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NORTH ISLAND KIWI.
1st Prize No.1 Photographic Competition—A. N. Breckon, Northcote, Auckland.

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UNION BANK CHAMBERS, FEATHERSTON STREET. P.O. BOX 631.

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THE NATIONAL STAMINA

IS IT DEGENERATING?

IT has been authoritatively stated that indications of race degeneration are already in evidence in New Zealand. Whether this be so or not at the present time may be a debatable point, but nevertheless, as surely as night follows day, such a happening is the natural outcome of soil deterioration. The fact that, over the larger part of the Dominion the top soil has lost its former richness is now generally recognised. Pastoralists find that the carrying capacity of many holdings has been considerably reduced during the last ten or fifteen years and that the stamina and health of their stock is progressively decreasing. Man depends upon the products of healthy soil to give him health and virility. The process of unchecked soil deterioration, resulting from sheet erosion, leads steadily down-hill to an ever-decreasing standard of living, a lack of force of character and of will to fight and work, ending finally in race destruction. Some of the many unmistakable signs of race deterioration are, strange to say, the encroachment by women upon what were men's domains in occupation and sport, the division of a nation into warring or quarrelling sections, and many other symptoms not noticed because they come about gradually.

Innumerable instances of this tendency to divide into antagonistic sections and then sub-sections are to be found on all sides, from capital versus labour down to every little village affair. Only a minority judges any matter with a national outlook. We have a notable instance at present of this sectional outlook in the controversy on wild life management or "control" as some people put it. Here we have those bodies who are interested in receiving the revenue from the taking or killing of fish and game, which are national property supported on the productivity of the soil, opposing a proposal which is aimed mainly at benefiting the hunters and fishermen whom these bodies claim to represent (presumably because the law says that licences must at present be paid to them.) In addition, the executives of these bodies, who are elected by a very few licence holders, seem to presume that they are the only section to be considered in the matter, regardless of the people as a whole, who, if they did but know it, are all more vitally affected, including the man on the land. The taxpayer does the paying, directly, by attempting to lessen the menace of mammals in our forests, and indirectly by the loss caused by extensive accelerated erosion accompanied by periodical excessive floods. These, in turn, are partly due to grave past blunders in the acclimatising of such creatures as deer. Many other factors with even more serious damaging powers, such as fire, over-grazing, mis-placed settlement, unscientific and injudicious timber-milling, work actively in co-operation in the destruction of Nature's preventive against excessive erosion, namely, the natural protective vegetation, be it forest or tussock. So the innumerable sections continue to war and quarrel, and get no further ahead, but rather go backward so far as the national well-being is concerned.

The Britisher is, however, always slow to move against wrongs and evils. He will suffer long and enduringly, but any day his national conscience may be aroused, and when this has happened he has been known to act at times in an extremely drastic manner, even to the cutting off of a king's head. One day, perhaps as the result of the ever-increasing damage caused by successive abnormal floods, the New Zealander will bestir himself. Then he will say, "Avaunt, self-seeking sections! Our country and its resources are for the nation and its children and children's children." When the New Zealander acts thus it may confidently be said that the race in New Zealand is not degenerating.

Half a million acres of restorable Kauri
Will twice pay the war debt. No Eastern houri
Could do more for an overtaxed man!
It may settle near twice the men on the land
That the two Land Acts, working hand-in-hand,
Did up to the outbreak of war-
Five thousand seven hundred and eighty.—*Sir David Hutchins, I.F.S.*

NEW ZEALAND'S FAILURE

(By Waiatua.)

ONE RACE, ONE PARLIAMENT, ONE BIG APATHY

IN the United States, "a melting-pot of many races," with a slow-working Federal constitution that puts every American under two Governments and two Legislatures, they envy New Zealand with her rapidly working unitary constitution and with her racial purity. One race one Parliament, one Government—why, New Zealand should, in the opinion of Americans, have the best and most rapid-working wild life administration and legislation in the world. With the goal plain before us, and with a straight legislative and administrative approach to it, we New Zealanders should have "no problems." We should be one united people with one big record of achievement.

But in wild life we have almost no achievement at all. Wild life administration is divided between various mutually suspicious Departments. We talk about consolidating departmental control, but we cannot even consolidate the acclimatisation societies. We cloak our non-achievement behind mountains of words. The New Zealand Treasury may possibly have heard about the balance of nature, but its only active concern is the balance of the Departments.

With one governing machine, one politically predominant party, and one race of people, that machine should have done much for wild life in the last half-decade. But what has it done? Perhaps it has done a little more than its predecessor. But that is a poor recommendation. Piebald North America, with all its confusion of colours and castes and classes, with all its political barriers, eclipses New Zealand in consciousness of wild life, and in protective achievement.

Notwithtanding the complications of conflicting Federal and State Governments within the United States, and notwithstanding "international conservation complications," the United States people do their best to limit the killing of the birds in transit and thus to reduce the effect of the shock that awaits these migrants when they meet the pot-hunting armament close to the Equator.

Now compare these North American migratory geese and ducks with the godwit and other migratory species that grace New Zealand with their occasional presence among us. So far as is known, the godwit when breeding in sparsely occupied North Asian wastes is little interfered with by man, but in New Zealand every year we fire a salvo, not in its honour but at it. That is how New Zealanders celebrate this annual triumph of instinct, this never-ceasing wonder of Nature —the migration of the godwit. In its other home in North Asia there may be a few Eskimos, but they are not machine gunners. As far as is known, they are in no sense Mexicans. For the purposes of the godwit, we New Zealanders are the Mexicans. And proud of it!

