



Forest and Bird



KERERU OR KUKU
N.Z. PIGEON

NUMBER 52

MAY, 1939

ISSUED QUARTERLY

FOREST AND BIRD PROTECTION SOCIETY

OF NEW ZEALAND (Inc.)

HEAD OFFICE: WELLINGTON, N.Z.
UNION BANK CHAMBERS, FEATHERSTON STREET. P.O. BOX 631.

LIST OF OFFICERS.

Patrons:

His Excellency the Governor-General of New Zealand, THE RIGHT HON. VISCOUNT GALWAY, G.C.M.G.,
D.S.O., O.B.E. Her Excellency VISCOUNTESS GALWAY.
REPRESENTATIVE OF THE MAORI RACE: THE RIGHT REV. THE BISHOP OF AOTEAROA.

Executive:

PRESIDENT: CAPT. E. V. SANDERSON.

DU PONT, MRS. A. J. ASTON, B. C., Esq., F.I.C., F.R.S.N.Z.
GILMER, MRS. KNOX MENZIES, D. R., Esq.
MORICE, DR. C. G. MORRIS-JONES, A., Esq.

Hon. Treasurer: ERIC LAWSON, Esq.

Vice-Presidents:

ANDERSON, SIR ROBERT, Kt., C.M.G.	Invercargill	GUTHRIE-SMITH, H., Esq.	..	Tutira
ARCHEY, GILBERT, Esq., M.A.	..	KIRK, MAJOR J. R., M.B.E., J.P.	..	Wellington
ASTON, B. C., Esq., F.I.C., F.R.S.N.Z.	Wellington	MACLEAN, LADY	..	Napier
BENHAM, DR. W. B., M.A., D.Sc.,	..	McCASKILL, L. W., Esq., M.Agr.Sc.	..	Christchurch
F.R.S., F.Z.S.	Dunedin	McKAY, DR. WM.	..	Greymouth
COBELDICK, WM., Esq., F.R.G.S.	..	McLEAN, W. E., Esq.	..	Wellington
COWAN, J., Esq.	..	MENZIES, DR., Esq.	..	Wellington
DRUMMOND, JAMES, Esq., F.L.S., F.Z.S.	Christchurch	MILNER, F., Esq., C.M.G., M.A.	..	Oamaru
FACHE, GEO. C., Esq.	Gore	MONCRIEFF, MRS. P.	..	Nelson
FALLA, R. A., Esq., M.A.	..	MYERS, DR. J. G., Sc.D., F.E.S.	..	Sudan
FELS, WILLI, Esq., C.M.G.	Dunedin	SLADDEN, BERNARD, Esq.	..	Taneatua
FRASER, W. M., Esq.	Whangarei	THOMSON, G. C., Esq.	..	Dunedin
GILMER, MRS. KNOX.	Wellington	THOMSON, J. B., Esq.	..	Invercargill

Representatives:

NORTH AUCKLAND—E. T. FROST, Esq., Kaitiaki.	TARANAKI—W. W. SMITH, Esq., Hotel Cargil, New Plymouth.
AUCKLAND—T. W. M. ASHBY, Esq., Town Hall.	NELSON—MRS. P. MONCRIEFF, The Cliffs, Nelson.
BAY OF PLENTY—B. SLADDEN, Esq., Box 52, Taneatua.	CANTERBURY—L. W. McCASKILL, Esq., Train- ing College, Christchurch.
POVERTY BAY—W. McLEAN, Esq., Otoko,	OTAGO—G. C. THOMSON, Esq., Dunedin.
HAWKE'S BAY—DR. D. A. BATHCATE, 1005 Karamu Road, Hastings.	SOUTHLAND—J. B. THOMSON, Esq., Invercargill.

HON. AUDITOR: W. S. WHEELER, Esq. (Watkins, Hull, Wheeler & Johnston).

CONTENTS OF THIS ISSUE.

	Page		Page
New Zealand's Vanishing Forests	1	Cartoon	7
A Lost Ambition	2	A Friendly Chat About Shags	8
Kereru or Kuku—N.Z. Pigeon	3	Poverty or Conservation	10
The Reef or Blue Heron .. .	4	A Lesson From Nature	12
National Suicide	5	The Birds' Necessary Place in	
Jack Miner's Waterfowl Come		Nature	15
Home	6		

NEW ZEALAND'S VANISHING FORESTS

WHAT IS THE AREA OF THE REMNANT?

FEW if any of the rising generation have ever seen New Zealand bush in its natural state, simply because very little, if any, exists. The question now asked is: What is the area of remaining forest-covered land which is in a state approaching its natural condition?

A Ministerial statement made at the Bush Conference in 1937 gave the area of remaining forest land, including scrub and land covered with second growth, as 20 million acres. What was meant by the term "forest lands" was not explained. A statement made in 1939, however, gives the forest area as 12,900,000 acres, but the further remark that it was not meant that all of this area was actually in bush, makes the whole statement valueless to anybody who desires to know the extent of the remaining bush—real bush.

In compiling such figures Ministers and others appear prone to include all scenic reserves, national parks and forest reservations as being in forest, or mainly so. This is not the case. If an accurate survey was made, the large proportions of such reservations which are not covered with bush would astonish people. Many portions of these areas have never been bush-covered and never will be unless the earth tips on its axis and thereby places New Zealand in a much warmer latitude. Even if such a catastrophe did happen some of the mountains would still rise above the possible altitude for forest growth.

So where are we? If the Minister cannot obtain accurate information, who can?

Again the question is asked: What is the remaining area of forest-covered land which is in a state approaching its natural condition? Apparently nobody knows. Are those who could supply the information deliberately avoiding a disclosure of the real position? In the meanwhile we again suggest that a total of 3,000,000 acres is probably nearer the mark than the more optimistic statements that have been made under authority.

The Minister of Lands, who is also Commissioner of Forests, is to be congratulated on his realisation of the gravity of the situation in New Zealand, in regard to soil erosion and the magnitude of the effort which should be made to save New Zealand for New Zealanders. The initial need is, however, that the public should be told the actual facts in order that they will be the better able to realise the gravity of the position and thus the more readily support any worthwhile steps—whatever the magnitude—which will have to be taken, to make any possible amends for disastrous blunders of the past in the maltreatment of forests.

Even if the claim that the remnant of native forest amounted to about twelve million acres was true, there is the official admission that the whole of the aggregate area is not bush-covered. Such a remnant is far from sufficient for the protection of agricultural and pastoral soils from disastrous erosion, due to excessive floods and for the maintenance of equable climatic conditions.

If then the top soil, which gives New Zealanders their living, is to be washed away, as the penalty for the destruction of protective forests, what is to become of all the present-day laudable efforts to improve the standard of living—social security measures, extensive road-making, and so on? Verily, when the matter is logically reasoned out, it appears that the cart is being put before the horse. The saving of the life-giving top soil is the first need, and adequate areas of native forest must be restored in places where its great water-holding equipment is essential.

A step in the right direction has been taken in the appointment of a committee which is now mapping and demarcating all lands according to the purposes for which they should have been used.

The next great need is to prohibit any further destruction of native bush on high country. Little or no effort is apparent in this direction, except the waging of a vigorous war against deer and other animals which ravage the native forests.

Such decisions as the proposed milling in Puketi forest are not reassuring.

"A home without trees is charmless; a road without trees is shadeless; a park without trees is purposeless; a country without trees is hopeless."

—Rocky Mountain Region Bulletin.

A LOST AMBITION

POLAR HERO WHO LOVED OUR BIRDS

WHEN the Anglo-Saxon liquidation of New Zealand's natural resources began about a hundred years ago, the unique wild life of the country stood in need of, first of all, protectors; and, secondly, in need of recorders, who might put on record, for all time, those birds and plants which the protectors could not save.

Recorders would include naturalists acting as writers, naturalists engaged in drawing from nature, artists working in colour; last—and in the writer's opinion, least—taxidermists and collectors, who would preserve stuffed birds and other museum material.

