Notes on the Birds of Central Oaxaca, Part III: Hirundinidae to Fringillidae

John M. Forcey
Apartado 1415, C. P. 68000, Oaxaca, Oaxaca. Correo electrónico: jforcey@spersaoaxaca.com.mx

Abstract
New data are presented amplifying or clarifying the status and distribution of 112 species of birds found in central Oaxaca primarily in portions of the Districts of Centro, Etla, Ixtlan, Tlacolula, and Zaachila within 35 km of Oaxaca City. Summaries are based on observations made on 752 days during the period from Dec 1996 to May 2002. Principal habitats found in the area are pine-oak (including limited areas of pine-oak-fir and limited extensions of bunch grass mixed with pine-oak), oak scrub, arid subtropical scrub, riparian areas, and areas more or less modified for agricultural or other human use (including gardens and parks). The following species are newly reported from the area as vagrants or rare transient migrants: Sinaloa Martin (*Progne sinaloae,* new state record), Happy Wren (*Thryothorus felix*), Wood Thrush (*Hylocichla mustelina*), Blue-winged Warbler (*Vermivora pinus*), Golden-winged Warbler (*Vermivora chrysoptera*), Chestnut-sided Warbler (*Dendroica pensylvanica*), Magnolia Warbler (*Dendroica magnolia*), Blackburnian Warbler (*Dendroica fusca)*, Grace's Warbler (*Dendroica graciae*), Mourning Warbler (*Oporornis philadelphia*), Canada Warbler (*Wilsonia canadensis*), and Dickcissel (*Spiza americana*). Also, the following six species have previously been reported either only on Christmas Bird Counts or as single records: Tree Swallow (*Tachycineta bicolor*), Gray Catbird *(Dumetella carolinensis)*, Tennessee Warbler (*Vermivora peregrina*), Yellow-throated Warbler (*Dendroica dominica*), Prairie Warbler (*Dendroica discolor*), and Red-headed Tanager (*Piranga erythrocephala*) (breeding season only). Breeding data are reported for 43 species, 18 without previous breeding records here. Thirty-nine of these 43 species can be grouped together as breeding Apr to Jul.

Keywords: Birds, Oaxaca, Mexico.

Resumen
Notas sobre las aves de Oaxaca central, parte II: Hirundinidae a Fringillidae
Se reportan nuevos datos que amplían y clarifican nuestro conocimiento del estatus y distribución de 112 especies de aves en la región central del Estado de Oaxaca. Las observaciones se realizaron abarcando partes de los distritos de Centro, Etla, Ixtlan, Tlacolula, y Zaachila dentro de 35 km alrededor de la Ciudad de Oaxaca. El reporte se basa en observaciones tomadas durante 752 días, comprendidos entre diciembre 1996 y mayo 2002. Los principales hábitats del área son de pino-encino (incluyendo zonas pequeñas de pino-encino-oyamel y pino-encino mezclado con pastizales), matorral de encino, matorral subtropical, vegetación riparia, y vegetación secundaria, campos agrícolas y otros (incluyendo áreas urbanas, jardines, y parques). Las siguientes especies se reportan por primera vez en la zona: *Progne sinaloae* (registro nuevo en el estado de Oaxaca), *Thryothorus felix*, *Hylocichla mustelina*, *Vermivora pinus*, *Vermivora chrysoptera*, *Dendroica pensylvanica*, *Dendroica magnolia*, *Dendroica fusca*, *Dendroica graciae*, *Oporornis philadelphia*, *Wilsonia canadensis*, y *Spiza americana*. Además, las siguientes nueve especies se han reportado solamente en los Conteos Navideños o por registros únicos: *Tachycineta bicolor*, *Dumetella carolinensis*, *Vermivora peregrina*, *Dendroica dominica*, *Dendroica discolor*, y *Piranga erythrocephala* (en temporada de reproducción). Se reportan datos de la reproducción de 43 especies, 18 de los cuales no se habían registrado en estado reproductivo antes en esta zona. De estos 43, 39 se pueden agrupar como reproduciéndose en los meses de abril a julio.

Palabras claves: Aves, Oaxaca, México.

Résumé
De nouvelles données sont présentées qui amplifient ou clarifient le statut et la distribution de 112 espèces d'oiseaux présentes dans le centre du Oaxaca, principalement dans les districts Centro, Etla, Ixtlan, Tlacolula et Zaachila dans un rayon de 35 km de la ville de Oaxaca. Le rapport est basé sur 752 jours d'observations réalisées entre décembre et mai 2002. Les principaux habitats rencontrés sont la pineraie-chênaie (incluant de petites aires de pin-chêne-sapin et pin-chêne mélangés avec des prairies herbeuses), la chênaie buissonnante, végétation buissonnante subtropicale aride, végétation riveraine, ainsi que des zones plus ou moins modifiées par l'agriculture ou d'autres usages, incluant jardins et parcs. Les espèces suivantes, nouvelles pour l'aire d'étude, sont rapportées comme vagabondes ou rares migratrices de passage: *Progne sinaloae* (nouvelle espèce pour l'état), *Thryothorus felix*, *Hylocichla mustelina*, *Vermivora pinus*, *Vermivora chrysoptera*, *Dendroica pensylvanica*, *Dendroica magnolia*, *Dendroica fusca*, *Dendroica graciae*, *Oporornis philadelphia*, *Wilsonia canadensis* et *Spiza americana*. De plus, les espèces suivantes ont été rapportées antérieurement une seule fois ou seulement durant les Comptes d'Oiseaux de Noël: *Tachycineta bicolor*, *Dumetella carolinensis*, *Vermivora peregrina*, *Dendroica dominica*, *Dendroica discolor* et *Piranga erythrocephala* (saison reproductive seulement). Des données sur la reproduction de 43 espèces, 18 sans de telles données antérieurement dans la région, sont aussi rapportées. Trente-neuf de ces 43 espèces peuvent être regroupées comme nicheuses dans l'aire d'étude entre avril et juillet.

Mots clés: Oiseaux d'Oaxaca central.

HUITZIL (2002) 3: 43-55

This is the third of three articles that cover the complete list of species over which I report. The reader is referred to the first two articles (Forcey 2002a, 2002b) for information under these headings. In this third part the period is extended to cover 752 days in the period Dec 1996 to May 2002.

CORVIDAE

Corvus corax Common Raven. [162] To 3100 m. Widespread over valley habitats and to highest elevations. Usually in pairs, Palacios once 35 birds recorded together.

Rowley (1984) reported what he thought was an active nest May 2. R. Aragon and I observed an adult feeding a large nestling on Apr 27 at the Yagul cliffs. Pairs have been recorded in other years at these cliffs, possibly nesting, from Feb 18 to Jul 28. Adults were also seen at a nest in a tall pine tree near the town of Cuajimoloyas on Mar 3.

HIRUNDINIDAE

Progne subis Purple Martin. No records.

Unreported by Binford (1989), while Howell and Webb (1995) map it as transient migrant. Presumably should be seen with other migrating swallows if present. Hypothetical.

Progne sinaloae Sinaloa Martin. [2] To 1720 m. One Aug 27, 1997 with flock of *Petrochelidon pyrrhonota* over Santa Cruz Etla. Two Jul 28, 2000 perched on a wire near the Rio Salado on the road to San Juan Guelavía.

Binford (1989) listed it as likely to be found in Oaxaca, no records. Howell and Webb (1995) map it absent Oaxaca, but suggest a possible Aug migration route that crosses Oaxaca. The Rio Salado seems to be a migration pathway used by several swallow species. First records for Oaxaca.

Tachycineta bicolor Tree Swallow. [8] To 1700 m. Nov 6 to Mar 5, recorded at least once in each winter month except Jan. Over valley ponds and dams.

Binford (1989) doubted May 16 record from Monte Albán. Howell and Webb (1995) map it northern Oaxaca, possibly edging on our area, Oct to Apr, to 2500 m. Schaldach et al. (1997) reported first records for the state. Rare transient.

Tachycineta thalassina Violet-green Swallow. [247] To 3100 m. Over all habitats, often concentrating over ponds and dams.

Binford (1989) reported it as possibly a rare permanent resident. Unequivocal observations of breeding are lacking. Recorded here every summer month, seven May records, four in Jun. May 2 and 7 records were migrating flocks, five May records beginning May 9 in groups of two to six birds. Four Jun records are all of one to six birds. Jul 4 is earliest record of migrating flock. Two birds seen May 9 appeared to be a pair. An adult and an immature seen together Jun 22, were repeatedly seen to approach one another in mid-air, apparently making brief bill contact, in what might have been feeding of immature by the adult. Breeding in Oaxaca still needs confirmation, but seems likely.

Stelgidopteryx serripennis Northern Rough-winged Swallow. [200] To 3000 m, mostly below 2300 m. Forages over a wide variety of habitats, often seen over ponds and dams.

No previous breeding records here. I have seen paired birds from Mar 22 to May 25. Copulation recorded May 5; entering nest or presumed nest hole May 11 and Jun 4, 7; immature begging from adult Jun 23. A bird was seen entering a presumed nest hole in a road bank just outside of the town of Cuajimoloyas at 3000 m. This meager breeding information corresponds roughly to the known breeding season elsewhere in range (DeJong 1996).

Riparia riparia Bank Swallow. [37] To 1900 m. Aug 4 to Oct 20, Feb 22 to May 19. Mostly over area dams or rivers, also widespread over valley habitats.

Unreported by Binford (1989). Howell and Webb (1995) report it fairly common to common Aug to Oct, mid-Mar to May, to 3000 m. Usually one or two sightings per year, unrecorded 1999. Often in small numbers accompanying more numerous flocks of other swallow species, but flocks of 25 and 40 birds also recorded. My data support Howell and Webb's (1995) assessment, possibly less common than they suggest. New early spring and fall dates.

Petrochelidon pyrrhonota Cliff Swallow. [99] To 1900 m. Feb 22 to Oct 20. Over most valley habitats, often seen at area ponds and dams.

Binford (1989) recorded nesting at three locations in our area May 27 to Jun 25. Erickson and Hamilton (1993) reported nesting Jun 29. I have recorded birds at nesting areas Mar 31 to Jul 10. In addition to the nesting locations reported by previous authors, I have found nesting at the highway bridges on the road to the Matías Romero Dam at San Pablo Huitzo.

