BIRDS OF BRIGHTON AND PARLEY'S WASATCH MOUNTAINS, UTAH

by

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This Thesis for the M. S. Degree

by

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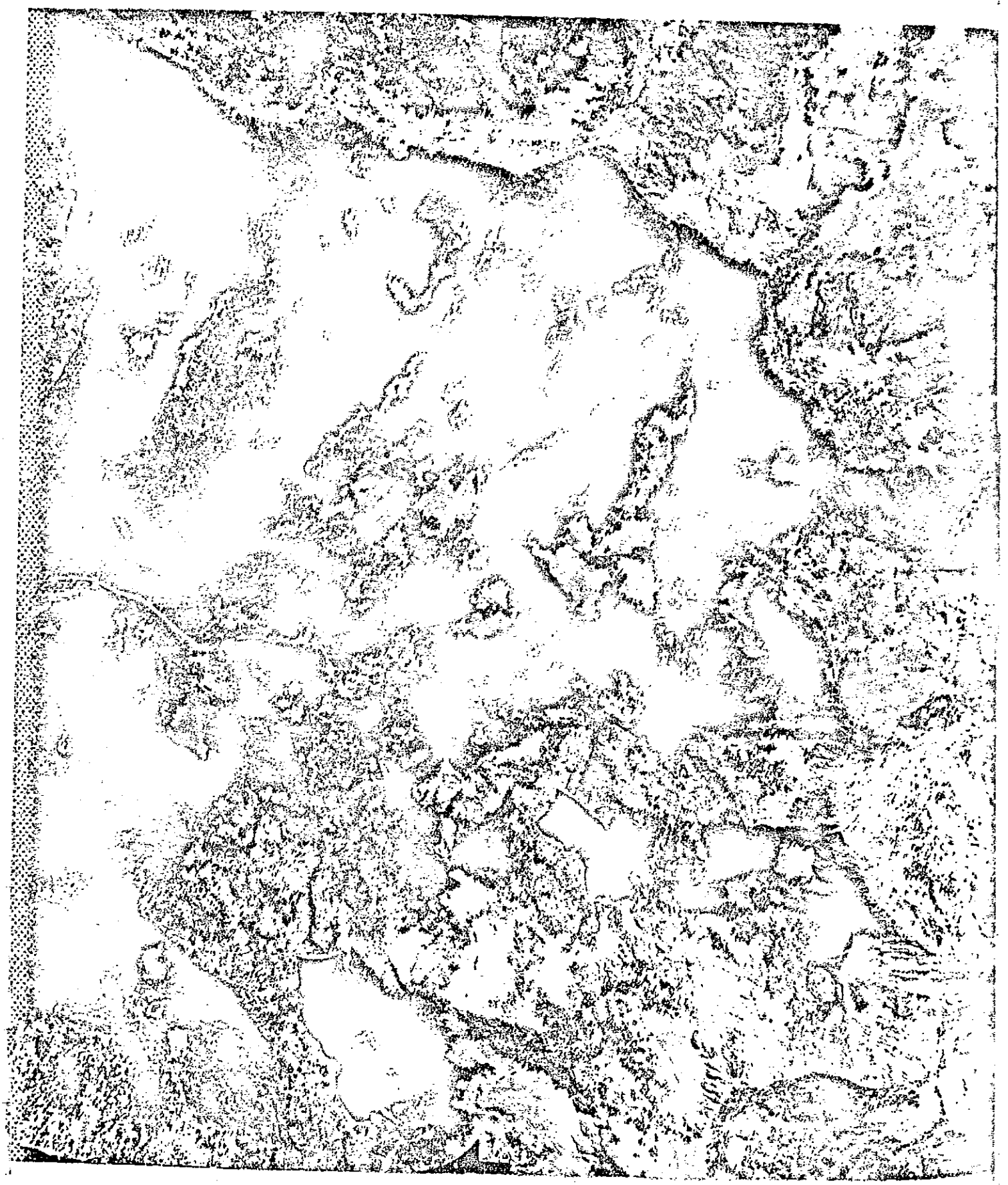

Aerial photograph of Brighton Basin

INTRODUCTION

Brighton Basin, a beautiful glacial cirque located at the head of Big Cottonwood Canyon about 30 miles south and east of Salt Lake City in the Wasatch Mountains, was selected as the focal point for this ornithological study. The purpose of this study, however, was to conduct a survey of the birds of a transect through the Wasatch to determine in so far as possible: (1) the kinds of birds present in this area, (2) the seasonal status, (3) the relative abundance, (4) altitudinal distribution, (5) the habitat in general of each species and the nesting habitat in particular.

