and the muskrats. As for the ducks, the other species simply did not mingle with the golden-eyes; each species kept by itself or, at times, mingled more or less casually with its more closely related species, as Mallards with the Teal and Shovellers. When the golden-eyes were spread about the lake all species were of course rather generally intermingled; still, in the matter of any inter-relations, the golden-eyes were simply "out of it"—a species apart; where the flock had drawn together in any of its "courting bees" other species never mingled or interfered. Beavers and muskrats were in a single category; either species could pass as if unnoticed unless the distance were less than fifteen or twenty feet; otherwise, the duck would swim rather deliberately out of the way a couple of yards or so. Even when the beaver or rat was coming swiftly and directly toward the duck, the latter seemed to regard the oncoming animal as little more than simply a small moving object with which impact was to be avoided.

YELLOWSTONE PARK, WYOMING.

## SOME IMPRESSIONS OF THE COMMONER WINTER BIRDS OF SOUTHERN ARIZONA

BY MYRON H. AND JANE BISHOP SWENK

Southern Arizona has much to offer to the ornithologist and bird lover of the northern United States by way of a decided contrast in the character of its bird life. It was our privilege to spend the winter of 1926-27 (October 19 to April 27) in this interesting region; and we have since thought it might be interesting to others if we briefly described how two Nebraskans, familiar enough with the birds of the North, but making their initial acquaintance with the commoner winter birds of this Lower Sonoran or semi-tropical country, were impressed by them.

Our stay was at the historic and flourishing city of Tucson, which lies picturesquely in the approximate center of Pima County, on a level plateau of about 2,400 feet elevation that is thinly clothed with vegetation of the verdant desert type—i. e., various cacti, scrubby mesquite, creosote bushes, etc.—and is practically surrounded by imposing and eternally varyingly hued mountain ranges, some of which attain an elevation of 10,000 feet and support a Transition fauna. We found the weather during our stay to be generally very pleasantly bright and dry, except for a period of about three weeks in December when there seemed to us to be a good deal of cloudy and showery weather for a desert country. The days were nearly all warm, but the night

temperatures from early November to March not infrequently dropped to freezing or a little below. No effort whatever was made by us to search out the rarer winter birds of the region; in fact, practically all of our observations were made incidentally right in the city of Tucson or on short hikes in its immediate environs, including, however, longer trips to Sabino Canyon at the base of the Santa Catalina Mountains to the north, to the base of the Tucson Mountains to the west, and to the Mexican boundary to the south. The birds here mentioned were all seen by both of us, but the records of bird songs have been excerpted wholly from the note book of the junior author.

Without a doubt the most abundant bird in Tucson and its environs was the handsomely reddish-purple-splashed male House Finch (Carpodacus mexicanus frontalis) and his grayish, brown-streaked mate. These birds were as common there as the English Sparrow is with us in Nebraska; and that gamin itself was of course not absent in Arizona either, but it seemed to us less prosperous in the face of real competition put up by the House Finch. We were not, of course, wholly unacquainted with the House Finch, having previously met with it in Colorado and southern California, but we had never before been privileged to enjoy an intimate association with it for months.

When we arrived at our home for the winter, on October 20, these finches were plentiful and conspicuous everywhere about the house. About 6:20 each morning they began to twitter in their sleeping places in the woodbine vines just outside of our east window. By 7 o'clock they were in full song, and from then on they continued singing lustily all the morning, especially around 10:00 A. M. when their songs were at the loudest. Early in November we noticed that they were gradually singing less frequently and less loudly; in fact, it seemed that their numbers about the house were becoming fewer. This period of diminished vocal effort extended from about November 5 to Christmas time. Toward the end of December the desultory songs became more frequent, and continued gradually to increase in frequency during January, so that by early February the birds were again singing as lustily as they were when we arrived in the preceding October. By the time nest building was started, early in March (we saw the first birds carrying nesting material on March 7), the singing of the males was at its height, and continued so through the remainder of our stay.

The House Finch is a joyous bird, and it expresses its joy in its rollicking, warbling song. The song itself is not long, but it is rapidly repeated many times, producing a long-continued flow of singing. The

song has many variations; in fact, but rarely do you hear two songs that are exactly alike. Different individuals will sing slightly differently, and the same bird will vary his song from time to time, but the song always has the same basic structure, is rather consistently given in 6/8 time, and all of the songs share the same general quality.

