

## NOTES ON THE BIRDS OF THE BABOQUIVARI MOUNTAINS, ARIZONA

WITH TWO ILLUSTRATIONS

By STEPHEN C. BRUNER

**T**HE BABOQUIVARI MOUNTAINS are situated in Pima County in extreme southern Arizona and extend from near the Mexican boundary northward for a distance of about thirty miles. Little or nothing seems to have been published regarding the birds of these mountains, although the ranges to the north and east have been considered in a number of papers. The following notes are based largely on observations made in Otero Canyon during the period from March 18 to May 26, 1925, while I was residing at Fresnal Ranch, property of Mr. Bryan Peters.

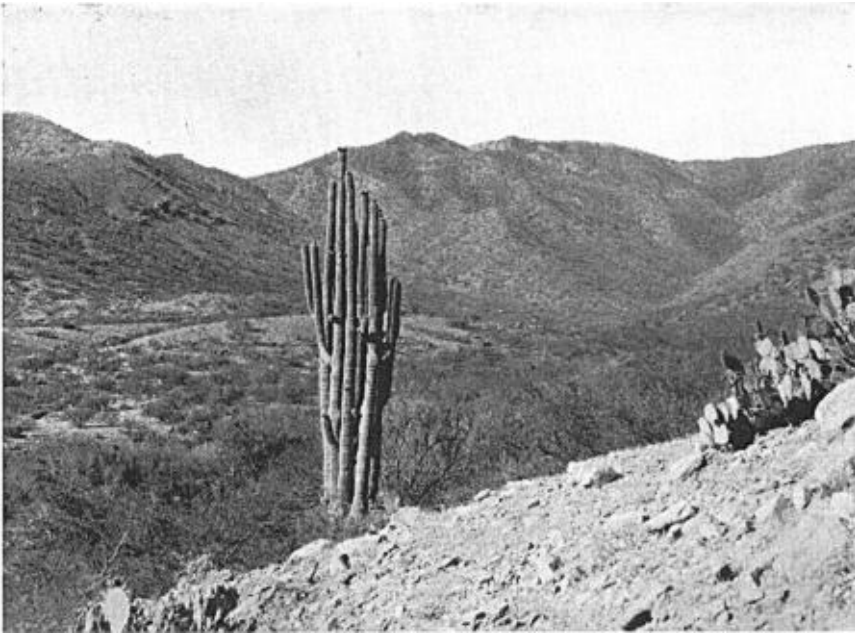


Fig. 77. Looking across Otero Canyon towards the south. The giant cactus is not numerous here and the unusually large specimen in the foreground was a useful landmark. The mesquite is the predominating tree in the bottom-lands, live oaks on the slopes, and pines and junipers above along the crests of the higher ridges.

During this period it was possible to observe the majority of both the summer and winter birds in addition to those occurring during the spring migration. Unless otherwise indicated, all of the birds here recorded were noted within a mile or two of the ranch house, which is located at an elevation of approximately 3500 feet.

The Baboquívvari Mountains attain only a moderate elevation, most of the ridges probably not exceeding 4000 to 5000 feet. They are uniformly rugged, quite arid, and very sparsely wooded except along the water-courses, which are entirely dry

except during a few days of each year. The upper, northern slopes of some of the higher ridges are rather heavily wooded over limited areas. The maximum elevation recorded is attained by Baboquívari Peak, 7,740 feet, a nearly barren, precipitous mass of rock which rises abruptly some seven miles to the southwest of Fresnal Ranch. This peak is hidden from view from the site of the ranch house by Fresnal Hill, so-called, which adjoins it on the north and which is said to be the second highest mountain in the range, evidently exceeding 6000 feet in elevation. Neither of these mountains was visited, which is to be regretted, as the latter, particularly, would no doubt have yielded ornithological data of interest, being apparently well-forested above.