The transect selected for this study included the Big Cottonwood drainage basin with Brighton at its head, and continued on over the ridge to the northeast of Brighton and down into Parley's Park. Parley's Canyon on the north and Mt. Timpanogos on the south generally mark the flanks of the transect through this portion of the Wasatch Mountains.

Additional objectives of this study were to: (1) gather together under one cover valuable information on birds from several sources that are difficult to obtain or are inaccessable; (2) to determine the plants that provide significant shelter and food for birds; (3) to determine the effects of human influences on the avifauna of the area; (4) to note any significant changes in bird populations, particularly in Parley's Park, since Ridgway's time (1869); and, (5) to give a brief description of the nest and eggs of each species.

This study was not a taxonomic one for this aspect has been worked out by Behle (1944); hence no attempt was made to determine to race or subspecies. Neither was it a collecting project, hence identification was made by direct observation or by checking against field guides and the specimens in the University of Utah museum.

The data for this study were collected during the academic year of 1959-1960 and during the summers of 1960 and 1961. It is hoped that this assemblage of information on birds of the Wasatch Mountains will prove useful not only to students of ornithology but also to those who just enjoy watching birds.

ACKNOWLEDGMENTS

I wish to take this opportunity of expressing my thanks and appreciation to the many people who have helped to make this report possible:

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To the Soil Conservation Service for permission to use the aerial photograph of Brighton Basin.

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METHODS AND MATERIALS

Research on this problem was pursued in three fields: (1) survey of available records of the past, (2) specimens in the University of Utah ornithology museum, (3) personal observations in the area of the transect chosen for study.

