

THE PRAIRIE FALCON IN THE STATE OF WASHINGTON.

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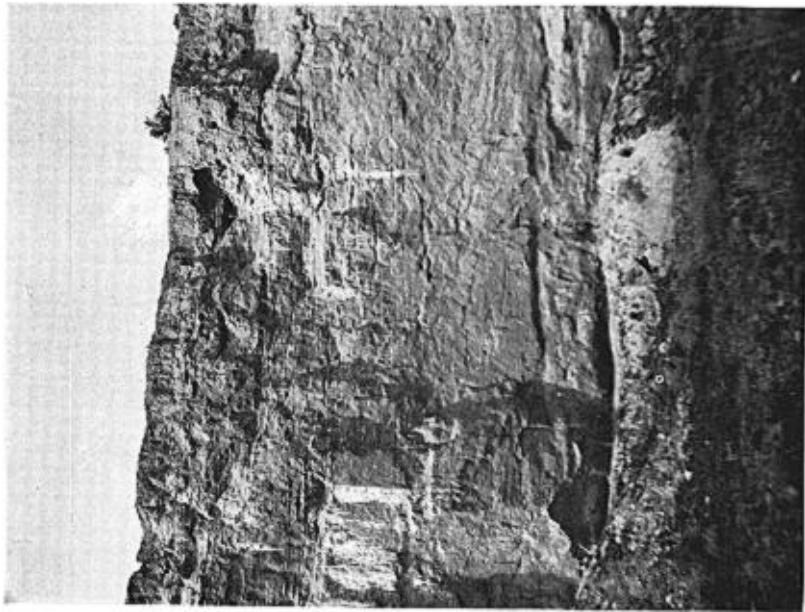
Plate III.

WEST of the Cascade Range, in Washington, the Prairie Falcon (*Falco mexicanus*) can be rated as only an extremely rare fall and winter visitor, the three records we have of specimens taken being as follows:—a female taken on the Tacoma Flats on February 18, 1923 (Murrelet, Vol. IV. No. 1); a female on the Nisqually Flats on October 23, 1927; and a female taken at Roy on January 2, 1927. These locations are all within a few miles of the city of Tacoma, Pierce County, Washington.

East of the Cascades, however, the species may be rated as a fairly common summer resident in localities that are favorable for them, though much less common in winter when the spirit of migration is upon them. At this season they must in many cases drift far from their nesting grounds.

It is during the nesting season that they are to be seen at their best, and when their habits may be studied to the greatest advantage. For some years past the writers of this article have given very close attention every spring to the study of these birds and we hope that our findings may prove of general interest and, perhaps, bring to light some new phases in the nesting habits of this very spirited and interesting falcon of the desert country.

In our experience the locality chosen for the nesting site is almost invariably the outcroppings of rock that are to be found here and there all through the sagebrush desert country. These outcroppings vary from mere surface showings to towering cliffs three or four hundred feet in height, which are perpendicular in a majority of instances. The cliffs are liberally punctuated every here and there with what are known as "potholes," which vary in size from a few inches to several feet in diameter, but which seldom penetrate into the rocky wall more than two or three feet. These potholes are among the favorite nesting sites of the Prairie Falcon, but they are also often used for the same purpose by the Raven, Sparrow Hawk, Western Red-tail, Horned Owl, Ferruginous Rough-



NESTING SITES OF THE PRAIRIE FALCON AT TOP OF CLIFFS.

leg, Rock Wren and other cliff-loving birds. The two larger Hawks do not often use the potholes, preferring to build their nests on ledges. A cliff may have a pair each of all four of these large raptors, as well as a pair of Ravens, nesting in fairly close proximity to each other with no apparent friction between them, for of course the Sparrow Hawks and other "small fry" are so insignificant as to be beneath the notice of their larger cousins. It is only when some outside disturbance occurs that they seem to show any enmity toward one another. One example of this occurred on a cliff that jutted up from the border of a small lake, the cliff having been chosen as a nesting site by a pair each of the Prairie Falcon and Western Red-tail. While examining the location we found that someone had shot a bird from each pair, oddly enough it being the male Red-tail and the female Falcon, their bodies lying on the ground close to their respective nests. The remaining parents had continued to "carry on," however, and the young that both nests contained seemed to be in excellent condition. When we appeared upon the scene and worked around close to the cliffs we started a very interesting disturbance between the two birds, both of which showed the greatest solicitude. Their previous unfortunate experiences with mankind had evidently taught them to keep well out of gunshot range of human beings, but the Falcon was apparently so angry that he had to give vent to his feelings on something, the nearest available object being the poor female Red-tail. Consequently we were treated to a most marvellous exhibition of what can be done by two trained experts in the art of flying, and the unusual and graceful movements of the Hawk were as thrilling to us as they were unexpected. The Falcon would mount high in the air over her and then drop down upon her like a meteor until so close that it seemed inevitable he must tear her in pieces. Then, just as he seemed upon the very point of striking her, the Hawk would turn gracefully back downward and thrust her great talons up at the approaching Falcon. Then there seemed no possible chance of avoiding a collision that would have meant almost certain death to them both, but always the Falcon would swerve in the very nick of time, missing by the merest fraction of an inch. This most interesting performance kept up until we left, but, it seemed that misfortune would be sure