Fall migrating flocks recorded Jul 18 to Sep 23. Spring migration (individuals and flocks) Feb 22 to May 16. New early spring date.

Hirundo rustica Barn Swallow. [109] To 1900 m. Sep 8 to May 23, mostly scarce in early fall, mid-winter. Over most valley habitats, often at ponds and dams.

Binford (1989) reported sightings Nov 27 to Dec 5 our area. Only nine of my observations have been in the months Dec to Feb, five of these in winter 2000-01, unrecorded these months in two winters, maximum four birds per observation in midwinter sightings. Likewise, there have been only five Sep sightings, four of these in 2000, maximum four birds per observation. Principal migration months are Mar to May, Oct and Nov. Primarily transient here, possibly strictly so, but with some movement of late or early flocks possible throughout winter.

AEGITHALIDAE

Bushtit *Psaltriparus minimus*. [224] To 3200 m. In most habitats from parks, valley scrub, to high elevation pine-oak forest.

No previous breeding records here. Pairs have been observed from Apr 4 to Jul 22, usually only until late May. A pair were seen carrying fluffy seed fibers to a small tree, apparently beginning nest construction on Apr 17. Other pairs were working on fairly advanced nests May 5 to 23. Adults carrying food to nests May 10 and Jun 8. Adults with dependent fledglings seen Jun 19 to 21. Highest elevation nest observed was outside the town of La Nevería at 2700 m.

Family groups of up to eight birds are seen in late summer. Some of these apparently combine in fall, beginning in Sep, to form larger flocks of ten to 20 or more birds. These flocks last until breakup and pair formation in spring, possibly triggered by first rains. In the critically dry spring of 1998 fairly large flocks (15 to 20 birds) were still being seen in late May. One day after the first rain, on Jun 1, birds were seen singly or in groups of two or three, with pairs regularly seen thereafter. This was the same year that pairs were seen to late Jul.

TROGLODYTIDAE

Campylorhynchus jocosus Boucard's Wren. [111] 1650 to 2130 m. Most observations in disturbed arid subtropical scrub of valleys and lower slopes, a few into more continuous thorn scrub or oak scrub of higher elevations. Species shows a marked preference for thorny and spiny vegetation, including cacti, maguey, and thorny arborescent plants.

In our area, Binford (1989) reported nest construction Apr 10, nest with eggs Jul 8. Thirteen nests recorded from Mar 3 to Oct 4. Nests made of grasses and lined with feathers. Nest heights have varied from just over 1 m to about 12 m, most below 8 m. Oct 4 nest was under construction. At only one low nest could I observe nestlings, Apr 24 to May 6. Dependent immatures seen on Jun 6, and in a family group seen on Oct 4, one was seen with yellow gape flanges. Because of the known tendency of wrens of this genus to build "dormitory" nests, nest construction alone can not be used as a certain indication of breeding. However, the fledgling seen in early Oct does indicate a prolonged breeding season.

Salpinctes obsoletus Rock Wren. [55] 1680 to 1920 m. Most in scrub habitats of lower slopes, often around dams, road cuts, or other rocky areas.

Binford (1989) reported one specimen taken in breeding condition Jun 2 in our area. Singing from prominent perches Feb 22 to May 5, adults with fledglings May 19 and Jul 17.

Thryothorus felix Happy Wren. [2] One Feb 24 above the town of Trinidad de Viguera, just north of Oaxaca City, 1850 m. One Nov 11 at the PAD, 1700 m (R. Antonio pers. com.).

Previously unreported here. Vagrant.

Thryomanes bewickii Bewick's Wren. [198] To 2300 m. Wide variety of lower elevation habitats including disturbed scrub of valleys, parks and urban areas, up to lower portions of pine-oak.

Binford (1989) reported a specimen taken in breeding condition May 6, adult attending young Jun 27 our area. Singing Mar 13 to Jul 2, nest construction May 5, 10, adults with fledglings May 6 to Jul 21.

Troglodytes a. aedon (Northern) House Wren – new dates: Oct 4 to Apr 29.

Troglodytes aedon brunneicollis (Brown-throated) House Wren. [56] 2130 to 3200 m, mostly above 2500 m. Pine-oak forest and clearings.

Binford (1989) reported record of a fledgling Aug 13 in our area. I have recorded paired birds from Mar 16 to Jul 24, nest construction Mar 24 and May 9, adults carrying food, presumably to nest, May 12. Noisy, active family groups Jun 10 to Jul 14. None of these latter appeared to include dependent fledglings.

Cistothorus palustris Marsh Wren. [18] 1640 to 1680 m. Oct 4 to Apr 1. Marshes and streamside vegetation.

Unreported by Binford (1989). Howell and Webb (1995) reported it rare and irregular, Sep to mid-May. Recorded every winter from 1997-98 to 2001-02, but in four years recorded only beginning in Jan. My data confirm Howell and Webb's (1995) assessment for the species here, except that it seems to occur annually, and the last recorded spring date is more than a month earlier than they indicate.

Henicorhina leucophrys Gray-breasted Wood-Wren. [17] 2250 to 2850 m. In humid pine-oak and arroyos in same.

No previous breeding records here. An adult with two fledglings was seen at about 2500 m above Santa Cruz Etla on Jun 10.

CINCLIDAE

Cinclus mexicanus American Dipper. [3] Nov 27 and Dec 12 two adult birds at the ford on the road to La Guacamaya, 2150 m. May 30 an immature was seen just above the San Felipe Ecological Park, 1740 m.

Unreported by Binford (1989). Howell and Webb (1995) report it uncommon to common but local, to 3000 m. My data confirm the presence of the species here, but much less common than Howell and Webb (1995) indicate, possibly only vagrant.

REGULIDAE

Regulus satrapa Golden-crowned Kinglet. [6] 2800 to 3200 m. Pine-oak-fir forests.

Roberson and Carratello (1997) reported the species in the La Cumbre area at 2800 m on Dec 22, 1995, and E. Hunn and I saw the species in the same area Mar 11, 1997. The latter also reported the species resident in the southern mountains of Oaxaca (Hunn et al. 2001). I have seen this species once in the community of Llano Grande, and four times in lands of the community of Benito Juárez. These two towns are located 20 to 25 km east of La Cumbre. Seen in mixed flock with *Poecile sclateri* on Jun 24. This last date, along with a sighting on Jul 13, confirms that the species is resident here. Only record of breeding behavior is singing bird Mar 11.

Regulus calendula Ruby-crowned Kinglet – new date: from Oct 3.

SYLVIIDAE

Polioptila caerulea Blue-gray Gnatcatcher. [273] To 2300 m. Disturbed areas and scrub habitats of valleys and lower slopes.

Binford (1989) reported one record of an active nest May 5 our area. Paired birds recorded nine times from Mar 3 to May 18 (however, also four times from Sep 14 to Nov 3, apparently arriving migrants). Male singing "advertising song" (see Ellison 1992) Apr 12. One seen carrying nest material Apr 20, and adults were feeding young at a nest on May 7. Male of a pair repeatedly attacked a perched *Aphelocoma californica* Apr 25.

Binford (1989) states that he finds no evidence of subspecies other than breeding *P. c. nelsoni* in interior. Only 13.7% of my observations are from the five month period of Apr through Aug. Numbers per observation increase from an average of 1.74 in the summer months to 2.67 in the winter months, with many records of 5 or more birds per observation. In certain locations this increase is even more marked. At the Tequio Park during the summer months the species has not been recorded, but in winter I have seen up to 12 per morning there. Recorded at eight locations during summer, but found at all of these plus 13 more locations during winter. Counts from Christmas Bird Counts in five years have been high: 31, 29, 15, 23, 78, 27. Furthermore, during the two months of Jun and Jul I have recorded the species a total of only four times in five years. Winter occupancy where not found in breeding season Sep 9 to Mar 24, corresponding closely to Binford's (1989) and Howell and Webb's (1995) dates for winter migrants in the state. Phillips (1991) thought that the lack of *P. c. caerulea* specimens from the interior of Oaxaca was due to a lack of sufficient collecting, and these data present indirect support for that theory.

TURDIDAE

Sialia sialis Eastern Bluebird. [12] 3000 to 3100 m. Clearings in highland pine and pine-oak forests (communities of Cuajimoloyas and Llano Grande).

No previous breeding records here. I have recorded paired birds Mar 14 and 18, adult male feeding young in nest cavity in dead pine tree May 11. Two spotted immatures Jul 14, apparently unattended by adults. Very uncommon and local, occurring to somewhat higher elevations than previously reported.

Myadestes occidentalis Brown-backed Solitaire. [155] 1700 to 3200 m. Pine-oak forest and in riparian areas to lower elevations.

No previous breeding records here. I have recorded display flight Apr 18, 22, nest construction May 10, completed nest without eggs May 16, immature birds Jul 12 to Aug 26.

Catharus aurantiirostris Orange-billed Nightingale-Thrush. [104] 1750 to 2250 m. Almost exclusively in riparian or arroyo vegetation of lower slopes.

Rowley reported two nests with eggs Sep 7 in our area (Rowley 1984). Paired birds have been noted from Apr 16 to Jul 26. One was seen chasing a *Catharus guttatus* on Mar 25, and an intraspecific agonistic encounter was seen on Apr 27. Nest construction Apr 20 to Jul 26. Adults attending completed nests with young May 17 to Aug 3. Adults seen feeding immature *Molothrus aeneus* Jun 8 and Jul 22. Rowley's (1984) late nesting date of Sep 7 seems unusual.

Binford (1989) listed it as both a permanent resident and vertical migrant. Howell and Webb (1995) state that altitudinal migrations are poorly known. Hunn et al. (2001) report it as summer resident, May 14 to Aug 18 only, in riparian groves at 1600 to 2000 m in interior southern mountains. Of my observations, 91.3% have been recorded in the six months from Mar through Aug. Only one record in each month of Jan and Feb. Single records in four of six Christmas Bird Counts. Birds vocalize almost their whole time in the area, song recorded to Nov 11. Primarily a summer resident, with stragglers present throughout winter.

Catharus ustulatus Swainson's Thrush. [21] To 2250 m. Sep 30, Oct 7; Apr 11 to May 26. Riparian areas and parks.

