Forest and Bird

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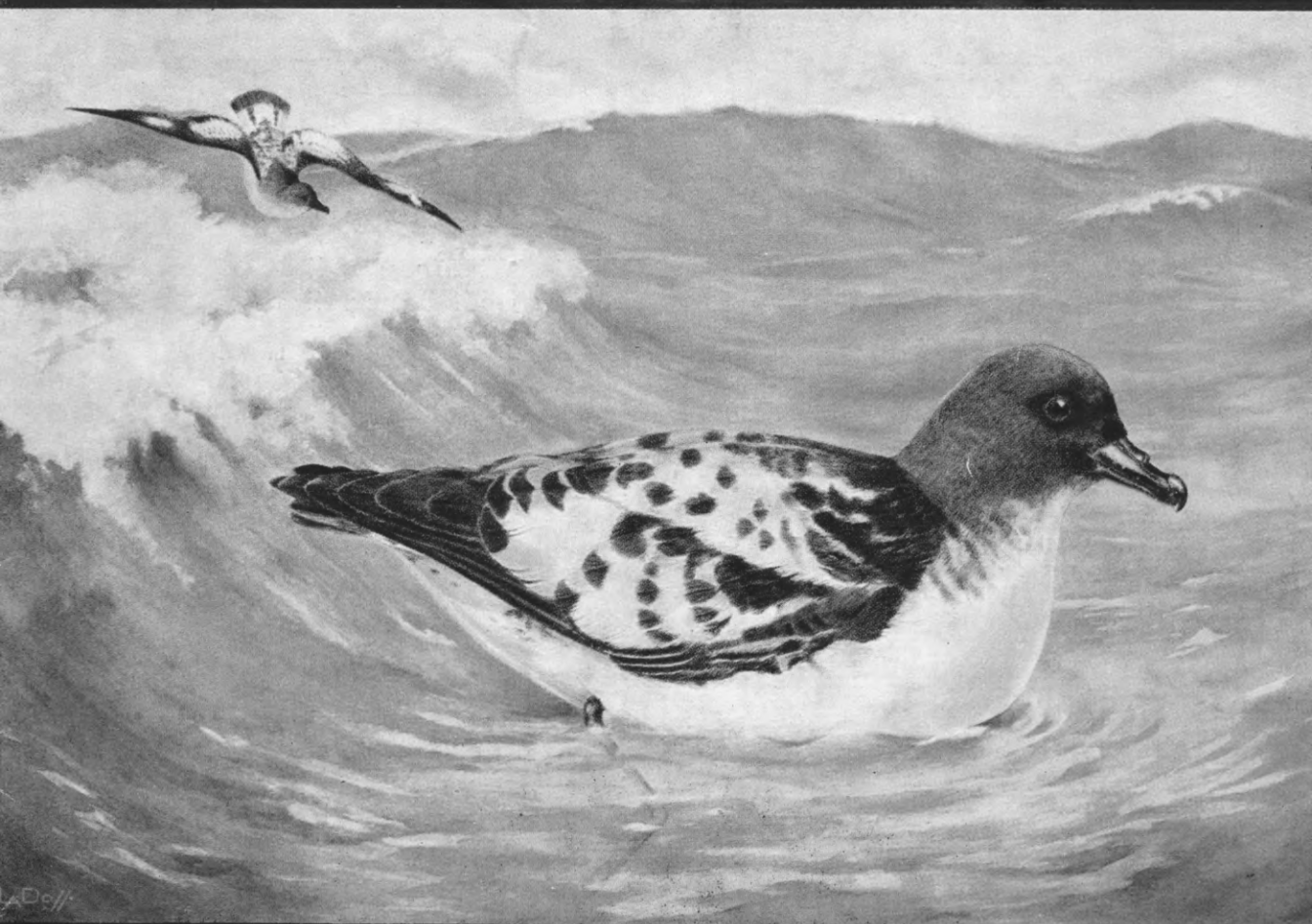

CAPE PIGEON

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FOREST AND BIRD PROTECTION SOCIETY

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AN URGENT NEED

THE DEMARCATION OF LANDS

THE need of a stocktaking, in order to obtain accurate estimates of the remnant of our native forests, is an urgent economic necessity. It is believed that some work was done in this direction about the year 1924, and that this showed that the remnants of real native forest were alarmingly small even at that time. Much of those areas has since been cut out.

A recent authoritative statement gives the remaining forest land, including scrub covered land and second growth, as 20 million acres. This official estimate is made up as follows—National Parks, 3,000,000 acres; Scenic Reserves and Domains, 1,000,000 State Forest Reserves, 8,000,000 (presumably including exotic plantations, 1,000,000 acres); otherwise owned, 7,750,000.

An estimate made on such a basis can only be likened to a business which overvalues its stock-in-trade, and thereby misleads itself and the public, because much of the land on the reservations named carries neither scrub nor second growth, let alone forests, as it includes large areas of snow-capped mountain tops, such as Egmont, Ruapehu, Tongariro, extensive areas in Fiordland National Park, and waste lands (without scrub or second growth even) on all reservations.

It is feared that an accurate stocktaking of the remnant of real forest would bring the total area down to as low a figure as three million acres. Nobody knows, as far as we can ascertain, what the total acreage is of the remnant of real forest still intact. Now what would be said about the business, which managed its affairs in such a manner that it never knew what stock it had on hand, and how far it could draw on its stock without depleting its resources and bringing its operations to a standstill.

A soundly managed business enterprise would know its resources in stock and how to utilise them to the best advantage. In the same way, then, the first act in dealing with our land resources should have been to ascertain their areas and qualities, in order that each class could be put to its best purposes, whether it was agriculture, pastoral, forestry, scenic, etc. But what did blundering New Zealanders do? They felled forests which should have remained standing. They financed hardy pioneers to do this and to attempt to make a living off land which was unsuited for farming purposes, with the result that the work of these deluded pioneers was lost to the community and much loan money had to be written off.