Some of our birds go to and fro from the Arctic. Some of our birds go to and fro from the Antarctic. In their Arctic haunts human life is scarce. In the Antarctic it does not exist at all. Therefore Antarctic and sub-Antarctic bird life has little to fear except from us New Zealanders. But what do we find when the albatross tries to nest on our coasts? We find stoning and egg-smashing by vandals.

The vandalism of individuals is bad enough. The apathy of the people, and the paralysis of Parliament, is worse. That apathy illustrates our so-called culture, which has hardly yet learned to lisp the word aviculture. We do pretend to agriculture, but the relation to agriculture of aviculture and sylviculture (the alliance of forest and bird to serve man) is far beyond the ken of all save an inactive minority and a few active individuals, who knock at the door of public opinion almost in vain.

The envious American who considers that New Zealand should have "no problems" refers to the advantages of our "universal education." But are these advantages real or apparent? Forty years ago the middle-class man was far better informed on wild life than he is to-day. To-day he is a specialist sawing bones, drawing teeth, or balancing account books — he is a specialist and nothing else. Education to-day educates the masses for the soap-box and the classes for narrow specialist jobs. That is too wide a story to be dealt with here, but it is the root of the evil.

Awards for No. 1 Photograph Competition

The entries for this competition included many excellent photographic nature-studies; so much so that the judge, Mr. G. C. Clarke, had an unenviable task in awarding the prizes.

Mr. A. N. Breckon, of Northcote, Auckland, a reproduction of whose study appears on the cover, was awarded 1st Prize for a beautiful photograph of a Kiwi feeding in its natural surroundings. Mr. Breckon also received the 2nd Prize for a perfect study of Terns in flight.

The 3rd Prize was awarded to Mr. Ellis Dudgeon, of Nelson, for a fine bush scene.

Other very commendable pictures were received from many, including Miss Patricia Brooke-Taylor, Miss F. P. Fraser, Miss Rona E. Robinson, Mr. C. E. Barwell, Mr. A. Northwood, Mr. W. A. Neill, and Master Ian MacLean.

Particulars of a second competition appear on page 13.

2nd Prize: A. N. Breckon—TERN IN FLIGHT.

THE ELEVENTH COMMANDMENT

(By Walter C. Lowdermilk, Assistant Chief U.S.A. Soil Conservation Service.)

Condensed from "American Forests" for January, 1940.

MOSES was inspired to deliver to the Children of Israel wandering in the wilderness of Sinai the Ten Commandments to regulate man's relation to his Creator and to his fellow men. These guides of conduct have stood the test of time for more than 3,000 years. But Moses, during those forty years in the wilderness, failed to foresee the vital need of the future for an additional Commandment to regulate man's relation and responsibility to Mother Earth, whose cultivation and production must nourish all generations.

If Moses had anticipated the wastage of land due to man's practices of suicidal agriculture and the resulting man-made deserts and ruined civilizations, if he had foreseen the impoverishment, revolutions, wars, migrations, and social decadence of billions of peoples through thousands of years and the on-coming desolation of their lands, he doubtless would have been inspired to deliver an "Eleventh" Commandment to complete the trinity of man's responsibilities—to his Creator, to his fellow men, and to mother earth. Such a Commandment should read somewhat as follows:

"XI. Thou shall inherit the holy earth as a faithful steward, conserving its resources and productivity from generation to generation. Thou shalt safeguard thy fields from soil erosion, thy living waters from drying up, thy forests from desolation, and protect thy hills from overgrazing by thy herds, so that thy descendants may have abundance forever. If any shall fail in this stewardship of the land thy fruitful fields shall become sterile stony ground and wasting gullies, and thy descendants shall decrease and live in poverty or be destroyed from off the face of the earth."

But no such commandment has been a part of man's attitude toward his occupation of the earth except in very limited areas. Man has generally been an exploiter, despoiler and destroyer of natural physical, plant and animal resources of the earth. He has brought upon himself the curse of destruction, impoverishment and desolation in vast areas.

To-day literally billions of acres of originally productive lands throughout the world bear the curse of unfaithful stewards through the centuries. This curse upon the land, by generations of ignorance, neglect, lack of forethought, greed, or oppression, represents a waste to humanity so stupendous as to exceed the comprehension of the human mind.

The world is now more fully occupied by the human race than ever before. In the face of the limited area now available, the idea that man is still destroying its usefulness by inconsiderate and wasteful methods, comes as a shock to thinking people. If man is making deserts out of productive lands, it is a matter not only of national, but of world-wide concern.

Travels through the morgues of former prosperous areas, now desolate and depopulated, are depressing to one who reads the Macbethan tragedy written far and wide on the landscape. It is appalling to see ruins of once great cities, of civilizations and flourishing culture, strewn like weather beaten skeletons in the graveyard of their erosion-wasted lands.

The exploitation of great areas, whether in America, Africa, Australia, or elsewhere, where farmers and stockmen have cleared and grazed new lands at a rate hitherto unknown, tell the same story. Within the memory of the present inhabitants of certain portions of the world, men have witnessed the transformation of fertile plains from luxuriant vegetation into barren windswept desert-like lands. Stockmen tell of grazing paradises, which within their day have been depleted of vegetation and gouged with gullies. People who paid taxes for the building of irrigation dams and reservoirs have already seen some of them abandoned and useless, while other reservoirs are silting up at an alarming rate.

The vast virgin forests of all these newly exploited continents have largely disappeared under wasteful exploitation. It has been annihilation rather than rational cutting with a planned maintenance of the forest for permanent productivity, and for the control of erosion and flashy storm run-off. In a few countries such as Germany, Italy and Japan, a high conception of the permanent value of natural resources for future national greatness

has been developed as a vital policy of national planning. Germany and Japan are exemplary in forest and land conservation. Italy is rushing her programme of conservation and reclamation as a basis for a greater empire.