Binford (1989) reported major migrations of subspecies *swainsoni* through isthmus Mar and Apr. Phillips (1991) mentions an Oct 4 record of the *ustulatus* race from the Oaxaca Valley. My Oct 7 sighting appeared to be of race *ustulatus*, otherwise all sightings (including Sep 30) that could be allocated to subspecies appeared to be *swainsoni*. These appear to be the first records of the *swainsoni* race from our area. Not recorded here every year. Rare to uncommon and irregular transient.

Catharus guttatus Hermit Thrush. [78] To 3100 m. Oct 25 to May 26. Mostly in pine-oak forests, also riparian areas, dry arroyos, parks.

Binford (1989) reported it in pine-oak only, Howell and Webb (1995) as more widespread in migration. My data show wider habitat use throughout winter, as listed above. Twenty-six observations have been in Apr, apparently the major month of migration. New late date.

Hylocichla mustelina Wood Thrush. [2] May 18 and Jun 1, 1998 in riparian area of San Felipe Park, 1750 m.

Rare vagrant. Previously unreported here. New late date in Oaxaca.

Turdus infuscatus Black Robin. [3] 2250 to 2500 m. High, humid pine-oak forest, also humid arroyos.

Binford (1989) reported a nest with eggs Jun 9 in our area. I saw two active nests May 10 near the town of La Nevería, with adults feeding small nestlings.

Turdus grayi Clay-colored Robin. [68] To 1750 m. Parks, riparian areas, usually with tall trees.

No previous breeding records here. Singing recorded Mar 28 to Jul 4; paired birds Mar 28 to May 29; intraspecific agonistic behavior Apr 21. Nest construction Apr 20 to 26 in two years; adults attending completed nest May 5 and 17. Adults seen feeding immatures May 25 and Jun 20, and an unattended immature was seen Aug 23.

Unreported by Binford (1989). Howell and Webb (1995) state that central Oaxaca population probably derives from escaped cage birds. Of my observations, 89.7% have been recorded in Mar to Aug. Not recorded in Sep, Oct, or Jan. The movement into the San Felipe Park area for breeding is especially marked (up to five birds seen per day in breeding season), but a similar breeding season occupation also occurs at the Tequio Park. Maximum three birds reported on Christmas Bird Counts in six years (from hotel gardens), and I have not recorded it in three winter seasons of six. It seems unlikely that breeding birds disperse throughout the common arid vegetation types found in the valley areas or in the pine-oak types at higher elevations, and they have not been recorded in such areas. Their withdrawal from some breeding locations might suggest concentrating in preferred habitats during winter, but numbers observed in the few winter sightings are not high, indicating that they do not gather in winter flocks. Unless there are undiscovered areas of winter concentration, the only other possibility is that most actually withdraw from the area in a local migration.

Turdus assimilis White-throated Robin. [74] 1750 to 2750 m, mostly below 2300 m. In pine-oak forest, or in riparian areas from lower slope oak scrub up to pine-oak forests. In riparian areas, almost always where groves of tall *Alnus acuminata* trees are present.

No previous breeding records here. I have recorded singing Mar 27 to May 15, paired birds Apr 16 to May 19, nest construction Apr 18 to May 19, adults attending complete nest May 17, adults attending immatures May 19 to Jun 9. On Apr 7, I saw one of these birds quickly attack a *Melanotis caerulescens* that flew to the robin's nest. Also, I saw a pair of these birds attack an unidentified raptor on Jun 10. An intraspecific agonistic encounter was seen on Apr 7.

Binford (1989) reported one 1894 record from our area, mentions winter movements into tropical evergreen forests at lower elevations. Howell and Webb (1995) also mention poorly understood winter wandering to lower elevations. Not recorded in four of six Christmas Bird Counts, in other years one and ten birds recorded. Only seven of my observations have been in the months Jul to Feb. Two non-breeding season sightings have been of mixed flocks, one Oct 31 with *T. migratorius*, one Mar 5 at a fruiting tree with *T. infuscatus*, *Ridgwayia pinicola*, and *Myadestes occidentalis*.

Turdus rufopalliatus Rufous-backed Robin. [176] To 1750 m. Mostly in park vegetation with tall trees, also in naturally occurring riparian areas. Recorded San Pablo Huitzo to San Pablo Villa de Mitla, the full extension of our area.

Binford (1989) questioned only previous interior record of breeding, a nest found by Rowley (1984) Jun 18 in Oaxaca City. I

have recorded singing Mar 19 to Jun 23, paired birds Mar 28 to Jun 21, intraspecific agonistic behaviors Mar 30 to Apr 20, copulation May 8, nest construction Apr 13 to Jun 9, adults attending complete nests Apr 28 to Jun 16, adult with fledglings Jun 16 to Aug 27, unattended immatures Jun 23 to Aug 2.

In three years for which I have complete records, only 24% of observations fall in the six months from Sep to Feb. Furthermore, numbers of birds per observation are markedly higher in the breeding season compared to winter (average birds/observation for Apr to Jun = 3.75, for Dec to Feb = 1.77). This is even more marked at certain locations. At the Tequio Park, for example, I have two Dec to Feb records, averaging two birds per observation. In Apr to Jun at the same location I have 16 records averaging 10.8 birds per observation. Note that by excluding the month of Jul most fledglings are excluded from these breeding season counts; numbers reflect adult breeding birds. These data suggest a year-round population that is augmented during the breeding season by birds entering the area from some other location.

Turdus migratorius American Robin. [121] To 3200 m, mostly from above 1700 m. Pine-oak forests, lower elevation riparian areas, rarely in disturbed scrub habitats and parks (see below).

Binford (1989) reported nesting in our area Apr 28, Jun 22. I have recorded singing Mar 11 to Apr 17, paired birds Apr 16 to May 25, copulation May 10, nest construction Apr 4 to 21, adults attending completed nests with eggs or young Apr 4 to May 15, adults with fledglings May 7 to Jun 23, independent immatures May 9 to Sep 8. Nesting adults were seen chasing a *Melanotis caerulescens* from the nest vicinity on Apr 4, likewise a *Molothrus aeneus* on Apr 20. Almost all of these observations were recorded in lower elevation riparian areas (1700 to 1900 m) where the species is very uncommon in winter. However, immature birds were seen at La Nevería (2850 m) on May 9, and the species certainly breeds in high elevation areas also. Breeding dates here roughly correspond to those known for the species elsewhere (Sallabanks and James 1999).

Small feeding flocks of six to 12 birds are seen beginning in Jul outside of pine-oak and riparian areas, often composed of adults and spotted immatures. Such flocks have been seen twice at Yagul (disturbed arid subtropical scrub abutting on marshy vegetation), three times at Monte Albán (heavily disturbed arid subtropical scrub). Also, a single immature was seen in Jul at the Tequio Park (non-native, park vegetation). Larger winter flocks are rarely seen, recorded Dec 12 (about 40 birds) and Jan 23 (about 25 birds) in pine-oak forests around 2300 m. In this habitat loose flocks could be difficult to identify as such, and might be more common than my records indicate.

MIMIDAE

Dumetella carolinensis Gray Catbird. [6] To 1700 m. Nov 13 to Apr 17. All in brushy disturbed habitats.

Previously reported 1999 Christmas Bird Count. Rare vagrant and winter resident. New fall date.

Toxostoma ocellatum Ocellated Thrasher. [23] To 2150 m. Mostly in oak scrub of lower slopes but also to lowest valley scrub habitats.

Binford (1989) reported a nest with eggs May 12 slightly east of our area. Singing from Feb 17 to Apr 10. Adult seen with short-tailed immature at San Felipe Park May 16.

Toxostoma curvirostre Curve-billed Thrasher. [237] To 1800 m. Disturbed scrub habitats, including towns, urban areas, at lower elevations.

Binford (1989) reported nests with eggs Apr 26, Jul 24 our area. Singing noted Feb 3 to Apr 11. Pairs most frequently recorded Mar to Jun, copulation Apr 9. Earliest nest construction recorded Mar 28, adults attending nests or carrying food recorded to Jun 17. Adults with dependent fledglings Apr 10 to Jul 7.

Melanotis caerulescens Blue Mockingbird. [187] 1680 to 2750 m From heavily disturbed arid subtropical scrub to riparian areas in pine-oak, to humid pine-oak forests.

Binford (1989) reported a nest with two eggs our area Apr 28. I have recorded breeding observations as follows: pairs Mar 15 to Sep 10 (possibly year-round as months without pairs recorded are also months with few observations of the species), nest construction Apr 21 to May 9. Intraspecific agonistic encounters have been seen involving two birds, a pair chasing a single bird, and a pair chasing another pair, Mar 23 to May 6. Two of three observed nests have been abandoned before egg laying, third could not be relocated and possibly also abandoned. Independent immatures Jul 5 to Sep 8.

Binford (1989) listed the species as a vertical migrant. One to four birds have been recorded on Christmas Bird Counts. Although I have recorded it in all months, only 19 observations (11.1%) have been in the months Oct to Feb. On the other hand, 129 observations (75.4%) were in the months Mar to Jul (59% Apr to Jun).

Singing has been recorded year-round and apparently is not useful as an indicator of breeding. Singing birds were twice heard to imitate the braying of a donkey, and once the song of *Vireo hypochryseus*. Frequently heard foraging in leaf litter, which is moved with a quick movement of the bill upward and sideways. I have seen these birds chased from the vicinity of nests of *Turdus grayi* and *T. migratorius*, also mobbed by four *Ptilogonys cinereus*, possibly indicating that this species is occasionally a nest predator.

MOTACILLIDAE

Anthus rubescens American Pipit. [139] To 1700 m. Oct 4 to May 5. Mostly around the edges and drying shores of area ponds and dams. Also on sand and mud bars in Rio Salado, rarely in plowed or grassy fields.

Unreported by Binford (1989). Howell and Webb (1995) report it uncommon to fairly common, late Sep to mid-May, to 3000 m, which my data support. Usually seen in small numbers, but where drying ponds present more extensive habitat up to 30 birds together. New early and late dates.

BOMBYCILLIDAE

Bombycilla cedrorum Cedar Waxwing. [47] To 3160 m, mostly below 2300 m. Dec 21 to May 13. In two of three years when this species was seen, first record was in new year. Mostly along valley rivers, in city parks and gardens, but also to high elevation towns and edges of pine-oak forest.

