Forest and Bird

SHINING CUCKOO
PIPIWHARAUROA

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FOREST AND BIRD PROTECTION SOCIETY

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IDEAL OF CONSERVATION

NEED OF WIDE VIEWS

THOSE who are very actively interested in the protection of native birds are perhaps over prone to concentrate their mind solely on the one aim, but the same tendency applies to the shootist who regards as vermin every living thing which he thinks may tend to lessen the numbers of the creatures he wishes to kill.

The trout enthusiast only too often looks merely at the fish in the river and views any natural killer of trout as his enemy.

Few people take the necessary wider view. When studying the conservation of forms of life in which they are particularly interested, they fail to look upon the whole, as a whole.

Now the main needs in the preservation of almost any creature, including fish, are food and cover. This course goes straight to the soil, because good fertile soil produces food and cover. Obviously the top soil must be saved to ensure a continuation of native plant life, the builder and guardian of the precious fertile top soil itself. When the protective vegetation is destroyed soil ceases to form; indeed, it is destroyed—leached and washed into the sea by the processes of erosion. Thus the Assistant-Director of the Imperial Bureau of Soil Science, Rothamstead, says:—

"The structure of the indigenous plant life is usually related to that of the soil in such a way that the vegetation and soil together form a natural non-eroding system."

When this natural vegetation is destroyed or damaged the fertile top soil soon begins to deteriorate as the processes of soil-destroying erosion proceed. At first it is barely noticeable, but with ever-increasing momentum it lays waste the land. All living creatures, including man, suffer from an ever-lessening food supply. Their numbers decrease, and in the end many species die out.

Owing to past grievous mistakes in forestry and wild-life management, New Zealand to-day is more gravely menaced by erosion than perhaps any other young country — young in the sense of settlement. The destruction caused by war may not be difficult to repair, but "when erosion assumes the mastery man is helpless," as the late Dr. Leonard Cockayne declared.

Surely, then, it behoves every person who seeks a living in this country to awaken and sturdily encourage and support any worth-while effort to placate much-wronged Nature. Let the native-bird lover and game-bird hunters and the fisher-man's voices lead the call for reform. All their interests, along with man's existence, are allied with the safeguarding of the fertile top soil.

An excess of silt in rivers and streams chokes fish. It spoils the breeding grounds and also destroys much fish food. This silting is caused by sheet erosion—the result of the deforestation of watersheds—and is not to be remedied in the slightest degree by the planting of river banks, as some trout enthusiasts fondly believe. The source of the trouble lies in the highlands, where, owing to the lack of the original protecting forest or other natural vegetation, water run-off fails to penetrate into the soil, and assumes an undue velocity and quantity with the result that the fertility and stability of the top soil are destroyed by the washing away of humus and organic matter.

The food of game birds and all birds depending on sustenance from the top soil or upon the fruits or seeds of plants, which would flourish if the soil was in its fertile condition, disappears, or greatly decreases owing to the infertile condition of the soil to the detriment of those creatures which in their turn are dependent upon this food.

In the face of such causes of the steady decrease of fish and game birds in New Zealand it does seem somewhat futile to endeavour to increase sport by destroying the natural enemy, as distinct from the introduced enemies. The remedy is to ascertain the real cause by careful research and trained observation.

THE PRESENT CIVILISATION—*WILL IT FAIL?*

Extracted from "The Rape of the Earth," by Dr. G. V. Jacks, Assistant-Director, Imperial Bureau of Soil Science, Rothamstead Experimental Station, England.

AS the result solely of human mismanagement, the soils upon which men have attempted to found new civilizations are disappearing, washed away by water and blown away by wind. To-day, destruction of the earth's thin living cover is proceeding at a rate and on a scale unparalleled in history, and when that thin cover — the soil — is gone, the fertile regions where it formerly lay will be uninhabitable deserts. Already, indeed, probably nearly a million square miles of new desert have been formed, a far larger area is approaching desert conditions and throughout the New World erosion is taking its relentless toll of soil fertility with incredible and ever-increasing speed. Science produces new aids to agriculture—new machines that do the work of a score of men, new crop varieties that thrive in climates formerly considered too harsh for agriculture, new fertilizers that double and treble yields—yet taken the world over the average output per unit area of land is falling. There is a limit to the extent to which applied science can temporarily force up soil productivity, but there is no limit except zero to the extent to which erosion can permanently reduce it. A nation cannot survive in a desert, nor enjoy more than a hollow and short-lived prosperity if it exists by consuming its soil. That is what all the new lands of promise have been doing for the last hundred years, though few as yet realise the full consequences of their past action or that soil erosion is altering the course of world history more radically than any war or revolution. Erosion is humbling mighty nations, re-shaping their domestic and external policies and once and for all it has barred the way to the El Dorado that a few years ago seemed almost within reach.