No systematic collecting was done and hence a detailed examination of specimens was not possible except in the case of birds taken during banding operations and a few obtained otherwise. It has therefore been necessary to exclude from these notes a number of species the identification of which was somewhat uncertain, including the juncos and several species of flycatchers and swallows. The writer is indebted to Miss Cummings of the State Museum at the University of Arizona, Tucson, for giving him free access to the excellent collection of bird skins prepared by the late Mr. Herbert Brown.

**Pelecanus californicus.** California Brown Pelican. On the afternoon of March 23 a flock of nine of these birds was watched for about ten minutes as they circled above the canyon as if lost. They had evidently strayed over from the Gulf of California, some ninety miles distant.

**Steganopus tricolor.** Wilson Phalarope. One in full nuptial plumage and three in immature or winter plumage were observed, May 3, at the reservoir in Fresnal Canyon on the Papago Indian Reservation, some twelve miles to the west.

**Lophortyx gambelii.** Gambel Quail. Extremely abundant everywhere on the floor of the canyon, coming to drink at the corral in large coveys until about May 15, after which most of the birds were seen in pairs.

**Cyrtonyx montezumae mearnsi.** Mearns Quail. The "fool quail", as it is known locally, is said to be not uncommon in the canyon, on the grassy slopes among the live oaks. A male and two females were seen together along the trail about three miles above the ranch house on May 3.

**Columba fasciata fasciata.** Band-tailed Pigeon. On May 14, thirty or more were seen along the creek bottoms within two hundred yards of the ranch house. Eleven birds were noted together in one tree. Four more were seen on May 23.

**Zenaidura macroura marginella.** Western Mourning Dove. Although a few individuals were observed in the canyon during the latter part of March, they did not become common until after April 10.

**Melopelia asiatica trudeaui.** White-winged Dove. First noted on April 12, the "white-wings" became common everywhere in the bottom lands after April 20. The first nest, containing two eggs, was found on May 13. Two nests were discovered on May 19, each containing a newly laid egg. A fourth found on May 24 contained two fresh eggs.

**Chaemepelia passerina pallescens.** Mexican Ground Dove. Two seen in Altar Valley at Palo Alto, seven miles northeast of the ranch, are the only ones recorded.

**Cathartes aura septentrionalis.** Turkey Vulture. Common in the canyon during April and May; prior to that time they were rarely seen.

**Accipiter velox.** Sharp-shinned Hawk. The most commonly observed of the few hawks found in the canyon.

**Buteo borealis calurus.** Western Red-tailed Hawk. Noted almost daily, soaring high above the ranch; also seen rather commonly in Altar Valley.

**Aquila chrysaetos.** Golden Eagle. Observed on March 27, April 15 and May 1. Eagles are considered to be fairly common in the Baboquívaris.

**Falco sparverius phalaena.** Desert Sparrow Hawk. Seen occasionally during March, April and May near the head of the canyon.

**Bubo virginianus pallescens.** Western Horned Owl. Frequently heard calling at night near the ranch house, and also flushed several times during the day. I was informed that during the past it has proved quite troublesome, due to its inroads on the poultry yard.

*Micropallas whitneyi*. Elf Owl. One shot in the poultry yard of the ranch in the evening of May 10. Its stomach contained five lepidopterous larvae and a centipede about two inches long. This most diminutive of our owls is apparently a rather uncommon resident in the canyon.

*Geococcyx californianus*. Road-runner. One seen near the corral on April 19 is the only record for the canyon; but Road-runners are not uncommon in Altar Valley some three or four miles to the east.

*Dryobates scalaris cactophilus*. Cactus Woodpecker. The only common resident woodpecker, at least in the bottom-lands. A female was flushed from her nest in the trunk of a live mesquite tree on May 9. When the nest was opened on May 25, the young appeared to be about half grown.

*Dryobates arizonae*. Arizona Woodpecker. A lone individual was observed on March 20, 21, and 23.

*Sphyrapicus varius nuchalis*. Red-naped Sapsucker. A male was seen on March 19 and again on March 20 and 22.

*Centurus uropygialis*. Gila Woodpecker. During the latter part of March this was by far the most abundant woodpecker; but it disappeared shortly after the first of April.