to happen to the birds if we stayed, so we very regretfully left them to settle down to their normal conditions of life.

Another interesting incident showing the vindictive temperament of the Falcons occurred when we were collecting a set of their eggs from a pothole well up in the face of a high cliff. After the usual preliminary dashes and outcries that the birds always shower upon an intruding man they seemed to realize the futility of their attacking us and left, flying several hundred yards down the cliff where they kept pitching at a large pothole that was there. They would swoop almost into it and then dart away with wild cries, so we felt certain that something else of unexpected interest was in store for us. Walking down to almost directly beneath this new hole we were surprised to find that all the noise we could make failed to bring any sign of life from the cavity, which we could see contained the old nest of a Raven. It seemed impossible that the Falcons had been simply playing us a trick, so the men on the cliff above let a rope down and slapped it against the hole. This was no sooner done than the entire entrance was blotted out by an immense female Horned Owl as she came off her nest, which, incidentally, contained three slightly incubated eggs.

While potholes, as above mentioned, are perhaps the favorite nesting sites of these birds, they are by no means the only kind selected. In many cliffs there are no potholes at all, but on some projecting ledge of rock a Western Red-tail or a Raven will have built its nest during some past season, and it is the old nests of these two species that are very commonly used by the Falcons. In fact, in many localities the abundance of the Falcons as breeding birds depends entirely upon the presence of the old nests of these other birds. An instance by way of proving this statement occurred to us in the past spring when we visited a cliff where the year before we had found a Falcon using an old Raven's nest. The nest had been dislodged by the winter storms and, as there were neither old nests nor potholes, there were no signs of the Falcons to be found anywhere in the vicinity. This is only one case in several that we have noticed. In our experience the Falcons will always return to the old nest, even though the rightful owners wish to take possession themselves. A very interesting example of this was given us in the past spring of 1928, a somewhat detailed account

of which may be permissible. The nest in question was that of a Western Red-tail, which was situated on a ledge about twenty-five feet from the ground and some forty feet below the top of the cliff. We had taken a set of three eggs of the Hawk from this nest in 1926, and in 1927 we had found it occupied by a Falcon with five eggs. Going to it in 1928 we at first thought it deserted as no bird could be seen, but, upon going directly beneath it and shouting, the Falcon flushed with her customary fierce challenge. Much to our pleasure the nest contained five eggs of the Falcon and, to our great surprise, one egg of the Red-tail, all of which were perfectly fresh. The poor Hawks had been through a very hard spring, as they had built a nest about half a mile distant across the river and had their eggs eaten by Ravens. Of course we had no means of ascertaining the course of events, but it would have been most interesting to know if the Hawk had laid its egg before or after the Falcons had taken possession of the nest. It is highly probable that the Falcons could and would drive away the rightful owner, if they wished to do so, even though the Hawks had taken possession first. However, on the other hand, it seems highly possible that the Ravens had destroyed an incomplete set in the new nest and the Hawk had then taken advantage of a temporary absence of the Falcons and laid the egg to complete her set in her nest of a former year.

The friendly relationship existing between Falcons and Ravens, that are both nesting in the same cliff, is nothing short of astounding, especially when we consider that a Raven is perhaps the most "dyed-in-the-wool" egg eater in the animal kingdom. It is fairly safe to say that in seven cases out of ten a pair of Ravens will be nesting in the same cliff that is occupied by a pair of Falcons, the nests in many cases being only a few hundred feet apart. Yet strangely enough we have never seen a sign of friction of any kind existing between the two species. When we first commenced our studies of these birds we always were fearful that the Ravens would eat the Falcon eggs before the set was complete. However, this has never occurred in all of the many instances that have come under our observation, the Falcons paying little or no attention to the Ravens at any time. The reason for this may, perhaps, date back to some past generations of the Ravens who learned

through bitter experience that it was far the wisest thing to make the contents of a Falcon nest the exception to their general rule of eating eggs and baby birds. Perhaps this knowledge has been inherited by the present generations. One thing absolutely certain is that the Falcons "rule the roost" and do exactly as they please in the selection of nests, the poor Ravens simply taking what the Falcons do not want and making the best of things. As a rule the Ravens lay their eggs about a week earlier than the Falcons, but the latter have apparently already selected the nest they want and the Ravens usually build a new nest for their first set. If the contents of the nests of both species are removed they will usually lay again in the same nests, but they occasionally trade nests, so to speak, the Falcons taking the Raven nest for their second set and the Ravens going to the former nest of the Falcons for their second attempt. Yet in all this switching around we have never seen any signs of discord between the two species, trying as it must be on their tempers.