When Dr. Edward Adrian Wilson, of South Pole fame, returned from the Antarctic with Captain Scott's first Antarctic expedition (1900-04) he landed in New Zealand in April, 1904, and he travelled through the North Island by the old Waiouru-Tokaanu coach route, via the Rangi-po desert, there being in those days no North Island Main Trunk railway and no National Park road to Tokaanu. Those were the days when travellers coached from Peters' accommodation house at Waiouru over the Rangi-po plateau (east, not west of Ruapehu and Tongariro) to Tokaanu where they boarded the late Captain "Darby" Ryan's lake steamer (there was then no road bordering Lake Taupo) en route to Taupo township, from which point coaches ran to Rotorua either via Waiotapu or via Atiamuri. In this way Wilson, British-born naturalist and lover of Nature, travelled through the heart of the North Island thirty-five years ago, and from what he has left on record in his journals and diaries and letters, New Zealanders' crimes against nature may be aptly summed up on impartial and expert evidence.

First of all, the protectors had fallen down on their job up to 1904 (and, it may be added, ever since). Secondly, writing naturalists and drawing artists and artists in colour had not then (and have not now) nearly covered the available ground; and many of the objects they should have recorded have gone for ever. Thirdly, for one constructive recorder of the passing bird life and other life, there were twenty destructive recorders—egg collectors

and other collectors whose collections were built but to perish.

In those coach and buggy days Wilson (who as everyone knows lost his life with Scott in the memorable South Pole expedition some seven years later), came and saw and was convinced that a crime was being committed in New Zealand against nature before the eyes of civilisation, with civilisation powerless to prevent it. He recorded, on his New Zealand tour in 1904:

"Everything indigenous to New Zealand is dying out at such a rapid rate . . . that before long birds, etc., which are now fairly common will be totally extinct. Men who have been in the colony some forty years speak of birds like the New Zealand quail as a bird that used to be found and shot everywhere, and now it is as extinct as the ichthyosaurus. There are birds that are on the verge of extinction. Anything that is written or drawn of them now will be infinitely valuable in another fifty years when they will all be gone. They have not got the man to do it here, and on all hands I am told he is badly wanted. Think what a chance for a solid piece of work!"

The "consolation" provided by "stuffed remnants" of New Zealand's extinct avifauna is to Wilson no consolation at all. He writes to his father in England: "Every little private museum in New Zealand has already some extinct bird's bones, eggs, feathers, cropstones, and other relics, all so recent; the fresh-looking eggs of quail and other birds are shown you—they might have been found last summer; and the man who shows them to you tells you how many brace he shot when he first came out. That quail is now as extinct as the Dodo, and the number of quail eggs as limited as those of the great Auk." These relics in private collections, even in 1904, were "getting rarer day by day," but "people sit by and let moths get into their private collections, while cats, stoats, weasels, and blights of all kinds are killing them out as fast as the railways. All these things want drawing and painting, and drawing over and over again from every point of view, and in every light and season before they disappear for ever. Well now, my Dad, isn't there a work

Concluded at bottom of page 6.

KERERU OR KUKU—N.Z. PIGEON

Hemiphaga novaeseelandiae

AT one time exceedingly abundant, the pigeon has suffered much at the hands of vermin and shooter. Even now it shows so little fear of man that it may be closely approached. It will learn no caution, and ever presents its fair white breast as an irresistible target to anyone with a gun. Luckily no species responds more readily to protection and, with the abolition of guns on forestry and scenic reserves, the pigeon is bound to increase. It is one of the finest pigeons in the world as regards size, beauty of plumage, and strength of flight. The fact that it can fly considerable distances in search of berries helps the bird to survive when the crop in any one district happens to fail. In spring and early summer it is often very lean, but, as the autumn advances and the favourite berries ripen, it rapidly improves in appearance. Of our forest plants, some sixty-five per cent. have succulent fruits attractive to birds, and naturally depend on the birds to distribute their seed. Of all the species so engaged the pigeon is undoubtedly the most important, not only on account of its voracious appetite and varied tastes, but also in virtue of its size, which enables it to swallow the largest fruits. Konini, poroporo, puriri, mangeao, makomako, tawa, matai, miro, kahikatea, titoki, maire, hinau, porokaiwhiri, and karaka are among the fruits eaten. When berries are scarce leaves are not despised, among those eaten being coprosma, kaiku, ribbonwood, and makomako, but kowhai is the favourite. Often through lack of food in the higher altitudes the pigeons, in August, are forced down to the lower country where they feed on the young shoots of the kowhai. When not engaged in filling its crop, the pigeon usually reposes on a thick limb with tail drooping and half spread, the wings closely folded, and the head drawn in; but when alarmed it stretches up its lustrous neck and gently sways its head, uttering its note "Ku, ku."

The pigeon is an inartistic nest builder. Nevertheless such care is taken in the making of the apparently flimsy structure, that it is very secure and rarely blown down. A favourite position is in the branches of a large shrub

overhanging a steep cliff or embankment. Sometimes it is perched on the stouter branches of a larger tree or in the cradle made by a jumble of vines. It is merely a platform of dry twigs and small sticks, cunningly interlaced so that no binding is necessary. Often the single white egg may be seen from below. The parents take great care of the young. At first the chick is fed on the milky secretion from the lining of the crop of the adult, but gradually berries are given in a less and less digested form. During feeding the beak of the old bird overlaps that of the nestling as the contents of her crop are transferred with a swaying motion. Although it has no song, the beautiful plumage, tameness and usefulness as a seed distributor make our pigeon one of our most valued birds.

SEED DISPERSAL BY NATIVE BIRDS.

(By L. W. McCaskill.)

THE experiments on seed dispersal by wax eyes carried out at the Christchurch Teachers' Training College were continued last winter. The birds were fed on a table with raised sides from May to September, the food being sugar and water or diluted honey. Each week the droppings were swept up and stored in sand until the feeding period ceased on September 30th. The material was then sown in a box of sterilised soil at the Botanic Gardens, Christchurch. Up to March 31st, 196 seedlings had germinated. The plants identified were as follows:—

Native:

- Coprosma robusta* (karamu).
- Cordyline australis* (Cabbage tree).
- Pittosporum tenuifolium* (kohuhu).

Introduced:

- Cotoneaster serotina*.
- Berberis* spp.
- Asparagus*.
- Lonicera* (Shrubby honeysuckle).

THE REEF OR BLUE HERON

[By David H. Graham.

Some Interesting Observations in Otago Harbour

DURING my term of office as biologist to the Marine Fisheries Investigation and Biological Station at Portobello, Dunedin, I had many favoured opportunities of observing and studying some of the habits of these interesting birds and the following is ample proof of how they learned, to some extent, to trust man.

The blue heron, known as the reef heron by some and as Matukumanoa by the Maori, is considered to be a wary suspicious bird trusting no man. It was while collecting marine life in and around Quarantine and Goat Islands that I made their acquaintance. At times two would be seen together and then months would go by and only one would appear. Just where its mate went to was not discovered.

Searching round the rocky shore, turning over every moveable rock looking for marine life to study and to stock the aquarium tanks, I soon found that the blue heron came to regard me as part and parcel of the locality. When it found that there was no intention of disturbing or shooting it, it soon became easier to approach.

As soon as it found that my custom was to lay bare the undersurface of rocks below high tide which was the hiding places of crabs, worms and other choice morsels, it began to follow and feed on whatever animal life had been left exposed and had not returned to the hiding places.

The birds soon made a habit of following me more and more closely, allowing me to make many first-hand records and observations, to note the peculiarities of resting, yawning and stalking over rocks and mud flats, and to observe closely the method of flying.

One feature, which is quite understandable when one considers the practice of so many men to shoot or frighten all birds, was that they would never let me approach closer than about twenty yards, but they would at times decrease the distance in order to feed. If a false step was made or one slipped they would rise rather awkwardly and make a detour round the headland and back again behind me where I had left upturned rocks.