I have recorded this species in alternate years, 1996-7, 1998-9, 2000-01. A single bird was reported on the Christmas Bird Count of 1999 (i.e. 1999-2000), based on vocalization only. Usually in small flocks up to 20 birds, occasionally to 150 birds. Binford (1989), Hunn et al. (2001), and I coincide in fairly late arrival dates, from Dec 11 to Jan 9, about two months later than the Oct date reported by Howell and Webb (1995).

PTILOGONATIDAE

Ptilogonys cinereus Gray Silky-flycatcher. [248] To 3000 m. Pine-oak forests, riparian areas, also arid subtropical scrub.

Binford (1989) reported nests with eggs our area Apr 29, May [*sic*]. The species is an abundant nester in the San Felipe Park riparian area, 1700 to 2100 m. In the spring of 2001 I located seven nests along about 1 km of the stream. Active nests have been found 3 m apart in the same or adjacent trees. In San Felipe Park I have recorded the following breeding observations: paired birds Apr 4 to Jun 12, pair apparently investigating nesting site Apr 4, nest construction Apr 12, active nests Apr 12 to Jun 10. The latter date was recorded 1998, following the very dry spring of that year. In contrast, in 2001, a year when several nests were located in the San Felipe riparian area beginning in Apr, all located nests were unoccupied, apparently vacated by Jun 8. In that year, counts of birds dropped, from 15 to 20 per visit to the area up to Jun 8, to only two to three from late Jun on. I have also recorded this species nesting May 3 at the town of Guacamaya, 2750 m, and it is presumably a common nester at higher elevations.

Binford (1989) reported it breeding in pine-oak forest, wintering to lower elevation oak scrub and arid subtropical scrub. Howell and Webb (1995) also mention use of pine-oak habitats, wintering to adjacent habitats. I have noticed some spreading out into other habitats following the early breeding season, possibly in response to greater useable habitat that follows spring rains. Thus the species has been recorded several times at Monte Albán in arid subtropical scrub, mostly beginning in Jun. Recorded in the lowest elevation areas (Tequio Park, 1500 m) Jan 13 to Feb 4. However, my few records at highest elevations have been in Nov and Feb.

PARULIDAE

Vermivora pinus Blue-winged Warbler. One seen Apr 21, 2001, feeding in riparian brush in company with one *V. ruficapilla* at the San Felipe Park, 1750 m,.

Previously unreported here. Rare vagrant or accidental.

Vermivora chrysoptera Golden-winged Warbler. One seen May 20, 1998, in riparian grove of *Alnus acuminata* on the road to Guacamaya, 2130 m.

Previously unreported here. Rare vagrant or accidental. New late spring date for state.

Vermivora peregrina Tennessee Warbler. [8] To 1740 m. Oct 12 and 15, Mar 15 to Apr 25. Arid subtropical scrub, parks, gardens.

Howell's (1999) listing at the Teotitlán area is only previous record. Seen with *V. ruficapilla* and *V. celata* on at least one occasion. Rare and irregular transient migrant.

Vermivora ruficapilla Nashville Warbler. New dates: Sep 12 to May 21.

Vermivora virginiae Virginia's Warbler. New dates: Sep 9 to Apr 30.

Dendroica petechia Yellow Warbler. [39] To 1720 m. Aug 23 to Oct 12, Dec 31, Apr 11 to May 27. Mostly in park vegetation, also in riparian areas, gardens.

Dates as given by Binford (1989) are for entire state and indicate winter residency. Reported on three of six Christmas Bird Counts, apparently from Oaxaca City irrigated gardens. I consider it vagrant in winter. Recorded every spring season beginning 1998, three of four fall seasons. This is our most regular transient migrant warbler. These are the first records of migration dates for our area, also a new late spring date for Oaxaca.

Dendroica pensylvanica Chestnut-sided Warbler. [5] To 1780 m. Apr 27 to May 17 in three spring seasons. Riparian vegetation of lower slopes.

Previously unreported here although Binford (1989) reported one slightly east of our area May 13. New late date for Oaxaca. Spring vagrant.

Dendroica magnolia Magnolia Warbler. [4] To 1800 m. Oct 26, 2000 and May 5 to 18, 1998. Parks and riparian vegetation.

Previously unreported here. New late spring date. Vagrant.

Dendroica coronata coronata Yellow-rumped Warbler. [9] To 1700 m. Jan 18 to Apr 12. Edges of dams.

Binford (1989) reported one record our area Jan 6. Howell (1999) listed it for Teotitlán. Recorded only in two years. Irregular and rare winter resident here, possibly entering the area more as an early spring transient migrant than as a true winter resident. New late spring date.

Dendroica coronata auduboni Yellow-rumped Warbler. New date: from Sep 20.

Dendroica nigrescens Black-throated Gray Warbler. New dates: Aug 28 to Apr 14.

Dendroica virens Black-throated Green Warbler. [2] Oct 13, 2001 and May 22, 1998. To 2230 m. Riparian areas.

Reported on four of six Christmas Bird Counts. Rare vagrant. I regard with some skepticism the regular Christmas Bird Count reports of this species in our area in winter. New late spring date.

Dendroica townsendi Townsend's Warbler. New dates: Aug 25 to May 16.

Dendroica fusca Blackburnian Warbler. [5] To 1650 m. May 10 to 19, in two spring seasons. Riparian and park vegetation.

Previously unreported here. Rare spring vagrant.

Dendroica dominica Yellow-throated Warbler. Probably a single bird recorded Sep 21, 2000 and Feb 24, 2001 in *Eucalyptus* trees at San Andres Huayapan dams.

Binford (1989) reported one 1859 record possibly from our area. The bird reported on 2000 Christmas Bird Count was probably the same one I saw, also reported 2001 CBC from same location. These records confirm the species as a rare vagrant in central Oaxaca.

Dendroica graciae Grace's Warbler. Single bird in mixed flock of warblers, Oct 25, 1997. 2250 m. Pine-oak forest.

Not previously recorded our area. Rare vagrant.

Dendroica discolor Prairie Warbler. [2] Mar 31, Dec 22, 1998. 1650 m. Both records from brushy vegetation near dam at San Andres Huayapan.

Binford (1989) reported one record from our area, Jan 6. These are the second and third records from our area. Rare vagrant.

Mniotilta varia Black-and-white Warbler. [95] To 2750 m, mostly below 2300 m. Aug 16 to May 4. Mostly in lower pine-oak forests

and riparian areas, also parks, disturbed scrub habitats of valleys, higher pine-oak.

Binford (1989) reported it as an uncommon transient migrant only in interior. Howell and Webb (1995) report it common to fairly common, Jul to May, to 2500 m, which my observations confirm. New early fall date.

Setophaga ruticilla American Redstart. [6] To 1800 m. Sep 23 to Nov 1, May 6 to 17. Riparian areas, parks.

Binford (1989) reported one record from our area May 6. Howell and Webb (1995) reported it as an uncommon transient in interior, Aug to Oct, Apr to May, which my records support, possibly somewhat more uncommon and irregular than they indicate. Also winter vagrant per Christmas Bird Count reports, apparently from downtown Oaxaca hotel grounds. New early fall date.

Seiurus aurocapillus Ovenbird. [6] 1750 to 2450 m. Oct 31, Nov 14; Apr 27 to May 29. Mostly in humid arroyos in scrub oak and pine-oak zone.

Unreported by Binford (1989). Howell and Webb (1995) report it as a winter resident in interior, late Aug to mid-May, to 2200 m. My records indicate it is a fall and spring transient migrant only. New late spring date.

Seiurus noveboracensis Northern Waterthrush. [12] To 1750 m. Sep 29 to May 23. Slow moving or stagnant water along valley streams.

Unreported by Binford (1989). Howell and Webb (1995) report it fairly common to uncommon in interior, late Aug to May, to 2500 m. Recorded on three of six Christmas Bird Counts. Eight of my records are from Mar to May. My data support Howell and Webb's (1995) assessment, possibly less common than they indicate. New early and late dates.

Seiurus motacilla Louisiana Waterthrush. [20] 1660 to 1780 m. Aug 4 to Apr 12. Along lower slope streams, generally at faster moving water than previous species, but some overlap.

Binford (1989) reported one record from our area, thought it a transient migrant only. Howell and Webb (1995) report it fairly common to uncommon in winter throughout Oaxaca, Jul to Apr, to 3000 m, which my observations support, possibly somewhat less common than they indicate. New early and late dates.

Oporornis philadelphia Mourning Warbler. [15] 1630 to 2250 m. May 16 to Jun 3, in two spring seasons. In riparian areas of lower slope arroyos or park vegetation nearby.

Not previously reported here. Rare vagrant. New late date.

Oporornis tolmiei MacGillivray's Warbler. New dates: Sep 9 to Jun 2 Latter date recorded 1998. Other years to May 13.

Geothlypis trichas Common Yellowthroat. [74] To 2150 m, most below 1750 m. Oct 7 to May 27. Mostly along watercourses where thick vegetation is present. In May of 1998 the species was recorded six times along fast moving, lower slope streams, hopping about the ground in relatively open situations.

Binford (1989) reported it as a common winter resident, Oct 7 to May 20, to 1540 m, thought it possibly a permanent resident in Oaxaca valley. Howell and Webb (1995) report it as common to fairly common, mid-Aug to May, to 3000 m. Highest elevation record for the area and latest spring date (otherwise to May 16) were recorded in 1998. Birds seen at that time differed in appearance from those typically seen in having darker flanks and grayer frontal band. I believe that most winter residents are of race *occidentalis*, while these were probably *trichas*. Such birds were also observed on Apr 25, 2001. Fall arrival date recorded by both Binford (1989) and myself is noteworthy compared to Howell and Webb's (1995), about six weeks earlier.

Geothlypis nelsoni Hooded Yellowthroat. [5] 2750 to 3200 m. Wet or dry bunchgrass meadows, weed grown fields.

No previous breeding records here. Paired birds May 9, Jun 2. Female carrying food Jun 2, presumably to a nestling. Female with immature Jul 14. Nest under construction in an overgrown field on Jul 17. Few available data indicate that the species is possibly a fairly late breeder compared to other species that breed in the area.