The first four of the following are typical or usual songs, as given when the finches resumed vigorous singing in February. The four sets of triplets would be repeated many times, sometimes very fast, usually finally ending in a single interrogatory note one or two tones higher than the last note of the final triplet, or else on the lowest tone of the triplets, as if to finish the song completely. The fifth song was that of a highly-colored old male heard on February 26, and presented



a somewhat unusual form. The sixth song was that of a male that frequented our front porch at nesting time (March 7 on), and is rather more varied than the first four songs here given, expressing the overjubilant mood the singer was in. No. 7 represents notes of alarm given by this bird on February 4 when a dog was prowling about in the yard close by. It was a series of strongly accented quarter notes. When we disturbed him he would sometimes give the call numbered 8 as he flew away. Often during March and April the birds sang while on the wing.

In town, about the houses, during April we found several House Finch nests in the trees and hedges, but out in the open desert all of the nests that we found were concealed in the protecting arms of the cholla cactus. We found the first completed sets of eggs (two sets) on April 2, and young were commonly out of the nest by the end of that month.

Next to the House Finch, the most abundant winter sojourner about our place was the dainty Gambel's Sparrow (Zonotrichia gam-

beli), which occurred in small troops everywhere about town from early December until the end of April. We first noted two of these handsome birds in some low trees in one of the several city parks on the afternoon of November 6; and the first thing we heard, early the next morning, was the characteristic song of this species in our own back vard. There were four of them - three adults and one immature bird, the latter easily distinguishable by its chestnut and white instead of black and white crown - feeding on the ground. A feeding board, amply provisioned with rolled oats, was at once put up, and the birds quickly responded to this hospitality. Two adults came on November 11, and from then on more or less regularly through the remainder of the month, others joining the party from time to time until by December 1 several of them were visiting the feeding board regularly and enlivening the day for us with their pleasing singing. Several of our visitors by this time were immature birds. This troop remained at about constant numbers up to December 14, when further additions became noticeable, and Gambel's Sparrows were abundant everywhere. The maximum numbers were reached about the end of December, and remained unchanged through January, February and March. Then during April there was a gradual falling off, so that by the end of that month there were very few of the birds remaining anywhere in town.

Out of many individual crown sparrows closely examined through the glass, all that were seen clearly enough to definitely establish the point had the characteristic pale lores, with the superciliary stripe attaining the bill, of the Gambel's Sparrow; and not one had the black lores and interrupted superciliary of the White-crowned Sparrow (Zonotrichia leucophrys). This latter species, according to Swarth (A Distributional List of the Birds of Arizona, Pacific Coast Avifauna No. 10, p. 53), migrates commonly through Arizona, usually in company with the Gambel's Sparrow, but evidently winters farther south at this longitude, since there seems to be no authentic record of its wintering in Arizona, even in the southern part; while the Gambel's Sparrow is not only an abundant migrant throughout Arizona but winters commonly in the southern part of the state. Our winter singers among the crown sparrows were, therefore, undoubtedly all Z. gambeli.

The song of the Gambel's Sparrow, as heard during the winter period in Arizona, consisted typically of a long, clear, sweet, whistled, introductory note, usually on A but sometimes on C or D, usually followed by from one to six shorter, dreamy, plaintive notes, usually on D but sometimes on C, all at the same pitch and equally emphasized except the terminal note, which was commonly rather blurred or double-toned in quality and a tone or a half tone higher or lower than the rest of the series of shorter notes. The variations were, of course, many, but the following sixteen excerpts from the singing of different birds that were heard from early January to early April are representative.

In January we frequently heard the single, whistled half note (1), or a quarter note followed by two eighth notes (2) or two quarter notes (3), while the longest songs consisted of only three (6 and 7) or four (8) notes following the initial quarter note. By March, while the songs of the shorter type (5 and 5) were still to be heard occasionally, most of the singing represented variations of the typical



whole song "oh, chee-ta che-e" (8, 9, 10, 11 and 12). By the end of March (28th) or early in April (1st) songs with five or six shorter notes following the opening quarter note were dominant (13, 14, 15).