As far as could be seen by their colourings, the same one or two birds visited Quarry Point; never at any time in the two years were any

young birds seen. It was not often that the two herons would occupy one vantage point, but when they did it was quite amusing to watch them performing the same movements at the same time. Both birds might sleep with heads slouched between their shoulders; then both would wake up, and, throwing back their heads, yawn several times in succession. They would stand for long periods on one leg, or they would both hold one leg in front. At other times they appeared to be "marking time" by changing from one foot to the other. These antics from such stately, though dull-looking birds, seemed quite out of keeping.

When sprats and pilchards were abundant in the harbour they could be seen catching and swallowing them one after the other. Rarely was one seen to catch its food on the wing, but occasionally one would be seen to dart down into shallow water and fly to the nearest rock to eat his meal. One very favoured daylight habitat of these birds was a dark wet cave and they could often be seen standing in that part between the light and dark, hunched up and motionless. If in a few months, two blue herons could learn to trust and follow me while I turned over rocks and supplied them with easily found food, what could be done if everyone took the same line of thought and treated all our native birds as our friends?

BLUE HERON.



NATIONAL SUICIDE DISASTROUS FOREST DESTRUCTION

(By E. T. Frost.)

I HAVE just completed a motor trip of about 1200 miles during which I visited a number of out-of-the-way places and took particular notice of the remnants of the once glorious forests that covered the North Auckland District.

Starting at Parenga, near Spirits Bay, I worked South as far as Tauranga, via the Puketi State Forest near Kaeo, thence across to the West Coast via the Waipoua Kauri Forest.

I hear that the kauri is to be worked out in the Puketi State Forest, near Okaihau. This will spell destruction to this fine area, which is the last remnant of kauri on the East Coast. Should this area of high country be denuded of its forest covering it will spell disaster to the settlements on the low lands at Kaeo and the surrounding district.

Already they are suffering for the mistakes of the past and disastrous floods have frequently occurred in recent years. The worked-over country, adjoining the Puketi Forest, is an eyefore and a striking example of the vandalism of civilized man. The country is rough and the rainfall heavy, and the denuded country is washing away with every heavy rain. Little use has been made of this worked-out area, and it is now a breeding ground for noxious weeds and is also a potential source of danger to the forest adjoining, as it is liable to carry fire during the dry seasons.

Foolish Fires in Kauri Forest.

I saw two lots of people lighting fires in prohibited areas in the Waipoua Forest. Damage running into millions could occur if a fire got out of hand here, but other damage could not be measured in terms of money if this National Reserve was destroyed.

I got into hot water with some people for interfering, especially when I had it published in the papers. It struck me that a patrol on the road through this area would be a safeguard, especially on holidays when traffic is heavy.

It may be that in the near future some check on those entering this Reserve will be necessary, so that every person entering it will have to be given a pass, together with instructions about fire-lighting. Certainly, from the way some of

the travelling public behave, more drastic steps will have to be taken in this direction.

We are having a dry season in North Auckland district. I could not help noticing how each year fires are eating way into remnants of bush here and there all over the country. It is only a matter of time when, if fires are not checked, there will be hardly any bush left on many of the higher slopes.

Penalties of Folly.

Some of the local bodies are now paying for the past folly of land settlement. The Hokianga County is about bankrupt, and cannot maintain its roads.

Over large areas the whole country seems to be moving now that the forest covering is gone. Roads disappear overnight. In one case I saw a whole row of piles driven alongside a road to prevent further slipping. Fences move every winter, and cow sheds and wool sheds have been endangered. In one instance the only road access to a settlement was wiped out, and the settlers were months without road access.

This will continue for years getting progressively worse. Yet they still are chopping down some of the last remnants of bush to get a few years of grass, while their earlier so-called improvements are vanishing. In a few years it will be all scrub and slips, and in many cases large areas will be abandoned.

A vigorous public and private policy of re-afforestation is needed immediately to check the drift to destruction. Already in this same country there can be seen tens of thousands of acres which have reverted to scrub, and as far as one can see very little stock is being carried on these areas.

In one instance I noticed the sides of a mountain, so steep that it could not be ridden over, had been cleared of heavy bush quite recently and the whole face seemed to be coming down. It appears that to save some surveying the settler had been given title right to the top of a mountain, rather than run a line across the face lower down. Consequently he chopped all the bush with the result that he will lose it all in a few years. Further, no regeneration of

forest is possible as the slips uncover the rock and nothing can now take root.

This is so called land settlement and is in a line with what has occurred all over the Dominion. What a commentary on our intelligence! The old Maori knew better.

Yet in the north there are thousands of acres of mangrove flats that could have been brought into production without endangering our adjacent land and it is pleasing to see that at last the value of this class of land is being recognised and some splendid examples are to be seen of such reclaimed land on the eastern shores of the Kaipara Harbour.

If the Government were to have a survey made of all this class of land in the north, and get to work and reclaim it, and see to it that not another tree is cut down in the forest reserves, it would be conferring an everlasting benefit on the Dominion.

JACK MINER'S WATERFOWL COME HOME WANTED MORE JACK MINERS IN NEW ZEALAND

WITHIN a few short miles of Detroit and Windsor on the old Miner homestead of Kingsville, Ontario, this self-taught naturalist, in some magical way, has established and developed a bird sanctuary that is world-famous. A Mecca for birds of all kinds, it holds a special fascination for ducks and geese. Thousands and thousands of them return to it in the spring and fall of each year as they complete their annual pilgrimage from south to north and back south again, and, during their brief stay, consume all the corn the Miner acres have been able to produce for them. Possibly, these Jack Miner birds are responsible for the expression "A Little Bird Told Me." In any case, whether they have spread the word or not, the fame of his Kingsville sanctuary has spread in some miraculous way and many sanctuaries in Europe have been patterned after it.

His objects are twofold: First, by means of tagging ducks and geese, as he has been doing since 1904, to collect scientific data regarding their habits, etc., which he turns over to the Government and to the various universities. His second object has a more universal appeal: it is to promote a love for and understanding of wild life amongst adults and children, and to help conserve it for the enjoyment of generations to come. His books, his lectures and his radio work have already accomplished much, but much remains to be done, and one of his

The whole matter of soil conservation about which we hear so much, is bound up in fire prevention, reafforestation, and forest conservation.

Those Dismal Pines.

By re-afforestation one does not mean the planting of thousands of acres of pines. These are useful in their place, but a thorough study needs to be made of local condition where re-afforestation is carried out, so that areas of berry and fruit-producing trees can be planted. The lack of these means no birds, and no birds mean increase of insect pests. Even in the planted areas which I noticed, the scarcity of birds is very noticeable. It would pay those in charge to set to work and provide an insurance against the inevitable insect by providing for our feathered friends who will repay a hundred-fold any such provision.