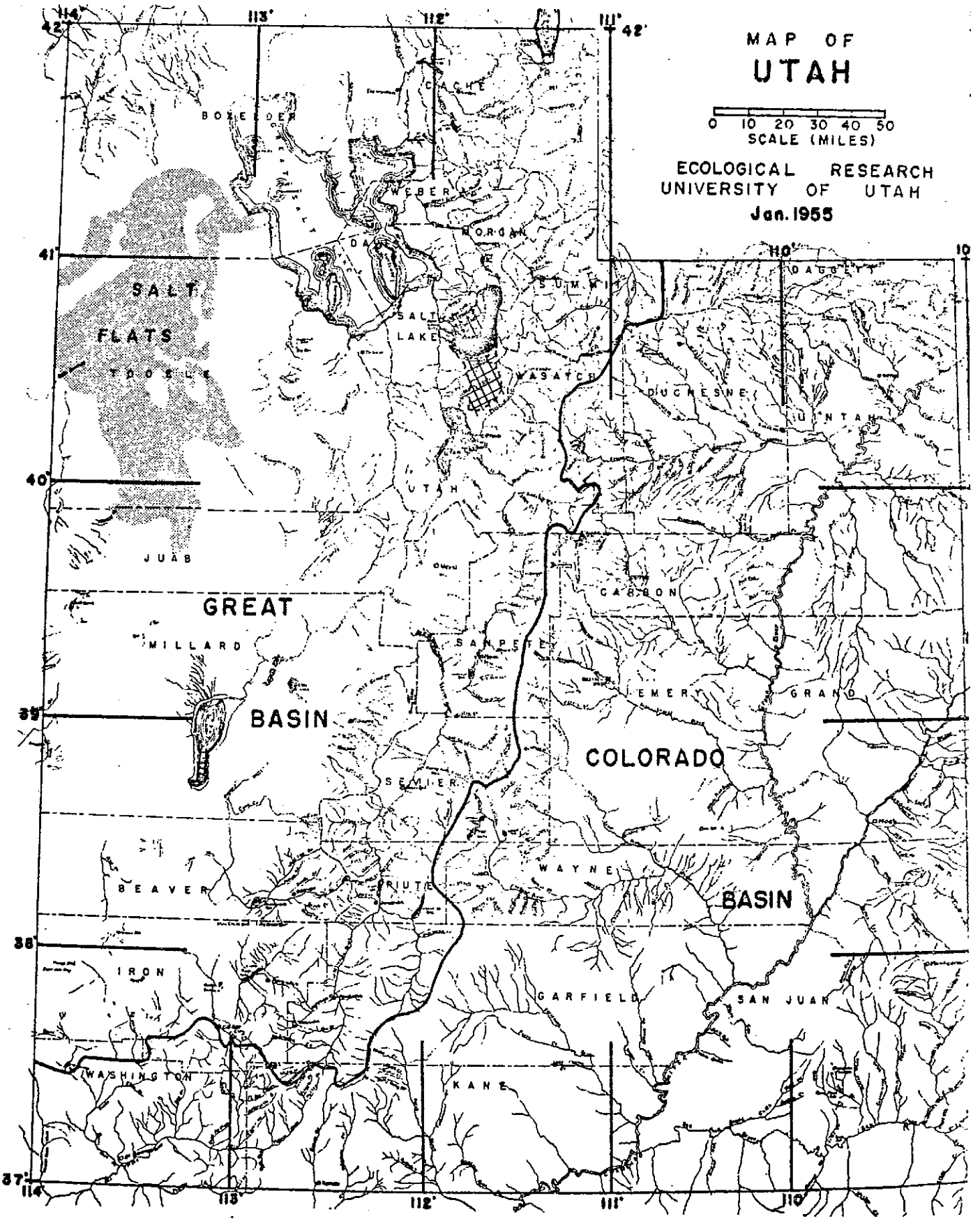
In the first area three sources were studied in detail. The report by Robert Ridgway, youthful naturalist for the King Survey of the fortieth parallel in 1869 was read in its entirety, and all birds observed at Parley's Park were carefully listed and included in this study. His observations, collections of birds, nests and eggs, and notes of interest as to habits, distribution and habitat were noted on a large card file. Secondly, the 26 years of observations of the Utah Audubon Society on its annual field trip to Brighton on the second Sunday in July were summarized and reported for each species seen. Thirdly, the voluminous records of C. W. Lockerbie, who has studied the birds of Salt Lake for over 30 years with a devotion seldom seen, were carefully gone over and all observations made in the area of the transect were tabulated on the card file. These were then given in complete form in the species accounts, or if too extensive, they were summarized. Dr. William H. Behle's "Check-list of the birds of Utah" was referred to often, especially in relation to seasonal status.

In the second area, the more than 16,000 bird skins in the University of Utah museum were individually examined, checked against the card catalogue, and all of those collected in the area of the transect were listed on my card file with all pertinent information, which was subsequently incorporated into the species accounts.

The 10,000 or more eggs in the museum I did not go through in more than a casual manner, save to study certain areas of particular interest with Ken Tanner as he worked with the eggs on his thesis. However, by 1961 Paul Harkin had completed his thesis on "An alysis of nesting data on the birds of Utah." Data for the collections made in the transect were extracted from his thesis and in turn incorporated in this paper.

October 9, 1959 marked my introduction to Brighton Basin, and between that date and August 25, 1960 sixty-eight days were spent at Brighton or other parts of the transect. On June 15 a permanent camp was established at Redman's Flat and maintained through the summer to August 16. Hikes were made almost daily to various parts of the basin where observations were made as to the species present, their habits, relative abundance and their nesting habitat. During the summer of 1960 two hundred five nests were found representing 36 species. These have been reported in the species accounts. Six additional trips were made to the transect area during the summer of 1961, and pertinent information has been included in the thesis.

A collection of plants was made to gain familiarity with the Big Cottonwood flora, and the more significant ones with relation to bird food and habitat were recorded in the section on plant communities.