Lands have been destroyed for a small gold return on lands which would have returned real necessaries of life for centuries, if they had been put to their proper purposes. Successive Governments have allowed large areas of high tussock country to be burned and grazed until its natural water-retaining qualities have been destroyed, and much of it is now of little use for pastoral purposes, but is a terrible

menace to lower and much more fertile lands. Thus the disastrous blundering has gone on from one decade to another.

But it is never too late to mend. So why not now, begin where we should have first begun and demarcate all of our lands to their proper purposes, irrespective of ownership. Then, as opportunity offers, we can put the lands to their most productive purposes. Most people, during the past few years, have been merely talking platitudes, both as regards forest and wildlife conservation. The time has arrived for action, real live action, if the soil of New Zealand is to be saved for posterity.

Where the Birds once sang.

NATIONAL PARKS

THEIR FOREST MANAGEMENT.

By Mr. E. P. Menecke, of the Bureau of Plant Industry, Department of Agriculture, Washington.

"THE park forester, it seems to me, deals primarily with the wild vegetation; that is his legitimate field. He preserves the wild forest in good growing condition. He works in large masses of trees and plants, and protects and fosters their growth. He is essentially, then, a biologist and ecologist. If he wants to shape the forest to the best advantage, and to protect the forest against unfavourable influences, he must know and understand the life and laws of life of the plants that compose the forest. This lifts his attitude toward the forest out of the purely mechanical. All plants, all trees in the forest are the objects of his care, and he must have an understanding of the conditions under which those particular plants or trees grow and of the effect that his treatment of the forest will have on those conditions."

In many types of forest the easiest and simplest way of making a fire-break is to strip a clean and straight swath through the forest. When it becomes advisable in a park, in order to accomplish identically the same purpose—that of creating an artificial barrier across the path of a possible fire, as a precautionary measure, the objective of preserving natural beauty as much as possible and the avoidance of glaring scars dictates departure from straight lines and the leaving of a certain proportion of the natural growth within the barrier zone.

Planting practice for the commercial forest appears to be pretty well standardised. It permits the use of whatever species is calculated to bring the greatest economic return, whether the ratio of the several species be the same or different from that found in nature, and whether the species be indigenous or not.

Planting projects in the natural park are usually undertaken on areas where logging, excessive fires, agriculture, disease, or insects, or some or all of these, have destroyed the native vegetation to such an extent that there is little or no prospect of a renewal of forest cover for a very long period of time. Here the effort is to restore or hasten the return of such a forest as originally grew there. That means the use only of indigenous species, in something approximating natural proportions. It means that two trees may be planted in a row, but never three—that the spacing shall simulate that of nature; and that once established, those "unhampered processes of nature" shall not be interfered with.

To the commercial forester, trails are primarily a means to the end of providing the readiest possible access—chiefly for protection—to all parts of the forest. What may be viewed along the way is almost wholly incidental. In the layout of park trails, we need the counsel of the forester, who is equipped to say where they should go in order to serve their protective purpose. Since, however, they must serve another purpose of equal importance, that of providing the park visitor a means of access to certain natural features that may interest or exalt him, and of doing that, again, with the minimum of disturbance of the natural appearance of the park, he must be willing to accept modifications of the strictly practical and utilitarian, in order to contribute more to the enjoyment of the trail user. He must even be content to leave certain areas trailless—to take his trails around, instead of through them, in order, for instance, to avoid interference with certain wildlife features, or wildlife habitats that are counted as important assets of the park but that might be accorded minor significance, or none at all, in the commercial forest.

Forest improvement is, of course, one of the important means by which the immediate economic value of the forest is heightened. It is based primarily on the comparative values of different species of trees as well as of individual trees of the same species. The commercial forester, for instance, will speak of certain species as weed trees; of certain individual trees as undesirable. To the park forester "there ain't no such animal" as a weed tree; they all have their own contribution to make to the natural forest picture; and the very tree which, in a commercial sense, may be most undesirable, may, from a park standpoint, be of exceptional value.

THE RECORD OF WILDLIFE CONTROL BY HUNTERS

SOME SPECIES EXTINCT, OTHERS DWINDLING.

(Excerpted from Article in *Nature Magazine,* By Ellsworth D. Lumley.)

FROM the time the first man swung a stone axe against the skull of an animal the management of our wildlife has been in the hands of the men who killed—killed either for sport or for gain. Because there was an abundance of wildlife, those who were not hunters were generally indifferent as to the activities of the killers. Through the ages it has become almost an instinct among men who hunt to feel that they alone should manage and control all policies pertaining to wild animals. They too often feel that one who is not a hunter and yet shows an interest in conserving animal life is a meddler and a "sentimentalist"!

One reason that much of our wildife has now reached a crisis is the fact that we have ever accepted as truth the conclusions drawn by untrained outdoorsmen from their casual observations. We have been most reluctant to accept the word of the trained research man if it conflicted with general opinion or with general observations. Two examples will illustrate how much in error casual observers may be and yet how persistently men will believe the false conclusions drawn from them.

Hunters have on many occasions witnessed large hawks capturing game birds or eating those found dead. The conclusion naturally drawn has been that hawks kill the game birds and were therefore detrimental to man's interests. Trained field men have carefully studied the habits of hawks and found by laboratory examination of the game birds supposedly killed by large hawks, that in most cases the game birds were diseased, parasitised, or injured so that they could not escape the hawk, or that they had died from injury, gunshot, disease, or some other cause. Large hawks seldom are capable of capturing healthy game birds. Another fallacy that has arisen from casual observation is the idea that shooting up coveys of game birds will strengthen and aid the birds by keeping them from inbreeding. Careful work on the part of scientists has shown that shooting up and scattering a rapidly diminishing species, such as grouse or quail, does absolutely no good. There is a natural tendency for flocks of birds to split up and reunite without the aid of man. Yet seasons on grouse and quail have been opened by game commissions on just such flimsy excuses as alleged inbreeding.