Erosion in Nature is a beneficent process without which the world would have died long ago. The same process, accelerated by human mismanagement, has become one of the most vicious and destructive forces that have ever been released by man. What is usually known as "geological erosion" or "denudation" is a universal phenomenon which through thousands of years has carved the earth into its present shape. Denudation is an early and important process in soil formation, whereby the original rock material is continuously broken down and sorted out by wind and water until it becomes suitable for colonization by plants. Plants, by the binding effects of their roots, by the protection they afford against rain and wind and by the fertility they impart to the soil, bring denudation almost to a standstill. Everybody must have compared the rugged and irregular shape of bare mountain peaks where denudation is still active with the smooth and harmonious curves of slopes that have long been protected by a mantle of vegetation. Nevertheless, some slight denudation is always occurring. As each superficial film of plant-covered soil becomes exhausted it is removed by rain or wind, to be deposited mainly in the rivers and sea, and a corresponding thin layer of new soil forms by slow weathering of the underlying rock. The earth is continuously discarding its old, worn-out skin and renewing its living sheath of soil from the dead rock beneath. In this way an equilibrium is reached between denudation and soil formation so that, unless the equilibrium is disturbed, a mature soil preserves a more or less constant depth and character indefinitely. The depth is sometimes only a few inches, occasionally several feet, but within it lies the whole capacity of the earth to produce life. Below that thin layer comprising the delicate organism known as soil is a planet as lifeless as the moon.

The equilibrium between denudation and soil formation is easily disturbed by the activities of man. Cultivation, deforestation or the destruction of the natural vegetation by grazing or other means, unless carried out according to certain immutable conditions imposed by each region, may so accelerate denudation that soil, which would normally be washed or blown away in a century, disappears within a year or even within a day. But no human ingenuity can accelerate the soil renewing process from lifeless rock to an extent at all comparable to the acceleration of denudation. This man-accelerated denudation is what is now known as soil erosion. It is the almost inevitable result of reducing

below a certain limit the natural fertility of the soil—of man betraying his most sacred trust when he assumes dominion over the land.

Man-induced soil erosion is taking place to-day in almost every country inhabited by civilized man, except north-western Europe. It is a disease to which any civilization founded on the European model seems liable when it attempts to grow outside Europe. Scarcely any climate or environment is immune from erosion, but it is most virulent in the semi-arid continental grasslands—the steppes, prairies and veldts of North and South America, Australia, South Africa and Russia, which offer the greatest promise as future homes of civilization. It is also the gravest danger threatening the security of the white man and the well-being of the coloured man in the tropical and sub-tropical lands of Africa and India. Until quite recently erosion was regarded as a matter of merely local concern, ruining a few fields and farmsteads here and there, and compelling the occupiers to abandon their homes and move on to new land, but it is now recognized as a contagious disease spreading destruction far and wide irrespective of private, county, state, or national boundaries. Like other contagious diseases, erosion is most easily checked in its early stages; when it has advanced to the stage when it threatens the entire social structure, its control is extremely difficult. In the main, unimportant individuals have started erosion and been crushed by it, until the cumulative losses in property and widespread suffering and want have brought governments and nations, with their immense powers for good or evil, into the fray.

In the United States the problem of erosion has become a dominant factor in national life; in South Africa, according to General J. C. Smuts, "erosion is the biggest problem confronting the country, bigger than any politics." In these two countries erosion has already assumed the proportions of a national disaster of the first magnitude, and has sapped their life blood to such a degree that only a tremendous and single-minded effort from a united nation can prevent a further rapid and irreparable decline. Fortunately, there are signs that the effort will be made in time. Elsewhere, the same destructive processes are at work, but owing to less intense exploitation in the past, they have not advanced so far as in the United States and South Africa. Nevertheless, governments, warned by the example of the United States in particular, are everywhere being compelled to take note of erosion, and when a government stirs it means that the question involved is no longer the concern of one section, but of the whole of the community.

That the ultimate consequence of unchecked soil erosion, when it sweeps over whole countries as it is doing to-day, must be national extinction, is obvious, for whatever other essential raw material a nation may dispense with, it cannot exist without fertile soil. Nor is extinction of a nation by erosion merely a hypothetical occurrence that may occur at some future date; it has occurred several times in the past. Erosion has, indeed, been one of the most potent factors causing the downfall of former civilizations and empires whose ruined cities now lie amid barren wastes that once were the world's most fertile lands.

CARRICK RANGE, NEAR BANNOCKBURN—FORMERLY TUSSOCK COUNTRY.

WILSON'S INNER CONFLICT

COLLECTOR, ARTIST, BEAUTY LOVER

By "Korimako."

WHEN an egg-collector is also a Nature-lover (using the word "lover" in its true sense) what shall he do to save his soul?

Can he worship the egg-collecting god and the true God of Nature-love, at one and the same time? Can he serve both the Mammon of collectorship and the God of Natural Beauty?

Dr. Edward Wilson, who, at the age of 39, died with the Captain Scott South Pole party in 1911, was from earliest youth an egg-collector, but as he grew older he revolted from it, though the scientific portion of his many-sided personality compelled him to continue some forms of collecting. In "Edward Wilson, Nature-Lover," his latest biographer, George Seaver, quotes from Wilson's diary:—

"Much as the egg-collection means to me as a collection of reminiscences, it is a permanent record of a cruelty I have come to hate in myself as well as in others. I am more inclined every year to leave a nest exactly as I found it."

The False God of Game-Protection.

