

the smallest trees, and those accustomed to finding Red-tail nests in the tops of the highest and most inaccessible trees, are surprised at the low elevations of many of their nests; we found them as low as twelve feet from the ground. A few birds seen were very dark or entirely black, though the six taken in 1917 were of ordinary light type and four of them indistinguishable from eastern birds; only two would have been identified as Western Red-tails, *B. b. calurus*, if their geographical origin were unknown. Probably some of the birds seen were Swainson's Hawk but except in most typical plumage I fail to see how these species can with certainty be separated in life. While it is evident that the Goshawk and the two large owls do serious damage to upland game, little objection can be made to these large summer Buteos. Through the spring and summer their main dependence is upon the Gophers and Ground Squirrels and the good they do in this direction can hardly be over-estimated. Though we were not in the Shoal Lake district during the summer we had special opportunities of studying the economic effect of these birds on the Red Deer River in Alberta a few weeks later, where the conditions as far as this aspect of the question is concerned are similar. We found them subsisting exclusively upon small destructive mammals. If it is true, as most excellent judges have stated and as was verified to us by several practical farmers, that a gopher will destroy a bushel of wheat in a season, with this grain worth two dollars a bushel, the hawk that takes a gopher a day for three months in the year is of real economic value to the community and should be rigidly protected. It is true that gophers hole up early in the autumn, after which the Red-tails and other Buteos may turn their attention to other food supplies, but only after several months of valuable service to man. These birds are peculiarly mammal-eaters and usually turn to mice rather than to birds. A few individuals occasionally, under certain conditions, develop a taste for poultry and game, but it is comparatively rare for they have not the speed and energy to hunt such game systematically as does the Goshawk or the rare large falcons. However, it would take a great number of chickens and game to counterbalance the good done by the destruction of noxious rodents, especially in the prairie provinces where these pests are a serious hindrance to agriculture. The farmer and other shooters usually plead their inability to separate one hawk from another as extenuation for killing all birds of prey. In truth, when the stake is so important, a modern agriculturist has as little excuse for not learning to discriminate between bird friend and foe, as he has for failing to learn the obnoxious weeds or insects and the methods for their control. Many, also, fail to judge the relative proportions of the

case; they are loud with indignation when a hawk takes a partially grown chick, but fail to enthuse when the same bird prevents the destruction of twenty bushels of grain. While an occasional Goshawk does or may remain in settled communities through the summer the majority of the large summer hawks are Buteos and harmless. They depart in the autumn while the objectional ones are mostly winter visitors. Should only winter hawks be killed or such others as are caught in the guilty act, but little mistake will be made.

91. *SWAINSON'S HAWK, *Buteo swainsoni*.

Though we failed to identify this species specifically in 1917, Young took a specimen on May 23, 1918. It is quite similar in color to the ordinary juvenile Red-tail, but more profusely and evenly spotted over with dark on all below except throat.

92. *BROAD-WINGED HAWK, *Buteo platypterus*.

Mr. E. Arnold tells me that he took a set of Broad-winged Hawk's eggs near Woodlands a few miles south of Shoal Lake, June 10 (1895). On May 5, 1918, Young reports flocks of 5 to 10, aggregating 50 or more, passing over every twenty minutes or so, all headed north. Single individuals were noted on the 8th and 22nd, and then no more were observed until Oct. 1 and 2, when three and two were seen.

93. *ROUGH-LEGGED HAWK, *Archibuteo sanctijohannis*.

Mr. Wm. Ward presented us with a specimen he killed on Oct. 2, 1917, which forms our only record for the locality. These large hawks, characterized by having the legs feathered to the base of the toes, are probably the least harmful and most beneficial to man of all the raptorial birds.

94. BALD EAGLE, *Haliaeetus leucocephalus*.

The Ward brothers told us in 1917 that four years previously a juvenile was taken. They usually see from three to four eagles a year.

95. PEREGRINE FALCON, *Falco peregrinus*.

In 1918, Young reports the Duck Hawk *F. p. anatum*, several times in May and again on Aug. 2. The Ward brothers seem to know it and report it regular but not common. It is unlikely that it breeds in the locality.

96. PIGEON HAWK, *Falco columbarius*.

Young records the Pigeon Hawk as seen once in early July, several times in late August, and again in September and early October. No specimens were taken but, without doubt, the form is the typical race, *F. c. columbarius*.

97. *SPARROW HAWK, *Falco sparverius*.

Only occasionally seen in the spring of 1917 and not noted in the autumn, but in 1918 a few individuals noted constantly from arrival April 23 to departure the first of October.