The singing of Z. gambeli is either different from that of the closely related Z. leucophrys, or else the songs of these birds are subject to considerable geographic variation. Though closely listened for, at no time did we hear the Sierra song of the White-crowned Sparrow, as described by Mrs. Florence Merriam Bailey (Handbook of Birds of the Western United States, p. 339), consisting of "two long whistled notes of rich and plaintive tone, the first sliding up to the second with grace notes, the second followed by a lower note repeated rapidly three times," viz., "oh, oh, chee-chee-chee;" nor (Wild Animals of Glacier National Park, p. 177) the Montana song of the same bird consisting of "four slow, clear notes followed by grace notes," viz., "oh see the firs, see-see-see-see." This latter song we have heard approximated by migrating White-crowns in Nebraska in

May—a clear, plaintive, whistled "oh, che, che, che, che-witty-witty" consisting of a low, softly upwardly slurred introductory note, followed by three distinct, clear, highly pitched, whistled notes, the first of which is emphasized, and ending hurriedly with three burred descending notes, sometimes shortened to "oh, che, che, wit-chee," in which the distinct, high, whistled notes are reduced to two, and the ending is abruptly descending, two-syllabled and rather harsh.

A bird that winters more or less commonly in the valleys of southern Arizona (Swarth, p. 56) is the attractively colored Desert Black-throated Sparrow (Amphispiza bilineata deserticola). We first noted this species in the desert on December 3, but at that time it was silent. On April 2, however, as soon as we entered the edge of the



desert north of Tucson we heard a new bird voice in the tinkling, canary-like song of this bird. Soon we saw several of them in the creosote bushes (Covillea), and had the opportunity of listening to several males in full, ectstatic song. The song was rapidly given and sustained, and frequently included triplets of what sounded like double-toned notes. The following is an effort to record the song of one of these birds. This sparrow was common in the desert about Tucson, but of course was never seen in the city itself.

Although the Green-backed Goldfinch (Astragalinus psaltria hesperophilus) is supposed to be a resident bird in the valleys of southern Arizona (Swarth, p. 51), we did not encounter it until in April. On April 8, while we were passing through the little city park in which



we had first noted the Gambel's Sparrow, we heard several repetitions of the following little song, that from its pronounced buzzing quality we thought must be that of the Pine Siskin, but that was yet not exactly the same.

We soon located the birds—a flock of about a dozen feeding on the ground under some trees in a perfectly typical Goldfinch manner. The

song was very high pitched, and entirely different from anything we have ever heard our common A. tristis utter in Nebraska, but very like the song of the Pine Siskin. After this first meeting with the Green-backed Goldfinch we frequently saw and heard them in little groups in different parts of town; they became, in fact, quite common before the close of April.

The Arizona Cardinal (Cardinalis cardinalis superbus) we found to be resident and common in the desert shrubbery environing Tucson, and we also occasionally glimpsed the related Arizona Pyrrhuloxia (Pyrrhuloxia sinuata sinuata). We first noted two individuals of this latter bird, a species new to us, in the desert north of Tucson on December 3, and last saw it twice between Tucson and Nogales on April 8. The Arizona Cardinal was more frequently noted, and on April 20 we had the pleasure of seeing a female sitting on its nest in a dense mesquite thicket southwest of town. Both of these birds seemed to us much shyer than our northern Cardinal is in Nebraska.

A familiar bird to us Nebraskans, albeit the males were in the unfamiliar streaky winter plumage, was the Lark Bunting (Calamospiza melanocorys). We saw a large flock of these birds on the desert north of Tucson on December 14. They were feeding in scattered longspur fashion on the ground and gave their characteristic call note as they flushed and flew away at our approach. Later in the day another smaller group was seen roosting in a clump of cholla cactus. From then on until early April they were present more or less commonly. The last two were seen on April 2.