Fortunately, though belated, a national movement for soil and water conservation was initiated by President Roosevelt, which aroused the American people to the menace of soil erosion. This enemy of civilizations had already destroyed 51,000,000 acres of farm lands and impaired the productivity of 200,000,000 acres more. As a result, the United States has begun the largest and most comprehensive movement for soil and water conservation in the history of the world.

If a nation would project itself into the future it must protect its lands from the ravages of soil erosion. Soil erosion expresses itself as a deficiency disease of the land which begets deficiency of food, vitality, and higher values for peoples and nations.

Soil erosion, the destroyer of land, has been diagonised; its processes are known and its control is possible. The hope for the future lies in a realization that man has an obligation born of a higher economics, a moral obligation to bountiful mother earth which must nourish all present and future human beings as long as it lasts. It is nothing short of criminal for individuals of one generation to sacrifice the right of future man to survive because of traditions of special privileges to exploit the earth. The present and future well-being of a people calls for long-range policies for the maintenance of productive lands and resources. These policies must be founded on what is right for the greatest number of people in the long run. It becomes a matter of social economics and national ethics. Practices of land use which work against the good of the whole must be regulated, whether by law or public opinion, to achieve a dual purpose: to maintain individual initiative and to safeguard the integrity of resources.

Exploitation is self limiting and suicidal. It uses up the principal and makes no provision for future balancing of the national resources budget. Finally, when a nation is reduced to desperation to supply food for its people, it will go to an expense far beyond any tax burden yet known to cultivate diminishing soils.

Land thus becomes, not a commodity, but an integral part of the corporate existence of a nation, even as its people. This principle justifies the safeguarding of soils and the restoration of denuded areas on a basis of national ethics and national economy. Economic considerations of to-day must be shot through with economics of a higher order to meet problems of sustained land use constructively for generations to follow.

Thus for the very endurance of civilization, an ethical approach to land use as a trusteeship, to be used and handed down in a productive condition to succeeding generations, becomes imperative.

Each nation to-day needs to have many a Moses of land conservation, to instill in the national consciousness the principle of an Eleventh Commandment to regulate man's relation to the holy earth as a faithful steward, to conserve its productivity from generation to generation. Then fields will be protected from soil erosion, water brooks from drying up, and hills from overgrazing by herds, and future generations may be assured of abundance forever.

Only by conservation in the fullest sense of the basic resources of land, water, and the spirit of peoples, can we maintain the human values of wholesome standards of living, opportunity, freedom, justice, and faith in the destiny of our modern civilization.

EROSION IN NEW ZEALAND. (A common scene).

THE RUINED LAND

A MAN-MADE CALAMITY

(By J. C.)

THE heavy rains which resulted in the recent disastrous floods and wash-aways over a wide area of country in the north Taranaki, north Wellington and Upper Wanganui districts, the heart of this north island, have really been no worse than the downpours of the past. We have had just as heavy a rainfall many times within memory during the last half-century. They simply do more damage because the protective forest garment of the land has been ripped away, and that is chiefly the result of the egregious blunders of the New Zealand landholder and all the New Zealand land administrations that have ever had to do with the settlement of the country until the last decade.

The mischief, the mishandling of the land and the forest, which began with the settlement of the land on a large scale and the felling of timber for sawmilling without replacement, has now proceeded so far that it is almost hopeless to attempt to restore conditions of security and safety.

Some of the wrecked districts have appealed to the Government to help them. It is natural that they should; it was the Government that thirty, forty, fifty years ago and more began the work of ruin. The crude old land settlement rule of past Governments, the policy that not only encouraged but enforced the destruction of the guard and shield of bush, is bearing its disastrous fruit to-day. The Governments of the past were obsessed by the all-important grass; nothing else mattered; the bush was simply an encumbrance to be got rid of. The Lands Department would not even wait for the sawmiller; there was a time limit.

As for the settlers, the principal sufferers, the trouble often was directly of their own making. Ignorance, lack of any scientific instruction in dealing with soil and vegetation, and the rush for more land than they could handle, rendered them easy instruments for successive land administrations that "opened up the country" for the sake of revenue and dearly-bought production.

Many of us have watched — helplessly enough, for we are not politicians, who have it in their power to reform policies — the process of soil damage operating all over the newly settled districts gradually working up— or down — to the conditions reported last month.

I shall take just one of these areas devastated by flood waters as an example of the shocking ruin of a country that should never have been "settled"—what a term of irony it is to-day! This is the region of rough contour between the King Country and Taranaki — Ohura, Whangamomona and contiguous districts, as far as Stratford. It is typical bush district, or rather half-and-half mutilated bush and murdered clearings. When I saw it first nearly 50 years ago it was one vast and splendid forest, growing on land that for the most part was broken into sharp ridges and narrow valleys, with here and there a comparatively broad saucer where very tall and really magnificent timber grew. One of these saucers of richest vegetation was Whangamomona. It was raining there, and we camped until the heavy downpour ceased, two or three days. We scarcely felt it in our bush shelter of branches and fern fronds. The rise of the rivers was scarcely perceptible; the thick sponge of ground vegetation below the roof screen of the 100ft. trees gradually filtered the rainfall and reduced the weight of its assault upon the earth. It was in fact not an assault at all; Nature's screen of garments tempered its fall to the hills and valleys.

