

Now, in order that the observer may be able to determine the most injurious species from the harmless and beneficial, I shall again refer to their different characteristics.

When a hawk is observed beating steadily back and forth, sailing and dodging about the prairie or marsh, or sulkily and indolently perched upon a post, branch or clod of earth, usually disregarding the approaching team or pedestrian on the highway, it may safely be concluded that this is not a thief and that he seems to realize it, and is therefore undisturbed by approach. And should one be observed about the farm-yard perched on the stack, barn or fence-post, even though poultry are about, he will not bother them, for he is after mice. But should a hawk be observed bearing down upon the place at an unusual rate of speed, never altering its course, and dashing among the startled fowl, you may know it is a thief, and must

be ready for him before he arrives, in order to frighten him off or get a shot at him as he whirls behind the barn or stack with a hen. Should you not be fortunate enough to see him coming, and suddenly see the streak of feathers flash past and hear a disturbance among the fowl, if you are not very sharp you will not even see him dodge off with the fowl and will not realize what has happened until you count your poultry, as when this bird makes the fatal swoop, nothing but death can stop his attack, and an army of musketry and dogs could not make noise enough to disturb him. Consequently, it is only on chance occasions that an opportunity is given to punish the culprit, unless, after repeated visits, a watch is kept for the approach, a quick shot is made and the thief dropped, and this invariably results in the loss of more time than the value of the poultry taken.

SMALL MAMMALS OF MANITOBA DESTROYED BY BIRDS OF PREY.

The small mammals which constitute the greater portion of the bill of fare of the birds of prey, and those most destructive to agricultural interests, are mice and gophers. Of the former group there are, besides the domestic mouse, three species which may be considered common, and whose ravages are worthy of attention. Chief among these in numbers and destructiveness is the common field mouse (*Arvicola riparius*). This chunky, short-tailed, unintelligent-looking little animal is familiar to nearly everyone, being of wide distribution in our province, and it will always be found in greater or less numbers wherever there is a grain field or granary. The field mice nest below the ground in the fields, so that they are constantly in the midst of abundance of food with a minimum of exposure to enemies. They are exceedingly prolific, and it is estimated that the increase under favorable circumstances from one pair of mice would be over 14,000 mice in five years, if we allow each pair to breed for two years, as each pair will raise at least ten young each year. The numbers of these animals in a given district would seem almost incredible to the majority of people, as the animals are mostly nocturnal, and, unless disturbed by daylight, they never move from their hiding place, and when disturbed they readily hide behind any cover available. On account of the favorable protective grey color

of the animal, they generally escape observation, unless one is especially looking for them. On one occasion, in September, 1897, I was desirous of securing some of these mice. I visited a field where threshing was in operation, and, with two boys, I followed the stook teams about, and in less than one acre of ground captured sixty specimens, and during this time as many more escaped uncaptured or were killed and eaten by a dog in attendance. The boys subsequently visited the same field for the sport of killing the animals, and inform me that my catch was only an average to be found over the whole section. This would mean, allowing two-thirds the number captured to have escaped, 100 mice per acre, or 64,000 mice on that section. Now, as by experiment I proved that 50 mice would destroy one pint of grain daily, and as this grain was standing stooked for about three weeks before threshing, these animals would have consumed large quantities of grain. At this rate a few pairs of mice wintering in a stack or granary would be very damaging to the farmer in one season. This is the species which most frequently falls a prey to the rough-legged hawk during twilight or to the owls which hunt by night. A pair of owls or hawks about a grain stack during the harvest will do much towards the extermination of these pests. Seeming to know their own powers of hiding, they are very bold and