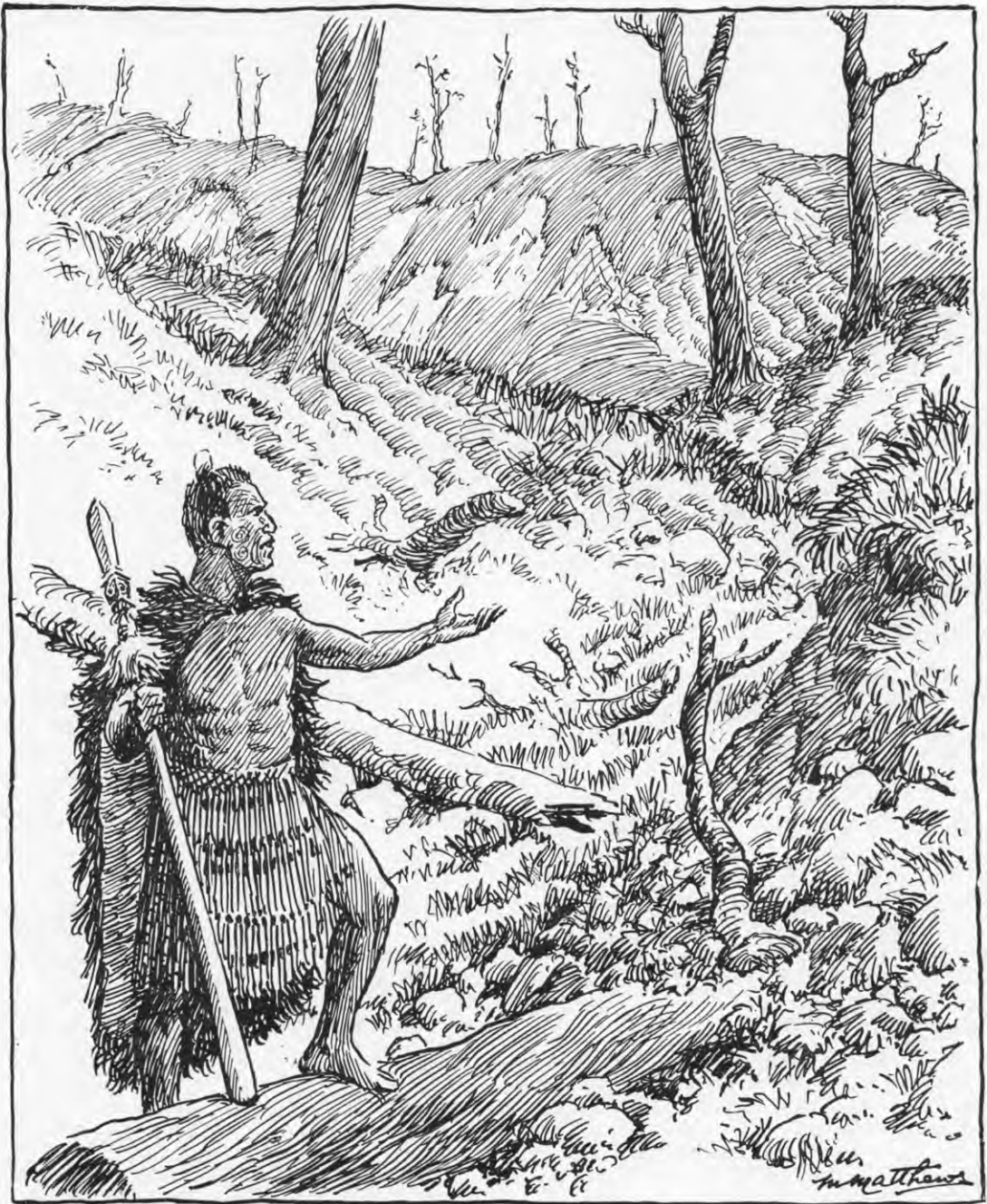
most pressing problems is to perpetuate the work he has started.

Jack Miner is a poor man. He has already passed his allotted "three score years and ten." He has no money of his own with which his plans can be carried through. To solve this problem, he has had the Jack Miner Migratory Bird Foundation incorporated in the State of Michigan and the Province of Ontario. He is giving his home and his sanctuary of thirty acres to the Foundation. Gifts are being solicited, and all moneys received will be held in trust, the interest to be used to maintain the bird sanctuary and to carry on his work.

Continued from page 2.

for anyone who will take it up?—and I believe there's a chance for me to do it."

But fate ruled otherwise. The Edward Adrian Wilson who in 1904 hoped to become New Zealand's nature artist, to save something from the wreck of our wild life, perished himself, at the age of forty in March, 1912, returning over the icefields from the South Pole. The bodies of Scott, Wilson and Bowers—three of the Polar party of five—were discovered together in November, 1912. Wilson's name lives in Antarctic records, and his artistry lives in many pictures of Antarctic and English birds and wild life, some in colour. But the niche he hoped to fill in New Zealand remained (and remains) tenantless.



And they called me a Barbarian.

A FRIENDLY CHAT ABOUT SHAGS

The Blunder of Declaring All Shags "Black"

An Appeal to Yachtsmen, Launchmen, and Others

This statement, issued by the Forest and Bird Protection Society, should be read carefully, especially by people who have been misled by ignorant allegations about "shags" — as if all shags were of the same species.

There is great lack of knowledge among the public with regard to the habits and haunts of the various shags. Indeed, heads of the Department, which administers wild life matters, and Acclimatisation Societies, which are expected to care for wild life in the field, loosely use the word "shag" instead of naming the particular species which they accuse of poaching trout. Consequently there is a widespread impression that all species of shags are enemies to trout, with the result that much unnecessary slaughter of innocent species is taking place, and license-holders' money is being paid out in the form of bounty on species which do not attack river fish.

The Minister of Internal Affairs, the Hon. W. E. Parry, in his endeavours to act in a sportsmanlike manner, in a letter to the Forest and Bird Protection Society, states:—

"I have certainly no desire to see destroyed any species of shag which does not create a problem in our trout fisheries, and I shall be only too pleased to help in allotting the blame correctly to black shags as you suggest."

THE BLACK SHAG frequents rivers, and does take trout, but many observers are of the opinion that it is quite possible that this species does more good than harm, because its natural food is eels and other native fish. In some districts it lives almost wholly on eels, which are enemies of trout. No scientific research has been made with reference to this species, therefore nobody knows the facts.

Inhabiting Stewart Island and the east and west coasts of Otago are two absolutely protected species of shag, known as the Stewart Island Shag and the Bronze Shag. The former

has a well developed crest in the breeding season, is black above and white below, with white areas on back and wings. The Bronze Shag also has a crested head, but its general plumage is black. It freely mixes and inter-breeds with the Stewart Island Shag. As there are no trout in Stewart Island streams the shooting of any species of shags should be entirely prohibited there.

Most species of shags are handsome birds and add much charm to many scenes. Anglers should bear in mind that there are more people interested in the preservation of New Zealand's native birds than there are trout fishermen, and that in their endeavours to protect their sport care should be taken not to incite people to kill those species which are doing their sport no harm whatever. The innocent shags include some species which it is the duty of Acclimatisation Societies to protect under their deed of trust, The Animals Protection and Game Act, 1921-2.

The Forest and Bird Protection Society feels sure that all the better-thinking sportsmen will help to put a stop to an unwarrantable persecution of innocents, especially those species which are protected by law.

Any person who takes or kills any such bird or sells or has in his possession any protected birds or their nests, eggs or feathers is liable to a fine of £25 for each offence. Moreover all guns, launches, yachts, motor cars, etc., used or intended to be used contrary to the provision of the Act are liable to seizure and confiscation.



THE PIED SHAG.

The Pied Shag frequently roosts and nests inland, but is a marine feeder; therefore it should cause no anxiety to anglers. The underparts of the pied shag are white; the upper parts are dark from the tip of the tail to the forehead.

THE SPOTTED SHAG.

The spotted shag, one of the most beautiful species, is absolutely protected by law. Nevertheless it has paid a terrible toll owing to the prevailing notion that all shags feed on trout. The spotted shag does not frequent rivers, but feeds on small sea fish and crustacea. It is not capable of swallowing a large fish in the manner of the black shag. The spotted shag, in the breeding season, carries two crests. Its throat is dark; its underparts are white and the sides of the neck to the eye are also white. The general appearance of the bird's back is a spotted greyish brown.



[Photo Courtesy Dominion Museum]

THE WHITE-THROATED SHAG.

The white-throated Shag is distributed throughout New Zealand. Its food, so far as is known, consists of fresh-water fish such as small eels and crustacea. Although this species may take small trout, there is no authentic evidence of such action. It is a small species of dark plumage, except that the underparts of the head and part of the back are white. Some birds have more of the underparts white than others.

THE ROUGH-FACED SHAG.

The rough-faced shag, a handsome bird, is found only on a few rocky islets in Queen Charlotte Sound. It is absolutely protected by law. As it is purely a marine feeder and much in danger of extermination, every effort should be made by all to save it from its threatened fate. It is dark above and white underneath, the whole of the upper part of the head being black. There is a white area on the back and wings.



POVERTY OR CONSERVATION

(By Jay N. "Ding" Darling.)

Condensed from "National Wildlife Federation Bulletin" for January.

"To conserve does not mean to refrain from human use and enjoyment but rather to use understandingly and with respect for nature."—Frank A. Kittredge, in "Recreation."