These two examples are given to illustrate the fact that men may spend a lifetime living with and observing Nature and yet draw erroneous conclusions from their observations.

When non-killers or scientists attempt to regulate shooting, "the game's best friend," the hunter, quickly proclaims that the "sincere Nature lovers" are attempting to legislate out all hunting. Reforms in shooting are held up to ridicule as ill advised, unworkable, and petty nuisance regulations that do not save the game. Shortening the season, lowering the bag limit and possession limit, shortening the shooting day, outlawing baiting, live decoys, and pump guns have all been used by certain sportsmen to bolster up the old contention that added restrictions only make law breakers of the sportsmen.

Another common statement made by sportsmen in an attempt to prove that "maudlin sentimentalists" should have nothing to say regarding hunting regulations and conservation is: "The sportsmen buy hunting licenses, part of the proceeds of which pays for game protection while Nature lovers and non-shooters contribute nothing toward maintaining warden service." "Just why," one might ask, "is warden service necessary?" Certainly not to protect the wildlife from Nature lovers. Wardens are needed principally because there are hunters who must be watched. That sportsmen find it necessary to hire men to act as referees to see that all killers play the game of shooting according to given rules, called game laws, certainly is no legitimate reason why a non-shooter should have no voice regarding the rules of the game. When hunting reaches a point where certain forms of wildlife are so greatly reduced that both hunters and non-hunters become alarmed, it is high time that those that have not taken part in the killing boldly demand

that they be given a voice in the policies of game management.

Sportsmen seem to fear that the "swivel-chair sentimentalists" will deprive them of the joy of the hunt if given a voice in forming policies to govern the taking of game animals. If naturalists made the hunting laws undoubtedly some forms of hunting would disappear. Nature lovers, however, are not as much opposed to hunting as to the bad ethics of the sport. Hunters seem unwilling to recognise the fact that they alone are responsible for the many restrictions on shooting.

The killers themselves have been the cause of the restricted shooting. They have robbed not only themselves of the joy of the hunt but they have taken from thousands of Nature lovers the joy of watching and studying these beautiful forms of life.

The record left by hunters in their management of game and non-game animals is not one of which they can boast. They have used every killing device the genius of man has been able to invent, and when warned by a few far-sighted individuals that their killing methods would bring extermination and ruin they have turned a deaf ear and cried—"Sentimentalist." Now that a crisis has been reached and the nation is faced with the grave problem of saving some breeding stock, innumerable reasons for the shortage are offered by the killers, and we read and hear about drought, drainage, predators, disease and poachers. Only the more liberal sportsmen admit that overshooting has been the chief cause of the depletion. Hunters as a whole are unwilling to admit the ruin they have wrought.

If our wildlife is to survive from the terrific punishment we have inflicted upon it, it must be placed in the hands of trained field men who are willing to study and accept the findings of scientific research. Occasionally such men are appointed to State fish and game commissions, but too often they are shortly removed because hunters object to progressive game management if it means fewer shooting privileges. Hunters' methods of game management have brought only ruin. If conservation is to be achieved, the lovers of wildlife, as well as the destroyers, must share in its management.

Some Results of Past Wild Life Management.

LAND IS LIFE

SOIL-SAVING MEANS LIFE-SAVING.

(By E. V. Sanderson.)

"THE land supports life. Industry helps man to make the land support him. When industry ceases to do that and supplants the land, and the land is forgotten and man turns to the machine for sustenance, we find that we do not live off the works of our hands but off the fruits of the land."—Henry Ford.

The philosophic Henry Ford could have gone further and said: "Land is life. No land—no human life." Man himself is animated dust, as the ecclesiastical saying implies: "Remember, man, thou art but dust, and into dust thou shalt return."

Soil is formed by the disintegration of rock and the decomposition of decaying vegetation through the ages. It has been computed that it takes at least 500 years to form one inch of soil. In some localities it would take a much longer period.

While nature was building up this top soil through the past ages, she kept the earth covered with vegetation. Great forests, living and dying, each contributed their iota to this inch of soil in 500 years. Nature, however, always showed a credit balance. Some of the top soil was carried away by the erosive effects of water and wind; yet still nature was able to show an annual credit balance, in that the vast quantities of humus deposited by the living and decaying vegetation were always more than that which were removed by erosion. Thus, after millions of years, nature was able to produce the land which now forms our farms and which covered our hillsides.

The lowlands arrested much of the top soil washed from the hillsides on its way to the sea and thereby became richer than the steep slopes. When man comes along with his so-called progressive measures, he destroys the vegetation, he ploughs the hillsides, grows crops which supply not only himself, but many insects, with ample food. He bares the forest-clad hills, over-grazes them with his stock, and causes this precious top soil to be washed away at a far greater rate than one inch in 500 years. In some instances, the loss is at the rate of one inch in 20 years, on steep hillsides. Clearly, this folly shows a heavy debit balance, as against nature's credit balance; but we must live. Civilisation has not yet shown us how we can carry on our present wasteful methods of exploiting the capital and, at the same time, obviate those disasters which have overcome all civilisations that have attempted to live in the same suicidal manner.

Two possible exceptions may be cited. One is Japan, which carries an enormous population, and yet does not allow her land to be destroyed by ever-increasing erosion. She retains some 65 per cent. of her land in forest, and takes immediate steps to repair erosion in its intitial state. To-day she is one of the most virile and progressive nations on earth. Nature decrees the survival of the fittest.

Another instance which might be cited is our own Maori race. They lived on the interest nature produced for some 600 years, and when the white man first began to displace them, the capital—the top soil—was intact. Were the Maoris more intelligent people, and are we striving to reach their level?