The war within Wilson between the Nature-lover and the scientific ornithologist plus zoologist plus biologist went on for years. Wilson was between two fires, burning within himself. He was also between two fires with regard to his friends and hosts, who expected him to kill preying birds and beasts in order to protect (as they thought!) game birds and fish. In 1899, when 27 years of age, he visited Norway as the guest of a Mr. and Mrs. Rice, who proved to be the kindest of hosts, and he wrote on July 2 of that year: "I shot a merganser and took seven eggs. All this is against my principles, but Rice is so very keen to kill down these beasts for the shooting and fishing." Mr. Rice saw the question only from the angle of the grouse and the black-game, but Wilson saw it also from the angle of the fox, and from the angle of a conception-of-God in which the fox as well as its bird victims figure as God's handiwork. Can it be said that predatory birds are less part of God's purpose than are other birds?

Writing in the same year from Norway to his betrothed in England, Wilson declares: "I do love the hawk and the owls more than any other birds, except perhaps the migrant warblers. I always hope and believe we shall be allowed to see all these things afterwards, and things we never can see now; *we shall see all God's works and shall know how they all fit in;* I can't think that any interest in them now can only be for these days; some day we shall see it all, and understand it all, you and I—both of us, and everybody else who has felt what it is to love anything into which God has put life. . . ."

The italics are the writer's, not Wilson's. Who among men shall be presumptuous enough to say that predatory birds do not "fit in"?

Divided Sympathies.

But Wilson continued to be divided between the God of Nature-love and the god of shooting and fishing—between his duties to wild life and his duties to zoology. On his Norwegian trip he joined in shooting a family of stoats engaged in hunting a grouse family, hen and chickens. He was much moved by the hen grouse's terror, but he felt he could not deny the stoat's right to live. He shot, but with misgivings. On June 27, 1899, he records: "In such a case one's sympathies were divided, for those stoats would not leave the place till they had hunted down every single grouse-chick and the hen-bird, too, for she would not leave her chicks."

The same incident, and others, are referred to by Wilson under date July 4, 1899: "I think more and more that sport is a vile and beastly form of amusement, not only because it means killing the game birds, but also because it means such wholesale slaughter of such a number of beasts and birds that are so much more interesting than the birds preserved. I like stoats, hawks, and foxes better than grouse, in much the same way as I like Esau better than Jacob. I am puzzled to know what to do, whether anyone has any right to kill birds and beasts for such reasons. If the place were mine, I should kill nothing except for painting and helping others and myself to get to know things better. I think that is right. But to shoot a duck and take all its eggs as I did the other day I am pretty sure is wrong, when the only reason was that it lives on young salmon. I felt a beast. . . . Now that I have got a merganser and

painted it, I don't think I could kill another even for Rice. But when you see six or eight stoats hunting down a family of little fluffy yellow-brown grouse chicks, and the mother grouse in such a state because she cannot help them, you feel you ought to shoot the stoats. But, if you like stoats as I do, it goes against the grain."

Science is a More Exacting God.

While Wilson thus denounces the god of shooting and fishing, he feels that he cannot renounce the scientific god of biology and zoology. But even on the altar of the scientific god he will not place any unnecessary victims. He will be sparing of life where he can be. And, as his references to "painting" in the above quotation show, he will be artist first and zoologist second—he will interpret birds and beasts to the public through his painted pictures, rather than through stuffed birds and trophies of slaughter.

And now comes a most interesting and symbolic conclusion—a conclusion that makes us think.

Wilson served science to the last, and the Polar dash in which he and his comrades perished yielded, among other things, three Emperor penguin eggs which Wilson collected with the hope that, through the science of embryology, they would throw light on penguin ancestry. If this had been his only achievement, he would have died in vain scientifically, for the *post mortem* scientific verdict was that "nothing decisive could be expected from the collection of the three Emperor embryos so close to one another in development as those which Dr. Wilson and his comrades obtained at such cost." In the words of the biographer Seaver, the dissection of these three eggs "has added nothing to our knowledge." But Wilson's paintings of birds and wild life have added much. They are the greatest heritage he has bequeathed to the Nature-lovers of the future; and these invaluable pictures stand out because they are that portion of his work which made least claim upon the blood of wild creatures, and which therefore did least damage to his principles of Nature-love.

As the world grows more truly civilised, it will appreciate more and more the conflict between Wilson the artist and Wilson the collector, and the truly spiritual character of the ordeal which he underwent and which he has left so plainly and so poignantly on record.

LEST YOU FORGET...

August is Bird Month.

WOMAN'S ADORNMENT

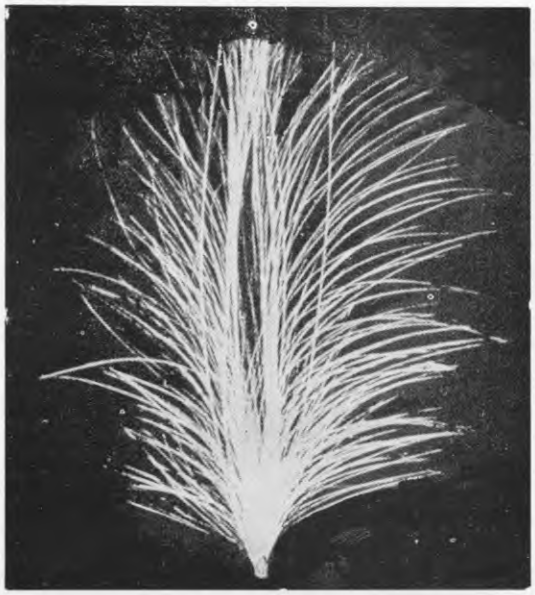
THE TRAGEDY OF THE "OSPREY" PLUME

(By the Wild-Life Preservation Society of Australia.)