WE have, as a nation, specialised on exploitation. We have exploited our forests, exploited our rivers and lakes, exploited our soils and exploited our wildlife. The question is, how long can we continue to live by exploitation alone? It was Benjamin Franklin who wrote "Forever taking out and never putting anything in soon exposes the bottom of the meal barrel."

Conservation is the reverse of exploitation, and unless we begin soon to counteract exploitation by the practice of conservation, how soon shall we find ourselves at the bottom of an empty barrel, looking out through the bung hole at our departed standards of living.

The term conservation has too often been accepted as though it applied *only* to forests, fish and game, and the beauties of nature. Quite universally conservationists are looked upon as close relatives of "Ferdinand the Bull," whose sole ambition was "just to smell the flowers."

Within the ranks of conservationists we discover group self-interests whose motives are only slightly removed from those of the exploiters. The landman thinks only of land conservation; the birdman thinks in terms of saving the birds; the fisherman thinks conservation means more and bigger fish. Each is, of course, an integral part of conservation, but we can no more succeed by thinking of conservation in terms of a single pet resource by itself, than we can think of the legs of a man functioning without a body.

Land, water and vegetation are just that dependent on one another. Without these three primary elements in natural balance, we can have neither fish nor game, wild flowers nor trees, labour nor capital, nor sustaining habitat for humans.

To attempt to remedy the lack of fish in our streams or game on our uplands without attacking the ailments of our land, water and vegetation, would be like trying to cure consumption with Smith Brothers cough drops. Building ten thousand new fish hatcheries will not restore

the fish unless we first restore the condition of the waters in our lakes and streams so that fish can live in them.

When water goes, vegetation departs with it. When vegetation departs, soil goes. When soil is gone man can no longer remain. Neither man nor beast can live without vegetation and vegetation cannot exist without water and soil.

If I read aright the signs in the skies, these more *fundamental aspects* of conservation have been, and are still, a blind spot in our social, economic and political vision. If we continue to ignore them we shall have not only no fishing or hunting, but we shall be heading our nation into social, economic and political bankruptcy.

Savants of culture have traced man's progress from his lowly beginning with a stone axe in his hand and little on his mind, up to and including air-conditioned homes, luxurious transportation and universal education—but these same experts have consistently failed to note that where natural resources failed, *culture, progress and civilisation* died.

Scientists have deciphered the secret formulae of chemistry and physics to transmute sawlogs into silk, to deaden pain and lengthen the span of man's existence with products distilled from nature's organic laboratory, but have they given thought to perpetuation of the *source* of organic materials with which they perform their magic? That problem remains practically unapproached.

Political scientists and economists have devised formulae for wealth, and labour has claimed to be its sole creator, but none has paused long enough to observe that without natural organic resources there would have been *no* labour, *no* political scientists, *no* wealth and *no* human life.

Can it be that all our planning and hope of prosperity is based on the false assumption that nature's resources are inexhaustible? Crumbling ruins where ancient civilisations once prospered would indicate that other races and other nations before us have miscalculated their

wealth and degenerated to poverty because of the same error our economists are now making.

Boiled down to the fundamental truth, the history of civilisation, since man was created, is largely made up of the rise and fall of empires through the exhaustion of resources. History, therefore, in reality turns out to be the story of hungry man in search of food. Conservation is the job of so managing our soils, waters, and gifts of nature on this continent of ours that man's search for these necessities shall not be in vain.

If we do neglect conservation as history has ignored it in the past, and any considerable portion of our population does search in vain for existence, we shall have increasing poverty, social upheavals and, *in spite of our high ideals and worship of peace*, we shall have *more* wars instead of *fewer*, for wars are the spawn of empty stomachs, and empty stomachs follow—as the night the day—the excess of demand for natural resources over the supply.

Wealth will continue to exist on this continent only so long as the natural resources of our soil and water continue to yield up their riches in proportion to the requirements of our population. That population already includes a widening margin of want and unemployment. When these resources are further depleted, as they have vanished from vast areas on other and older continents, prosperity, standards of living and social contentment among our people will vanish.

Few are aware of the incalculable cash losses which have been ignored by the people of this continent through the persistent habit of calling everything profit which we rip from the soil.

We have left no debit slip in our national cash drawer for the exhausted resources which have gone for ever when we harvest and remove any considerable crop from the soil.

If nature's pantry had been wisely guarded, our relief rolls would have been a fraction of their present appalling magnitude.

The time will surely come—indeed if it is not already here—when the widening fringe of unemployment and hunger will threaten the stability of *our* social institutions as it has upset other governments and other nations before us, when bulging populations have burst through their geographic and legal boundaries and involved themselves and their neighbours in

bloody warfare. Japan has already passed the crossroads. If she had stayed within her boundaries she would have starved.

We may juggle our currency, we may substitute dictatorship for democracy, we may set up devices for redistribution of wealth and social security, but none of these, nor all of them together, will restore the sustaining land we have wastefully depleted. It will not put back the forests on our eroding hills, it will not restore the fish in our polluted streams and vacant waters of the seaboard. Only we ourselves, by studied processes, can accomplish this recovery.

Conservation becomes, then, *not* a matter of sentimental appreciation of the beauties of nature. It is no idle humour of the experimental laboratory; it is grim business for statesmen.

ALBATROSS FUND.

THE following further donations have been received in aid of the fund to reimburse the Dunedin enthusiasts, who have advanced the money to erect a man proof fence to protect the albatross, which are endeavouring to re-establish their ancient nesting ground at Taiaroa Head:—

DONATIONS TO ALBATROSS FUND.

Previously acknowledged ..	7	1	0
Mr. H. B. Stuckey ..	10	6	
Master A. C. Lambie ..	1	0	
Mr. F. M. Low ..	10	0	
Mrs. C. E. Clark ..	2	6	
Miss J. H. Clark ..	2	6	
Miss M. Findlay ..	3	0	
"J.E.R." ..	5	0	
Major J. R. Kirk, M.B.E. ..	10	0	
Mrs. R. C. Kirk ..	5	0	
"L.S.G." ..	5	0	
Mr. D. Ferguson ..	10	0	
"A.A." and "E.M.B." ..	5	0	
D. H. Graham ..	1	6	
"C.E.W." ..	10	0	
Miss E. Brown ..	10	0	
Miss A. E. Porritt ..	2	6	
Mr. R. Bell ..	5	0	

£11 19 6

A LESSON FROM NATURE

BIRDS AND SOIL

WHEN one visualises the difference between barren and alluvial soil, it is evident how such factors as the washing away of the top soil, i.e., sheet erosion, must inevitably destroy almost all bird life as it does all living creatures.

Roger T. Peterson in an article appearing in "Bird Lore," the official organ of the National Association of Audubon Societies, U.S.A., entitled "The Good Earth," says:—

"The soil is alive. Men, birds and other creatures depend upon it, so it should be treated well." Then Mr. Peterson goes on to describe a walk in the country by a dozen children accompanied by their schoolmistress, in the following manner:—

A Walk in the Country.

One Saturday morning a dozen members of the Junior Audubon Club took the dirt road north of town, the one that goes to the river. Some of the best "birding" spots near town could be reached by the wood trails that lead off this road. One open glade that ends in a cow-pasture was always good. This morning when they crossed the little brook and this charming spot they were more conscious than ever of the number and variety of things that lived there. Some people could have taken this same walk and, being too busy with thoughts about themselves, would have seen nothing but the grass and the trees—but not these young people. Their eyes were keen and they saw many things. A Flicker flew from a large anthill where it had been grubbing with its long bill; a little party of sulphur butterflies hovered around a wet, muddy spot on the path. A male Song Sparrow sang from a bush top and dashed after another Song Sparrow that trespassed on his territory. Chipmunks scampered under the rocks of an old stone wall. Dragonflies hawked the air, and everywhere there were living things, crawling, hopping, or flying.

It had never occurred to the class until today how much the soil had to do with the lives of these creatures. Many of them foraged

amongst the plants or scratched or grubbed in the debris at the grass roots. The soil seemed to have a great fascination for them.