Binford (1989) reported a record from La Cumbre area as farthest southeast in range. Recorded 25 km farther east at Llano Grande. Also recorded once in an overgrown field in cloud forest area at the town of Santa Maria La Luz, 2200 m, in the Sierra Juárez.

Winter observations scarce in central Oaxaca. The species has not been recorded on any Christmas Bird Counts although groups usually cover the La Cumbre area where Binford (1989) reported it. Presumed resident, but all my observations are from Mar 23 to Jul 17. M. Grosselet (pers. com.) reported one from San Pablo Cuatro Venados Jan 1.

Wilsonia pusilla Wilson's Warbler. New date: to May 23 (May 17 to 23 in six spring seasons).

Wilsonia canadensis Canada Warbler. [13] To 2250 m. Sep 21, 2000, May 10 to 23, in two spring seasons. Riparian areas and parks.

Previously unreported here, but Binford (1989) reported one interior record slightly east of our area May 12. Rare and irregular transient migrant. New late spring date.

Cardellina rubifrons Red-faced Warbler. New date: from Aug 24.

Ergaticus ruber Red Warbler. [67] 2250 to 3200 m, mostly above 2500 m. Pine-oak forests.

Binford (1989) reported nest construction May 8 our area. I have recorded pairs from Mar 28 to Aug 20, dependent fledglings May 11 to Jul 23, immature plumage to Aug 20. Mixed flocks recorded from Jun 17, overlapping period of fledglings (see account of *Vireo huttoni* in Forcey 2002b).

Myioborus miniatus Slate-throated Redstart. [181] 1580 to 3200 m. Mostly in pine-oak forests to highest elevations in summer, also lower (down to about 1750 m) in riparian corridors. Sep 4 to Mar 29 also recorded in arid subtropical scrub, arroyos in same, park vegetation, scrub growth along Rio Salado.

Binford (1989) reported nest with two eggs Jun 7 in our area. I have seen paired birds Apr 10 to Aug 1, fledglings and immatures from Jun 10 to Aug 23.

Basileuterus rufifrons Rufous-capped Warbler. [296] 1630 to 2500 m. In arid subtropical scrub and oak scrub up to edges of areas with taller pine-oak forest.

Previously unrecorded breeding here. Paired birds recorded throughout the year, more commonly from Apr and May. Singing birds recorded from Mar 20 to Jun 2; intraspecific agonistic behavior Apr 24; nest building from Apr 26 to Jun 11; fledglings from Jun 1 to Aug 16. Adults feeding fledgling *Molothrus aeneus* Jun 16, Jul 7.

Icteria virens Yellow-breasted Chat. One Mar 5, 1999 at San Andres Huayapan, 1650 m, in roadside brush. One 1996 Christmas Bird Count report, location unknown.

Unreported by Binford (1989). Howell and Webb's (1995) map shows it as transient migrant. Rare here, and possibly better considered as vagrant.

THRAUPIDAE

Piranga flava Hepatic Tanager. [132] From 1650 m. Pine-oak forest, oak scrub, riparian areas, occasionally to disturbed scrub habitats.

No previous breeding records here. Pairs recorded throughout year, more commonly Mar to Jul. An intraspecific agonistic encounter (two males) May 10, pair selecting nest site Apr 24, adults attending nests May 16, pairs feeding nestlings at two different nests May 11,18, pair attending fledgling *Molothrus aeneus* Jun 10, streaked plumage immature Jul 6.

Piranga rubra Summer Tanager. New date: from Sep 21.

Piranga ludoviciana Western Tanager. New dates: Sep 15 to May 21.

Piranga erythrocephala Red-headed Tanager. [12] 1900 to 2150 m. May 10 to Oct 7. Riparian vegetation and adjacent scrub.

Binford (1989) reported one old record from our area, date written as Jun 21, 1984 probably should be 1894. Howell and Webb's (1995) mapped area seems to not include our area. Eugene Hunn first reported the species to me at the ford on the road to La Guacamaya, and I have recorded it in five consecutive years from same area, once in San Felipe Park riparian area. Eleven of 12 records Apr to Jul. Beside the dates, paired birds and a male singing from the top of a tall tree indicate breeding. Possibly a local migrant.

Binford (1989) reported the species absent the Sierra Juárez north of our area, but Howell and Webb's (1995) map apparently shows it present there, and their text states it is rare from 2100 to 3000 m. I have recorded it five times in three communities of the Sierra Juárez, 1000 to 1300 m, around villages and in coffee plantations in humid pine-oak forest.

Euphonia elegantissima Elegant Euphonia. [85] 1680 to 2300 m. Pine-oak forest, riparian areas, disturbed scrub habitats.

No previous breeding records here. Pairs or groups seen throughout the year, but paired birds mostly recorded late Mar to Jun. Nest construction Apr 16 to Jun 10, adults attending completed nests Apr 30, Jun 20. Immature plumage birds recorded May 25 to Jul 12. All three nests found have been in riparian areas, and the species is often common in these areas during the breeding season. Two of these nests in the same tree in two consecutive years in branches hanging over small stream.

EMBERIZIDAE

Volatinia jacarina Blue-black Grassquit. [94] To 1740 m, most at lowest elevations. Weedy fields, low scrub along rivers.

No previous breeding records here. Males entering breeding plumage recorded late Mar, males' display flights recorded Apr 28 to Aug 23, begins when breeding plumage is not yet complete in some displaying males. Males in breeding plumage to Sep 29. Schaldach et al. (1997) found evidence of breeding in the northern lowlands of the state as early as Jan. In extremely dry spring season of 2002, in fairly numerous population along Rio Salado, males were still not displaying on May 23.

Habitat occupation can be irregular in all seasons. Unrecorded two winters, recorded once in two others, but common at Tequio Park in winter of 1998-99, flocks to 20 birds. Recorded from twelve locations overall, only two in winter. Flocks to about 50 birds seen in Mar to Apr, apparently returning birds. In breeding season, recorded in certain marginal locations only irregularly, few birds per observation. However, in preferred habitats breeding populations can be quite dense, with agonistic encounters between neighboring males observed fairly frequently.

Sporophila t. torqueola White-collared Seedeater. [267] To 1900 m. Widespread in weedy and brushy areas.

No previous breeding records here. Singing May 4 to Sep 9. Intraspecific agonistic encounters recorded May 17 to Jun 23. Paired birds May 25 to Aug 16, but single adults feeding fledglings to Oct 17. Schaldach et al. (1997) reported evidence for breeding Jan to early Jul in northern Oaxaca, indicating a breeding season beginning up to six months earlier in *S. t. morelleti*. On the other hand, breeding season of *S. t. sharpei* begins mid to late Apr, but ends by mid-Jul (Eitniear 1997).

Breeds in a variety of scrub habitats, some entering riparian areas during breeding season. In the dry spring of 1998 birds were first recorded in the San Felipe riparian area one day before the first rain of Jun 1, other years recorded in riparian areas by May 5.

Melozone kieneri Rusty-crowned Ground-Sparrow. [2] 1300 m. Arid tropical scrub along Rio Grande in lands of San Juan Atepec, north of our area.

Binford (1989) reports an 1894 record from San Juan Bautista Cuicatlan. Roberson and Carratello (1997) reported a vagrant individual in the eastern portion of our area Dec 21, 1995. Howell and Webb's (1995) map indicates the species present our area, which the lack of records here does not support. The Atepec area is contiguous with the Cuicatlan location. Nearest portion of this river valley to area where Roberson and Carratello (1997) reported their sighting is about 40 km distant.

Pipilo maculatus Spotted Towhee. [105] 1750 to 3200 m. Brushy edges in pine-oak, oak scrub, riparian areas.

Binford (1989) reports a specimen taken in breeding condition Apr 4 in our area. Paired birds throughout the year but most recorded late Mar to mid-Jun. Singing Apr 9 to Jun 3. Adults carrying food, presumably to nestlings Jun 2, feeding fledglings May 9. Immatures May 25 to Jul 26.

Pipilo albicollis White-throated Towhee. [462] To 3100 m. Abundant in disturbed and scrub habitats at lower elevations, also locally in openings in pine-oak forests to highest elevations.

Rowley (1984) recorded 13 nests in our area from Jun 27 to Jul 27, a fledgling Sep 12. Paired birds Mar 18 to Oct 14, most May to Jul. Generally in family groups through fall and winter, some lasting until next breeding season. Birds carrying nesting material Apr 28 to Jun 18, copulation Jun 21, presumed displaying male Jun 28-29, adults with fledglings Jul 3 to Oct 30, adults feeding *Molothrus aeneus* fledglings Jul 3 to Sep 20. Vocalizations of immature birds heard in family groups Jul 30 to Dec 6.

I have recorded the species several times from habitats where not previously reported. In our area, I have nine records in disturbed pine-oak-fir in and around the towns of La Nevería, Benito Juárez, Cuajimoloyas, Llano Grande at elevations of 2750 to 3100 m. In the Sierra Juárez, I have two records in arid tropical scrub found along Rio Grande of San Juan Atepec, 1300 m, two records in disturbed tropical evergreen forest at San Pedro Yaneri,

1400 m, one record in coffee plantations in San Felipe El Porvenir, 1600 m.

Aimophila botterii Botteri's Sparrow [45] To 1850. Mar 5 to Oct 10, presumed resident. Grassy areas with scattered bushes.

Binford (1989) reports specimens taken in breeding condition May 6, Jul 31 in our area. Singing Apr 9 to Sep 27, pairs Apr 14, 21, adult carrying three small caterpillars Jun 23, immatures Aug 2 to Sep 12. In the very dry spring of 1998, singing was not recorded until Jun 11, two days after first widespread rains.

Aimophila notosticta Oaxaca Sparrow. [77] 1700 to 2130 m. Oak scrub, arid subtropical scrub of lower slopes.

No previous breeding records our area. Paired birds recorded Mar 19 to Sep 13, singing Mar 20 to May 16, immature bird Aug 24.

Oriturus superciliosus Striped Sparrow. Four individuals recorded on Jan 1, 2002 at San Pablo Cuatro Venados (2750 m). Extensive bunch grass mixed with highland pine-oak forest.

This is apparently the location of a specimen taken in 1894 that is reported in Binford (1989), possibly also the location indicated on Howell and Webb's (1995) map.