An experiment on a scale never before attempted on this earth is at present being tried in Southern Russia, in an endeavour to make man's demand for food supplies conform with nature's inexorable exactions so that extra water can be available. The rivers discharging into the Arctic are being diverted into the Volga, for vast irrigation works. This is being done in an attempt to counteract threatened desert conditions in the great wheat-growing areas.

A credit balance in nature's scheme could be assured in New Zealand if sufficient areas of hillsides were allowed to revert to their natural state. In this manner water and silt would be released gently onto the lower fertile lands, and the eventual forest should yield a perpetual revenue of great profit owing to the coming world shortage of timber, if it was worked on proper forestry methods which would enable the forest to perpetuate itself.

If, however, our land resources continue to be mishandled as in the past, then disaster must

overcome New Zealand, and our attempt to prosper in this Dominion will end; it will be classed by future historians as an experiment that failed. We shall be left with an eroded land beyond the power of man to remedy. The mountains will be high rocky masses, with scarcely any vegetation visible, and most of our hill country will assume a similar aspect, while the present fertile lands will be largely covered with debris scattered over it by rivers fed with rocky matter from the highlands. This will be the outcome of such deplorable blunders as grazing and burning high tussock country, destroying forest on steep and high country, permitting plant-eating mammals in our forests, over-grazing land which should be in forest, and other mistakes.

Shall this be the bleak and blank heritage we bequeath to posterity, or shall we awaken in time and use our land resources in a manner which will conform with Nature's requirements? Or shall we allow individual greed and recklessness to destroy the country?

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LAKE HOWDEN

Lakes, swamps, etc., are factors in Nature's scheme to irrigate the subsoil and by evaporation to induce that humidity of atmosphere which makes things grow.

Here in New Zealand, we are busy draining lakes, swamps, etc. In other countries, such as Canada and United States of America, where they have experienced the resulting evils induced by this sort of damage, they are refilling with water many areas which have cost much money to drain.

THE CAPE PETREL *or* "CAPE PIGEON"

(Daption capensis.)

(By R. A. Falla.)

THE Southern Ocean is the home of many species belonging to the great order of Petrels or "tube-nosed swimmers." Many are so much alike in size and colour that they are not distinguishable on the wing to untrained observers, and consequently they have no distinguishing popular name, or even sailors' names. One striking exception is the subject of this article. Portuguese seamen voyaging south met with a conspicuously dappled petrel in the region of the Cape of Good Hope and called it the "Pintado," the painted bird, and English seamen called it the "Cape Pigeon" from its slight resemblance in size and plumage to the common domestic pigeon of Europe. Since that time the range at sea of this pretty bird has been found to be more extensive than that of almost any other petrel. In the southern summer it may be found off the coasts of Antarctica itself and in winter reaches the coasts of South Africa, South America, Australia, and New Zealand.

Before ships and men invaded these southern seas the food of Cape Pigeons was probably similar to that of other petrels, consisting of small marine animals like squids and crustaceans. But they must also have had a taste for scavenging when opportunity offered, for with the advent of sailing ships these birds became well known for their habit of following in the wake and scrambling for refuse thrown overboard. To the present day only comparatively few petrels have acquired this habit. From the stern of a sailing vessel the Cape Pigeons could be caught and examined by the simple method of flying a number of threads from the mizzen rigging, and in these the birds became entangled as they flew past. They were thus well known to sailors and passengers of from one hundred to fifty years ago. More recently another new source of food supply has become available to these adaptable birds, namely, the waste oil from the great Anarctic whaling industry. Around the Island of South Georgia it is said that they become so numerous in summer that when whaling ceases in the winter months many of the birds die of starvation. A certain number find their way to temperate coasts where whaling is carried on in the southern winter, and on the New Zealand coast they may be seen in Tory Channel in numbers, and off Whangamumu less commonly. When feeding in flocks in this way they are noisy and quarrelsome, but always dainty in movement, whether in swimming or flight. They are little disturbed by boisterous weather and seem to have reserve powers of flight enabling them to remain at sea in the teeth of a gale.

It may seem strange that so little is known of the nesting places and nesting habits of such an abundant bird. The nests were first described at Kerguelen in 1899 and the first eggs collected at the South Orkney Islands in 1903. Since then they have been found on the Antarctic Continent also. In all these places the situations have been similar, tall cliffs with here and there a narrow ledge on which there is just room for a bird to sit. Except that a few pebbles are sometimes gathered, there is no attempt at an actual nest, and the sites are generally inaccessible to all possible enemies except such predaceous birds as the skua gull. Protection from these is effectively gained by the power of squirting oil and partly digested food from the throat by both adult and young Cape Pigeons. They always do this when disturbed, and a few venturesome human naturalists that have managed to get near a Cape Pigeon's nest have had to take the precaution of "drawing the bird's fire" with a long stick until its "ammunition" is exhausted. Dangers from falling rocks are avoided by the selection of ledges where the cliff overhangs immediately above, so that the Cape Pigeon may be regarded as a bird that has left nothing to chance. Only the rigours of climate and the fluctuations of food supply remain as dangers against which the birds are unprotected, except by their general fitness. As with all petrels, only one egg is laid, pure white, and fairly large for the size of the bird.

A DAY IN THE LIFE OF THE BELL-BIRD

(By Hugh Ross, Quarry Hills, Invercargill)

FAINT indications of dawn, just that gradual lessening of intense blackness as if magical hands were blending a diminishing grey with the darkness, were coming over the hills. A morepork called twice, and several replied. Then silence again.

Thin, faint, and indescribably sweet, a new sound floated on the pure morning air—almost apologetically at first, as though the composers, dubious of their ability, wavered on the verge of silence. And it was these first hesitating notes, so enticingly sweet, that seemed to hold the very dawn spellbound.