EVERY woman knows the "osprey" plume, but few who wear these plumes are aware of the manner in which they are obtained. The Wild-Life Preservation Society of Australia wishes to place the actual facts before every woman who is now wearing, or is ever likely to wear, an "osprey."

The egret, which at breeding time carries these graceful plumes, is a shy wading bird. Through nine months of the year it is scattered in pairs over the watercourses of the country. At nesting time it gathers into rookeries for mutual protection, and many hundreds of the birds nest together in the trees round swamps and rivers.

When the young are hatched, plume hunters, knowing that the birds will not leave their young, visit the rookeries. They shoot the parent birds in the act of tending the nestlings, tear from their backs the small patch of skin



"OSPREY" PLUME.

EGRET ON NEST.

which bears the fatal plumes, and leave their bodies to rot in the waters of the swamp.

The helpless young die of slow starvation in their nests, save a few which, driven frantic by hunger, manage to scramble from the platforms to a more merciful death in the water below.

Our illustrations show that this statement is not in any way exaggerated. They are actual photographs taken by Mr. A. H. E. Mattingley, C.M.Z.S., in the swamps on the Murray River. What is shown here as taking place in Australia has gone on in North America and Eastern Asia until there are practically none of the birds left. Hundreds of thousands of egrets are being killed each year in the northern parts of South America. Soon there will be none left there.

These plumes are not always white. The millinery trade dyes them in all shades, and frequently represents them as imitations. There is no imitation made that looks in the least like the real plumes. Milliners will also say that the plumes are collected when dropped by moulting birds. This is absolutely untrue. Every plume that is displayed on a woman's head costs the lives of an adult bird, and of its helpless young.

Every woman, who purchases or wears one of these plumes, is as directly responsible for the tragedy depicted below as the gunner who fires the shot.

Can feathers obtained in such a way make any woman fairer?

Can true womanhood sanction such barbarous cruelty?

STARVING EGRET NESTLINGS.

THE DEAD MOTHER.

THE SHINING CUCKOO

(Lamprococcyx lucidus)

PIPIWHARAUROA

"THE call of the shining cuckoo, harbinger of spring," is the wording, translated, of an old Maori proverbial saying. The clearness and peculiar quality of the call notes of this little migrant singled it out for this special notice, just as in Europe the common cuckoo has been regarded from time immemorial as "sweet messenger of spring."

This call bears no resemblance to that of the European bird. It has been rendered by the Maori words "kui, kui,kui, kui, whiu whitiora." The first series may be repeated any number of times, and the last notes, with their sighing cadence, usually twice. In early spring the song often consists of the first series alone, and the final notes are acquired later. Other features are a certain ventriloquial quality that makes it difficult to detect the exact whereabouts of the singer, and a crescendo in which the swelling notes make it appear that the singer is approaching. Furthermore, the shining cuckoo is semi-nocturnal and may occasionally be heard singing during the hours of darkness.

The exact winter range of the species in islands to the north of New Zealand is not definitely known. From the fact that some have been found in Northern Queensland, it is surmised that others winter near New Guinea. There is at any rate no doubt that a number arrive in New Zealand from overseas in September. Such birds are sometimes found in the Auckland district in an exhausted state, as if after a long flight, but otherwise in good condition. The first records of birds seen and heard are published each year from all over New Zealand and become progressively later from north to south. By November the little visitors are well distributed. Being comparatively small they are more often heard than seen, but may sometimes be detected on account of a habit of flying from one tree to another after whistling.

Their food consists of insects, notably such furry caterpillars as are avoided by other birds, the ones best known in New Zealand being the larvae of the black and white magpie-moth *(Nyctemera annulata),* the black and orange "chimney-sweep" or "woolly-bear." This caterpillar feeds on ragwort, Cape "ivy" groundsel, and other plants of the great order *Compositae* and, where patches of these grow, cuckoos are usually to be found.

As in Europe, the cuckoos build no nest, but leave the hatching of their eggs and the rearing of their young to other birds, usually the little grey warbler (rironiro), whose nests are among the most comfortable found in the bush, the birds themselves being remarkable for their care of their young. The newly-hatched cuckoo throws out any rival eggs or young birds that may be in the nest, soon outgrows its cradle, and, leaving it a sad wreck, remains perched about in the neighbourhood, calling plaintively for food, more, and more, and more; and this is regularly supplied by the faithful foster-parents, and by other small birds, instinctively attracted by the hungry squeaker. Some of them remain dependent on foster-parents so long that they are not prepared for the sea journey to the northward in February or March. It is well known that a number of cuckoos do not leave New Zealand, and it is fairly certain that these are young birds which have been fledged too late to get away. The migratory instinct is stimulated only at regular seasons, and the birds thus left remain here contented on adequate if reduced fare till the following autumn.

