THE INTER-RELATIONSHIP BETWEEN BIRDS AND MAN*

THE complex inter-relationships which exist between the members of the animal kingdom are usually so well adjusted that their existence is overlooked, and it is only when something happens to upset the rhythmic working of this system that we appreciate its delicate balance, and the importance of our efforts to put things right.

The importance of insects in the natural scheme of things is driven home by the hordes of noxious species which force themselves upon our notice, but the role played by birds, although less conspicuous, is none the less important.

In his early days man regarded birds as an important source of food, and perhaps of clothing, and although to-day the indebtedness is less apparent it is none the less real. Even to-day birds constitute an important article of food to civilised and native races, in fact so important were they found to be in New Zealand, that the Government deemed it necessary to pay a large sum to the Maoris of a certain district as compensation for the drainage of extensive swamps which were the home of the new rare brown duck.

Another instance of direct utility to man may be taken from the mutton-bird industry in the Bass Strait islands, where many thousands of eggs are gathered and marketed annually together with consignments of smoked birds.

This industry is now a carefully regulated one, and should prove to be a permanent source of wealth to those engaging in it, although in its early days the indiscriminate exploitation of the rookeries, as the breeding grounds are called, threatened the very existence of the species.

It is sufficient just to mention the vast guano deposits which may be found on many oceanic islands to bring to mind the importance of birds in maintaining the fertility of our soils; and the project has been seriously considered of introducing some of the more prolific guano producing species into our local seas so that in years to come Australia may have supplies of fertiliser near at hand.

Instances showing the importance of birds to a specific few may be cited almost indefinitely. Until recent years plume hunting was quite an important industry, and traffic in various avian products is more or less continuously carried on, but it is the more important, though indirect services which birds render to man which are worth most consideration.

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* By C. F. Jenkins, B.A., R.A.O.U., Assistant to Entomologist, Department of Agriculture, in *The Journal of the Department of Agriculture, Western Australia*, June 1935.

The foregoing examples are insignificant when compared with the importance of birds in controlling the numbers of the lower animals, and it is owing to their untiring efforts in this direction that we find life upon the earth at all tolerable. All birds, of course, are not wholly useful, and a few are really injurious, but many popular culprits by no means warrant their bad reputations.

Birds like the swallow, the robin, and the wagtail are too well known to need any eulogy, but other less known species such as the magpie lark, the pardalotes, and the cuckoos are equally valuable.

The magpie lark is of particular interest to the pastoralists in various parts of the Eastern States, where that dread parasite of sheep—the liver fluke—occurs, for by feeding upon the fresh water snails, which constitute the alternate host of this parasite, its ability to multiply is appreciably checked.

The little pardalote is widespread in all the timbered areas of the Continent, but spends its time hunting for insects in the leafy tops of the trees, and usually its monotonous call is the only intimation of its presence. Its absence, however, is very quickly reflected by the forest trees, and the death of many fine eucalypts in the park lands surrounding Adelaide has been traced to the ravages of insect pests present in unusual numbers due to the disappearance of this tiny and beautiful bird.

The cuckoos are viewed with distaste by some people because of the murderous habits of their young, for the baby cuckoo ejects its foster brethren from the nest at the first opportunity; but although by this means many useful insect eaters come to an untimely end, the cuckoo's liking for various hairy caterpillars, highly distasteful to other birds, makes it rank as an important vermin destroyer, and compensates for its less commendable habits.

Before passing to the really destructive species, I will deal with a few which have been rather severely handled by popular opinion, and whose evil reputations are based upon extremely doubtful evidence.

Silvereyes, crows, hawks, shags, and black cockatoos will serve as examples.

The silvereye, it is true, takes its toll of grapes and soft fruits during the season, but throughout the remainder of the year it hunts assiduously for aphis, mealy-bug, and similar pests, the ravages of which cause far heavier losses than those sustained from the pecked fruits.

The crow, as is generally known, will attack lambs and weak sheep, but its services as a scavenger are usually overlooked. It is doubtful whether the damage done to healthy animals is at all considerable, and when it is remembered that the loss to the wool industry from the blowfly pest, in New South Wales alone, has been estimated at £2,000,000 per annum, the services of any ally against such a scourge should not be lightly cast aside.

The poultry farmer is the sworn enemy of all hawks, and produces a gun whenever any member of the hawk family comes in sight, but this bitter enmity is by no means justified. The sparrow hawk and the goshawk, both small, swift flying species, are notorious chicken stealers, but the majority of the others are carrion or vermin feeders, and should be encouraged.