Flocks of Red-winged Blackbirds (Agelaius phoeniceus subspp.?) were abundant in the city all winter. An especially large and noisy assemblage of them was discovered on November 14, roosting at night in the large palms on and near the University of Arizona campus, and from appearances they had been roosting there for some time before we found them. They foraged by day in the surrounding country. The flocks seemed to increase in size until about December 10, when they remained at about constant numbers until early in March. On February 27 we noted that a large number of Yellow-headed Blackbirds (Xanthocephalus xanthocephalus) had joined the flock, and were contributing their guttural calls to the confusedly liquid Red-wing chorus. A Dwarf Cowbird (Molothrus ater obscurus) found dead under a palm tree in the city on October 22 was the only contact we had with this bird, which apparently winters but rarely in the Tucson region (vide Swarth, p. 47). The only Western Meadowlark (Sturnella neglecta) that we saw all winter was a lone bird on December 19, near the eastern edge of town. We saw an oriole at a distance on April 8, south of Tucson, that we took to be the Bullock's Oriole (*Icterus bullocki*), but otherwise we did not encounter any orioles. Judging from the commonness of oriole nests in the tall cottonwoods and other trees in the city, however, this species must be common there, later in the season.

The only warbler that we saw all winter was the pretty little Audubon's Warbler (Dendroica auduboni auduboni), but that species was abundant everywhere, both in the trees of the city and in the shrubbery of the desert. Along in November we began to hear the very sharp and short "twit" calls of this species in the trees about us, and from early December on until mid-April when out-of-doors one was scarcely ever out of the hearing of it. On the morning of November 22 we picked up an immature female of this species in our yard, it evidently having been killed during the night by striking a wire.



Toward spring, and especially in April, the very high-pitched, thin, fine song of the species could be heard almost whenever listened for. The song has no carrying quality. It sounded to us much like "twe-ee twe twe," repeated again and again with little variation.

The White-rumped Shrike (Lanius ludovicianus excubitorides) was a common bird, in and around Tucson, all winter. A pair of them made frequent visits to our back yard, of a morning in the early winter, where they were wont to perch, one on each radio pole, and call their "kee-kee-e-e," shrilly to each other for minutes at a time. One or both of them were particularly noted doing this on November 4, 9, 19 and 21 and December 19; but after that they came no more. Along the valley roads in the spring this shrike was, next to the Desert Sparrow Hawk, the most abundant species of bird, exceeding slightly in numbers even the abundant and omnipresent Arkansas Kingbird.

We had hoped to see more of that odd bird, the Phainopepla (*Phainopepla nitens*), than we did. It apparently did not winter about Tucson, at least not commonly, and the first and only individual seen by us was one flying over the desert southwest of town on April 20. On March 6 we had the pleasure of renewing acquaintance, under strange surroundings, with our familiar friend the Cedar Waxwing (*Bombycilla cedrorum*). A flock of a dozen or more of them was seen right in town along an arbor vitae hedge and in the trees above.

This bird is recorded as of rare and irregular occurrence in Arizona (Swarth, p. 64), though it has previously repeatedly been observed at Tucson, from March to June. Another old friend, of more regular occurrence in winter in the Tucson region (Swarth, p. 81), that we encountered there, was the Mountain Bluebird (Sialia currucoides). On December 14 we saw an open flock of about a dozen of these beautiful birds on the desert north of town, and on December 31 we saw a lone individual in the same locality. On both December 3 and 14 we saw several Western Gnatcatchers (Polioptila caerulea obscura) in the creosote bushes on the desert north of Tucson, but we did not again encounter them later in the winter, though they are known to winter in the vicinity (Swarth, p. 78).

On our first trip into the open creosote bush and cholla cactus covered desert north of Tucson, on November 21, one of the first birds we encountered was a medium-sized, long-tailed, plain gravish brown bird, with a long, slightly curved bill, that flew up from the ground with the loud "ter ter it" call, and flew to a cholla cactus ahead. Immediately we knew we were having our first sight of the Palmer Thrasher (Toxostoma curvirostre palmeri). Soon another one was seen, and on every subsequent trip to the desert we encountered several of these birds; in fact, they proved to be one of the commonest species of the open desert. Early in March (5th) we noted that they were nesting, their bulky nests being conspicuous objects in the cholla cactus, upon the formidable spiny armature of which the birds evidently relied for the protection of their nests. At this time they had a loud, distinctly thrasheresque song. On April 2 fully fledged young were found, one unwary young individual nearly permitting itself to be picked up by hand.

The Western Mockingbird (Mimus polyglottos leucopterus) was not noted until early in April, and we believe it winters but sparsely in the Tucson region. On April 8, south of Tucson, it was very common, being outnumbered only by the Desert Sparrow Hawk, Whiterumped Shrike, Arkansas Kingbird and Western Mourning Dove. By April 20 these birds were in full song everywhere.