MAP OF
UTAH
0 10 20 30 40 50
SCALE (MILES)
ECOLOGICAL RESEARCH
UNIVERSITY OF UTAH
Jan. 1955
SALT FLATS
GREAT BASIN
COLORADO BASIN
BOX ELDER
WEBER
DAVIS
MORGAN
SUMMIT
SALT LAKE
TOOELE
WASATCH
DUCHESNE
UINTAH
DAGGETT
UTAH
JUAB
MILLARD
SANPETE
CARBON
EMERY
GRAND
SEVIER
BEAVER
PIUTE
WAYNE
IRON
GARFIELD
SAN JUAN
WASHINGTON
KANE
42°
41°
40°
39°
38°
37°
114°
113°
112°
111°
110°
Main Transect
Flanks of Study Area

THE GEOLOGY AND TOPOGRAPHY OF BRIGHTON BASIN

As one approaches the Wasatch Mountains from the west there are no gradually rising hills, but so suddenly and sharply do the mountains rise in a giant fault escarpment, that some of the highest peaks seem almost to overhang the Great Salt Lake Valley. From the top of any of these peaks the western edge of the range is seen to form a series of giant crescents in which lie the five largest cities of Utah and three-fourths of her people, who live there because of the life-giving waters gathered and held in the deep snow packs of these mountains.

From ten to 40 miles in width, the Wasatch range extends in a north-south direction from Mt. Nebo on the south to beyond the Wyoming border on the north. It is widest in the middle, tapering to both ends. The eastern limits of the Wasatch are not so sharply defined for the slopes on the east are gentler and the ridges and valleys smoother than on the west, and often it is difficult to tell where the Wasatch Mountains end and the Uinta Mountains begin or the Uinta Basin to the south or the Wyoming Basin to the north, of which Parley's Park is one small valley in its southwest corner.

The section of the Wasatch Mountains which provides the setting for this study is near the southern end of the range. It is here the highest peaks are found. Both Mt. Nebo and Timpanogos are variously quoted as a few feet plus or minus 12,000 feet. On the ridges between Big and Little Cottonwood Canyons and between Little Cottonwood and American Fork Canyons are several peaks over 11,000 feet including a Twin Peaks on each ridge, Superior Peak, Mt. Baldy and Sugarloaf Mountain. The area around the Cottonwood Canyons is particularly interesting since it lies due west of the west end of the Uinta Mountains, which range is claimed to be the largest range of mountains in the United States, whose main axis runs in an east-west direction. This portion of the Wasatch is the most complex in structure and contains the only large intrusive bodies as well as the only important ore deposits in the whole range.

To orient the reader for a view around the rim of the basin, let us stand along the east side of Silver Lake or at the Brighton store. To the northeast and almost on a line between Brighton and Parley's Park lies Scott Hill with an elevation of 10,116 feet. Turning almost due east, you find the local Twin Peaks, elevation 10,420 feet. A little to the south of east is Clayton Peak, known to most as Mt. Majestic, elevation 10,721 feet. Two lesser peaks, 10,315 and 10,321 feet, succeed Clayton Peak. Almost due south of Brighton and overhanging Lake Catherine is Pioneer Peak, elevation 10,430 feet. This is the only peak from which all six lakes in Brighton Basin are visible. Beyond Pioneer Peak farther west lies Sunset Peak, a rugged conical mountain standing 10,648 feet. Southeast of Brighton are two of the highest peaks on the basin rim--Mt. Tuscarora, something over 10,600 feet, and Mt. Wolverine, elevation 10,795 feet. Mt. Millicent standing 10,452 feet, is in many ways the most spectacular peak viewed from the floor of the basin. Though somewhat lower than Tuscarora and Wolverine, it lies between them and the viewer down in the basin. Honeycomb Cliffs to the west

of the basin completes our circuit, and the bench mark atop its southern tip reads 10,479 feet. Scott Pass to the northeast is 9,450 feet, but from Twin Peaks around Honeycomb Cliffs the ridge is all above 10,000 feet, save the Alta-Brighton divide above Twin Lakes, which is 9,993 feet, only seven feet below 10,000 feet. Mt. Evergreen, a little over 9,800 feet, is a prominent feature north of Mt. Millicent. Its slopes rising west of Silver Lake are covered to its very crest with spruce-fir forest and some limber pine.