One thought of fairy-land and the elfin and pixie inhabitants heralding the arrival of their queen by ringing innumerable silver bells. Dawn was breaking and the volume of music increasing—fading sometimes, only to swell louder. Mist-veiled, the trees appeared more clearly every moment, and the bell-bird's morning paean had reached a full volume. Some time later it abated until nothing was heard but an occasional joyful chant. It was then that the rising sunbeams spread along the bush-covered hills, driving before them the white, wispish mist, before falling in golden pools upon the forest floor.

By this time bell-bird, dapper, bright-eyed, was going busily about his daily affairs—food-seeking mostly. He was very interesting indeed to watch as, with noisy flutter of wings, he flitted from tree to tree. Winter was near and food very scarce; thus the bell-bird, a honey and berry-eater by nature, was obliged to seek other meals.

Diligently he hunted insects in the bark crevices of the bigger trees. He explored the leafy canopy of creepers leaf by leaf, for lurking pests. Claws like wisps of slender steel gripping the twigs firmly, he hung in every attitude, apparently quite at ease when upside down. For a time he was so busy fossicking that he appeared to forget to sing. At length, however, he paused long enough to look about him and give a trill.

Suddenly he thought of a favourite perch. Years ago a tract of bush had been felled and left lying. Now, fast regenerating, it retained a score or so of decaying beeches and one broad-leaf, whose gaunt heads towered over the new growth. On this broad-leaf, this pathetic remnant of a once glorious monarch, the bell-bird was wont to perch, sing, preen his feathers, enjoy the sun, and generally take stock of the

world. For two years he had occupied it, unchallenged. To-day it was different. True, no rival defied him upon his arrival, but down at the bottom was business-like activity. The susrrounding scrub was being cut away. An axe struck a solid blow upon the big trunk. Wedges jingled together. Then a saw rasped.

The bell-bird eyed these operations with growing suspicion and resentment. In a sudden grip of annoyance he swooped down to within a few feet of the intruders' heads; he clung, swaying, to a twig, and poured forth a passionate, albeit melodious, protest against the intruders. Several times his bell-like challenge rangout. And then he was joined by a companion. Another and still another appeared, until there was perhaps a score of birds flying noisily around the workers' heads.

The only reply was the monotonous "swish-swoo!" of the cross-cut saw. One by one the birds departed for their hunting grounds. By the time the veteran tree crashed to earth only the original bell-bird remained. He kept to the locality throughout the day, watching the men split the tree into suitable sizes for posts, while a bedraggled tom-tit enjoyed the feast of a life-time on the horde of grubs disclosed every time a portion of the tree was removed. Occasionally the iron wedges jingled together, and always the bell-bird answered with his song.

Other birds that evening haunted the vicinity of the fallen broad-leaf. A singular hush had fallen on the bush, for the sun had hidden behind a rolling bank of clouds, dark and grim. The birds were restless, fluttering, and it seemed as though song was unknown to them. The tom-tit still made raids at intervals on the luckless grubs. The blows he, with a violent criss-cross motion of his bill, dealt them against his perch were audible for some distance.

And then a new sound was on the air—thin and pathetic, poignant—the crying of silver-eyes. They appeared in flocks. They swayed on the undergrowth, calling insistently, moment by moment increasing in number, until when it was nearly dusk they swarmed everywhere. Then a large flock arose above the bush, their cries increasing tenfold. Twice they circled, green wings flashing, until they rose higher and headed for a mile-distant homestead with its inviting plantation and artificial feeding devices. Their voices died to a whisper; were lost on the cold air.

Bell-bird knew that a storm threatened. No doubt he knew, too, whither the silver-eyes had gone, and why. He had been there himself, when the sweet-scented gum-trees were in flower, and later to feed on the nectar-yielding red flax flowers in the garden. If, instinctively, he knew that these foods were past he perhaps thought that he would find others as a substitute. After a restless flight through the undergrowth and a moment spent in pursuit of some fluttering large-winged insect he cast a wrathful glance at the well-fed tom-tit, then darted above the bushy canopy as though in search of his habitual perch. He failed to find it, however. I think the song he trilled as, with increasing speed, he set off in the wake of the silver-eyes, was one of anger and keen disappointment.

Although they were long past flowering, the gum-trees were first visited by the bell-bird. After ten minutes or so spent in song and repeated attacks upon insects in the trees, away went restless bell-bird on a flight of discovery. He spent busy minutes among the amber and gold leaves of the gooseberry bushes, perched slant-wise on the raspberry canes seeking only he knew what. He rose from there and, spying a clump of willows, he needs must approach them to flutter and sing. The slightest movement of his wings wafted the yellow leaves earthward.

Approaching the house he spent long minutes among the withered stalks of a bed of giant sun-flowers. Throughout the time he "boarded" with us he paid several daily visits to these flowers. In the orchard he appeared to find content at last — a huge red apple jammed in a forked branch, and which had already been partly eaten by the silver-eyes.

Bell-bird, now visibly distended after his feast of apple, had gone to roost in the fir-trees. Perhaps he felt he was sheltered from the coming storm; perhaps he thought that here was food to carry him through the winter, or it may be he sang instinctively. Certain it is that, just as the first big rain-drops fell, he, stretching his pretty head, sent forth a paean of thanksgiving to the dying day.

THE TARARUA RANGES

DANGER OF A ROAD.

(By "Rakau.")

THE principal objection to a road through areas of high-country forest such as the bush on the Tararua Ranges is that it will come to be used as a timber-carting road by sawmilling interests. It does not seem to matter whether a forest area is a Crown property or not, even if it is a natural protection forest and a water-supply reserve. The bush is on the way to ruin once a road for wheels is put through it. The sawmiller wangles cutting rights, he cuts at his own sweet will, he pays a small royalty, and leaves the bush a scene of devastation and ruin. For every mature tree felled and hauled out, scores, hundreds of small trees are broken and destroyed and thousands of seedlings. The bush floor is littered with broken branches which, when dry, are most inflammable, an invitation to fire.