Three wrens winter in the Tucson region — the Cactus Wren (Heleodytes brunneicapillus couesi), the Rock Wren (Salpinctes obsoletus obsoletus) and the Canyon Wren (Catherpes mexicanus conspersus)—in our experience decreasingly commonly in the order given. All are permanent residents there. We made our first acquaintance

with the big (for a wren), spotted-breasted, skulking Cactus Wren among the cholla cactus on the desert north of town on December 3, and thereafter at intervals met with it again in the same situations. Later we became acquainted with the bulky, globular nests of this species, protected, like those of the Palmer Thrasher, by the excessively spiny branches of the chollas, in which those nests that we saw were all placed. They had reared a brood of young by April 20. The Rock Wren we knew as an old friend, it being common in proper situations in extreme western Nebraska. We saw our first ones—a pair in a rocky gully—near Sabino Canyon on December 19, and later found them to be common in the rocky hills.

On the morning of October 24 we were attracted by a plaintive familiar call, and, stepping outside, we saw a pair of the Say's Phoebe (Sayornis sayus), one perched on the roof and the other on the telephone wire in front of the house. After a time they flew away. From this time on, one or both of what we assumed were the same birds appeared at irregular intervals around the house during the winter—on November 23 (two), December 3 (one), December 14 (two), December 19 (one), January 19 (one), January 23 (one) and February 4 (one)—thus indicating that the species remains through the winter in the vicinity of Tucson. Others were seen in the desert. During March and April these birds became much more common, and "our" pair settled down to build its home under the front porch of a house about a block away. By April 14 there were young in this nest.



The Arkansas Kingbird (Tyrannus verticalis) was, of course, absent during the winter in the Tucson region, but it returned early in April. We saw the first ones on April 2, in our favorite little park, loudly calling "che-burr, che-burr" from the tree tops in decided Kingbird fashion. The call sounded as if the birds put so much emphasis on the "burr" that they had to stop abruptly to take in a breath after each call. Within a week the roadsides of the whole region roundabout were abundantly supplied with these birds, so that only the Desert Sparrow Hawks and White-rumped Shrikes could be counted as

more numerous in such situations, and from then on to the end of our stay their varied, chattering "kaw-kaw-deer" notes were to be heard everywhere, both in the town and in the open country. Aside from this and the preceding species, the only flycatcher that was seen by us was one we somewhat doubtfully identified as the Ash-throated Flycatcher (Myiarchus cinerascens), seen April 8 between Tucson and Nogales.

The Raven (Corvus corax sinuatus), though a resident bird (Swarth, p. 46) was seen by us only once—two of them along the road between Tucson and Nogales, opposite the Santa Rita Mountains. The Roadrunner (Geococcyx californicus), that odd ground-living cuckoo, is also resident, and was apparently more common, several of them being seen by us. Of hummingbirds we saw only one speciesthe Costa Hummingbird (Calypte costae)—but after the apricot trees in our yard came into bloom these were seen commonly about the blossoms, and on April 16 we had the pleasure of seeing a beautiful newly completed nest of this species in a vine growing over the doorway of an occupied house in the city. The Desert Quail (Lophortyx gambeli) we found to be common in the desert, and it furnished a good deal of sport to the local gunners in the fall. It was inclined in the spring to run ahead in the road, like our Bob-white used to do in eastern Nebraska twenty-five or thirty years ago, before it became virtually extirpated here, and its call was strongly suggestive of that of our northern bird.

