

farther south, except when compelled to on account of snow and ice.

We now come to the two smallest species of owls found in Manitoba.

Richardson's Owl (*Nyctala tengmalmi richardsoni*), and the Saw Whet Owl (*Nyctala acadica*).

Both these birds are resident practically wherever found, Richardson's owl being possibly the most secluded of the two. Both are nocturnal, and in daylight, with slight precaution, may be caught in the hands. I have found mice an absolute necessity to keep them alive, consequently these must form the greater portion of their diet. Certainly neither of them are large or ferocious enough to do much damage to poultry. The records for the Saw Whet Owl are in 19 full stomachs, one contained a small bird's remains, 17 mice and one insect.

Lastly, I refer to a species not previously recorded for Manitoba, but which is now becoming numerous in many localities, namely, the Burrowing Owl (*Speotyto cunicularia hypogaea*), of which we have all heard more or less in connection with his supposed association with the prairie dogs and rattlesnakes. The truth of this is that the little owl drives out the gophers and prairie dogs and appropriates the burrow for his own home, and the finding of the rattlesnakes in the same locality is no proof of their living with the owls. Dr. Coues, who first upset the story of the harmonious association of the three forms, says the owl is a match for both old prairie dogs and rattlesnakes, living largely upon the young dogs. They are peculiar looking little birds, with their long, slender featherless legs, so different from all other owls, which makes them look somewhat top-heavy. Capt. Bendire, in his life histories, relates an experience in feeding two specimens in captivity, in which the owls killed with ease, and devoured with equal ease, four Townsend's ground squirrels, animals considerably larger than the birds, in one day. Every day of their captivity they eat more than their own weight, which will give a slight idea of what a growing brood will require, and as the food is almost entirely vermin, they are extremely beneficial agents and deserving of the fullest protection. Their advent into Manitoba can therefore be looked upon with favor, more especially on account of their fondness for gophers, and among them the pocket gopher, which tunnels so much under ground, heaving up heaps of earth and doing great injury to growing crops. This animal works mostly at night, and the burrowing owl is the best adapted species to act as constable and intercept him at his

work, arrest him, judge and condemn, and finally dispose of him to the owl's satisfaction.

## CONCLUSIONS.

Having collected together the foregoing facts relative to the economic relations of the individual species of the birds of prey, let us now briefly review them, and see what conclusions may be drawn from them. In the first place, we have three species proven absolutely beneficial, with no records of destruction of either poultry or game birds.

In the second group we have six hawks and eleven owls, mostly beneficial, which average only 16 1-3 per cent. injurious, and from this small percentage we must deduct 12 per cent. for the small birds taken, whose economic value is doubtful, because we have no knowledge of the species, which leaves a grand total of 4 1-3 per cent. of 17 common species of birds of prey injurious to poultry and game combined, while the remaining 82 2-3 per cent. are entirely beneficial in their destruction of agricultural enemies. Is it justice to slaughter 84 innocent birds because four in the hundred fancy poultry or game? On the contrary, it is very unjust, and therefore so when we consider that these 84 innocents have been diligently working in our interests and yearly saving us many times the value of all the poultry we own.

Reviewing the records of the harmful group, what do we find? Five species are credited with doing the damage for which the other 23 species suffer. The question now is, what is the injury they do? The average injury of these amounts to only 25 per cent. to poultry and game, while an equal percentage is proven to be beneficial, the remaining 50 per cent. being destructive to smaller birds. Now, it has been shown that the Peregrine falcon seldom visits the farm-yard, but follows the game, which will greatly reduce his injurious effects upon poultry. It has also been shown that the three species most injurious to small birds are most so to two pests, the English sparrow and the blackbird, and for this reason we can reduce their injurious qualities in this respect at least one-half. Consequently, we have at least 50 per cent. of the most harmful hawks directly beneficial to agricultural interests, while only 25 per cent. are injurious to poultry and game combined, and the remaining 25 per cent. to birds of doubtful economic value.

From these conclusions, I think it only justice to the interests of our country that the birds of prey should be included in the Act for the protection of birds beneficial to agriculture.