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13 Stafford st
Wellington
April 1st 1939

Forest and Bird
Protection Society

Dear Sirs,

Could you stop the Pukeko from being shot next month-

Pamela Williams " age 11 years.
Bill Holdstock age-14.
Lyle Park age-12
E. Ericson age 13
Irea Boake age 14
Paul Boake age 13
Barbara Keith age 11
Shirley Trotter age 12
Peter Dykes age 10
Yolande Dykes age 8
Jeannette Watson age. 12.
Gordon Tomline AGE 13.
James Bird age 14
Stephanie Blatchford 9

DID YOU KNOW?

By JAY N. (Ding) Darling. *Condensed from "U.S.A. Bulletin."*

How shall we avoid a calamity for the future of our continent?

Productiveness of soil can be maintained by an intelligent plan of land use. Most people do not realise that water should be as productive, acre for acre, as land, and of all the gifts of nature we have misused the waters most. Most of the food producing elements of our continent come under the head of renewable resources. Our waters can be restored, our forests replanted, our wildlife replenished, and our rivers and lakes be made to again furnish their rich quota of life's necessities.

The processes for this restoration are known. Demonstration projects have been successfully carried out, but on such a small scale that they may be compared with the test tube of the chemist in his laboratory. The application on a large scale requires the support of a wide public understanding and a popular demand. The application of these policies would constitute real conservation.

We are, then, confronted with our first most serious problem of education. Our public must be taught what conservation really means now and to the future of our country. There are no text-books and there are no teachers. In fact, there is at the present time no place in our public or private schools for such a system of education. Worse and more of it, our political officers of government, elected by popular vote, are no more aware of the needs for conservation than the public. Because our governmental leaders are unaware of the conservation needs there is no support among our political leaders for adequate measures to accomplish the necessary ends. Conservation projects are always defeated in legislative halls. All our appropriations, generally speaking, go in the opposite direction, for new power dams to destroy more rivers, new reclamation projects to drain more lakes and marshes, new roads to open up the last remaining wilderness to the tourist, forest fires, and waste.

Educate the public and create a public pressure upon our government leaders and demand adequate recognition of conservation needs. Bring together, as an active national force, all organisations in this country that are awake to the importance of our outdoor heritage, all people who for sport or recreation, for health, business, scientific interest, or plain love of the outdoors, are willing to do something on behalf of sustaining resources and the wildlife of forest, field, and stream.

A CALL TO NEW ZEALANDERS

WAKE UP OR PERISH!

Although a disastrous flood occasionally makes New Zealanders think of the need of well-planned action against the soil-destroying forces of erosion, the general public tends to lapse into apathy. The people are more concerned with minor things of the moment, matters under the eye, than with the less visible problems of saving the country. . In "The Rape of the Earth," Dr. R. O. Whyte, Ph.D., Deputy Director Imperial Bureau of Pastures and Forage Crops, Wales, has a passage which should make New Zealanders wake up and take notice.

"The most urgent problem in New Zealand," he writes, "is the control of floods and the prevention of the excessive washing of soil down the short river courses into the sea, a process which threatens to leave the country like an 'emaciated skeleton.' Deforestation by cutting, burning, or overgrazing of the undergrowth in the mountain areas by sheep, cattle, deer and other animals has greatly accelerated run-off and soil-wash, and there is hardly a river in the country which is not affected by periodic flooding. The fact that these rivers frequently pass through rich dairying country combines with the mountain damage to make the conservation of soil, water and vegetation a pressing problem in New Zealand."

SHAGS AND TROUT

IT IS FUNDAMENTALS THAT COUNT

AN article which appeared in "Forest and Bird" of February, 1938, described how the Peruvian guano supplies were furnished mainly by countless thousands of a species of shag, which is related to the Stewart Island shag. Myriads of these shags feed upon vast shoals of small fish, as also do great numbers of larger fish. Off the Peruvian coast, it was stated, there are more birds and more fish than anywhere else in the world, except perhaps in the vicinity of the sub-antarctic islands. This is the whole story so far as the superficial observer would see and if New Zealand had such a natural asset and wished to increase the extraordinary numbers of fish, the call would be to kill the shags with the inevitable result that the fish would initially increase and later become slab-like and poor in condition. Disease would then control the numbers of fish as the shags did, only in a much severer and more drastic manner.

The superficial observer would not take into account what is the foundation of the presence of such great quantities of birds and fish which are to be found along the coast of Peru. But the biologist would point out that the whole life-cycle is based upon the infinitesimally small diatoms which are continuously ejected in their billions by the cold Humbolt ocean current. Upon these the small fish feed and in their turn form food for larger creatures. Increase the numbers of these diatoms, if such was possible, and both the birds and all fish will automatically increase in ratio. Totally destroy these diatoms, and the whole structure of birds and fish will tumble like a pack of cards and disappear.

That kind of disturbance of Nature's balance is even now taking place in New Zealand rivers and streams owing to forest destruction on the highlands. Thus the habitat of trout and other fish is yearly becoming more and more untenable for them because of the destruction of fish food and cover, following the erratic behaviour of the rivers, with their excessive floods which roll masses of destructive stones along the river-beds. Thus all living creatures in the rivers have the ever-recurring risk of being crushed or choked to death with silt.