There is one Arizona bird that is strictly a bird of the townsthe little Inca Dove (Scardafella inca). According to Swarth (p. 24) it is exceedingly local in its distribution. It was very common in Tucson, but we never saw it on the desert. On April 8, going from Tucson to Nogales and return, a distance of fifty-odd miles, we did not see a single Inca Dove between the two places, though they were common enough in each. On the other hand, the Western Mourning Dove (Zenaidura macroura marginella), so common in the towns of the North, was not seen by us in Tucson, but was common around the little outlying settlements. We encountered the Inca Dove almost at once on our arrival at Tucson, there being small flocks dispersed all over the city. Several of them habitually visited our back yard. Some were seen all through the winter, for the species is resident, though it seemed to us that there were more of them about in October and November, and again in March and April, than in December, January and February. This is a small, "scaly backed" species with a long, white-edged tail, and shows conspicuous reddish brown coloration in the wings when it is in flight, suggestive of that shown in the Yellow-billed Cuckoo's wings. These little doves are very tame and can be approached to within a few feet. The call of the Inca Dove is a monotonous, unvaried, rather hard yet plaintive "coo-oo-coo" or "who-oo-who" (1), rapidly repeated over and over. There is a blowing quality in it. We heard this call all through the winter, but it became louder and more insistent as the nesting season approached in March and April. It is very different from the soft, drawled "coo-oo-coo, coo, coo, coo" (2) of the Mourning Dove. We noted the latter first near San Xavier Mission, south of Tucson, on December 26—a flock of twelve or fifteen—and again in greatly increased numbers on different occasions in April.



The commonest woodpecker seen during the early part of the winter in the cottonwood, poplar and other deciduous trees in the town was the Cactus Woodpecker (Dryobates scalaris cactophilus). a species of about the size of the Downy Woodpecker of the eastern United States, and of similar general habits and voice, but with the back crossbarred black and white. We saw and heard the first one on November 18, then another (a male) on the 24th, the next one on December 4 and again one on December 24 (a female). the species is recorded as resident, we did not see any after Christmas day. In the same tree with the male seen on November 24, and conversing spiritedly with it, was a male Red-naped Sapsucker (Sphyrapicus varius nuchalis), the only one seen during the entire winter. The commonest woodpeckers of the locality were the Gila Woodpecker (Centurus uropygialis) and the Mearns's Gilded Flicker (Colaptes chrysoides mearnsi), both of which are resident and were encountered from December to April whenever we entered areas in which the giant cactus or saguaro occurred numerously. They both nest in holes that they dig in this remarkable plant, which takes the place of trees in the desert, and we did not see them elsewhere. The Gila Woodpecker reminded us very much of our Red-bellied Woodpecker, but had less red on the crown in the male, and none in the female, and the wash on the under parts was yellowish rather than reddish. "charr-r" call notes and general behavior, however, reminded us more

of our Red-headed Woodpecker. The Mearns's Gilded Flicker looked and acted much like our common Northern Flicker, but that the red nuchal crescent was lacking and the malar stripe of the male was red, as in the Red-shafted Flicker, instead of black. Both of these woodpeckers were especially common about the Carnegie Desert Laboratory in April.

Two small birds of prey profit by the numerous woodpecker excavations in the giant cactus, in that these supply them with nesting sites. These are the Elf Owl (Micropallas whitneyi) and the Desert Sparrow Hawk (Cerchneis sparverius phalaena). We have no real idea how common this tiny owl may be in the saguaros, but on one occasion we found one sitting in the opening of its burrow, calmly blinking down at us, and allowing itself not only to be photographed at very short range with a small pocket camera, but afterward to be dragged out of its retreat. The Desert Sparow Hawk, is certainly very abundant everywhere. A pair of them visited the radio poles on our house on three occasions during November (18th, 21st and 25th), thus emulating the White-rumped Shrikes. In the spring, during April, they were easily the most numerous bird along the roadsides and among the giant cacti, where they nested. Aside from the Desert Sparrow Hawk, the bird of prey most in evidence was the Turkey Vulture (Cathartes aura septentrionalis), which during the late winter and spring was quite plentiful. On one day we saw over a dozen of them. The Marsh Hawk (Circus hudsonius) was also seen in small numbers in April.

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## ARE BIRDS DECREASING IN NUMBERS?

## BY ALTHEA R. SHERMAN

In replying to a query regarding the decrease of birds in recent years a careful observer would be quite apt to say that many species are decreasing in numbers, while a few are increasing. Such would be my answer, based on memory impressions, as well as on daily written records. Within the past three years friends have signified their recognition of a keenly felt loss of certain birds, formerly common or abundant, speaking somewhat in this wise: "We seem to have lost our Bobolinks. In this entire summer I have seen a Bobolink only two or three times." While another asks, "Tell us what has become of the Bobolinks, Kingbirds, and Bluebirds? We used to see many of them by the roadside, but now they are seldom met." Such