Anyone who has seen a party of black cockatoos stripping the trees of bark and strewing the ground with litter would think that the forester had ample justificaiton for resenting the presence of these birds, but a little investigation will show that there is a strong case to be presented in their favour. These cockatoos perform the service in Australian forests which the woodpeckers do in those of the old and new worlds, and although in their search for wood-boring grubs they gash the limbs about in a reckless manner, the timber is already spoiled for commercial purposes, and by devouring the original culprits they are helping to maintain the health of other uninfected trees.

With the possible exception of some of the parrots, there are few native birds whose indiscriminate destruction can be recommended, but when we consider the introduced varieties it is quite another story, and it is then the serious consequences man's interference with the balance of nature can bring about becomes apparent.

A classical example is presented by Charles Elton in his book on Animal Ecology.

Some keen gardener introduced into Hawaii a species of Mexican lantana, which in its native home caused no trouble to anybody. Meanwhile someone else imported to the islands a number of turtle-doves from China, which showed a great liking for the berries of the lantana. Indian minahs were also introduced, and the two birds were instrumental in spreading the plant throughout the country. But this is not all. The grasslands and young canenelds had formerly been ravaged annually by hordes of army worm caterpillars which also served as food for the minahs, and the increase of the latter bird acted as an important check upon the insect plagues. About this time parasites were introduced upon the lantana, and the weed began to decrease. As a result the minahs also began to diminish in numbers, and the army worms to appear again in the crops. In addition it was found that when the lantana had been removed, other introduced weeds took its place, often more difficult to eradicate than the original shrub.

Such an example is only one of many, and it is not difficult to find them nearer home. In fact Australia and New Zealand probably illustrate better than any other countries in the world how easily the balance between man and the lower animals may be upset and with what disastrous results. Deer introduced into New Zealand roam the forests in vast herds, and have completely stripped the undergrowth in many places, thus upsetting the environment of the native birds. Not satisfied with this, civilization has brought with it numerous foreign birds like the goldfinch and the starling, many of which have overrun the country, practically ousting

its lawful avian inhabitants. The blackberry is an ever-increasing pest in the Dominion, and the starling, one of the chief factors in its dispersal, must be eradicated before the weed can be controlled.

In Western Australia introductions are as yet few and unimportant. The hordes of sparrows, starlings, goldfinches, blackbirds and thrushes which plague orchardists in the neighbouring States, are here unknown. Our most numerous foreigner is the kookaburra, which has already increased with rather alarming rapidity in certain districts. The goldfinch has just obtained a footing, while the Indian and the African turtle doves so numerous around the suburbs are annually spreading further and further over the State.

The driving out of native species by foreigners may have even more far-reaching effect than already cited, for it is the feathered population, and more especially its honey-eating members, that we in Western Australia must thank for much of our characteristic flora. Apart from controlling insect pests birds serve as important agents in cross-fertilisation and such unique plants as the kangaroo paws owe their very existence to the little honey-eaters which tend them. Insect visitors are not lacking but the flowers are so constructed that birds alone can transpose the pollen grains, and banksias, grevilleas and even eucalypts, look to birds for pollination. It has been said with considerable truth that were the honey-eaters to be exterminated Australian eucalypt forests would likewise perish and it is certainly true that many of the smaller plants would find reproduction impossible.

The importance of native species will now be apparent, and although foreign forms may have a certain appeal they should be viewed with suspicion one and all.

The fact that a bird is not harmful in its native country is no guarantee for its behaviour elsewhere, and removed from the natural checks of its normal environment its members may attain serious dimensions in a very short time. The European birds introduced into Australia have not the hardships of winter to contend with to which they have been accustomed, and may be found rearing broods of young any month in the year, so that it is small wonder their native competitors fall back before them.

With the spread of civilisation the depletion of certain members of the bird population is inevitable, for species like the mallee hen and the bronzewing pigeon are essentially lovers of cover and must be driven back as the land is cleared, but what is disastrous to one may be advantageous to another, and magpies, ground larks and quails will increase as fresh land is thrown into cultivation. The diminution of certain species through the advance of settlement we are powerless to prevent but the drop in numbers resulting from deliberate destruction, or from the introduction of pests like the fox and the cat, is a matter over which we have, or did have, some control. Unfortunately in many cases it is too late to rectify the errors already made, but if they serve as guides for future action, and make us realise the value of our feathered population, much may still be done to preserve in our own State the balance which has been elsewhere so rudely shaken.