketable, and, where private persons experience any difficulty in otherwise disposing of such skins, the Department of Internal Affairs will accept and pay for those skins coming up to requirements. Chamois-skins are accepted under the same conditions.

The price which will be paid for deer-skins accepted as first grade will be 2s. 3d. per lb. dry weight.

Where skins do not come up to first grade requirements they will, where considered by the Department's Inspector to be marketable, be accepted at a lower rate, or the skins may be entirely rejected. The Inspector's decision will be final, and it must be clearly understood that skins are submitted on this understanding, and that any skins absolutely rejected will be destroyed.

Persons desiring to submit skins should first communicate with the Under-Secretary, Department of Internal Affairs, P.O. Box 7, Government Buildings, Wellington, when statement forms and advice as to the destination to which the skins are to be sent will be forwarded. Statements *must* be prepared in duplicate (two copies) and sent to the same destination and at the same time as the skins. Skins received at the depots, for which there are no statement forms, will not be examined or any payment made until such statements are received.

The Department will not be responsible for losses of skins. The possibility of loss of skins in transit can be minimised by tying bundles securely and putting the name on each skin, when green, with indelible pencil.

The Department's Inspector will visit receiving depots about the end of February, April, June, September, and December.

Any freight charges not paid by the person sending in skins will be deducted from the amount payable.

Skins taken from August to December (inclusive) are lighter and of poorer quality than those taken from January to July (inclusive). Those taken during March, April, and May are the best quality and greatest weight, and every effort should be made to secure skins during these months.

The continuance of deer-skin markets is entirely dependent upon the skins being submitted in the best possible condition and so trimmed that every portion of each skin is of full value to those using the leather made therefrom.

The Department reserves the right to vary the conditions or to discontinue acceptance of skins at any time.

The following directions as to skinning, curing, packing, etc., are supplied:—

1. Skins *must* be dried by hanging over a tightly stretched wire or a pole, with the flesh side out, and thereafter folded only along the crease made from neck to tail. They *must not* be stretched by pegging out flat. During drying, which should be done in the shade in warm weather, edges must be prevented from rolling or sticking back, and frequent attention in this respect is essential. Spring clothes-pegs should be used to keep skins straight and prevent wrinkling and edges rolling.

2. Bleaching is caused by leaving out skins in alternate rain and sunshine. Bleached skins will be rejected.

3. Skins that are badly wrinkled, knife-marked, dirty, damp, moth or weevil infested, stale, torn, rat-eaten, rock-bruised, or otherwise damaged, or with fat or flesh left on, or with excessive bullet-holes, will be rejected. It is imperative that all skins be thoroughly dry before being bundled, as one damp skin will ruin many others. Any damp skins will be immediately destroyed on receipt at the depot. No fat or flesh should be on the skins. The Department's deer-destruction parties recover some thousands of skins annually, and the "First Grade" standard adopted in the grading

of skins submitted by private commercial hunters is one which experience has shown to be readily attainable by men of average skill with reasonable care.

4. Deer must be so skinned and skins so trimmed that front shanks (leg-skins), all points, hind shanks lower than half-way down to hocks, and neck shanks higher than the throat-line, are not included. The neck-skins of heavy stags must be cut off not higher than half-way between the shoulder and the ears and in all cases the ends of neck-skins must be cut square. In trimming, any bullet-holes near edges must be cut through to avoid leaving any narrow portions between the holes and the edges. Skins not trimmed to requirements will be further trimmed before weighing and the cost of labour so involved deducted from the amount payable.

5. Bundles must be securely tied with light rope. Wire must not be used. *Skins must be treated with powdered naphthalene on hair side, after being dried, to keep away moth, etc.* The greatest care should be exercised to see that deer-skins are at no time dried or stored in sheds where old sheep or deer-skins, or pieces thereof, are stored or lying about, as these may be infested with moth or weevil, or both, and are therefore sources of danger to the deer-skins. Skins must be kept flat, folded along the backbone line as they come off the drying line, and bundles must contain as near as possible twenty skins each. Each bundle must show on the left-hand bottom corner of the address tag the name and address of the sender and the number of skins in the bundle.

6. Recent investigations in connection with tanned deer-skins have revealed the fact that one of the main points which detrimentally effect their value is that of damage to the "grain" surface (the outside) by rocks. As the maintenance of satisfactory markets can only be achieved by hunters doing all possible to eliminate all conditions that detract from the value of skins, it is imperative that rock-damage be obviated as much as possible. While it is realised that in some cases some such damage is unavoidable, much can be done during skinning to prevent further damage, and any seriously damaged skins must not be submitted.

Note.—With a view to further assisting persons desirous of shooting deer for commercial

purposes, the Department of Internal Affairs will supply .303 Mark VII military ammunition at 10s. 6d. per hundred rounds, freight payable by the purchaser. The purchase-price must accompany all orders for this ammunition, which may be obtained from the Conservator of Fish and Game, Rotorua, or the Custodian, Government Buildings, Wellington, Christchurch, Blenheim, Nelson, Hokitika, Dunedin, or Invercargill.