That was the back country for scores upon scores of miles before the "opening up" of the country began. Then began also the ruin that brings yells and moans of distress from townships, farms, railways and roads, and thousands of travellers.

The country was opened up with a vengeance. The Crown Lands Department compelled all holders of sections to carry out improvements as one of the conditions of retaining their land. These "improvements"

consisted in the first case of felling the bush and burning it off. If they did not make haste to do so, their sections were forfeited and some other plucky but misguided toiler took it up, and a smother of fiery smoke covered the land.

Over hundreds of thousands of acres this process was repeated through successive burning-off seasons, until the grass seed began to "take." It took well at first; there was a lush growth for the first year or two, and then the second stage began, the slipping away of the land and the slippery-slidey blue *papa*. Trees, shrubs, roots and all are gone. There is nothing to hold the ribs and flesh of the land together. The clearance extended over the steepest ranges. No need to describe the rest of the sorry progress of settlement. We see it to-day, in all its ugliness and tragedy. But the very sufferers themselves fail to understand the root causes of the ruin. They blame it all on the "unprecedented rainfall."

Scientists tell us that one-third of New Zealand should be under forest. These North Taranaki and Upper Wanganui and King Country highlands were exactly designed by Nature for the purposes of a great forest reserve in perpetuity for recurrent crops of selected timber and for river and soil protections. But who takes notice of old Mother Nature?

3rd Prize Photographic Competition: Ellis Dudgeon, Hardy Street, Nelson — TREE FERNS AT PELORUS.

GROWTH RATE OF NATIVE TREES UNDER CULTIVATION *(By L. W. McCaskill.)*

ONE of the complaints made against the use of native trees for planting for purposes of ornament, conservation or timber is their alleged slow rate of growth as compared with exotics. Although there is plenty of experience to the contrary there do not seem to be available many actual growth records of trees of known age. It is fortunate that we have in Canterbury such an enthusiast as Mr. J. M. Baxter of the Tawhai Nursery and Native Reserve on the slopes of Mt. Pleasant, near Christchurch. Mr. Baxter has spent several years in a labour of love—the changing of a dry grassy hillside into an area of artificial native bush, nearly three acres in extent. The result is what must be one of the finest collections of native trees and shrubs in existence. Of particular interest is the fact that the owner has personally grown from seed, cuttings, or wild plants, every plant in the collection except those necessarily imported from the North Island. Further than that, he himself planted every tree and shrub, with the result that accurate information is available as to the age and soil treatment of almost every plant in the collection.

The first trees were planted some thirteen years ago in holes prepared in the grass covering on the hillside. With subsequent plantings greater attention was paid to prior cultivation with results obvious from a study of the tables. In February, in company with Mr. Baxter, I made measurements of the height and circumference at ground level of representative specimens of trees and shrubs, together with the date of planting and the soil treatment prior to planting. Most of the plants would be two to three years old at planting and were planted out of pots or as balled plants from nursery rows.

General view of Mr. Baxter's Native plantation.

A.—Planted in holes prepared in the grass. B.—Planted in well cultivated ground. C.—Planted in ground grubbed and trenched two feet six inches deep.

	Number of Years since Planting.	Species.	Common Name.	Height in feet.	Circumference at ground level (inches).
A	12	*Nothofagus solandri*	Black beech	24½	19
	12	*Edwardsia microphylla*	Kowhai	18	13
	11	*Nothofagus fusca*	Red beech	16	26½
	11	*Pomaderris apetala*	Tainui	17	17
B	8	*Pseudopanax ferox*	Lancewood	12	6½
	8	*P. lessonii*	Lancewood	11½	—
	8	*Nothofagus cliffortioides*	Mountain beech	21	12
	8	*N. fusca*	Red beech	15½	12
	8	*N. menziesii*	Silver beech	17	11
	8	*Podocarpus spicatus*	Matai or black pine	9	—
	8	*P. dacrydioides*	Kahikatea or white pine	13	10
	8	*P. totara*	Totara	18	15
	8	*Pittosporum ralphii*		18	22
	8	*Griselinia littoralis*	Broadleaf or kapuka	12	11
	8	*Edwardsia tetraptera*	Kowhai	13	—
	8	*Dodonea viscosa*	Akeake	19	16
	8	*Pittosporum eugenioides*	Tarata or lemonwood	19	16
	8	*Hoheria populnea*	Ribbonwood	23	28
	7	*Nothofagus xblairii*	Hybrid beech	25	16
	7	*Fuchsia excorticata*	Kotukutuku	14	12
	7	*Phyllocladus trichomanoides*	Tanekaha or celery pine	9	—
	6	*Alectryon excelsum*	Titiki	11½	2
	6	*Pennantia corymbosa*	Kaikomako	8	—
	6	*Cordyline australis*	Cabbage tree	17	33
	6	*Libocedrus bidwillii*	Pahautea or cedar	6	6
	5	*Pseudopanax trifoliolatum*	Lancewood	8	—
	4	*Edwardsia tetraptera*	Kowhai	11½	—
	4	*Nothopanax arboreum*	Whauwhaupaku or fivefinger	11	11
	4	*Griselinia littoralis*	Kapuka or broadleaf	11	—
	4	*Pittosporum ralphii*		12	8
	4	*P. tenuifolium*	Kohuhu	14	11
	4	*P. crassifolium*	Karo	10	9
C	2	*Nothofagus cliffortioides*	Mountain beech	7	4
	2	*N. fusca*	Red beech	9	5
	2	*N. solandri*	Black beech	10	5
	2	*Hoheria populnea*	Ribbonwood	12½	9
	2	*Nothopanax colensoi*	Orihau	9	5
	2	*Pittosporum ralphii*		8½	—
	2	*P. eugenioides*	Tarata or lemonwood	7	4
	2	*Leptospermum scoparium*	Manuka	7	—
	2	*Edwardsia tetraptera*	Kowhai	6½	3
	2	*Dodonea viscosa*	Akeake	10	5
	2	*Aristotelia serrata*	Makomako or wineberry	8½	—
	2	*Cordyline indivisa*	Cabbage tree	10½	21
	2	*Libocedrus doniana*	Kawaka or cedar	4	—
	2	*Brachyglottis rangiora*	Rangiora	7	—
	2	*Agathis australis*	Kauri	4	—
	2	*Entelea arborescens*	Whau or corkwood	6	—
	2	*Laurelia novae-zelandiae*	Pukatea	4	—
	2	*Vitex lucens*	Puriri	4	—