Spizella passerina Chipping Sparrow. [214] To 3000 m. Aug 17 to May 5. Most in disturbed scrub habitats of lower elevations, less common in lower pine-oak zone, rarely recorded at high elevation clearings in pine-oak.

Both Binford (1989) and Howell and Webb (1995) report this species breeding here, but I have not recorded it during breeding season. Usually seen in flocks under 20 birds early in winter season, flock size increases towards spring.

Spizella pallida Clay-colored Sparrow. [91] To 1740 m. Oct 4 to May 11. Mostly in disturbed scrub habitats of lower elevations.

Binford (1989) reported only four previous records from here, considered the species very uncommon. Howell and Webb (1995) reported it as common to fairly common Sep to May, which my data support. Often in flocks over 20 birds, occasionally to hundreds. Flocks often with *S. passerina*, *Chondestes grammacus*, *Carduelis psaltria*. New dates.

Chondestes grammacus Lark Sparrow. [116] To 1750 m. Sep 7 to Apr 24. Disturbed scrub habitats.

Reported as very uncommon in interior by Binford (1989). Winker et al. (1992) reported it as common in our area in 1983. Howell and Webb (1995) report it as common to fairly common in winter, which my data confirm. New fall date.

Passerculus sandwichensis Savannah Sparrow. [52] To 1680 m. Oct 26 to May 9. Found in a variety of habitats, some irregularly. In weedy or ploughed fields, grassy brush near water, banks and sandbars of Rio Salado.

Binford (1989) reported a single 1857 record from interior. Howell and Webb (1995) report it common to fairly common Sep to mid-May, which my data support. New dates.

Ammodramus savannarum Grasshopper Sparrow. [32] To 1850 m. Dec1 to Apr 27. In grassy scrub areas of valleys and lower slopes.

Less common than reported by Howell and Webb (1995). Most appear to be of race *A. s. ammolegus*. Some that appear to be *A. s. perpallidus* recorded less often . New late date.

Melospiza lincolnii Lincoln's Sparrow. New dates: Oct 7 to May 23.

CARDINALIDAE

Pheucticus ludovicianus Rose-breasted Grosbeak. [29] To 3100 m. Oct 20 to Apr 20. Habitats varied; most in park and garden vegetation to highest elevation towns, also pine-oak, riparian areas.

Binford (1989) reported it as rare, probably only transient migrant, and Howell and Webb (1995) map it absent our area. Recorded all winter months, 16 records from Nov to Feb. Very uncommon winter resident.

Pheucticus melanocephalus Black-headed Grosbeak. [195] 1630 to 3100 m. Most in pine-oak, riparian areas, oak scrub.

No previous breeding records here. Singing Mar 9 to Jun 22; paired birds Apr 4 to Jul 21; intraspecific agonistic behavior (chasing) Apr 4 to Jun 3. Nest construction Apr 12, active nests May 2 to Jul 8; fledglings Jul 7 to 22. Almost all breeding observations in riparian areas 1750 to 2300 m, where uncommon in winter. Year-round presence at higher elevations suggests nesting in those areas also.

Guiraca caerulea Blue Grosbeak. [260] To 1800 m. Disturbed scrub areas of valleys and lower portions of oak scrub.

Rowley (1984) reported active nests Jul 4, 16 in our area. Singing males Mar 9 to Aug 2. Paired birds seen rarely outside of breeding season, most Mar 30 to Sep 17. Intraspecific agonistic behavior recorded May 25, 29, and a male was seen chasing a *Columbina inca* Apr 28. Nest construction Jun 21, Jul 2. Adults with fledglings Aug 2, Sep 8. These data suggest nesting takes place only several weeks after establishment of territories and pair formation. Such behavior would have the advantage in our area of allowing for development of vegetation to provide better cover for nest sites, but more data needed to be sure of this point.

Passerina cyanea Indigo Bunting. [47] To 1800 m. Oct 12 to Apr 28. Most in low elevation, grassy, disturbed scrub habitats, also lower portions of oak scrub, riparian areas.

Binford (1989) reported one doubtful 1859 record from the area. Winker et al. (1992) reported sightings of four birds in 1983. Howell and Webb (1995) report the species as fairly common to common. I have recorded the species in every winter, but number of records varies from one to 24 per season. Seen singly or in small flocks, with greatest numbers seen in spring. Uncommon and somewhat irregular, mostly transient. New early date.

Passerina ciris Painted Bunting. [13] To 1720 m. Oct 12 to May 16. Disturbed scrub habitats of valleys, parks, gardens.

Considered rare by Binford (1989). Howell and Webb (1995) reported it fairly common to common. I have zero to five records per winter, usually one or two. Unrecorded Jan. Rare winter resident. New late spring date.

Spiza americana Dickcissel. [13] 1500 m. Jan 5 to Apr 28. Weedy and grassy fields of Tequio Park.

Previously unreported here. Twelve records in 1999, one 2002. Single birds up to flock of 42, all at Tequio Park. On Mar 31 a flock that probably numbered in the thousands was seen in the same area. Irregular transient and winter resident.

ICTERIDAE

Agelaius phoeniceus Red-winged Blackbird. [9] To 1680 m. Most in marshy areas and nearby agricultural areas along rivers, also at Yagul marsh.

Howell and Webb (1995) indicate this species is common. Binford (1989) reports the species from our area without assessing its status. Distribution is limited by lack of suitable habitat. Rare resident, probably threatened by ongoing habitat destruction.

Quiscalus mexicanus Great-tailed Grackle. [254] To 1900 m. Towns, parks, agricultural areas, shores of ponds and dams.

No previous breeding records here. Nest construction recorded from Mar 1 to Jul 3. Fledglings recorded Apr 18 to Aug 29.

Molothrus aeneus Bronzed Cowbird. [307] To 2700 m, most below 2150 m. Mostly in disturbed scrub habitats of valleys, including agricultural areas, more widespread in breeding season, particularly in riparian areas, rare up to clearings in high elevation pine-oak.

I have recorded males singing from high perches beginning Feb 28 but courtship displays not seen until Apr 6, latest record of displaying male Aug 10. Fledglings recorded Jun 10 to Sep 20. Successful brood parasitism has been observed of *Catharus aurantirostris* (2), *Basileuterus rufifrons* (2), *Piranga flava* (1), *Pipilo albicollis* (17), *Icterus wagleri* (1); attempted parasitism of *Contopus pertinax* (1), *Contopus sordidulus* (1), *Tyrannus melancholicus* (1), *T. vociferans* (1), *Pachyramphus aglaiae* (1), *Turdus rufopaliatus* (1), *T. migratorius* (1), *Ptilogonys cinereus* (1). Rowley (1984) reported brood parasitism of *Turdus rufopaliatus*, and *Pipilo albicollis* in our area, with *Pipilo albicollis* nests containing 5 and 6 cowbird eggs. I have usually seen only one cowbird fledgling being attended by the host parents of any species, in two instances White-throated Towhees were attending two cowbird young. In no cases have I seen a cowbird fledgling being fed along with the natural young of the parent birds.

From Sep to Apr seen in valley towns, agricultural areas in flocks up to several hundred birds. In the breeding season, birds gather in evenings in small flocks for roosting, spread out to breeding areas in mornings. Large flocks begin to form again in late Jul. A pair were seen May 10 at La Nevería, 2700 m, but the species is rarely found at the higher elevations, probably only during breeding season.

Molothrus ater Brown-headed Cowbird. [19] To 1850 m. Mar 28 to Aug 4. Disturbed scrub habitats in valleys, also to lower riparian areas.

Rowley (1984) reported brood parasitism of *Campylorhynchus jocosus*, *Polioptila caurulea* May 5 in our area. I have recorded pairs and singing or displaying males from Mar 28 to Jun 8.

The species certainly retires from much of its breeding area in central Oaxaca in winter. I have not seen the large winter flocks reported here by Rowley (1984), but I have seen this species as a very small component of large flocks of the preceding species on Aug 4 and Apr 11. Lack of winter records suggests that the species withdraws entirely from our area, at least in some winters.

Icterus wagleri Black-vented Oriole. [285] To 2250 m, most to about 1800 m. In broken scrub habitat of valleys, parks and gardens, lower riparian areas, rarely to higher elevation riparian areas within pine-oak zone.

Binford (1989) reported one specimen taken in breeding condition Jun 3 our area. Pairs recorded throughout the year but more commonly Apr to Aug. Intraspecific agonistic behavior Apr 18. Nest construction recorded May 5 to Jul 7; adults attending fledgling *Molothrus aeneus* Aug 2.

Icterus spurius Orchard Oriole. [57] To 1740 m. Aug 2 to May 12. Parks and gardens, disturbed scrub habitats of valleys.

Binford (1989) and Howell and Webb (1995) considered the species a transient migrant in our area. I consider it an uncommon winter resident as it has been recorded most years in months of Nov to Feb (15 records). Also recorded sparingly in all Christmas Bird Counts since 1996. Numbers per observation average 2.0 from Aug to Oct, 4.2 from Mar to May. New late spring date.

Icterus cucullatus Hooded Oriole. [16] To 1800 m. Oct 12 to Mar 20. Gardens, parks, disturbed scrub habitats of valleys.

Unreported by Binford (1989). Howell and Webb (1995) map it as winter resident. I have recorded it in five of six winter seasons. Reported on four of six Christmas Bird Counts. Rare winter resident.

Icterus pustulatus Streak-backed Oriole. [11] To 1740 m. Sep 27 to Apr 16. Parks, disturbed scrub habitat of valleys.

Unreported here by Binford (1989). Howell and Webb (1995) map it as permanent resident. I have recorded the species only in winters of 1997-98, 1998-99, spring only in 2002. Reported in these winters on Christmas Bird Counts, also 2000-01. These data suggest that the species enters the area irregularly in winter only.

Icterus bullockii Bullock's Oriole. New date: to May 16.

Icterus parisorum Scott's Oriole. [21] 1630 to 3100 m. Nov 10 to May 9. In high pine-oak forests feeding in flowering maguey and mistletoe, also in disturbed scrub habitats of lower slopes.

Binford (1989) reported it in our area in winter, gave no dates and did not report it at high elevation areas. Howell and Webb (1995) report it in winter Sep to Mar. Seen in higher numbers at high elevation areas. In these same areas singing male and paired birds Mar 8 and presence into May suggest that it might be breeding.