This is what has occurred in milled forests all over the country, and the wasteful old methods begun more than a century ago continue to-day. The marvel is that any forests survive at all. There is no adequate supervision, and there is no attempt at all to regenerate the milled-over areas. Either they are set fire to and cleared to make way for the settler and his grass, regardless of the obvious unsuitability of high country for agriculture, or exotics are planted with the object of killing the native undergrowth. This under-bush contains the makings of another timber crop when the forest grows, but the foresters do not want that. So the area of our native forests dwindles year by year. Conservation is not merely neglected but is strongly disapproved.

Go to the Akatarewa hills and other parts of the Tararua Ranges and you will see the lamentable process to-day. The present Akatarewa-Waikanae road, which was made as a highway for passenger traffic, is largely a timber-hauling road, and the scenes near the road, even at the summit, 1400 feet above sea-level, are a melancholy *memento mori* to a ruined forest. Fire may sweep the ranges, at any time, beginning in the chopped and sawn-over parts on the roadside.

SAVE THE BUSH

PROTECT THE WATERSHEDS.

FARMERS' INSURANCE AGAINST DISASTER.

"PLANT trees for your lives," was the injunction of a pioneer settler on the Mackenzie Plains, in the South Island. Trees are necessary for timber, firewood, and for shelter. They are needed in great numbers.

But in the North Island and about the sources of rivers in the northern part of the South Island, they are needed above all for soil protection for the farming regions below. Bank protection works far down the valleys are absurdly insufficient. Why cannot Government and local bodies take a broad view of the whole problem from mountain watershed down, and begin protection where it is most needed?

These remarks are prompted by the news of the recent disastrous flood in North Auckland. Old settlers perceive the blunders of the past, and the far-spread effects, more clearly than most of our farming communities and our local bodies to-day. It is in the ultimate resort the Government that must grapple with the increasing damage caused by landslips and refractory rivers. They would not have become refractory had an intelligent policy of high-country forest protection been adopted a half-century ago or even later.

The present authorities are unfortunately burdened with the task of repairing the stupid and selfish errors of their predecessors. Unfortunately also there is not yet apparent any systematic effort to conserve the bush where it should be conserved. Settlers and sawmillers are stripping the banks of rivers and feeding streams of the only kind of vegetation that saves the land from ruin. The process has gone too far for recovery in some places; but in many parts of the north the bush can be regenerated, and in other parts the land cries out for the planting of protective trees. Even manuka and other despised "scrub" are potential saviours of the land. Every settler should be required to grow some timber, for protective purposes and other needs. This is advocated now by some of the more enlightened settlers, and wisely they recommend the vegetation native to the soil.

UNPAID SERVICE

A MEMORY OF DR. COCKAYNE AND SUB-ANTARCTICA.

EVERY people that has a public conscience will at times pause in its "business pursuits" and will take a look at its Unpaid Public Service.

To try to take stock of Paid Services, or even of Paid Public Services, would be too big a job. Paid Services include almost the whole population. Paid Public Services, covering people who receive public pay, also amount to a great army. They need, for their control, extensive administrative machinery. To the man in the street all this kind of remunerative service is a closed book.

But though the people—the lay public—would find it too big a job to take stock of the Paid Services or of the Paid Public Service, a stocktaking of Unpaid Service is easy, simply because it is comparatively scarce.

Consider, for instance, all those who give much of their time and some of their money to the cause of wild life—the protection of plant and bird. In every civilised country this Unpaid Service goes on. Is it not truly national work? Work given to the national interest, but not charged for. Work that was nobody's job until a few enthusiasts took it up, and—without commercial incentive—built up a great national, and even international, public service, unpaid.

There have been times, and perhaps they are to some extent with us yet, when the champions of birds were classed with the champions of lost causes. There was only one way of answering this, and that was to show results. But in the winning of results a decade of seemingly fruitless labour is almost nothing. The war against indifference may last decades, because the average citizen does not value what he gets for nothing. To see some of his fellows giving to (not receiving from) a public cause does not necessarily command the average citizen's respect. He cannot see any credit, or even sense, in a non-commercial transaction; or in a propaganda that seems to fall ceaselessly on deaf ears. The average citizen does not realise that, even in the drop of water that wears away the stone, there is supreme force, and (if the force is well directed)) there is national benefit.

Vividly one realises this when looking again into a file of the New Zealand Forest and Bird Protection Society — a file that supplied an article in the last Bulletin on the Lord Auckland Islands. The file begins in June, 1925, when the Society began to knock on the closed door of Government policy — a policy that farmed the Lord Auckland Islands for the pitiful reward of £40 a year. This collection of papers and documents traces over a number of years the ebb and flow of the Society's efforts to open the door; and at last, in 1934, the door opened.

Though for years it defended its devastating policy in those natural museums of wild life, the Lord Auckland and the Campbell Islands, the late Government of New Zealand at last admitted its error. The present Government, and probably any future Government will not again deliberately farm these islands. To that extent the drop of water has worn away the stone. But the evil that past Governments have done lives after them. Some of the sheep are still there, ravaging the native growth, destroying the birds' habitat.

The Society has no desire to blow any personal trumpets, but would like to point out to all New Zealanders that it is engaged in national work (the work of the nation) and that it is getting results and requires their support. The cause is not lost. It can be won. It is being won. Help it and join it.

But there is one whose trumpet the writer would like to blow. That one is dead. He is the great New Zealand botanist, Dr. L. Cockayne, whose heart was in the defence of the Sub-Antarctic Islands. He gave freely to the Society his distinguished advice. Yet it was given anonymously, and his reason for anonymity reveals in a flash what has been stated above—that the defenders of wild life have too often been regarded as "enthusiasts" and

as the champions of lost causes. Dr. Cockayne wrote privately to the Society on July, 1925: "Keep my name out of the matter. I am so well known as a supporter of preservation of plant and animal life that my influence is really lessened thereby."