Millions and millions of fish-food creatures must be killed as well as many trout. After floods come excessive low water-level periods when large areas of the river-bed are dry altogether, or contain merely pools of overheated shallow water. Then more fish-food and trout succumb. River pollution must be added to all the happenings caused by forest destruction on the uplands.

The superficial observer, however, is content to view the lessening of the quantities of trout through the big end of the telescope, and blames shags without even naming the species —or some other native bird.

That is the superficial way of looking at the matter and the easiest way to arrive at erroneous conclusions. Start at the diatom end and work upwards not downwards, and the true story will unfold itself. The crying need is undoubtedly the taming of our rivers and streams in order to produce the conditions necessary for an ample supply of fish-food.

DONATIONS TO ALBATROSS FUND.

The following further donations have been received in aid of the fund to reimburse the Dunedin enthusiasts, who have advanced the money to erect a man-proof fence to protect the albatross, at Taiaroa Head:

	£	s.	d.
Previously acknowledged	11	19	6
"C.M.," Murchison		5	0
Mr. N. M. Drummond		10	0
Mr. H. Guthrie Smith	1	1	0
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	£17	12	0

THE NATIVE GREY DUCK

A MOST VALUABLE BIRD TO FARMERS

THE Forest and Bird Protection Society initiated the idea in the February, 1938, issue of this magazine that the best method to adopt in order to save the grey duck from being exterminated lay in the setting aside of a chain of sanctuaries throughout the Dominion. At the same time the necessity of administering these reservations in a modern manner was emphasised.

Therefore, the Society is now pleased to see that a number of land-owners have not waited for the Government to act, but have themselves taken the initiative and set apart and ring-fenced suitable waters. Some may have done this merely for the purpose of obtaining handy shooting, but others are alive to the great economic value of native waterfowl in holding down many insects and larvae which, if allowed to unduly increase, would spread disease and be otherwise detrimental to man's wellbeing—for example, mosquitoes or the small water-snail which acts as the host of that very virulent sheep disease, called fluke. Dr. W. Eichelbaum, Wellington, writes as follows with reference to the value of the duck in checking the spread of this sheep disease:—

"Arrived some months ago from Germany, where I had studied birds for many years as a hobby, I was highly interested to read from your last issue of 'Forest and Bird' the appeal for protection of ducks.

Apart from the reasons mentioned therein for saving a species from extermination, there is one among others of extreme practical importance. In a country whose wealth depends so largely upon sheep, special attention ought to be paid to the preservation and protection of all kinds of ducks.

Ducks are an invaluable aid to farmers against the depredation of fluke.

In England in 1879-80 three million sheep fell victim to the disastrous fluke epidemic. In some parts of Germany in 1900-5 and 1910, 50 per cent. of the flocks were lost. In Hungary the annual loss amounts to one million sheep. In German abattoirs in 1906-18, 5 per cent. on an average of all sheep livers and 2 per cent. of all livers of cattle had to be rejected and destroyed.

The disease originates in low lying ground, especially in such as is often subject to inundation.

Many remedies are known to science—both prophylactic and therapeutic—the best natural remedy 'being the acclimatisation of duck in the districts concerned.'

The development of fluke (common species in New Zealand: *Fasciola hepatica)* is rather complicated. It lays its eggs in the bile ducts of its host: sheep, cattle, goats, sometimes horses. The eggs are passed out through the intestines and, when reaching water, a larvae *(Miracidium)* is hatched out. This larvae penetrates into the body of a certain water snail *(Limnaea truncatula).* After three transformations, finally, in the liver of the snail a ciliated larvae *(cercaria)* is produced, which leaves the snail and swims in the water until it encysts on plant leaves. When drinking water or grazing on inundated meadows stock swallow the little snail or consume respectively the larvae encysted on the vegetation. In this way the fluke is enabled to complete its cycle of existence developing its final stage in the liver of the original host.

Thus the development of the fluke requires a second host in addition to stock, and the prevalence of fluke disease depends absolutely on the numerous existence of the before-mentioned water-snail. Since all kinds of small snails are a favoured repast for ducks, there is obviously a quite simple remedy to prevent the sheep from eating the snails, to encourage the breeding of ducks. Incidentally ducks consume enormous quantities of encysted larvae with the plants they eat. A dangerous infection of stock, especially an extensive epidemic resulting in heavy mortality, therefore, is highly improbable in districts sufficiently supplied with ducks. New Zealand, too, is a country that has suffered from fluke disease of sheep ('rot'). In 1920 an epidemic, seeming to be a form of dysentery, occurred amongst cattle, which were fed on watercress. This epidemic has to be considered fluke disease too: *post mortem* examination disclosed flukes, examination of the watercress disclosed water-snails. If up till now sheep in New Zealand have been spared

from more serious epidemics, the reason is perhaps to be found in a fact mentioned in the appeal: 'Some years ago duck shooting was not nearly so popular as it is at present.' This situation might be altered when fowlers succeed in killing the last duck."

. . . . . .

The man on the land is the initial sufferer from fluke and similar stock diseases, but the remedy is in his hands. The majority of farmers, however, do not happen to have lakes or lagoons on their properties, but there is generally some suitable depression which can be made to hold water with the aid of a dam or some other method.

