

great wave of migration was at its height. Tanagers were seen everywhere, and noticed by everyone. After May 20 they decreased in numbers, and by May 26 the last ones had left the valley. The number of these tanagers now breeding in our mountains is no larger than usual." He also says, "the damage done to cherries in one orchard was so great that the sales of the fruit which was left, did not balance the bills paid out for poison and ammunition. The tanagers lay all over the orchard, and were, so to speak, 'corded up' by hundreds under the trees."

It will be seen that the main body of this wave of migration did not reach this part of the state till eight days later—May 22 at Haywards. The last ones were seen June 4 to 6 at Haywards, while at Pasadena Mr. Gaylord says the last ones were seen May 28, eight days earlier than those which were observed here.

There must have been thousands of tanagers destroyed all through the path of their movement along the state, as they worked their way to the breeding grounds.

What caused these unusually large numbers of tanagers to move so regularly through the State, can hardly be known with accuracy. It may have been brought about by a late cold wave meeting them on their way northward from their winter home in Central America, and they may have been impelled to move together in large companies to where food was plenty, and the weather milder. On April 15 we had a hard killing frost all through the State, which would, no doubt, throw these tanagers together, as it did many other of our spring migrants. This fact I noted while in camp at the foot of Mt. Diablo, April 11 to 19, 1896. On one or two mornings large numbers of birds were observed in the canyon, while it was warm and sunny. But as soon as the cold spell set in, all bird life seemed to have suddenly disappeared, to appear again several days later. This was particularly true of the white-throated swifts and violet-green swallows. Three times the birds left the canyon bare of the summer visitors. The last time they returned late one afternoon, when, at sundown, the air was alive with swallows and swifts sailing along the face of the cliffs, or over the tops of the oaks. The next morning found the canyon awake with bird life and song, showing that the cold wave had passed.

### The Harris Hawk on His Nesting Ground.

BY FLORENCE MERRIAM BAILEY.

FIFTEEN miles west of Corpus Christi, Petranilla Creek throws a belt of rich vegetation across the prairie. Its walls are crowned with elms and live oaks whose serried branches are hung with waving gray moss, while encircling a floor massed with pink primroses grow a mixture of Mexican and United States trees and bushes—hackberry, ash, palmetto, all-thorns and cactus. Birds and mammals naturally flock here and also show southern admixtures, the clay banks of the creek being tracked up by coon, coyote, wild cat, and armadillo, while in April and May the trees are alive with such birds as the cuckoo, chat, wren, wood pewee, kingbird, cardinal, and a variety of warblers including the Blackburnian, together with the golden-fronted woodpecker and nonpariel.

As we were admiring the beauty of the place our attention was attracted by the cries of a mockingbird pirouetting around a big Harris hawk (*Parabuteo unicinctus harrisi*) perched on the bare top of a tree in the open. The mocker would

flounce around him distractedly, or lighting close beside his ear or under his bill look up at him and scream in his face; but through it all the dignified bird of prey would plume his feathers as unconcernedly as if his assailant had been a buzzing gnat. Sometimes, it is true, the mocker would fly at him and hit him on the back so hard that his tail would fly up involuntarily, and once, having silently received seven blows in quick succession, Harrisi deliberating a moment, turned his stately head and gave a reproachful scream in a hoarse warning tone. The mocker was so startled by this unexpected rebuke that he fairly sat back on his perch. Then as if that were all there was to say on the subject, the big bird with a heavy jump faced around on another branch, to spy out the land in another direction. Though the mocker promptly returned to the charge, Harrisi sat calmly on one foot in



FROM THE BIOLOGICAL SURVEY.

NESTING GROUND OF HARRIS HAWK.

philosophic oblivion of all but his own thoughts. The play lasted for the hour that we were in the neighborhood, with unabated vigor on the part of the mocker and unflinching superiority on that of the hawk.

The reason for Harrisi's attachment to the neighborhood became apparent later when we discovered his nest in a moss hung hackberry on the bank of the creek. Two big heads showed above the mass of sticks and Mr. Bailey climbed the tree to get a photograph of the young. As he got to the nest they burst from it, sprawling out over the branches, and one of them fell prone to the ground. He tried to amble off when approached but was easily caught and quieted. While I was examining his plumage, Mr. Bailey called down in astonishment over the wood rat golgotha he had found in the moss-lined nest—skeletons enough to more

than explain the preoccupation of the big bird in the tree top. While studying the nestling, noting his dark brown eyes, and the lemon yellow of his face-skin and bare legs, I quite forgot his weapons, but, disturbing him a little had such a forcible reminder in the sharp sting of his talons that when I finally loosed them and put him down on the ground, I went away with little fear for his safety, though he had prematurely left the nest.

### Stray Notes from Southern Arizona.

BY F. H. FOWLER.

ALL the original material in the following notes was collected by the author during a four years' residence in Arizona, September 1890, to October 1894. Most of the work was done in the Huachuca and Chiricahua Mountains, and in the San Pedro, Sulphur Springs, and San Simon Valleys, in Cochise County, the extreme southeastern corner of the Territory. A few notes were taken during a trip as far north as Prescott, in the months of May, June and July in 1893.

MASSENA PARTRIDGE. The Massena partridge (*Cyrtonyx montezumæ mearnsi*) is essentially a bird of the lower pine and oak belts in the mountains of Arizona. Its range north of our borders is quite extensive, reaching as it does from the national boundary between Arizona and Mexico, north to Prescott, east to Taos, New Mexico, and south to the eastern limit in the Bandera Hills north of San Antonio, Texas. Personally I have met with this bird in the Huachuca, Carmelita and White Mountains of Arizona. In the month of July 1891, I saw large flocks of these birds in the open grassy glades among the live oaks on the southern slope of the Huachucas a few miles north of the Mexican line. They were more numerous here than at any other point at which I have observed them, the flocks numbering fully twenty-five birds, doubtless comprising two families. The country was ideal for them as food, water and shelter were close at hand, and natural enemies were few.

The next place I found them was in the Carmelita Mountains, a range of heavily wooded hills extending west from the northern end of the Huachucas. I was out in these hills for a few days in the latter part of March 1892, and found that the Massenas had already paired and were evidently busy hunting up good nesting places. I saw only two pairs, but these showed how different the actions of birds of the same species can be under the same conditions. The first pair I came upon in some open oak brush; both birds walked slowly off—the male uttering a very low, clucking note and both puffing out their derby-like crest. I shot the male at a very close range, and the female flew out of reach with a speed which I think cannot be equalled by any other species of the quail family. The next pair ran a few yards, hid in the grass, and when I pursued them on foot, flew up with an equal speed and disappeared behind a thick grove of trees.

In a canyon about a mile above the post of Fort Huachuca, a female evidently had a nest hidden among some scrub oaks and mescal plants. She was seen at this place at least half a dozen times during the latter part of May 1892, skulking away through the brush, but a careful search failed to reveal the nest. In this canyon also were several small coveys of six or eight each, which could be found along the trail almost any day, and when discovered would usually run swiftly, single file for the brush, where they would scatter to hide.