*Colaptes cafer collaris*. Red-shafted Flicker. Flickers were rather common at the time of my arrival but began to disappear soon after, none being recorded after about April 1.

*Phalaenoptilus nuttalli nuttalli*. Poor-will. A bird heard calling in the evening of May 8 was taken to be this species.

*Chordeiles acutipennis texensis*. Texas Nighthawk. First seen about the ranch house on May 19; but nighthawks noted near the mouth of the canyon two miles to the east on April 28 were no doubt of the same species. They were frequently flushed from the road at night when I was crossing Altar Valley.

*Aeronautus melanoleucus*. White-throated Swift. When the crest of the high ridge to the south of the canyon was visited on April 15 these magnificent swifts were quite abundant. A few were again seen there on April 30, and over the divide to the west on May 3. I was informed that they had been seen here on March 15 also.

*Archilochus alexandri*. Black-chinned Hummingbird. This appears to be a common species in the canyon, at least as a migrant. It was first definitely recorded on April 23 when a dead bird was examined, but it no doubt arrived much earlier. After this date a number were seen, some when engaged in their curious aerial courtship dance.

*Calypte costae*. Costa Hummingbird. Observed commonly during the migration in April. The first definite identification was made on April 14, although what seemed to be the same species was noted as early as March 31.

*Cynanthus latirostris*. Broad-billed Hummingbird. This is a striking species, not easily mistaken, as its peacock green breast and bright red, black-tipped bill are very distinctive field characters. Its curiosity and habit of perching frequently within a short distance of passers-by invite attention. The Broad-bill was first seen on March 30 and thereafter it was noted almost daily until the end of April. It was last recorded on May 3 in Fresnal Canyon, in the Papago Indian Reservation. However, it seems quite probable that this hummingbird breeds in suitable localities in the Baboquivaris.

*Tyrannus verticalis*. Arkansas Kingbird. While not uncommon this species was less numerous than the Cassin Kingbird. It was noted first on March 23. One or two pairs established themselves for the summer near the ranch house. A nest with well grown young was found on May 24. At the reservoir in Fresnal Canyon both this and the following species were common on May 3.

*Tyrannus vociferans*. Cassin Kingbird. This is the more common resident kingbird in Otero Canyon. First recorded on March 18, it was noted regularly soon after.

*Myiarchus cinerascens cinerascens*. Ash-throated Flycatcher. Found commonly in Otero Canyon; also seen in Fresnal Canyon. It was first observed on March 30 and noted regularly after about April 7.

*Sayornis sayus*. Say Phoebe. Observed rather commonly during March, April and May; is evidently a permanent resident. Two nests about half completed were found on April 18 under the eaves of an outhouse. These were situated about three feet apart and were evidently built by the same bird, as in the case of the eastern

Phoebe of Mr. Burroughs which had "missed her aim", described by Dr. Chapman in "Camps and Cruises". One of these nests was finally completed and contained two eggs on May 11.

*Sayornis nigricans*. Black Phoebe. This species was rather uncommon, apparently occurring as a migrant in Otero Canyon, but may breed elsewhere in the Baboquivaris. It was first recorded on March 19 and last on May 3 near the head of the canyon, some five miles to the west. In Tucson it was noted as early as March 1.

*Nuttallornis borealis*. Olive-sided Flycatcher. Noted on April 25 and April 30 (two); probably not an uncommon migrant.

*Empidonax difficilis difficilis*. Western Flycatcher. First observed on March 26, it was seen more or less regularly thereafter until at least May 12. This is a very quiet bird, frequenting shady spots and therefore easily overlooked.



Fig. 78. Female Vermilion Flycatcher brooding. This bird was unusually confiding, returning to her nest and eggs while the photographer sat in plain view not more than three feet away.

*Pyrocephalus rubinus mexicanus*. Vermilion Flycatcher. Found rather sparingly in the upper portion of the canyon, but rather commonly lower down near the mouth and on the adjoining plains; also observed in Fresnal Canyon. Only two pairs took up their residence near the ranch house but a considerable number was seen during the migration. The first individuals were noted here on March 20, but in Tucson one was observed on March 1.