These figures are eloquent proof of the rapid growth of native trees under dry conditions with light winter frosts. The main factors necessary appear to be thorough preparation of the soil, use of hardy nursery-raised stock, and planting in close association.

Mr. Baxter's garden is an excellent example of the results of planting "bird food" and supplying fresh drinking water. Birds are with him all the year round feeding on nectar of kowhai, flax, and fuchsia, and the berries of poroporo, fuchsia, wineberry, cabbage tree, fivefinger, broadleaf, ngaio, and the pittosporums. Dozens of birds nest undisturbed every year.

NATURE OBSERVATION

(By R. H. D. Stidolph.)

THE NEED FOR ACCURACY IN FIELD WORK

A BIRD-LOVER enjoys every minute of a day spent among the birds in the open, and if the art of observing wild life is tackled in an intelligent way many observations of value may be recorded. In New Zealand, where almost all native birds are protected, it is the most logical pursuit for those whose enthusiasms for our birds finds expression in a desire to become better acquainted with the ways of their feathered friends. A careful observer never causes any distress to, nor unduly disturbs, any bird but is content to watch them and record their habits, working so quietly that on many occasions the birds may be quite unaware of his presence. It is under such conditions that true insight into a bird's habits is to be gained. Moreover, even dwellers in cities and towns, if they keep their eyes open and their ears tuned into bird calls, may often see something of more than usual interest. It must not be assumed that a city dweller is ill-placed for making observations of that kind. As a case in point, how many of the hundreds of thousands of people who visited the Centennial Exhibition during the birds' breeding season noticed that both the starling and the sparrow had been quick to seize the opportunity of finding suitable places for nests inside the Exhibition buildings?

Every care must be taken when making a record that it is correct in every particular. To ensure this it is necessary to be positive of the identity of the bird and to record only exactly what takes place. The value of a record is at once destroyed if mere assumption is allowed to appear as an event of fact. It is far better to refrain from putting forth any observation if there is any doubt as to its correctness. It is essential always to place first and foremost the safety of the bird. Never do anything that imperils the safety of a bird or its nest. Do not under any circumstances touch a nest or the eggs, as some birds will readily desert them if they are handled, and in any case it is quite unnecessary to interfere with them. In making an examination of a nest, a mirror fixed on to the end of a stick is of great assistance and enables the contents of a nest to be seen without jeopardising the safety of the structure by climbing to it, especially when the nest is placed on a thin branch. If you are watching a nest, do so from a convenient distance, so that your presence does not disturb the adult birds; and if you find the birds will not return, even when you are a safe distance away, retire altogether rather than endanger the young or eggs. Remember that as a bird lover and a bird observer your job is to check vandalism and to save the birds from any injury.

KUKU — NEW ZEALAND PIGEON

[Photo: Rona E. Robinson, Dunedin

Apart from the breeding habits, many valuable observations of the habits of birds may be made; but the best work is obtained when you work to a definite plan and in collaboration with other bird watchers. For instance, concentrate on one particular area or one particular species. Take careful and full notes of everything you see, such as the first arrival of a bird, how many birds inhabit the area, when they start to sing, when the breeding season starts and ends, their behaviour in respect to territorial rights and to other species, how they are affected by the weather, how many broods are reared in a season, and a thousand and one other points that arise, and at the end of a year a valuable mass of data is accumulated. The same thing extended over a number of seasons allows comparisons and deductions to be made that may be of considerable value. Although much good work can be accomplished without binoculars, a good pair of glasses is almost indispensable. They enable an observer to see many intimate little happenings in a bird's life that would otherwise be missed and in many cases to identify positively a bird that under ordinary circumstances would not be possible. Prismatic binoculars of six or eight magnification are the most suitable for general all-round work.

It is as well to remember that laboratory work, unless supported by accurate field observations, loses much of its value. It is possible in some cases to be misled by placing reliance on laboratory conclusions to the exclusion of other evidence. Similarly, a casual observer may make a gross mistake, as is evidenced by an instance in which a poultrykeeper in Australia, seeing a hawk perched in a tree over his chicken runs, at once concluded that the hawk had designs on his poultry. The bird was shot but when its stomach was opened up the crop was found to be crammed full of large caterpillars and grubs. Because a bird is seen in a wheat field crop it must not be concluded that the bird is feeding on the grains; it may be destroying injurious insects that threaten the very existence of the wheat. These instances emphasise the great need for care in making bird observations and at the same time give some idea of the scope offered in the field for accurate work. No native or introduced bird in New Zealand has been studied systematically and there is an almost virgin field of investigation open for bird observers in this country who have the time and inclination to undertake work on these lines.