Big Cottonwood Canyon is one of many deep and rugged canyons which drain in an east west direction to empty their waters into the Great Salt Lake Valley, which is actually the eastern limits of the Great Basin. As the creek emerged from the canyon, its banks in the early days were lined for some distance out into the valley with Populus angustifolia. This interesting phenomenon led to the name, "Big Cottonwood Canyon." The waters of this canyon form an important part of Salt Lake City's water supply, and a water purification plant is located near the mouth of the canyon where the elevation is 5000 feet. In the fifteen miles from the mouth of the canyon to Brighton at its head, there is a rise of over 3,700 feet. There are 19 major side canyons which drain into and add their waters to Big Cottonwood Creek. Several of these have the word "Mill" incorporated in their names, as Mill D. This practice came about as a result of the lumber mills that were developed on both sides of the canyon almost throughout its whole length. There were somewhere in the neighborhood of 20 mills built.

Two source books are available for detailed descriptions of the actual Geology of the Big Cottonwood area: (1) "Geology of the Central Wasatch Mountains, Utah" being number 8 of the "Guidebook to the Geology of Utah" series published by the Utah Geological Society, 1952 and (2) "Geology and Ore Deposits of the Cottonwood-American Fork Area, Utah" by F. C. Calkins and F. S. Butler, 1943 being Geological Survey Professional Paper 201. The vandalized copy in the University of Utah Library is incomplete, principally in maps.

Both of these sources list some 25 or 26 geologic formations dating in age from Pre-Cambrian to recent. Of these, twelve are dominant in exposure, and as one drives up Big Cottonwood Canyon from the west they occur in the following order and are superimposed on each other unless faulting has interrupted:

(1) Big Cottonwood series--quartzite, sandstone and shale undifferentiated
(2) Mineral Fork tillite glacial till interbedded with varved shales
(3) Tintic quartzite--light colored, fine to coarse grain, conglomerate at base
(4) Deseret and Madison limestone, the former dark gray, dolomitic, cherty; the latter gray little dolomite and chert, many fossils
(5) Weber quartzite--gine grained quartzite and sandstone, some interbedded, cherty limestone
(6) Park City formation--limestone, sandstone, shale, quartzite and some phosphate rock
(7) Woodside shale--fine grained, thin-bedded red shale
(8) Thaynes formation--limestone, sandstone and shale

(9) Ankareh shale mainly red shale, some sandstone
(10) Clayton Peak stock diorite, gray fine grained } igneous stocks
(11) Alta stock--granodiorite light gray }
(12) Moraines--glacial till from Pleistocene glaciers

The floor of Brighton Basin itself is largely an alluvium of flood plain deposits of gravel, sand and silt. There are small similar deposits of alluvium scattered down along the floor of Big Cottonwood Canyon. The immediate slopes above the upper reaches of Big Cottonwood Creek are covered by a mantle or morainic material left after the retreat of the ice sheets which covered the area during Pleistocene time. This morainic material extends up the slopes right to the outcropping of the solid base rocks and from Brighton to Giles Flat it is over a mile wide, from there on tapering gradually to less than one-fourth mile at The Spruces. These morainic deposits extend for a considerable ways up each of the tributary canyons on both sides of Big Cottonwood Canyon. The South Fork of Mill D has the longest and most extensive deposit of same.

The base rock first encountered when ascending the slopes of Brighton Basin, south and west and the ridges to the northeast or east is the igneous granodiorite of the Alta stock. The first rock to the east and southeast in the draws and above 9,500 feet over the whole of Clayton Peak ridge is the diorite of the Clayton Peak stock. Twin, Mary, Martha and Dog Lakes as well as Mounts Millicent, Wolverine and Tuscarora lie wholly within the Alta stock. Lake Catherine lies half in this and half in the Deseret and Madison limestones. Silver Lake lies just outside the exposure of the Alta stock, though there are outcrops of the rock only a few feet from the southwest corner of the lake. Calkins (1943:35) observed that the area of outcrop of the Alta granodiorite is about three miles by one and one-fourth miles at its widest part and that it intruded an older igneous rock, the Clayton Peak stock which is a diorite.