On May 12 a nest was found within one hundred feet of the ranch house. This was situated in a mesquite about eight feet from the ground and contained three eggs. These hatched five days later and by May 25 the young were well grown and within a day or two of leaving the nest. A second nest was found, May 20, in a cat's-claw tree about ten feet from the ground. It contained one freshly laid egg.

*Otocoris alpestris*, subsp.? Horned Lark. Flocks of horned larks were seen just to the east of the canyon in Altar Valley on March 29 and May 16, where they seem to be common. The summer birds, at least, are probably referable to the form *adusta*.

*Aphelocoma woodhousei*. Woodhouse Jay. Observed only twice, April 5 and 11, when lone individuals came to the corral to drink.

*Aphelocoma sieberi arizonae*. Arizona Jay. An abundant species, seen regularly in flocks in the upper portions of the canyon, but sometimes descending to the vicinity of the ranch house. The presence of these jays was always announced by a chorus of peculiarly finch-like notes.

*Corvus corax sinuatus*. Raven. The large American Ravens were occasionally seen flying high above the canyon, usually in pairs, their deep hoarse croaking betraying their identity. Among a large number of ravens seen around the reservoir in Fresno Canyon on May 3, were a few individuals of this species. An aerial combat between two White-necked Ravens and one of their larger cousins, who took the defensive, was seen near Tubutama, Sonora, on May 17.

*Corvus cryptoleucus*. White-necked Raven. None apparently reside in Otero Canyon, but they were not infrequently seen flying over the ranch. They are common in Altar Valley and in Fresno Canyon. On the outskirts of Tucson, especially along the Santa Cruz River bottoms, these ravens are exceedingly abundant, more than two hundred being counted on the morning of February 13, seventy of which were seen together in a group of three trees.

*Molothrus ater obscurus*. Dwarf Cowbird. Not noted in Otero Canyon until May 4; seen daily thereafter around the poultry yard in small bands up to the time of my departure. A flock of fifty or more was seen at the reservoir in Fresno Canyon on May 3.

*Tangavius aeneus involucratus*. Red-eyed Cowbird. A lone individual appeared on May 17, and was joined in a day or two by a number of others. These, in company with the smaller *Molothrus*, were seen in the poultry yard regularly up to the time of my departure. The males were most interesting because of their antics, puffing out their neck feathers and strutting about in a most ludicrous fashion.

*Xanthocephalus xanthocephalus*. Yellow-headed Blackbird. A lone male in full plumage observed at the corral on April 26 is the only record.

*Icterus parisorum*. Scott Oriole. Three seen feeding among the ocotillo blossoms on the crest of the ridge to the south on April 15. Several observed there again on April 30. Later they were found in the bottom-lands. They probably breed in the canyon.

*Icterus cucullatus nelsoni*. Arizona Hooded Oriole. This species appeared in the canyon on April 11 and was afterwards a common and conspicuous resident.

*Icterus bullocki*. Bullock Oriole. A common migrant; first individual noted on March 20. None was recorded after March 31.

*Carpodacus mexicanus frontalis*. House Finch. Seen only occasionally during March, but became quite numerous soon after. During May it was probably the commonest breeding bird about the ranch.

*Astragalinus psaltria hesperophilus*. Green-backed Goldfinch. First recorded on April 4, and small flocks seen occasionally until as late as May 15.

*Astragalinus lawrencei*. Lawrence Goldfinch. A pair in full plumage was seen on March 27, and others, sometimes in small flocks, were noted at irregular intervals up to May 20.

*Passer domesticus domesticus*. English Sparrow. Six or more pairs were established around the ranch house.

*Passerculus sandwichensis nevadensis*. Nevada Savannah Sparrow. An individual accidentally killed during trapping operations for banding, May 2, constitutes the only record. A Savannah Sparrow noted on April 15 was probably of the same form.