One of the most important aspects of bird observation work is that which concerns itself with recording evidence of the depredations of enemies, such as stoats, ferrets, weasels, cats, rats, dogs, or opossums. Unfortunately, a mass of misstatements exist about many incidents of bird life, one of the most glaring of which, in recent months, being that the hedgehog had wrought so much devastation among the skylark as to cause this bird's almost total disappearance in some areas. As a matter of fact, in areas known to the writer where the hedgehog is quite common, the skylark remains one of the most numerous of introduced birds. No one denies that the hedgehog destroys the eggs and young of ground-nesting birds, but the extent of this destruction is a matter which provides a good example for investigation by careful bird observers. The depredations of the weasel tribe among birds have been established beyond doubt; but who had heard of the pukeko being able to hunt and destroy these bloodthirsty little animals until a week or two ago a resident of Charleston, near Westport, reported that the pukeko actually did tackle and vanquish these animals? Here again is another avenue for investigation by bird-observers. Is this a common trait of the pukeko or an isolated case? Are there other birds that give the ferret tribe equally short shrift? The replies to these and many other vital questions can be supplied by bird-observers.

FANTAIL ON NEST
Photo G. A. Buddle, Auckland.

OBSERVATIONS BY THE ROADSIDE

(By Hugh Ross.)

IN the bush festooning the placid waters of lovely Lake Rotoiti I saw, for the first time, a bush robin. For a moment I actually took it to be an unusually corpulent hen tomtit. Quite the tamest of our native birds I have ever encountered, he was perched upon a convenient root supervising my tying a swag to the cycle-carrier with interested and critical eye. An instant later he flew over to perch on my foot.

He rested there for some time and not once did he deign to look up at me. Beady eyes unwinking, he peered and peered—one might have thought short-sightedly—among the leaf-mold. Next minute he pounced triumphantly, returning with a very minute something that I think was a centipede.

I offered this quaint visitor a handful of bread-crumbs. He accepted them readily enough, his claws gripping my finger firmly while he picked at the offering in a manner so violent as to send small particles flying in all directions. Fear? It never entered his head. I could have caught him a dozen times. I started the engine of the bike and he came and perched on the handle-bars to twitter at the noise. He showed only anger and ruffled his feathers, apparently ready and willing to attack had he but known where to direct his energies. I left him, twittering bewildered protest at the exhaust smoke-cloud oozing about him. As I rode away I thought of that little robin. I think of him yet, wondering if he will still be there when some day I go back. I fear not, however. You see his delightful tameness will probably prove his downfall—the first marauding cat to discover him will achieve an easy capture.

At Lake Rotoroa there is a pretty little track cut through the dense bush: it follows the lake shore for a short distance ere striking off. Wandering along it one sunny afternoon I had my first close view of a parakeet. A cheery red and green chap, he flew from a branch above my head, alighting on the track to dig and delve with his powerful beak among small chips and fallen leaves. The manner in which those chips flew adequately bespoke the strength of the bill, too. He was very tame, allowing me to approach within a few yards

SOUTH ISLAND ROBIN.

[Photo: Mrs. P. Moncrieff

of him ere flying farther along the path to resume his grub-hunting.

Nearly a quarter of a mile did he precede me, alighting every chain or thereabouts for further fossicking. I do not think he welcomed my presence either—certainly I interrupted his quest for food a good many times—for presently he flew over my head and alighted behind me. He was still on the path when I returned an hour later. This time he made a peculiar harsh cackling noise ere flying off into the forest. With green coat and long, graceful tail he was a strikingly handsome fellow. To have caged that bird would have been a cruel crime!

I visited that wonderful and beautiful sight far down on the West Coast—Franz Joseph glacier. A narrow white track, so cunningly cut as to enable one to see only a very short distance ahead, leads from the hostel to the glacier. I returned along it on a still summer evening. Borne to my ears was the cry of a far-off bird. For a time I failed to place it;

then, suddenly, I knew, although I was hearing it for the first time. "Care!" it called. "Care!" Soon, far, far above I beheld it, hovering as a hawk might have hovered, above its glorious domain and looking down on the bush and the huge glacier white and grim in the approaching dusk. Afar he would see the blue Pacific and, facing it, those distant snow-peaks of the Southern Alps. What a domain! What an indescribably lovely home, vast, wild, and never to be forgotten! And how that lonely, poignant cry "care!" borne on the wings of night fitted it to perfection. I wandered on . . . that other kea I had seen was in my mind. "Happy? Of course he is happy! Why, he is in practically natural surroundings," I was told enthusiastically. He was in an aviary perhaps sixteen feet square. There was a miniature pile of rocks and a large pine-cone at which a doleful kea picked and picked, or spent endless fruitless hours trying to pull his tin of water from the ground where it was securely pegged. Poor captive! Probably never again would he cry "Care!" in the manner his wild brother was now doing, unless, maybe, in his dreams.

Days later I sat among some stunted manuka watching the sun set over Lake Hawea. Already the rays had caressed the blue waters for the last time that day. By now the brown hills on the far side were turning purple. Flapping clumsily came a great black shag to alight on a stone within six feet of me. Through the screening manuka I peered at him with interest. Of a sudden he shook his sleek, glossy head and tiny beads of water flew, dimpling the tranquil lake surface. Next he stooped and bit tentatively at a small piece of drift-wood; I actually saw the bark crumple! Long moments he spent looking at the blue waters, white shore-line and big bare hills. And who shall say what thoughts were in his mind? With laborious flap of wings he lazily made off.

That night as I lay on a bracken bed gazing at the white tent walls and listening to little noises of the calm night, I sighed. To-morrow I had a three hundred mile ride home because my holiday was ended. And what a holiday! With what a wealth of flora and fauna New Zealanders are blessed. More and more was forced upon me the wisdom that lies in the clarion-call of the Forest and Bird Protection Society: New Zealanders, cherish your heritage!