The teacher commented on this, and one of the boys suggested that they take a sample of the soil so that they might see what was in it. The small trowel and the pail used for transporting plants to the school garden came in handy. A handful of surface dirt and debris from an open grassy spot revealed an ant, a tiny spider, and several other small creatures. This looked promising, and it was dumped into the pail and a section of earth 12 inches long, 6 inches wide, and 4 inches deep was carefully scooped out with the trowel and dumped in with it. They found by probing deeper into the soil that only an occasional grub or earthworm could be found deeper than 3 to 4 inches. Most of the small animal life lived near the surface. One-half square foot of soil would be quite enough to analyse, so a piece of cloth was tied tightly over the pail to prevent anything from crawling out.

What was in the Soil?

The pailful of earth was put on the centre of the work-table and each student carefully picked over a handful of it at a time, on his piece of cardboard. If an insect or worm was found, it was picked up with tweezers and dropped into a little glass medicine vial. With twelve people working it did not take long to run through the whole pail. The pail itself and its cloth covering were carefully examined, too, so that nothing would be missed. Some of the tinier things could be very easily overlooked. There were several very tiny, pale insects that could hardly be seen, so small were they. These were springtails, and they were very hard to catch, too, because they would jump when the tweezers touched them.

When the job was finished, one of the boys offered to try to analyze the contents of the vial, with the help of several good books on insects and other invertebrates from the library.

His analysis showed the following:—

Earthworms	..	..	..	2
Sowbugs	..	..	..	6
Centipedes	..	..	..	3
Millipedes	..	..	..	10
Mites	..	..	..	6
Spiders	..	..	..	1
Ants	..	..	..	15
Fly pupae	..	..	..	30
Aphids	..	..	..	4
Beetles	..	..	..	4
Springtails	..	..	..	14
Unidentified	..	..	..	20
Total	..	..	..	115

One hundred and fifteen invertebrates in a half square foot of earth! Two hundred and thirty per square foot! What would that be per acre? That was easily determined on the blackboard.

$$\begin{array}{r}
 43,560 \text{ (sq. ft. per acre)} \\
 \times 230 \\
 \hline
 1306800 \\
 87120 \\
 \hline
 10,018,800
 \end{array}$$

Over 10,000,000 small animals to the acre! No wonder the soil is such a favourite feeding-ground.

Micro-organisms.

It was noted that most of the insects were in the ground debris and in the top 3 to 4 inches of soil. If a small sample of this same rich surface soil were placed beneath a powerful microscope, great numbers of tiny organisms could be seen, tiny plant and animal forms. These are micro-organisms; millions or even billions exist in a single gram of soil. These micro-organisms are perhaps as necessary as anything on earth. Without them life would stop. They form the link between the living and the dead. They transform dead plants and animals into a condition on which living plants and animals can be nourished.

The micro-organisms, insects, birds, mammals, man himself, and his crops are all dependent on one another. They all get their life from the soil and return to the soil when they die.

Birds and the Soil.

If the life-giving topsoil were to go and the land be made lean, it is logical that birds would be less common, too.

A good bird population, then, is "a sign of healthy land."

Scientific studies have shown that not only are the animals dependent on the soil but that the soil is dependent on animal life.

As animal activities in soils increase, soil-structure, fertility, and cover are improved. Vertebrate animals, such as the mammals and the birds, often have as great an effect on the soil as the lower forms of animal life.

"The Topsoil is Like Frosting on a Cake."

The top layer of earth, which is so full of organic life, has been likened to the frosting on a cake. Some people eat the frosting off the cake first. We have eaten much of the frosting of topsoil off and are getting down to the less palatable subsoil. When the topsoil goes, everything that depends upon it is affected—the small creatures, the birds, and man and his crops.

Erosion is Licking off the Frosting.

Much of this loss of topsoil has been the result of *erosion* or a *wearing away* by wind and water, the teacher explained. To demonstrate water erosion in its simplest form, she used a large piece of wallboard propped up to present a slight slope. She took a watering-can and sprinkled a quart of water at the top. It slid off almost instantly. Next she placed an old piece of thick carpet on the board and repeated the sprinkling. (She got her idea from Stuart Chase's "Rich Land, Poor Land.") Very little water ran through, at first, and the dribble continued for some time.

The wallboard, she explained, was hillside with a slope; the can of water was rainfall, and the bare surface, ploughed fields. The carpet was natural ground-cover, either grass or woodlands.

Over the bare fields, improperly ploughed, the water comes down, taking with it the rich topsoil. In the second instance, the water sinks into the cover and is released slowly. Very little, if any, soil is washed away.

Much Erosion is Man-made.

The teacher explained that most of this loss of land was due to man's mistakes and carelessness. He cut the timber completely off slopes that should have been lumbered more carefully, if at all. Without protection, the soil was washed from the rocks by the rain. Trees cannot grow on bare rocks, nor can rocks hold water, so as the years went on the gullies on the slopes were cut deeper and deeper.

Meadows were burned on purpose, and forests by accident. The burning killed the

organic life in the topsoil, burned the humus, and set the stage for erosion.

Farmers placed too much livestock in their fields. Instead of putting three or four cows on a small piece of land, they pastured twenty or more. The cattle ate all the ground-cover, and packed the earth so hard that the rain could not sink in but ran off the surface, washing the dirt with it.

These were but a few causes of erosion, the teacher said. She wrote them down briefly on the blackboard, so that the children might put them in their notebooks.

1. Careless lumbering.
2. Fire.
3. Overgrazing of livestock.
4. Improper ploughing.
5. One-crop farming.

Dust Storms and Floods.

Erosion of a field here and a hillside there seldom caused much comment. The process was a gradual one that went on unnoticed except by the farmer, who found, sooner or later, that he

could no longer grow a paying crop on his land. But the newspapers carried stories of dust storms and great floods. This was big news, for it often meant the lives of many people. These catastrophes were called acts of God, over which man had no control. A few people knew otherwise. They could clearly trace these events to the eroded fields and hillsides. The rain fell, and instead of soaking into the ground, was carried away into the little brooks, whose banks could not always hold the unnatural rush of water. Erosion had set in there, too—and so on into the big rivers. Instead of wandering slowly towards the sea, the water rushed down in a hurry. Great floods were caused by too much water reaching the same place all at once. When the drier months came, the water was gone prematurely from the little brooks and streams. They became dry and the soil parched. On the great plains the powdery, exhausted soil was whipped into the air by hot summer winds and literally whole farms were blown away.

WINTER.

Winter approaches! That great tester of which creatures shall survive, and which shall succumb, owing to cold and shortage of food. Countless numbers of birds will die of starvation and cold, unless we help our feathered helpers in the contest against insect pests, rodents and disease. It has been amply demonstrated that those birds which have access to ample food supplies can easily survive.

Remember, then, as you snuggle between warm blankets, aided perhaps by a hot water bottle, that the birds are out in the cold, and many will be found dead beneath their perches in the morning, having been unable to resist the cold, owing to sufficient food being unprocurable in the daytime.

If, then, you do not already do so, supply their meagre needs. They will reward you by showing extreme trust in you, and will intensely interest you and your children by their antics and bickerings while feeding. In the Spring they will again gladden the hearts of all by their songs and presence, besides

“crushing the beetle in his coat of mail,
and crying havoc on the slug and snail.”

Suet, dilute honey, well sweetened porridge and milk, and almost all usually wasted scraps

of food, will be acceptable. But place your food receptacles where the ever-prowling cat can do no harm, otherwise you may be merely feeding cats on birds.

“There is a *very* short list of birds that are seriously injurious to the interests of the farmer and gardener: of a considerable number it must be said that while they do harm, they also do good: of the *vast majority* it may safely be said that they are beneficial.”—Professor Sir J. Arthur Thomson.



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 shell 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 birds depicted—Price 12/6 per copy.

Children's Page....

THE BIRDS' NECESSARY PLACE IN NATURE

By Miss F. P. Fraser

A Story told by Longfellow in One of His Poems.