*Chondestes grammacus strigatus*. Western Lark Sparrow. First seen at the ranch on April 7; they soon became very numerous about the corral. They were last noted on May 20.

*Zonotrichia leucophrys leucophrys*. White-crowned Sparrow. An abundant species, especially around the poultry yard where food was readily obtainable. The last individual was recorded on May 22.

*Zonotrichia leucophrys gambeli*. Gambel Sparrow. More numerous than the foregoing during March. It became less numerous towards the end of April, but a few were noted as late as May 12.

*Spizella passerina arizonae*. Western Chipping Sparrow. A few were seen during the latter part of March. During April they became abundant, but none was recorded after the first week in May.

*Spizella breweri*. Brewer Sparrow. Seen in considerable abundance on the plain to the east, and less commonly within the canyon. Here they were observed as late as May 15, when they were found in full song.

*Amphispiza bilineata deserticola*. Desert Black-throated Sparrow. Found commonly, evidently as a resident, on the floor of the canyon, especially near the mouth to the east of the ranch.

*Aimophila ruficeps scotti*. Scott Sparrow. Two were noted, April 15, near the crest of the ridge to the south at an elevation of about 5000 feet, where they were apparently resident.

*Melospiza lincolni lincolni*. Lincoln Sparrow. Recorded only twice, April 6 and May 15, when lone individuals were seen at the corral.

*Pipilo fuscus mesoleucus*. Canyon Towhee. A common resident everywhere in the canyon.

*Oreospiza chlorura*. Green-tailed Towhee. Found above the ranch in the live oak belt on March 25; afterwards it was seen along the creek bottoms, becoming quite common during April. The last was noted on May 20.

*Cardinalis cardinalis superbus*. Arizona Cardinal. Exceedingly numerous, especially around the ranch house, where it was not too shy to display itself at all hours of the day. A nest containing three eggs was found on May 10; these hatched on May 19.

*Zamelodia melanocephala*. Black-headed Grosbeak. One or two noted nearly every day between April 7 and May 22.

*Passerina amoena*. Lazuli Bunting. A tolerably common transient. The first was recorded on April 10 and the last on May 20.

*Piranga ludoviciana*. Western Tanager. After April 27, when first recorded, this tanager became very common. Fifteen were captured for banding, water being the "bait" employed. All disappeared rather suddenly, the last being observed on May 21.

*Piranga rubra cooperi*. Cooper Tanager. First noted on April 24. Tolerably common thereafter throughout the migration period. As one was seen as late as May 23, it is possible that a few may breed in the canyon or nearby.

*Progne subis subis*. Eastern Purple Martin. The only record is that of a lone female observed at Palo Alto on May 26.

*Tachycineta thalassina lepida*. Northern Violet-green Swallow. On May 13 and 14 several were observed at short range, but what was no doubt the same species was seen with White-throated Swifts near the crest of the high ridge to the south on April 30. Probably a common migrant throughout the region.

*Bombycilla cedrorum*. Cedar Waxwing. Small flocks of waxwings appeared in the canyon on May 9 and were noted almost daily up to the date of my departure, May 26.

*Phainopepla nitens*. Phainopepla. One of the most common and conspicuous birds of the canyon. It appeared to be more numerous during April when it was not infrequently seen in small flocks. A nest containing one egg was found on May 5. This hatched on May 18. Only the male was seen in attendance.

*Lanius ludovicianus excubitorides*. White-rumped Shrike. No shrikes were found in the canyon, although not uncommon in Altar Valley a few miles to the east.

*Vireosylva gilva swainsoni*. Western Warbling Vireo. A rather common bird in the canyon, being noted from March 19 until at least as late as May 15.

*Lanivireo solitarius cassini*. Cassin Vireo. What was taken to be this form of *solitarius* was almost as numerous as the foregoing, at least during April. The first was recorded on April 1 and the last May 2, although it was almost certainly present after this date.