Does not this passage speak volumes? Here was a bontanist of world fame and a holder of the Darwin medal, yet his "influence was lessened" because he brought his great gifts to unpaid national work!

Once again: Is it not time that the public conscience paused in "business pursuits" to take a look at Unpaid Public Services? And perhaps to join the cause, which is now spreading through the civilised world like a tidal wave.

ACCLIMATISATION

FOREST DESTROYERS.

THE acclimatisation of animals that have proved pests is now, let us hope, completely a thing of the past.

All foreign animals in the native bush, including deer, goats, and opossum, must be exterminated. It must be one thing or the other. Opossums are protected at present. They should be declared pests and eliminated. All license and fees should be abolished and free trapping allowed. That is the only way if the bush is to be saved.

There can be no half-way house in this matter of bush protection. The havoc caused by the opossum is not so obvious to the casual eye, as that caused by deer or goats, because it is mostly in the forest roof. There the opossum lives on the young leaves and shoots and on the food which belongs to the native birds. Its destruction of eggs and young bird life is well known to bushmen. Birds undoubtedly disappear in forests where the insidious opossum is plentiful. It is protected because of the revenue derived from its skins. It would be just as logical to protect rabbits, for the same reason.

It is a fight for life between the native forests and the imported destroyers. Which is it to be?

NO FOOD THERE

THE BIRDLESS NEW FORESTS.

DURING the past summer, writes "Tangiwai," I travelled through about a quarter of a million acres of *pinus insignis* and other exotic timbers, in the great plantations of the two principal companies in the heart of the North Island. Waves upon waves of pine, an immense monotony of pine. Valuable, no doubt, for some timber purposes; valuable also in a climatic sense, a protection from the bleak winds. But a silent depressing place after the forests native to the soil.

That was the most significant feature of those American pine plantations—no birds. For league after league, through hundreds and thousands of acres of exotics, not a bird note is heard. The explanation is simple—there is no food for them there; never a berry or a flower.

It is different among the eucalyptus, especially the red gums; the bellbird, sweet honeysucker, is often seen and heard there, and frequently the tui, and other birds. That is in the State plantations near Rotorua; also on the Kaingaroa Plains, where there is a roadside sprinkling of gums in the great pine forest.

Not only is this absence of bird life a melancholy thing, it is an evil omen for the new plantations. Insect pests are comparatively unchecked there without the birds to keep them down. Bird and tree—they are interdependent. One cannot live without the other.

These exotic forests are most necessary in order to relieve the strain on the valuable native timberlands. Paper-pulp forests will be in great demand. But more Australian hardwoods are called for; they are the most useful of all exotics, and while the planters are about it they should not forget the birds, which may yet prove to be their best friends in preventing the early decay of some components of the great forest scheme.

BIRD FREEDOM.

Thy lovely wings, outspread, free, free,
O'er hill and dale, and sapphire sea,
High and far, in the dappled sky,
Broken thy life, if thou can'st not fly.

—Fanny Richardson.

USE FOR EXOTICS

THE KAINGAROA PLANTATIONS.

WHEN driving through that great State enterprise, the new forest on the Kaingaroa tableland, a few weeks ago, the present writer noticed that large quantities of thinnings from the plantations were stacked by the roadside, cut up ready to be treated with creosote as a preservative—they were in fencing-post lengths. It has been found that the *pinus insignis* will not last many years in the ground unless it is creosoted. Fencing material is one of the principal uses for this timber so treated.

The Hon. Mr. Langstone, Minister for Forests, made a quick and wise decision when he prohibited totara forest in the Urewera country from being used for fencing posts, and referred the timber-men and farmers to the new pine-creosoting depots on the Kaingaroa. This is an excellent first instalment of protection for one of six most valuable timbers.

It is hoped that these far-extending and quickly growing plantations of foreign timbers will presently provide material for house-building. They cannot, however, give us the quality of the indigenous trees. There is the further possibility of wood-pulp material. Certainly it will be a most powerful argument in favour of extending the exotic plantations if the timbers are found suitable for paper pulp, the demand for which is increasing very rapidly.

It has been reported that experiments show tawa and *pinus insignis* make a good pulping combination. Our tawa, however, is a vanishing quantity; it has been the practice to burn it off as a cumberer of the ground, despite its usefulness and beauty. The tawa available would not last long before the onslaught of the pulp manufacturer.

It may be that experiments will reveal a suitable pulping combination among the North American species that grow so readily. It is to be hoped so, for certainly we cannot afford to expend our dwindling native timbers on wood pulp any more than we can afford to knock down totara for fencing stuff.

The Cultivation of Kauri

(By Rakau).

THERE are those, even among foresters, who should know better, who declare it is hopeless to attempt the culture of Kauri timber. Their ignorance would be dispelled if they only took the trouble to read the accounts of actual experiments by men who knew what the Kauri was capable of under the right conditions.

The late Sir Edwin Mitchelson, of Auckland, who was a bushman and sawmiller for many years, and the late Mr. Thomas Cheeseman, and others who were sound and practical authorities, always urged the cultivation of the Kauri. Sir David Hutchins, soon after his arrival in New Zealand, became a devotee of the Kauri; he wrote a splendid book dealing with it scientifically.

Even in Wellington the Kauri has been grown successfully. A correspondent of the Wellington "Dominion" recently called public attention to a flourishing specimen *Agathis Australis* growing in Wadestown, less than 300 yards from the tramway terminus. It is 30 to 40 feet in height and between one and two feet in diameter. It is probably fifty years old or a little more. There is a thriving Kauri tree in the Botanical Gardens in Wellington, and another in Christchurch.