J. W. HEENAN, Under-Secretary,
Department of Internal Affairs.

Wellington, 11th June, 1937.

OPOSSUMS.

A number of Acclimatisation Societies have applied for a close season for opossums this year. The value of such skins is at present at a low ebb. Thus is the ground being prepared for another menace such as that of rabbits and deer. The presence of opossums in our forests can easily become another major disaster if the price of skins remains low.

One forester claims that these creatures confine their harmfulness to orchards and gardens. It is certainly difficult to follow the logic of such a declaration, nor do observations and reports uphold such a claim.

Apart from the damage done by the opossum themselves, grievous harm is done by trappers in the forests who are not restrained from heavily blazing well matured trees and slaying many saplings. Their traps, too, kill and maim numbers of kiwi and other birds.

Revenue, however, has been forthcoming from opossum skins in past years, and when this is the case its recipients are usually prepared to gloss over all the harmful assertions and take the risk of another grave menace being encouraged.

Future historians, no doubt, will be able to record another unheeded warning if skin values remain low, and the taxpayer will have to shoulder a further burden.

One Tree—One Forest.

(By G. R. Lomas.)

The big trees of California have the reputation of being the largest trees in the world, but in the North Island of New Zealand are trees with twice the timber yield of the towering Sequoias.

These are the Kauri trees (*Agathis Australis*), whose habitat, according to R. W. Firth, is confined to the Auckland Province, where, in the State Forest of Waipoua, may be seen some magnificent specimens of these giants.

In the Tutamoe Forest, adjoining Waipoua, grew the largest timber tree in the world, mentioned in the Government Report on Waipoua Forest by D. E. Hutchins.

This tree measured 22 feet in diameter and contained 295,788 super feet of sawable timber, whereas the largest Californian tree recorded in the Congress Report 397 of 1912 on Calaveras Big Tree National Forest contained 141,000 super feet.

As a tree with 1,000 cubic feet of timber is generally considered a very big tree, this New Zealand giant with 31,416 cubic feet is as large as thirty-one big trees elsewhere!

Comparing this tree with European forests—an acre of medium quality spruce has, at 120 years of age, about 10,000 cubic feet of timber, whereas this single Old Man Kauri has a timber stand of three acres.

The cross-cut saws used to fell these mighty trees are operated by four men, and forty-six people have stood together on the stump of a fallen monster.

The growth of these trees is slow, averaging about one foot per year, and some now standing are estimated to be over twelve hundred years of age.

In his Botanical Report, Dr. Cockayne aptly describes the Kauris—"huge, grey, shining, columnar trunks whose heads tower over the rest of the forest, giving the impression from a distance of one forest superimposed upon another."

We Are Getting Better —In Certain Ways.

(By Stephen Haweis.)

If there is one thing in which the change for the better is most obvious it is in the relations between man and the animals. It was in the beginning of the world that the hunter was paramount—one degree removed from the beast—but he killed, like a respectable beast, for necessity, and because his intelligence had not yet developed to the point where agriculture provided him with food. Thereafter he fought for his right to eat what he had planted against animals that had not come to understand the sanctity of private property. The domestication of animals was another step, and if he treated them cruelly it was because his own struggle for life was cruelly hard and he saw his beasts of burden only as means to an end. Two thousand years ago the animal was for use alone. Two hundred years ago nobody doubted that the screams and antics of tortured animals were a legitimate source of amusement. We have made progress; certain forms of cruelty are no longer regarded as legitimate at all. Let anyone attempt to beat a dog, or roast a living cat in public, and the progress will at once become noticeable to the meanest intelligence.

No doubt great numbers of people still derive pleasure from modern sport that they can obtain in no other way—that they know of. The low-grade man cannot be appealed to through his intelligence. For him, "Thou shalt not kill!" was written. Those of finer intelligence can be reached by reason. They already limit their bag to a real minimum and create their own difficulties to increase their interest; they may even be weaned to the use of the camera gun, but the greatest hope lies in their learning something about the lives of the creatures they go forth to slay. The man who knows his wildlife soon begins to take more interest in the life than in the death of his game. When this leaven comes, it is safe in his hands.

Excerpt from "Nature Magazine."

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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 (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 their 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 (President, Dr. T. Gilbert Pearson).

Recognising that it is essential for all those who desire to save our Forest and Bird Life to band together, I enclose herewith my subscription of £..... as a subscriber to the Society. I shall be glad to receive the quarterly magazine, "Forest and Bird," without further charge.

SUBSCRIPTIONS:

Children	£0 1 0 per annum
Ordinary	0 5 0 " "
Endowment	1 0 0 " "
Life	5 0 0