The female Falcon according to our experience always incubates the eggs. She is an exceedingly "close sitter," as a rule, and for some reason will remain with her eggs when in an open nest, such as a Hawk's or a Raven's, almost to the last extremity, while in one of the pothole nests she may flush at some little distance. The period of incubation does not seem to influence her actions in this respect to any great extent so far as we have seen. We had one most fascinating exhibition of a close sitting bird at one site where an old nest of the Raven was used. One of us was walking along the top of the cliff, while the other walked along at the base, the man at the top being considerably further in advance. Presently a nest was sighted at very close range with the bird crouched upon it and most intently watching the man below her. The man at the top made very little noise and she had not seen him, so he had a perfect opportunity to study her. She flattened herself down into the nest so far as to be completely out of sight from any direction excepting directly above and remained in that position until the man below was almost up to her. Then she stood up in the nest and commenced her battle cry that gives such a never failing thrill to the bird lover, not leaving until she knew it was useless to remain any longer.

In its action around the nest we have never known a Falcon to actually strike a human being, but they occasionally give the collector very unpleasant moments on his rope when they plunge and scream around his head. During these demonstrations it is the female who is almost invariably the more aggressive of the two, as the male usually contents himself with flying around and screaming at a comparatively safe distance. The cry may be described as a shrill yelping "kik-kik-kik-kik-kik," repeated over and over again. It strongly suggests a combination of the cackle of a Cooper's Hawk (*Accipiter cooperi*) at its nest and the alarm notes of the Greater Yellow-legs (*Totanus melanoleucus*).

Where neither potholes in cliffs, nor old Raven nests are obtainable the Falcons will resort to cavities in cut banks of earth, or a niche in some rocky wall. The result is that there is a wide variation in the distance that a nest may be from the ground. In one nest we took a handsome set of five eggs after no more of an effort than simply walking to it and picking up the eggs, while others are placed under an "overhang" of rock at such dizzy heights that we simply wished them good luck. In Washington they are, as a rule, less than sixty feet above the ground, forty feet being perhaps a fair average. We consider it as extremely doubtful if these birds ever make any attempt towards gathering material for nest building.

The number of eggs laid in a set, if the nest has not been previously disturbed, varies from four to six, five being perhaps most commonly found, while six is extremely rare. In shape they vary from rounded oval to rounded ovate, the average being somewhat inclined to the former. In size the smallest egg from a considerable series measures 2.00 x 1.46 inches, and the largest 2.26 x 1.60 inches. Neither of these eggs is in any way abnormal, the other eggs in the respective sets being similar, and a fair average would be midway between these two measurements. The coloring is subject to a wide range of variation, a large and well selected series making a most artistic and beautiful display. The ground color is usually dull yellowish, varying to pinkish, or light brown; one rare type being pure white. The markings are usually heavily laid on, being of almost all possible shades of brown, with frequently dottings of black. The white type is usually spotted

and blotched with pinkish brown and is very beautiful. Very rarely an egg will be of a uniform color all over, without markings of any kind. They very seldom approach the dark coloration of eggs of the Duck Hawk (*Falco peregrinus anatum*), but occasionally a set will be found where it is necessary to be sure of the birds in order to make certain of the identification of the eggs.

The food of these birds during the nesting season, so far as we have seen, consists almost entirely of cotton-tail rabbits and young Jack rabbits. Probably the enormous supply of these mammals that comes to the immediate vicinity of the nests gives the Falcons little temptation to hunt for feathered game. This seems all the more likely because ranchers living at no great distance from the nests seldom trouble the birds. In the winter, however, the contents of the stomachs that we have examined would seem to indicate a decided change in diet. A large female at Santa Barbara, California, had killed a Coot (*Fulica americana*) with which it tried to fly across the road directly in front of a horse that we were driving. The horse would certainly have trampled it underfoot if the Falcon had not dropped its prey at the very last moment. The stomachs of the winter birds mentioned at the beginning of this article all contained the remains of Western Meadowlarks (*Sturnella neglecta*). Our findings as to the food habits of these birds are admittedly very incomplete, but we give them as a groundwork for further observations.

Tacoma, Washington.