WITH the coming of spring in the village of Killingworth the birds trilled and twittered and sang in their glee. Little wanderers returning from far distant lands passed overhead, calling loudly as they flew to join their friends in field and orchard.

Such loud singing there was at dawn of day that farmers early at the plough heard the swelling chorus with alarm. What was going to happen when the seed was sown? The birds were not even afraid of the old scarecrow; indeed they seemed to take a delight in fluttering around him. Something would have to be done!

The farmers were so concerned about the flocks of birds everywhere, "that they shook their head and doomed to swift destruction the whole race of birds."

The birds were the talk of the town, and a meeting was called to consider how best to get rid of the little thieves. Those in authority in the village gathered together with all the farmers from the country side, in the new town-hall. "The Squire presided, dignified and tall, His air impressive and his reasoning sound: Ill fared it with the birds, both great and small; Hardly a friend in all that crowd they found, But enemies enough, who every one charged Them with all the crimes beneath the sun."

Apart from the rest there sat a young science-master from the Academy. As he entered the hall, he had been thinking deeply of Almira, a lovely girl who was pure and good, and when he found that there was none to take the part of the innocent songsters, the thought of Almira gave him courage to rise and speak out boldly in defence of the birds.

"In this little town of yours," he said, "you put to death the ballad-singers and the troubadours, the street-musicians of the heavenly city, —the birds. Why will you kill them all? They may scratch up a few grains of wheat, or rye or barley, while searching for worms or grubs; or eat a few cherries that are not so sweet as the songs they sing at their feast.

"Do you ne'er think what wondrous being these?

"Do you ne'er think who made them, and who taught them to speak to one another in

song? Think how at sunrise every morning the happy birds sing joyously. And when you think of this, remember, too—

"Tis always morning somewhere, and above
The awakening continents, from shore to shore,

Somewhere the birds are singing evermore."

The young teacher went on to tell the townsmen and the farmers what would happen if they destroyed the birds that worked so industriously in fields and gardens keeping down the hordes of insects that were so harmful to the crops. Then he closed with these words:

"How can I teach your children gentleness,
And mercy to the weak, and reverence
For life—when by your laws
Your action, and your speech,
You contradict the very things I teach?"

In spite of all he said, the others took no notice of him, except to laugh and nod their heads as they whispered together that he was a very sentimental fellow.

But the girls and boys of the Academy read a report of his speech in the papers and were so proud of him that they greeted him with great applause. They made him feel that, after all, he had not failed when he had their sympathy and sweetest of all, to him, was fair Almira's praise.

There was a dreadful slaughter of the innocent birds! A price was paid for the little heads! Everywhere the birds fell and their young ones died of hunger in their nests.

Then came summer, and in the orchards there crept myriads of caterpillars and in the fields and gardens there were hosts of devouring insects. From the trees, nasty little worms fell even upon the ladies' hats and frocks, and everybody in that village was afraid to walk abroad.

The farmers grew uneasy, and some owned that they had been in the wrong. Then the law that had been made to kill all the birds was repealed, but of what use was that after the birds were dead?

When autumn came, there were only a few leaves left on the trees to take on the beautiful tints of the season.

"While the wild wind went moaning everywhere,
Lamenting the dead children of the air."

But the next spring, the townsmen made anxious enquiries as to where they might procure birds; and messengers were sent to other parts of the country to bring as many birds as possible to Killingworth village.

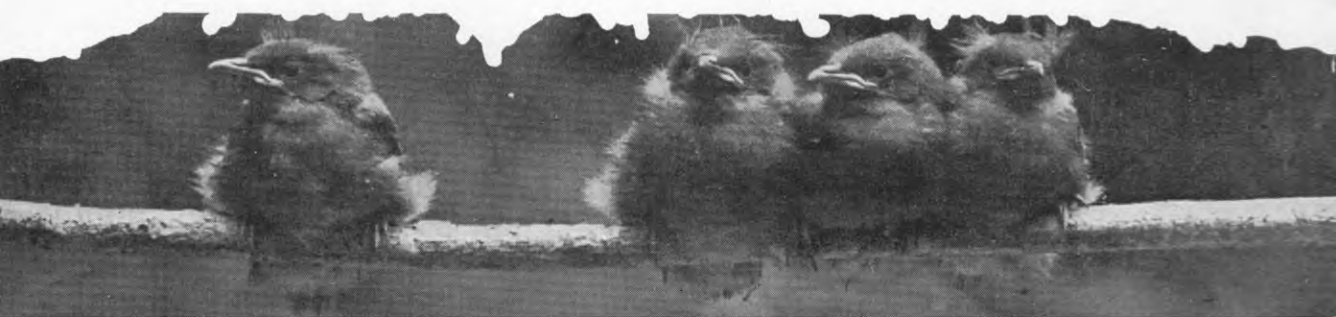
It was a wonderful sight when a waggon came down the village street, and in the waggon there were green branches of trees on which were hung cages full of birds. They filled the air with their singing and the people thought they had never heard such lovely music. Many thought that the birds in their little songs were

laughing at the farmers, and it almost seemed as though they were saying, "Aha! You could not do without us, then!"

When the cages were opened, out flew the little songsters over the heads of the people in the street, out to the fields and the gardens calling loudly as they went.

Almira's wedding-day dawned, and such a carolling was heard! The birds seemed to know all about it, and they were everywhere. And when the young teacher and his bride set out upon their wedding tour,

"Their songs burst forth in joyous overflow,
And a new heaven bent over a new earth,
Amid the sunny farms of Killingworth."



[Photo by Courtesy Edgar F. Stead.]

FORESTS AND CLIMATE.

Writers in various parts of the Dominion have recently commented upon the rapid manner in which the soil and the grass have quickly dried up during the last summer. Indeed many farmers noticed this tendency in the spring, despite frequent heavy rains.

One of the results of forest depletion is seen in the effect on climate. The natural effect of a shortage of forests is a hard, harsh, barren climate. The trees of the native forests in New Zealand absorb large quantities of moisture in the wetter seasons of the year; also, moisture is retained in the soil because of the water holding properties of the forest floor aided by the sheltering and shading effect of the trees. In dry periods much of this retained water is given off in the form of vapour. If the forests

are of sufficient extent, this vapour produces a humid atmosphere which is the delight of most plant life.

THE FEATHERED FRIENDS OF MAN:

"The service that birds perform in protecting woodland trees," writes E. H. Forbush, State Entomologist of Massachusetts, "is more nearly indispensable to man than any other benefit they confer on him. . . . Were the natural enemies of forest insects annihilated, every tree in our woods would be threatened with destruction, and man would be powerless to prevent the calamity.

Yet this hurculean task is ordinarily accomplished as a matter of course by birds and other insectivorous creatures, without trouble or expense to man."

HON. LIFE MEMBERS:

CAPT. E. V. SANDERSON.
H. GUTHRIE-SMITH, Esq.
W. W. SMITH, Esq.

LIFE MEMBERS:

ABSOLON, J. ARCHER, Esq.
ABSOLON, Mrs. G.
ANDERSON, SIR ROBERT, KT., C.M.G.
BAKER, Miss D. D.
BARCLAY, DR. W. J.
BARNETT, ARTHUR, Esq.
BARNETT, LADY
BARNETT, SIR LOUIS
BARNETT, SISTER M. F.
BATHGATE, DR. D. A.
BEATTIE, MRS. ANNIE H.
BELCHER, H. C., Esq.
BIRCH, A. C., Esq.
BRADLEY, ORTON, Esq.
BRASS BROS., LTD.
BRISTED, J. F., Esq.
BROWN, Miss E.
BROWN, WM., Esq.
BUNNY, Miss M. M.
BURNETT, Miss E. M.
BURNETT, Mrs. N. M.
BURNS, W. J., Esq.
BURTON, E. R., Esq.
CAMPBELL, H. R., Esq.
CHAMBERS, H. C., Esq.
CHAMBERS, JOHN, Esq.
CLARK, T. P., Esq.
COOKE, M. G., Esq.
COWIE, DR. HELEN, B.A.
CUDDON, Miss PAMELA
DARLING, Mrs. W. R.
DEAR, EDGAR, Esq.
DEVENISH, W., Esq.
DICKSON, JOHN R., Esq.
DU PONT, Mrs. A. J.
EWEN, Mrs. D. A.
FELS, WILLI, Esq., C.M.G.
FERGUSON, Miss CATHERINE
FERGUSON, W. D., Esq.
FERGUSON, G. J., Esq.
FERGUSON, SHOLTO, Esq.
FISHER, A. H., Esq.
FITCHETT, DR. F.
FITZGERALD, GERALD, Esq.
GIBSON, DR. HAROLD R.