A most important essential is that duck reservations should be fenced, leaving ample space around the water to permit cover in the shape of raupo, and other plant life, to establish themselves. This cover gives protection from enemies besides providing extended feeding ground and nesting places. If the land owner is prepared to go further still, then the ducks can be regularly fed by throwing wheat, barley, and other food in shallow water. The ducks will get all of it then, and the sparrow will be defeated. In this latter case, if the ducks are shot at, the whole operation becomes illegal and punishable.

All shooting will, of course, be prohibited in or near the sanctuary. In Canada and in the United States of America such reservations are called "duck ports." The following remarks as to their effectiveness are culled from *"Readers' Digest"*:—

"Hundreds of duck ports—small sanctuaries where waterfowl are welcomed, fed and protected—have been established all over the country since the idea originated a generation ago, and, oddly enough, some of the most popular are in great cities. What hunter would think that the gaudily-plumed wood duck would make the lagoons of Jackson Park, Chicago, a stopping-off place, or expect a pond in New York's Central Park to be black with many kinds of waterfowl, some of which set up city housekeeping? On Roaches Run, Washington, D.C., people are treated to the sight of feathered and human fliers taking off and landing together with the duck port enjoying the greater patronage.

These refuges not only conserve America's colourful waterfowl which in many cases are being rendered homeless, but often transform a mosquito-ridden swamp into a place of beauty. At Lake Merritt, originally a marsh area in the heart of Oakland, Cal., men, women and children spend hours in winter watching the home life of nearly 10,000 wild ducks of 15 varieties, and of six varieties of wild geese, swans, herons, etc.

Small duck ports can be established by enterprising communities or individuals with little effort or expense. It is easier to attract wildfowl near migration routes, of course, but given certain attractions they will come to most localities." . . . . .

In New Zealand such reservations can be protected by law, if the occupier of the land so desires, either by having the area gazetted as being excluded from shooting or, when no dogs whatever or guns are permitted, as absolute sanctuaries. The Forest and Bird Protection Society will be glad to furnish further information with regard to restrictions on shooting and assist any applicants on request.

ON A SANCTUARY.

THE VALUE OF NATIONAL PARKS

(Condensed from an address delivered in Pretoria on the 17th November, 1938, by Col. J. Stevenson-Hamilton, the noted Conservator of Kruger National Park.)

AS some of you may know, I have been in charge of our own Kruger National Park for over thirty-six years, and, as may be surmised, I have during that considerable period of time devoted a good deal of thought to wild beasts in reference to habits, environments, and their influence upon one another and their surroundings.

The Kruger National Park is designed to form a sanctuary from human foes for every kind of wild life without exception, and not alone for those embraced under the general title of "game." In other places where protection exists it is usually directed towards the preservation of the latter only, with the accompanying destruction of all predatory creatures as "vermin". The governing factors in such a policy are (1) that carnivorous animals are a menace to domesticated stock; (2) that for sporting reasons it is desirable to keep "game" so far as possible inviolate except from the operations of legitimate hunters.

In closely settled overseas countries, the natural enemies of the ground and flying game are harried to the point of extermination by the gamekeepers that the sportsmen may each season find an otherwise unreduced stock at their disposal.

The ideal embodied in a National Park is, however, of a totally different kind. In addition to its popular object of displaying unspoiled nature and giving the public some notion of how the country appeared before the white man came to it, there are many deeply interesting and scientifically important questions which can hope for answers only in an area where all the species indigenous to it are allowed to live out their natural lives, unhampered by artificial aids and restrictions.

But if untrammelled Nature is to be read with profit we have to realise that all animals great and small, of the earth or of the air, whether predatory or otherwise, have their full place with her. We must, in fact, rid ourselves of the "Gamekeeper" point of view, which regards every natural enemy of what is termed "game" as "vermin" to be destroyed on every opportunity in order that the selected animals only may be preserved for the benefit of the arch slaughterer and enemy of all wild life—Man!

Man, in fact, is the only exterminator, whether he is savage, armed with bows and arrows, or European, on a lorry with spot-light and repeating rifle, he is always wild life's most ruthless enemy. The total elimination of one species by another, whether by a carnivorous type destroying a herbivorous one, or by one herbivorous type forcing out another, except as a final culminating factor after Man or some ecological cause such as starvation or disease has first played the principal part, is something unknown to Natural History throughout the ages, and would form a totally new departure in the process of Nature.

To turn to the carnivora, and I will take Lions, as being not only the largest and best known to the public, but also those whose habits I have most closely studied. A lioness has young normally at intervals of from 2½ to 3 years under ordinary favourable conditions of food supply and produces from three to four cubs at a litter. When food conditions are poor, *i.e.*, when game is scarce, two is the usual number, whereas under exceptional favourable surroundings it may rise to five, though this would be exceptional. Of the litter one or more always dies in infancy unless food conditions are exceptionally favourable, and in any case it is unusual for more than half the litter to attain full adult dignity.

It is a fallacy to suppose that Nature does not keep a strict balance between hunters and hunted. The Ngorongoro Crater in Tanganyika forms a good instance. There, confined within the nearly precipitous sides of this huge crater with its diameter of many miles, roam thousands of Wildebeest and other game animals which share the retreat with a full complement of Lions. These Lions and the other animals must have shared the bed of the crater from time immemorial. The veld is rich clover grass, and so the game displays no constant urge to leave the crater, nor does it seem that it has ever either felt the need to get away

(Continued on page 15.)