*Vireo bellii pusillus*. Least Vireo. First noted on March 22, and soon became one of the commonest birds in the canyon, its noisy call coming from almost every thicket. When the characteristic call was heard repeatedly from a small open mesquite on May 12 an investigation showed that it proceeded from an almost entirely concealed brooding bird on its nest.

*Vermivora luciae*. Lucy Warbler. Appeared on March 21, and became common by April 1. A bird carrying nesting material was noted on April 18. This species is the only common breeding warbler found in the canyon.

*Vermivora ruficapilla gutturalis*. Calaveras Warbler. Seen rather commonly from April 19 to 29, when the last individuals were recorded.

*Vermivora celata lutescens*. Lutescent Warbler. During March and April the Lutescent Warbler was one of the commonest small birds in the canyon. It was last noted on April 26. On April 24 an individual agreeing perfectly with the typical

form, *V. celata celata*, was watched for some time with the binoculars. At other times an occasional very dull bird with the concealed crown patch was seen, but the great majority were typical Lutescent.

*Dendroica aestiva sonorana*. Sonora Yellow Warbler. Tolerably common, the first appearing on April 24. It is not unlikely that it will be found to breed in the canyon, especially in the lower portion.

*Dendroica auduboni auduboni*. Audubon Warbler. Seen commonly during March and April. The last record is for May 12.

*Dendroica nigrescens*. Black-throated Gray Warbler. Found commonly from the end of March to the first of May. The first was noted on March 21 and the last on May 12.

*Dendroica townsendi*. Townsend Warbler. Although less numerous than the foregoing, this was not an uncommon species during the height of the migration. The first individual was noted on April 18, after which a few were seen regularly until May 15.

*Dendroica occidentalis*. Hermit Warbler. After April 15, when the first individuals were recorded, Hermit Warblers became tolerably common for a short while. None was observed after April 30.

*Oporornis tolmiei*. Macgillivray Warbler. Found rather commonly from March 30 until about the middle of May. The last individual was seen on May 25.

*Geothlypis trichas occidentalis*. Western Yellowthroat. Observed occasionally between April 21 and May 21.

*Icteria virens longicauda*. Long-tailed Chat. A lone individual noted on April 20 constitutes the only record.

*Wilsonia pusilla pileolata*. Pileolated Warbler. First recorded on April 1; found commonly throughout the month. The last record is May 2. A few individuals appeared considerably richer in color than the majority and it is probable that collecting would have shown these to be referable to the form *chryseola*.

*Setophaga picta*. Painted Redstart. This seems to be an uncommon transient visitor in the canyon, as it was recorded only twice, April 13 and April 23. It may breed, however, in the higher, more suitable portions of the Baboquivari range.

*Mimus polyglottos leucopterus*. Western Mockingbird. Although mockingbirds were occasionally noted in the canyon as early as March 28 and probably winter there, they did not become at all numerous until toward the end of April, when several pairs established themselves in the vicinity of the ranch house.

*Toxostoma curvirostra palmeri*. Palmer Thrasher. Fairly common resident. A recently-completed nest was found on April 18. Two eggs were laid some days later, which hatched on May 10 and 11. Only one of the young survived, which left the nest on May 25.

*Toxostoma crissale*. Crissal Thrasher. Probably not less numerous than the Palmer Thrasher, but being rather shy was less frequently observed. Nests containing well-grown young were found on April 20 and May 9. A third nest containing two eggs was discovered on May 17; these hatched on May 23. All three nests were similarly situated in the interior of small, dense, thorny bushes.

*Heleodytes brunneicapillus couesi*. Cactus Wren. A number were resident along the lower rocky sides of the canyon, but outside on the plains they were much more numerous.

*Salpinctes obsoletus obsoletus*. Rock Wren. One bird was noted on March 24 near the crest of the barren rocky ridge to the southeast of the ranch house. It is probably a fairly common resident in suitable situations.

*Catherpes mexicanus conspersus*. Canyon Wren. A pair observed about two miles above the ranch house on March 18; but none seen subsequently.

*Thryomanes bewickii bairdi*. Baird Wren. After the first of April this wren became rather common and was heard singing its peculiarly towhee-like song on every hand. It was not, however, recorded during May.