GILMER, Mrs. KNOX
GIRL GUIDES ASSN. OF N.Z.
GUNSON, LADY
GYLES, Miss ETHEL
HAINES, Mrs. CHARLES
HANDLEY, Mrs. C. H.
HARDING, R., Esq.
HAWKINS, N. G., Esq.
HAZLETT, EDGAR, Esq.
HOLDSWORTH, Mrs. L. V., *England*
HOME, DR. GEO.
HUDSON, R., Esq.
HUTCHINSON, FRANCIS, Esq.
JENSEN, T. A., Esq.
KEBBELL, Mrs. M. G.
KINDLEY, W. G., Esq.
KIRK, MAJOR J. R.
LAWSON, ERIC, Esq.
LONG, R. H., Esq.
MACDONALD, DR. J. G.
MACLEAN, LADY
MAPPIN, F. CROSSLEY, Esq.
MC EWAN, W. B., Esq.
MCKAY, D. W., Esq.
MCKELLAR, C. O., Esq.
MCKENZIE, WILL B., Esq.
MELLAND, Mrs. KATHERINE, *Eng.*
MONCRIEFF, Mrs. P.
MOORE, Miss L. M.
MORRAH, Mrs. F. D.
MORRIS, CROSBY, Esq.
MORRISON, A., Esq.
MULLIN, DR. W. J.
MYERS, DR. J. G., *Sudan*
NAIRN, Mrs. BEATRICE
NEAVE, Miss A. C.
NEAVE, Miss E.
NEAVE, Mrs. E.
NELSON, Mrs. W. B.
PASSMORE, J. L., Esq.
PORRIT, Miss A. ELIZABETH
PRICE, HERBERT, Esq.
PUCKEY, Mrs. A. F.
RAYMOND, Miss M.

REED, A. H., Esq.
REVELL, Miss E. E.
RHODES, Miss B.
SIR R. HEATON RHODES, M.L.C.
RICHARDSON, Miss ETHEL
RITCHIE, DR. R. I.
ROBERTS, R. C. E. T., Esq.
RUSSELL, ARTHUR S., Esq.
SAINSBURY, G. O. K., Esq.
SHARPE, Mrs. E.
SIMPSON, GEORGE, Esq.
SMITH, Miss M.
SMITH, W. S., Esq.
SPENCE, JOHN, Esq.
STEVENS, Miss M. ALEEN
STUCKEY, H. B., Esq.
STUCKEY, Mrs. H. B.
SUTHERLAND, B., Esq.
SUTHERLAND, Mrs. R.
TAPPER, GUS., Esq.
TAPPER, JULES, Esq.
TARARUA TRAMPING CLUB
TAVERNER, Mrs. A. A.
THOMSON, Miss E. M.
THOMSON, G. C., Esq.
THOMSON, Mrs. JESSIE
THOMSON, J. B., Esq.
THOMSON, J. SCOTT, Esq.
THOMSONS, LTD.
TIFFEN, D. N., Esq.
TOD, ROSSLYN H., Esq.
TRIGGS, Mrs. M. H.
TROUBECK, Mrs. EWAN
TURNBULL, Miss S.
TURNER, GEO., Esq.
VALDER, Miss L.
WARREN, DR. ERNEST, *Natal*
WATT, Miss E. A.
WILDER, Mrs. A. S.
WILKINSON, A. S., Esq.
WILLIAMS, A. B., Esq.
WILSON, Mrs. F. W.
WILSON, ORMOND, Esq., M.P.
ZELLER, Miss ROSE

ENDOWMENT MEMBERS:

ADAMS, Mrs. JESSIE
ARMSTRONG, J. SCAIFE, Esq.
ARMSTRONG, M. I., Esq.
ASHCROFT, M. I., Esq.
ASHCROFT, W. J. C., Esq.
ATKINSON, ALFRED C., Esq.
BACHELOR, Mrs. F. STANLEY
BELCHER, L. F., Esq.
BENHAM, DR. W. B.
BIGGS, C., Esq.
BLUNDELL BROS., LTD.
BRODRICK, N. A., Esq.
BUDGE, Mrs. H.
BURNS, DR. WM. C., M.A.
CHAMBERS, MASON, Esq.
CLARK, DR. A. G.
COBELDICK, WM., Esq., F.R.G.S.
COLES, W. R., Esq.
COOPER, G. R., Esq.
CROOKE, ALFRED, Esq.
CRUICKSHANK, GEORGE, Esq.
DENNISTON, HUGH, Esq., *Argentina*
DENNISTON, Mrs. H. E., *Argentina*
DERHE, ALEX., Esq.
DIXON, Mrs. M.
DOUGLAS, R. A., Esq.
DUNEDIN NATURALISTS' FIELD CLUB
FACHE, G. C., Esq.
FIELD, W. H., Esq.
FINLAYSON, Miss M. P.
FIRTH, Mrs. J. P.

FRASER, W. M., Esq.
GILBY, J., Esq.
GILLIES, Mrs. A. N.
GOW, GORDON V., Esq.
GOWER, Mrs. A. R.
GRAY, Mrs. D. W.
GREENWOOD, Mrs. A. R.
HALL, J., Esq.
HAMMOND, E. E., Esq.
HEIGHWAY, A. J., Esq.
HOLMES, ALEX. S., Esq.
HORNE, JOHN, Esq.
HOSKING, C. H., Esq.
HUMANITARIAN AND ANTI-VIVISECTION SOCIETY OF N.Z.
HUNTER, PROFESSOR T. A.
HUTCHINSON, Miss H. S.
JENNINGS, MILICENT
KIRK, R., Esq.
MACKLEY, J. F., Esq.
MATHEWS, Miss A.
MAXWELL WOMEN'S INST.
MCINTYRE, HUGH, Esq.
MCKAY, DR. WM.
MILNE, JAMES, Esq.
MILNER, F., Esq.
MOORE, DR. W. W., F.R.C.S., *England*
MORICE, DR. C. G.
MORRISON, A., Esq.
MORTON, Mrs. H. B.
MYERS, BEN, Esq.

NELSON GIRLS' COLLEGE
NELSON, ROYAL, Esq.
NORTHERN WELLINGTON FEDERATION OF WOMEN'S INSTITUTES
OTAGO TRAMPING CLUB
PROSSER, T. C. W., Esq.
PYCROFT, Miss F. S.
REICH, Mrs. J. J.
REIDY, M. A., Esq.
ROBERTS, Miss F. A.
ROBINSON, Miss ELIZABETH A.
ROSS, A. A., Esq.
ROTARY CLUB OF WELLINGTON
SCANNELL, DAVID, Esq.
SIMPSON, J., Esq.
SIMPSON, J. R., Esq.
SLADDEN, BERNARD, Esq.
SORENSEN, J. H. JR., Esq.
SOUTH CANTERBURY FEDERATION OF WOMEN'S INSTITUTES
SOUTHERN HAWKE'S BAY FEDERATION OF WOMEN'S INSTITUTES
STATE FOREST SERVICE
STEEL, Miss DOROTHY
THOMPSON, Mrs. T. T.
THOMSON, JOHN, Esq.
WALL, FRANK, Esq.
WATSON, T. H., Esq.
WEGGERS, W. H., Esq.
WHYTE, Mrs. DOUGLAS O.
WILSON, Miss IRENE

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	