PRIZES FOR NATURE-STUDY PHOTOGRAPHS

To encourage the development of Nature photography the Forest and Bird Protection Society is offering the following cash prizes:—

Section A. £1 for best photograph depicting native land bird or birds.

„ *B.* £1 for best photograph depicting sea birds or waterfowl.

„ *C.* £1 for best photograph depicting scenic beauty.

„ *D.* £1 for best photograph depicting forest destruction or erosion.

Photographs of birds in captivity are not eligible.

The winning photographs, with the names of the prize-winners, will be published. Awards of 5/- each will be made to other competitors whose photographs are deemed worthy of publication.

Any competitor may enter any number of photographs.

The competitor's name and address and the title must be written on the back of each photograph, which must be a glossy print to facilitate reproduction.

All entries become the property of the Forest & Bird Protection Society.

The judge will be Mr. G. C. Clarke, Process Expert.

Entries close 1st July, 1940, and should be addressed to Forest & Bird, Box 631, G.P.O., Wellington.

£100 FOR FORESTS AND BIRDS

By E. V. Sanderson.

A bequest of £100 has been received by the Forest and Bird Protection Society, under the will of the late Mrs. J. P. Firth, widow of that great schoolmaster who was for a number of years principal of Wellington College.

The late Mr. and Mrs. Firth always took a very keen interest in the work of the Society and both were enthusiasts for the conservation of New Zealand's forest and bird life.

Mr. Firth attended the initial public meeting in 1923, which was called with a view to forming the present Society, and gave a remarkable address on patriotism. He spoke of how our mountains, lakes, forests, and birds represent New Zealand in all its scenic beauty and glory, and how every New Zealander should cultivate a regard and respect for those things which made our native land what it was and is.

THE LATE J. P. FIRTH.

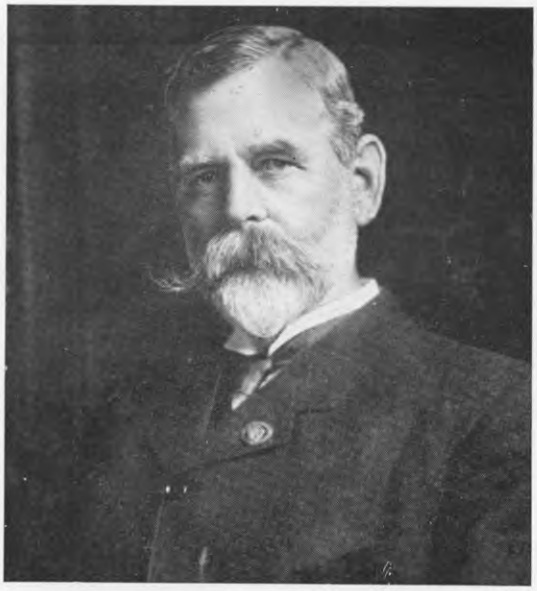

Photo by courtesy "Evening Post."

Mr. Firth also took an active part in the saving of Kapiti sanctuary, which, about fourteen years ago, had fallen into a deplorable state owing to mis-management. The present improved condition of this sanctuary is partly due to his interest, and his encouragement of those who headed an agitation to have the island efficiently handled.

Later, Mr. Firth edited the Society's bulletin. At such time many congratulatory references were made by newspaper editors to the high tone of the matter appearing in the publication.

When the Society is honoured with the administration of such bequests, the writer feels that as some of the present Executive and many of our prominent members have in their time come under the influence of the late Mr. Firth, his maxim will be well remembered—"First and foremost, be a man and play the game." Also, the words which Mrs. Firth spoke to the writer —"He still lives in his past pupils"—will urge many to carry on to final success the great work now in hand.

THE WORLD'S LARGEST TIMBER YEILDING TREE.

If a pioneer Englishman had discovered valuable coal mines and opened them up; if an unskilled race had come afterwards and burnt the coal mines, making clumsy attempts at working them, the feelings of the Englishman would match sentiments I have heard expressed by French foresters regarding the destruction of the Kauri forests!

SIR DAVID HUTCHINS, I.F.S.

BADGES.

Further supplies of these are at present unobtainable except at prohibitive prices.

ALBUMS.

One depicting 24 forest inhabiting birds in colour, price 12/6, and a second illustrating 24 sea birds in colour, price 10/-, are now on issue.

Each picture is accompanied by letterpress describing the habits of each species.

The pictures in both are executed in a manner unapproached so far.

Children's Page . . .

"TALES OF TAIAROA"

(By Ruth Hertslet.)

"THE FERN FROND FOLK"

IN the Leafy Deep dwelt the Fern Frond Folk. Giant matai, shining broadleaf, and graceful kotukutuku trees sheltered them from the mid-day sun, and silvery waters rippled at their feet. Bell-birds sang in the freshness of the morning and the cool of the evening; Rainbow trout leapt in the waters and rested contentedly under the overhanging branches; and fantails darted at the swiftly moving insects, turning with quick and graceful movements. A place of peace and beauty was the Leafy Deep, and wise old Father Punga lifting his giant head gazed happily at his people, the Fern Frond Folk.

It was Terry Pteris from the bracken field who first brought the disturbing news.

"Father Punga! Father Punga!" cried he in distress, "the merry picnickers are coming. They will soon be upon us! Look and listen!"

Horror stricken, Father Punga gazed at the hill-top, and sure enough, there they were, laughing and singing, and scrambling down the hill. His face turned pale, and his giant fronds shook violently. At the same time, his ears caught the sound of a voice, sweet and lilting.