FRINGILLIDAE

Carpodacus mexicanus House Finch. [352] To 2700 m, most to 1850 m. Widespread in lower elevation habitats, rare to openings in high elevation pine-oak.

Rowley (1984) recorded nests Mar 20 to Jul 28. Pairs seen mostly late Feb to mid-Aug. Singing and displaying males Mar 4 to Jun 21. Ned Brinkley (pers. com.) reports a female on an active nest Feb 27. I have recorded nest construction Mar 20 to Jul 26, Dependent fledglings May 5 to Oct 31. One observation from high elevation town of La Nevería May 9, presumably enters such habitat during breeding season.

Loxia curvirostra Red Crossbill. [11] 2250 to 3200 m. Most in pine-oak-fir forests at highest elevations, occasionally to lower limits of pine-oak forests.

Binford (1989) reported only one record from our area. Reported on five of six Christmas Bird Counts. Fairly common in suitable habitat.

Carduelis psaltria Lesser Goldfinch. [409] To 3000 m, mostly below 2250 m. Most in disturbed scrub habitats of valleys,

including urban areas, rarely in pine-oak or clearings in high elevation pine-oak.

Binford (1989) reported active nests here Sep 26 and Oct 18. I have recorded paired birds from Jun 5 to Oct 26. Singing males beginning Jun 2. Nest construction recorded beginning Jun 29, most Aug and Sep, last active nest (with four nestlings) Nov 10. Adults feeding fledglings Aug 19 to Dec 13. These dates appear to be about four to six weeks later than those indicated by Watt and Willoughby (1999) for other interior populations of these birds.

This species shows somewhat irregular seasonal movements, probably influenced by availability of food. Abandons large areas of habitat in late winter as seed crop is depleted and winter/spring drought means no replacement until after arrival of spring rains. For example, in the brushy areas surrounding the Monte Albán archaeological site where seed producing plants abound, in the late dry season months of Mar to May I have recorded three birds in 18 visits to the area, while in Jun I have recorded 76 birds in eight visits to the same area. During spring months, birds often concentrate in larger flocks (to 40 birds) locally where seed crop is sufficient to maintain them. Some small feeding flocks recorded almost all months, but larger flocks seen Jan to May.

Use of higher elevation habitats limited. Recorded four times in openings around high elevation towns (2700 to 3000 m) north of Oaxaca City, once feeding in same *Alnus acuminata* trees with *Carduelis notata*. Dates of these records, Jan 23 to May 9, indicate use of this habitat when food is scarce at lower elevations. Recorded once Jun 4 in closed canopy oak scrub at about 2100 m, apparently feeding on *Arbutus* fruits.

Coccothraustes vespertinus Evening Grosbeak. [4] 3000 to 3200 m. High pine-fir forest only.

Binford (1989) reports one 1894 record from Cerro San Felipe, thought it possibly a migrant only. Three of my four records have been in Jun and Jul, one flock of at least ten birds Jul 14 had juvenile birds. Breeding resident.

Discussion

At this writing 341 species of birds have been recorded in the central Oaxaca area, of which 34 have been reported for the first time in this and the previous two articles (Forcey 2002a, 2002b), and another 15 have been reconfirmed from single previous records or Christmas Bird Count reports only. This large number of vagrants and rare migrants was to be expected considering the geographical location of the area of study, and it is likely that the number of recorded vagrants will grow with further study. Of the total of 341 species, 170 are known or presumed breeding species, and 171 are non-breeding species.

Breeding season

Of the 170 breeding species, there are no breeding records in our area for 59 species, and 15 are known from a single report of breeding behavior or specimen taken in breeding condition. Breeding records for the remaining 96 species in many cases are still scarce. In spite of this lack of depth of data, based on present information a few general observations can be made.

As presently known, breeding seasons vary in length from a little over two months (e.g. Gray Silky-flycatcher *Ptilogonys cinereus*, possibly some *Empidonax* species) to over six months (e.g. Northern Beardless-Tyrannulet *Camptostoma imberbe*, Great-tailed Grackle *Quiscalus mexicanus*).

The great majority of birds for which some records exist breed early in the year, primarily late Mar and early Apr to Jul, a few beginning as early as Feb, and some continuing to as late as Sep. Exceptions are two aquatic species (Least Grebe *Tachybaptus dominicus*, Common Moorhen *Gallinula chloropus*) which appear to breed beginning Jul, one hummingbird (Berylline Hummingbird *Amazilia beryllina*) breeding Jun to Oct, two hummingbirds (Dusky Hummingbird *Cynanthus sordidus*, White-eared Hummingbird *Hylocharis leucotis*) breeding in winter, and three seed eating species (White-collared Seedeater *Sporophila torqueola*, White-throated Towhee *Pipilo albicollis*, Lesser Goldfinch *Carduelis psaltria*). One of these latter, White-collared Seedeater *Sporophila torqueola* apparently begins breeding in mid to late May, the other two in late Jun. Additionally, one other seed eating species, Blue Grosbeak *Guiraca caerulea*, appears to form territories and pairs early, but may delay nesting until Jun. Species that delay breeding apparently do so because they are more dependent on summer rains for specific resources: habitat in the case of aquatic species, abundant flowering plants for the hummingbird, seeds of annual plants for the seed eaters.

The breeding season found here broadly agrees with that described by Rappole (1995) for the tropical lowlands of Vera Cruz. However, Schaldach et al. (1997) reported breeding seasons for some species in the northern lowlands of Oaxaca that differ significantly from the breeding seasons of central Oaxacan populations of the same species as reported herein (see accounts of Rose-throated Becard *Pachyramphus aglaiae*, Blue-black Grassquit *Volatinia jacarina*, White-collared Seedeater *Sporophila torqueola*).

In comparing the breeding seasons here with those of populations known from farther north (primarily southern and western United States), for 29 species for which I have comparative information available from the AOU Birds of North America series, 18 seem to breed at approximately the same time of year, seven breed about two weeks to a month earlier here, three seed eating species breed one to three months later. Least Grebe *Tachybaptus dominicus* shows a late breeding season beginning Jul, while northern populations breed year-round.

For the majority of species, breeding begins in Mar, a month of critical dryness that often continues into May at lower elevations in the Oaxaca central valleys. Most (104) species breeding at this time do so in the higher elevation pine-oak forests and lower slope riparian areas and parks where nest cover, shade, food, and water are more available. As migrants leave and rains begin to fall in May and Jun, young are hatching and being raised by the adult birds. There exists some evidence that some species move out into the greening scrub habitats of the lower elevations to take advantage of this developing habitat after the rains come. This is most marked in a wandering seed eating species such as Lesser Goldfinch *Carduelis psaltria*, but seems to take place also in Golden Vireo *Vireo hypochryseus*, American Robin *Turdus migratorius*, and Gray Silky-flycatcher *Ptilogonys cinereus*. My records from the exceptionally dry springs of 1998 and 2002 also indicate that breeding is postponed by some species (see accounts of Rose-throated Becard *Pachyramphus aglaiae*, Bushtit *Psaltriparus minimus*, Gray Silky-flycatcher *Ptilogonys cinereus*, Blue-black Grassquit *Volatinia jacarina*, and Botteri's Sparrow *Aimophila botterii*) as a result of severe climatic conditions in some years.

Further stress during the early months of the breeding season might be assumed to derive from the continued presence of migratory species typically into late May. In fact very little evidence exists that there is direct competition for food resources between breeding and migrant species, and I have recorded only two interspecific agonistic encounters between breeding and migratory species (see accounts of Greenish Elaenia *Myiopagis viridicata*, Orange-billed Nightingale-Thrush *Catharus*

aurantiirostris). Both of these were in the early breeding season when breeding birds begin to defend territories, and aggressive behavior was directed toward migrants.

Migration

Of 171 non-breeding species, eight species (Black-bellied Whistling-Duck *Dendrocygna autumnalis*, Fulvous Whistling-Duck *Dendrocygna bicolor*, Northern Jacana *Jacana spinosa*, Green-fronted Hummingbird *Amazilia viridifrons*, Garnet-throated Hummingbird *Lamprolaima rhami*, Plain-capped Starthroat *Heliomaster constantii*, Sparkling-tailed Hummingbird *Tilmatura dupontii*, and Happy Wren *Thryothorus felix*) are presumably short distance vagrants from lowland areas and 163 are completely migratory. Two species, American Dipper *Cinclus mexicanus* and Streak-backed Oriole *Icterus pustulatus*, were considered resident by Howell and Webb (1995) but seem to be rare winter migrants.

Fall migration begins with arrival of Solitary Sandpiper *Tringa solitaria* in mid-Jul and ends with arrival of Cedar Waxwing *Bombycilla cedrorum* in Dec, possibly even Jan. The majority of vagrant species during this season tends to be mostly aquatic birds such as ducks and shorebirds.

Spring migration may begin in Jan with movement of *coronata* subspecies of Yellow-rumped Warbler *Dendroica coronata*, and lasts until late May or rarely early Jun with the departure of many species at that time. The majority of vagrant species recorded at this season tend to be mostly insectivorous passerines such as flycatchers, vireos, and warblers.

The spring season of 1998 should be mentioned for the outstanding number of vagrants and late dates recorded in that season. Unusual species reported in this article that were recorded in spring of 1998 were Swainson's Thrush *Catharus ustulatus*, Wood Thrush *Hylocichla mustelina*, Golden-winged Warbler *Vermivora chrysoptera*, Chestnut-sided Warbler *Dendroica pensylvanica*, Magnolia Warbler *Dendroica magnolia*, Blackburnian Warbler *Dendroica fusca*, Mourning Warbler *Oporornis philadelphia*, Common Yellowthroat *Geothlypis t. trichas*, and Canada Warbler *Wilsonia canadensis*. New late spring dates were recorded for 19 species reported in this article in 1998. With those species already reported (Forcey 2002b), a total 17 new or rare species for the area were recorded in that season, and new late dates were recorded for 28 species. This pattern was partially repeated in the spring of 2002, also an exceptionally dry spring. Although it is impossible to know what might have caused this shift in timing and route of so many species, it is tempting to seek the cause in the extreme drought and severe accompanying forest fires that marked the 1998 season. This unusual migration shift might also serve to demonstrate why long-term studies are needed, and as a caution against drawing conclusions from a single visit to any otherwise poorly known area.