*Baeolophus wollweberi*. Bridled Titmouse. Noted almost daily in small numbers along the creek bottoms near the ranch house until April 1. It was found again, above, on the ridge to the south on April 30 at an elevation of about 5000 feet, where it probably breeds.

*Psaltriparus plumbeus*. Lead-colored Bush-tit. On March 20 a pair of Bush-tits was observed gathering spider-webs, evidently for nest building, from a live oak along an arroyo some four miles above the ranch.

*Auriparus flaviceps flaviceps*. Verdin. Found commonly everywhere on the floor of the canyon. On May 20 a fully-feathered young being fed by its parent was observed, and on the same day a pair of these birds was seen engaged in nest building.

*Regulus calendula*. Ruby-crowned Kinglet. Seen very commonly during March and April, the last being noted on May 3.

*Polioptila caerulea obscura*. Western Gnatcatcher. Met with rather commonly everywhere on the floor of the canyon during March, but disappeared early in April.

*Polioptila plumbea*. Plumbeous Gnatcatcher. Seen regularly, and not uncommonly, from March 18 up to the time of my departure.

*Myadestes townsendi*. Townsend Solitaire. Noted on March 18, 22 and 28, and on April 14. It would appear to be a winter visitor, and not uncommon.

*Hylocichla guttata*, subsp.? Hermit Thrush. Fairly common up to about the middle of April. The last straggler was seen on May 22. More than one subspecies was apparently represented among the birds seen.

*Planesticus migratorius propinquus*. Western Robin. Observed irregularly in small numbers up to April 24.

*Santiago de Las Vegas, Cuba, July 27, 1925.*

## FROM FIELD AND STUDY

**What is a Water Bird?**—To answer this question is not quite such a simple matter as it may at first seem. A true definition must, of course, define, by elimination, a "land bird" as well. Almost all bird students know pretty well by a kind of instinct to which group a given species belongs. But some of those whose judgment in that regard may be unfailing would, I take it, have to do some thinking if suddenly called on for a hard and fast explanation of the terms. Among real bird-loving enthusiasts I have not infrequently noted a great lack of discrimination between land and water birds; nor are instances wanting of field-going professors of biology showing the same failure, if one may judge from such a classification as "herons, marsh wrens and other water birds". So it would seem worth while to really define the terms "land bird" and "water bird".

Such forms as swallows, swifts, hummingbirds and nighthawks are sometimes made to form a third group: "aerial" birds. This group does not seem to be so well-defined as the two larger ones under consideration, when one thinks of the kites, for example. Be that as it may, this group may fairly be regarded as a subdivision of land birds for the present purpose. Yet I believe one has only to substitute "aerial" or "land" (or "terrestrial"), as the case may be, to make the definition given beyond applicable to all species; and, in that case, we should certainly not find the "aerial" group unrepresented.

It is true that, but for a comparatively few exceptions, no definition would be necessary, the habitats and habits of the birds being usually so decided as to leave no room for doubt on the point. Yet, in checking over a complete list of American birds, we discover that the question by no means answers itself or hinges on the extent to which a given species is or is not aquatic in actual practice.

Take the case of the water ouzel for example. Now, I think it can be shown that, if the term "water bird" (and by fair inference "land bird") is to mean anything definite, we must eliminate the wonderfully aquatic ouzel from the group; and I believe this has, indeed, generally or always been done whenever a distinction has been made in this case. On the other hand we have, for example, the woodcock, a bird quite largely given to rather dry woodlands and merely moist bogs, yet properly classed as a water bird. Some definition can not well be indefinitely avoided and, as a working basis, I offer the following.

*A water bird is any species of bird primarily and anatomically adapted to live continuously where aquatic conditions predominate. And, it may be added, a land bird is any species of bird not so adapted.*

That definition, it will be observed, embraces not only birds which are actually aquatic in practice, but all species essentially related by structure to the water, regardless of their haunts and habits as a species. Now let us see if the definition will "hold