Seeing that Kauri grows here in the south quite well, far from its natural habitat, how much more readily it can be cultivated in the north! If foresters developed a *wish* to grow the Kauri, we could have many thousands of acres devoted to Kauri nurseries in North Auckland. Kauri grows more rapidly than European oak. The English, when they established oak forests looked far ahead; they had regard for the future timber needs of the nation.

Why cannot foresters import a similar long-sighted spirit into the official attitude towards the world's most useful timber, the most valuable thing that ever grew on New Zealand soil?

HAWKS

THEIR UNJUST CONDEMNATION.

(By Ellsworth D. Lumley, Biology Department, Great Falls High School, Great Falls, Montana.)

Few birds have been as severely and unjustly condemned as have our hawks. Erroneous statements regarding their food habits have started the many rumours now prevalent that all hawks are "chicken hawks" and should be killed. Without attempting to find if there is not some good in the hawk tribe the whole race is condemned. While it is true that a few song birds and fewer game birds and poultry are eaten by hawks, yet an examination of their stomach shows few birds eaten compared to the many mammals consumed. The mammals consist chiefly of the most destructive rodents the farmer has to contend with, namely mice, rats, rabbits, etc. Upon further investigation, we find that all of the hawks are condemned for the actions of a few. The reasoning of most people has been about as accurate as though we were to condemn the whole human race for the actions of a few gangsters.

A Kauri.

S.O.S.

CALL OF COLD, HUNGRY BIRDS.

Some of the people who put out suitable food for native birds and certain species of acclimatised birds last year, and noticed that the meals were neglected, may be inclined to cease acting as hosts this winter. However, such an attitude would be a mistake.

The reason for the conduct of the birds last year, and to some extent in the year before, is that the seasons were favourable for a superabundance of natural food which, of course, the birds prefer.

This dispensation of nature also helped the birds in rearing more young than usual. The situation now is an increase of birds striving for a living in a hard winter which threatens to take heavy toll of some species. For example, numbers of White-eyes have been seen lying dead in various parts of Wellington.

Therefore, friends of the birds, have pity on them in this time of dire need. Don't forget scraps of fat, sweetened porridge, watered honey or sugar syrup, and odds and ends of fruit. You will have your reward in the delightful happiness of the birds, and in the gratitude the survivors will show in waging war on harmful insects and grubs in the spring.

CAT FOOD.

One Wisconsin community found it had this problem on its hands: An endowment fund was willed to provide food for stray cats, and there was some question as to the most suitable way of using the money.

One sportsman argued that birds are the favourite food of cats, and that therefore the money could be most efficiently used for the winter feeding of birds. His point was that cats could be best served by increasing the number of birds. He won.—*Wisconsin Conservation Bulletin.*

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 make handsome brooches.

HILL FOREST DESTRUCTION

A PIONEER'S OBSERVATIONS——————RUINOUS FLOODS AND THEIR CAUSES

(By "Rakau.")

AN old resident of the Wellington Province, Mr. A. H. Gibson, writes to the Forest and Bird Protection Society describing the hills and forest on the eastern side of the Wellington harbour and the Rimutaka ranges as he saw it over fifty years ago.

"When I entered Port Nicholson," he says, "in January, 1879, with my father in the little s.s. 'Albion,' all the hills to the east, right up to the top of the saddle, and down the other side as far as Featherston, were covered in beech forest interspersed in a few hollows with rimu, cabbage-trees, nikau, etc. Right through the beech grew a species of moss, or light feathery fern, which in summer got very dry. I have been coming from the Akatarewa in the dry season with the packhorse used for carrying meat, bread and butter from the Upper Hutt to the farm, in the year 1885. I often used to see miles of the beech high on the opposite side of the Hutt Valley alight, and no one troubling, though a muster of settlers in the Hutt could have put it out if taken at the beginning. In this way the whole of the range to the east of the Hutt River was burnt out, and is now practically bare."

Mr. Gibson goes on to refer to erosion of land by rivers coming down in flood, in a few hours' rain. In former days such rivers as the Hutt, the Manawatu, and the Wairau (in Marlborough) took three days to come to flood level and then three days to subside. The last fifty years of forest destruction on the ranges have changed all this. "I have seen the Manawatu sweep away acres of the most fertile soil in one year alone of flood, and I have stood near by after very heavy rains and witnessed the devastation caused by the Oroua flood waters pouring over the edge of the eroded banks into the Manawatu, while the latter river was engaged in attacking the banks from underneath, so that these destructive agencies were both above and below."

To these remarks it should be added that timber-milling, more than fire, cleared the western side of the Hutt Valley. Most fires were, of course, settlers' clearing-off burns, on third-class country.

The lesson should not be lost on local bodies. As surely as you cut away and burn away the forest on the headwaters of streams, on watersheds, and along the river banks, so surely shall the country suffer. The damage becomes more acute every year, and local bodies wrestle with protection works low down in the river's course —as in the case of the Manawatu—while nothing is done to remedy the trouble at its source.

●

SHAGS

(By. A. Landsborough Thomson.)

A useful illustration is given by the case of the Australian cormorants *(shags)*, of various species, inhabiting certain swamps of the Murray River. A war of extermination was begun against these birds under the impression that they were spoiling the fishing. The result, as it proved, was that the fishing grew worse instead of better. It was then discovered that the birds fed largely upon crabs, eels, and other creatures which destroyed the spawn and fry of desirable fishes. The cormorants were therefore a necessary part of the economy of nature even from the human utilitarian point of view; they were to be classed as beneficial to man in spite of any toll that they might themselves levy upon the acquatic harvest which they had contributed to keep in existence. Over and over again in his attempts to interfere with nature, man has been presented with lessons of this kind."

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FOREST AND BIRD PROTECTION SOCIETY

OF NEW ZEALAND (Inc.)

APPEAL FOR BEQUESTS.

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

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

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

CALL FOR SANCTUARIES.

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

OBJECTS.

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

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

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

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