Movements of breeding species

Besides long distance migrants (i.e. those not known to breed here) whose ranges are fairly well known, my data indicate various kinds of seasonal movements for an additional 35 breeding species. These movements are difficult to classify with certainty because some appear to be relatively short-distance, and because all but four of these species apparently can be found here to some extent during winter. Wintering areas for many of these species are unknown or very poorly known.

Two breeding bird species of the area, Western Wood-Pewee *Contopus sordidulus* and Cliff Swallow *Petrochelidon pyrrhonota* are long distance migrants. So far as is known, none of these birds winter in the area after the breeding season, Christmas Bird Count reports to the contrary notwithstanding.

Five species of seed eating birds, Blue-black Grassquit *Volatinia jacarina*, White-collared Seedeater *Sporophila torqueola*, Bronzed Cowbird *Molothrus aeneus*, Brown-headed Cowbird *M. ater*, and Lesser Goldfinch *Carduelis psaltria*, demonstrate similar patterns of movement. They all enter their respective breeding areas in spring or summer and withdraw from those areas in winter, forming feeding flocks in low-elevation areas where winter habitat continues to provide sufficient food. Details differ for each species as to timing of movements, extent of flock formation and size of flocks, breeding habitats utilized, and maximum breeding elevations. Two of these species, Blue-black Grassquit *Volatinia jacarina* and Brown-headed Cowbird *Molothrus ater*, are often difficult to find in the area during winter. Presumably a variable portion of their populations withdraws from the area, and this may be true to a lesser extent for the other three species as well.

The next two groups of species may differ from one another only in degree to which individuals of the species withdraw from our area.

Ten species move locally into riparian areas to breed and apparently disperse to nearby areas after the breeding season ends. Two of these, American Robin *Turdus migratorius* and Black-headed Grosbeak *Pheucticus melanocephalus*, are found in winter in the same habitats where they breed, but with notably less frequency in lower-elevation riparian areas. Two others, Greater Pewee *Contopus pertinax* and Gray Silky-flycatcher *Ptilogonys cinereus* breed at high elevations and in lower riparian areas but disperse throughout the whole area from lowest to highest elevations in winter. The Cordilleran Flycatcher *Empidonax occidentalis* seems to disperse widely in winter; possibly a portion of the population leaves the area. Four species, Thick-billed Kingbird *Tyrannus crassirostris*, Slaty Vireo *Vireo brevipennis*, Dwarf Vireo *Vireo nelsoni*, Elegant Euphonia *Euphonia elegantissima*, disperse after breeding to lower elevations of scrub habitats, rarely being found in winter to the lowest or highest elevations. Possibly some portions of these two vireo populations withdraw from the area in winter, but scarcity of observations leave this point unclear. Vermilion Flycatcher *Pyrocephalus rubinus* breeds at lower elevations in a variety of habitats including riparian areas, but seems to mostly withdraw from these latter areas in winter.

Eighteen species are vertical migrants to one extent or another, with major portions of their populations leaving our area, as evidenced by their known appearance in non-breeding areas or their scarcity here in relation to numbers observed in breeding season. Greenish Elaenia *Myiopagis viridicata* and Rose-throated Becard *Pachyramphus aglaiae* may properly belong with the group listed in the previous paragraph (local dispersal) because some are found here in winter in high elevation areas while all known breeding locations are in the riparian areas of the lower slopes. However, their general scarcity during winter is most easily explained by supposing that the majority withdraw to lower elevations outside of our area. The White-throated Flycatcher *Empidonax albigularis* both appears in lowland areas of exterior slopes in winter (Binford 1989) and is unrecorded here during the same season, and is thus completely a vertical migrant. Downslope movements of Tufted Flycatcher *Mitrephanes phaeocercus* and Slate-throated Redstart *Myioborus miniatus* are noted within our area and probably some of the latter withdraw from the area in winter because the species is known to arrive in non-breeding areas elsewhere. The first of these two species is the only one that notably moves into lower elevation riparian areas in

winter after breeding birds have vacated them. Berylline Hummingbird *Amazilia beryllina* and Gray-collared Becard *Pachyramphus major* are known to be vertical migrants in winter by their appearance in that season elsewhere (Binford 1989). My data do not reveal an outstanding diminution in numbers in winter here, but presumably some leave the area. Red-headed Tanager *Piranga erythrocephala* is unique in the area as a rare breeder so far found in only two locations. It has not been recorded in winter, and presumably withdraws from the area. Elegant Trogon *Trogon elegans*, Pileated Flycatcher *Xenotriccus mexicanus*, Golden Vireo *Vireo hypochryseus*, Warbling Vireo *Vireo gilvus brewsteri* (breeding race), Orange-billed Nightingale-Thrush *Catharus aurantiirostris*, Clay-colored Robin *Turdus grayi*, White-throated Robin *Turdus assimilis*, Rufous-backed Robin *Turdus rufopalliatus*, and Blue Mockingbird *Melanotis caerulescens* all show marked decreases in numbers observed after breeding season and are not thought to generally disperse throughout our area. Thus, they are presumed to largely withdraw from the area in winter. Hooded Yellowthroat *Geothlypis nelsoni* shows a similar pattern, but available data are insufficient to draw firm conclusions regarding this species. It is noteworthy that twelve of these 18 species breed exclusively or primarily in riparian and/or park vegetation.

Acknowledgements

I wish to express my gratitude to my companions of field and forest, Roque Antonio, Rachel Werling, and Manuel Grosselet. The latter also encouraged me to organize my notes for publication. Hector Gomez de Silva was very encouraging in offering his assessment of my first manuscript. Special thanks to Elizabeth Torres for assistance in translating the summary into Spanish. Thanks to Ramiro Aragon for providing additional information on the transient migrants of spring, 2002 and to Sophie Calmé for her helpful criticisms of the original draft.

Literature cited

Binford, L.C. 1989. A Distributional Survey of the Birds of the Mexican State of Oaxaca. The American Ornithologists' Union, Washington, D.C.

DeJong, M.J. 1996. Northern Rough-winged Swallow (*Stelgidopteryx serripennis*). *In* The Birds of North America, No. 234 (A. Poole and F. Gill, Eds.), The Academy of Natural Sciences, Philadelphia; The American Ornithologist's Union, Washington, D.C.

Eitniear, J.C. 1997. White-collared seedeater (*Sporophila torqueola*). *In* The Birds of North America, No. 278 (A. Poole and F. Gill, Eds.), The Academy of Natural Sciences, Philadelphia; The American Ornithologist's Union, Washington, D.C.

Ellison, W.G. 1992. Blue-gray Gnatcatcher (*Polioptila caerulea*) *In* The Birds of North America, No. 23 (A. Poole and F. Gill, Eds.), The Academy of Natural Sciences, Philadelphia; The American Ornithologist's Union, Washington, D.C.

Erickson, R.A. and Hamilton, R.A. 1993. Additional Summer Bird Records for Southern Mexico. Euphonia 2:81-89.

Forcey, J.M. 2001. Breeding of Cooper's Hawk (*Accipiter cooperii*) in Oaxaca, Mexico. Huitzil 2:21-23. <http://www.huitzil.net/nr-8.pdf>. Date consulted: Feb 8, 2002. Date of last modification: Dec 18, 2001.

Forcey, J.M. 2002a. Notes on the Birds of Central Oaxaca, Part I: Podicipedidae to Laridae. Huitzil 3:1-10 <http://www.huitzil.net/nr-9.pdf>. Date consulted: Mar 1, 2002. Date of last modification: Feb 22, 2002.

Forcey, J.M. 2002b. Notes on the Birds of Central Oaxaca, Part II: Columbidae to Vireonidae. Huitzil 3:14-27 <http://www.huitzil.net/nr-10.pdf>. Date consulted: Apr 12, 2002. Date of last modification: Mar 22, 2002.

Howell, S.N.G. 1999. A Bird Finding Guide to Mexico. Cornell University Press, Ithaca.

Howell, S.N.G. and Webb, S. 1995. A Guide to the Birds of Mexico and Northern Central America. Oxford University Press, Oxford.

Hunn, E., Acuca Vásquez, D., and Escalante, P. 2001. Birds of San Juan Mixtepec, District of Miahuatlan, Oaxaca, Mexico. Cotinga 16:14-26.

Phillips, A.R. 1991. The known birds of North and Middle America, Pt. II. Allan R. Phillips, Denver.

Rappole, J.W. 1995. The ecology of migrant birds: an neotropical perspective. Smithsonian Institution Press, Washington.

Roberson, D., and Caratello, R. 1997. Updates to the Avifauna of Oaxaca, Mexico. Cotinga 7:21-2.

Rowley, J.S. 1966. Breeding Records of Birds of the Sierra Madre del Sur, Oaxaca, Mexico. Proc. West. Found. Vert. Zool. 1:107-204.

Rowley, J.S. 1984. Breeding Records of Land Birds in Oaxaca, Mexico. Proc. West. Found. Vert. Zool. 2:73-224.

Sallabanks, R., and James, F.C. 1999. American Robin (*Turdus migratorius*). *In* The Birds of North America, No. 462 (A. Poole and F. Gill, Eds.), The Academy of Natural Sciences, Philadelphia; The American Ornithologist's Union, Washington, D.C.

Schaldach, W.J., Escalante, P., and Winker, K. 1997. Further Notes on the Avifauna of Oaxaca, Mexico. Anales Inst. Biol. Univ. Nac. Autón. México, Ser. Bot. 68 (1):91-135.

Watt, D.J., and Willoughby, E.J. 1999. Lesser Goldfinch (*Carduelis psaltria*). *In* The Birds of North America, No. 392 (A. Poole and F. Gill, Eds.), The Academy of Natural Sciences, Philadelphia; The American Ornithologist's Union, Washington, D.C.

Winker, K., Warner, D.W., and Dickerman, R.W. 1992. Additional Bird Records from Oaxaca, Mexico. Ornitologia Neotropical 3:69-70.

Recibido 25 de marzo de 2002; Revisión aceptada 07 de octubre de 2002
Editor asociado: Sophie Calmé