Children's Page . . .

BELLBIRD HOLLOW

By Flora Patie

ELSA and Don Grey loved their new home near the hills, where they had lived now for six months. It was one of the finest sheep stations in Hawke's Bay, but the children's chief interest was in the forest beyond the homestead. They had explored part of a bush-clad gorge, where a little creek ran over its stony bed. Near the entrance to the gorge there was a hollow where the creek widened into a pool of clearest water, shaded by the trees which met overhead.

"It was the very place for fairies," so Elsa said. It was there that Elsa and Don first heard the chime of the bellbird, and they named it "Bellbird Hollow."

One afternoon, as they passed by the sheep-yards on their way in from school, the children heard their father talking to the shepherd about burning off the bush on the lower hills.

"Oh, Daddy!" cried Elsa, "not our Bellbird Hollow! Oh, please don't burn the bush there."

The children slid off their ponies and ran over to their father. "Daddy," said Don, "we have such fun up in the forest. Couldn't you come with us to-night to hear the birds' good-night song? Mother has promised to take us after tea."

His father laughed. "I'm too busy to think about birds. Off you go to your mother."

A few minutes later, Elsa and Don dashed into the house calling: "Mother Mother! Where are you?"

When the children told her their trouble, Mrs. Grey said: "Daddy doesn't understand what Bellbird Hollow means to us. Let us hope he will change his mind. Don't worry any more about it, darlings. Look what has come in to-day's mail." She held up a large envelope.

"Oh! Oh!" they both cried, "our 'Forest and Bird' journal! Could we have just one peep before tea?"

"Yes," replied their mother, "if you get your work done quickly."

When they sat together on the window-seat, looking at the bird pictures, Don said: "Let us show this to Daddy when he comes in."

"What are you going to show me?" called a merry voice, and Mr. Grey came striding into the room. He caught up Don and sank into an easy chair with the little boy on his knee. Elsa ran to him with the journal, saying: "Look at the lovely birds, Daddy."

Mr. Grey frowned. "Birds again! Bothersome little things, that's what they are; they're eating the fruit wholesale."

"But we can easily spare them some," said Elsa, "after all the work they have done for us in the garden."

Just then Mrs. Grey called them to tea.

As the sun was setting, the children and their mother wandered into the leafy shade of Bellbird Hollow. They found a comfortable seat on the rocky edge of the fairy pool and waited quietly for the song of the birds. At first there was a solemn stillness, broken only by the tinkling of the creek and the faint stirring sound of insects in the forest, "like the fairies whispering," said Elsa.

As the shadows deepened they heard a great twittering in the trees. "The birds are coming home for the night," said Mrs Grey. "See them

(Continued on page 16.)

from the Lions, or that the Lions, also left entirely to themselves, have ever succeeded in reducing drastically the numbers of the Wildebeest or exterminating the Antelopes of rarer species also found there.

On the other hand, no doubt, had no Lions been present, the game would have increased to such an extent that it would at last have finished even that fine food supply, and would either have perished miserably of starvation long ago or have abandoned the area.

If we desire to have a picture of things as they were designed to be and as, in fact, they continued through many thousands of years before Man counted as a force on Earth, if we desire to find the key to many biological problems, and if we wish to preserve intact the few relics of wild Nature which we have allowed with difficulty to survive, it behoves us to tread warily and to interfere as little as possible in matters concerning the interrelation of species of which at present we know very little.

flitting about. Some of them like to play just as you do at bed-time."

"How funny," said Don. "Do birds really play, Mother?"

"Certainly they do; have you never seen them around the bird-bath? But, listen! Now they are beginning to sing."

The forest rang with the happy bird voices—bellbirds, tuis, robins, fantails, grey warblers, and all the other little songsters took their parts in the wonderful chorus.

"If only Daddy had come with us!" sighed Elsa.

By the time they reached the garden gate it was dusk, and there was Mr. Grey waiting for them. "I was beginning to think I should have to come and look for you," he said. "I've been listening to your birds, children; it's the first time I have really noticed their singing."

"You should have been as near to them as we were," said Don. "It was great!"

After the children had gone to bed, Mr. Grey picked up the "Forest and Bird" magazine, and as he glanced carelessly through it, the story of the destruction of some of the beautiful forests of New Zealand caught his eye. "It *is* too bad!" he remarked. "After all, it's only a matter of a few acres."

"Yes," replied Mrs. Grey, "and you would gain far more by leaving the forest on our hills just as it is."

"This is my first experience of hilly country," said Mr. Grey. "This journal says that the forest will help to prevent flooding of the flats."

"Not only that," said Mrs. Grey, "but the forest will be a never-ending delight to the children and of great value in their education. Then, also, it is the home of the birds; and, lastly, I have always longed to live as close to the forest as we are now."

"That decides the matter," replied Mr. Grey. "We will set aside the whole forest as a sanctuary."

When Elsa and Don heard the good news next morning they were delighted. They went with their mother on many exploring expeditions after that, and often their father joined the picnic parties at Bellbird Hollow.

BELLBIRD HOLLOW.

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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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Children	£0 1 0 per annum
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