"Taiaroa! Taiaroa!" called he in despair. "Little Master, the people need thy help!"

Bounding down the hill came Taiaroa, son of the Music Man and the Sun Woman, and great-grandson of that mighty chieftain, Hone Heke.

"You called me, Father Punga?" said he gently. "Yes, Little Master," and the giant fronds trembled; "evil is about to befall us." Taiaroa laid a comforting hand upon the massive trunk. "Your wisdom is great, Father Punga," said he gravely. "Let not your courage be less." Then he turned and scanned the hillside. Quickly the flashing brown eyes took in the situation. Here were the Merry Picnickers, with their shining axes, come to collect greenery for the Easter festivities. No wonder Father Punga trembled!

"Oh, what a heavenly place," cried one. "Look at those ferns!" "Just the very thing to decorate the hall for the Easter party," cried another. "Look at that Punga! What a beauty! We'll tackle him first," said a third picnicker. Only Hal Daintree, the one child of the party, watched fearfully. "Let's go away," said he fiercely. "They are far too pretty to cut down. Please do not kill them!" But no one paid any attention to him.

"Let us boil the billy first," cried the Merry Picnickers. Soon a fire was blazing merrily, and the party spread rugs and opened baskets. "Hurrah for billy tea," cried the Merry Picnickers. Long and loud was their laughter, until at length they were interrupted by a soft, musical voice. "Tena koe, Pakeha," said the mellow voice courteously. "This is the home of the Fern Frond Folk. I beg that you will leave it unmolested." The party looked up, and saw a small Maori boy, head erect and eyes deadly calm. They did not see the music of the Universe in his heart, or the love that the Sun Woman had taught him, or the proud noble spirit of his great grandfather Hone Heke. Only Hal Daintree saw something of this. His eyes flashed in sympathy.

"Run away, little Maori boy, and do not bother us," cried one of the Merry Picnickers. "Yes, off with you, and look sharp," called a second. Only Hal Daintree came shyly forward. "Stay and picnic with us! There is plenty to eat." "Hal, sit down! We do not invite Maori boys to our picnics!" The voice was sharp with reproof, and Hal coloured painfully.

"Thank you, son of the Pakeha." The mellow voice was wonderfully soft, and the eyes were shining. "Taiaroa never forgets a kindness." Smiling, he held out his hand, and quickly Hal grasped it. Brown hand met white hand, and brown eyes smiled into blue eyes. A friendship was cemented. Then quickly the brown boy turned and faced the Merry Picnickers. "You will leave this glen undisturbed." The mellow voice had in it the ring of command, and the brown eyes were flashing. "I, Taiaroa, have spoken!" And quickly he turned and walked away.

Loud and long was the laughter of the Merry Picnickers as they picnicked in the Leafy Deep, the home of the Fern Frond Folk. Only Hal

Daintree stood silent, feeling still the pressure of the brown hand, seeing again the softness of the brown eyes. At length, having eaten their fill the Merry Picnickers packed their baskets and folded their rugs.

"Now for the ferns," cried they, and reached for their shining axes. They gazed in amazement. Every axe was covered, handle and blade, with Bumble Bees — angry, buzzing, yellow-banded Bumble Bees. Alongside stood a small boy smiling quietly. One picnicker angered, reached out to grab the boy by the neck, but drew back with a cry of pain. Another, venturesome, tried to grasp an axe handle, but drew painfully back. The buzzing grew loud and angry.

"Gently, Buster Bumble, gently," soothed Taiaroa. Then, turning to the Merry Picnickers, he said quietly, "Now will you go—and quickly—or shall I set Buster Bumble and his Yellow Dandies upon you?" No answer.

"Well, Buster, work your will, but do not touch the small son of the Pakeha. He is my friend," he added softly.

"No, no," cried the Merry Picnickers in dismay. "We will go away—the place is bewitched!" And off they fled. Only Hal Daintree turned to say good-bye. Once more white hand met brown hand. Once more blue eyes smiled into brown eyes. "Come again," said the soft musical voice. "Taiaroa will await you."

"Oh! surely," cried Hal, little dreaming of the friendship that was in store for him. On the hill-top, at the edge of the whispering bush, Hal Daintree turned. What was that sound so wondrous sweet? Could it be Pan himself, with his wonderful pipe? Stealthily he crept back through the Whispering Bush, and peered into the Leafy Deep. There, to his amazement, he saw the Fern Frond Folk, in their natty green suits, dancing merrily, their long plumes swaying up and down in rhythmic grace. And there in the arms of the giant Father Punga, the sunshine in his eyes, and in his heart and in his voice, nestled Taiaroa, singing with a sweetness that rivalled the Pipes of Pan:

"Dance Little Folk, in your Leafy Deep,
Where rainbow trout in the waters leap,
Where bellbirds tinkle their silver bell,
And dainty fantails their secret tell.
In broadleaf shiny and matai bold,
And kowhai laden with treasures gold,
Dance little Fern Frond Folk.
Maiden sweet in your bright green gown,
Gallant gay, with your plumes of brown,
Dance Little Folk, there is naught to fear,
The son of the Music Man is near.
Dance Little Folk in your Leafy Deep,
Taiaroa, a watch will keep.
Dance little Fern Frond Folk."

THE HOME OF THE FERN FROND FOLK —Photo A. Northwood, Kaitaia.

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FOREST AND BIRD PROTECTION SOCIETY

OF NEW ZEALAND (Inc.)

APPEAL FOR BEQUESTS.

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

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

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

CALL FOR SANCTUARIES.

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

OBJECTS.

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

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

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		

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