Calkins (op. cit.:IX) gives this general statement: "The rocks of the area are in the greater part sedimentary strata ranging in age from Pre-Cambrian to Jurassic. All these strata are cut by intrusive stocks and dikes whose age is probably late Cretaceous or Tertiary . . . A large part of the area is occupied by intrusive igneous rocks. These belong chiefly to three stocks which crop out along the course of the Uinta axis and which are named in order of position from west to east, the Little Cottonwood stock of quartz monzonite, the Alta stock of granodiorite and the Clayton Peak stock of diorite. In age they run in just the reverse order, the Clayton Peak stock being the oldest . . . But all were presumably intruded within a relatively brief period, for they are so closely related in composition as to indicate that they were differentiated from a single body of magma." These massive intrusions have produced extensive metamorphism which is especially conspicuous in the limestone and other calcareous rocks, and to this is attributed the formation of the numerous large and small ore bodies.

The rest of the formations are so complex, faulted and spotty I simply refer the reader to the two sources mentioned above, particularly to plate three of Calkins and Butler (1943:separate map).

The rock from which Brighton Basin was carved, and in fact the whole of the Big and Little Cottonwood area is of a crystalline or highly metamorphic nature and forms peaks of rugged pinnacle-like form. In contrast, those peaks carved from horizontal sedimentary beds are of pyramidal form with alternate cliffs and talus slopes. Mt. Timpanogos to the immediate south is a beautiful example of this latter kind.

The earliest recorded mineral discoveries in the Cottonwood-American Fork area were made in 1865, and mining production has continued almost uninterruptedly since 1869 to the present Calkins and Butler (1943:X). Far less mining was done in Big Cottonwood Canyon than Little Cottonwood; hence the Big Cottonwood area was not so denuded of its timber for mining operations (op. cit.:6).

No grander view can be found anywhere in Utah than afforded the one who will learn a little of the setting which is the primary object of this chapter to give and then drive and hike with seeing eyes the length of Big Cottonwood Canyon from its cottonwooded mouth right back to its sheer pinnacled walls.

GLACIAL ACTION IN BRIGHTON BASIN

Brighton Basin is a beautiful glacial cirque lying at the head of Big Cottonwood Canyon fifteen miles south of Salt Lake City and then fifteen miles east into the Wasatch Mountains.

The main crest line of the Wasatch Mountains extends in a general north-south direction and stands four thousand to six thousand feet above the level of the Bonneville Basin to the west. The upper-most shore line of the ancient Lake Bonneville is about one thousand feet above the present lake level (Atwood 1909:73). The east slope of the Wasatch range is more gentle than the west and is generally well covered with vegetation. The main crest line of the Wasatch is near the east border of the range in the Big Cottonwood area.

This whole section of the Wasatch was visited by two different glaciers, both within Pleistocene time, and evidence clearly indicates the former ice sheet was more extensive than the latter (op. cit.:81). In the area between the Provo Peaks on the south and Mill Creek Canyon on the north, fully fifty glaciers that exceeded one mile in length have been determined, plus a number of smaller ones tributary to the main glaciers. Forty-six of these fifty glaciers were west of the crest, and seven of the larger ones reached the shore line of old Lake Bonneville (op. cit.:91). By far the greater concentration of these glaciers is to be found in the Big and Little Cottonwood and American Fork catch-basins. The explanation of this is to be found in two east-west divides lying west of the main crest, one between Big and Little Cottonwood Canyons and the other between Little Cottonwood and American Fork. These divides were largely responsible for the vast accumulations of snow in these basins (op. cit.:91). Brighton Basin, though as large as any, lies to the leeside of the Wolverine-Honeycomb Cliff divide, and as a result was not able to catch and hold as much snow as Little Cottonwood to the windward side. For this reason Little Cottonwood glacier extended twelve miles down its canyon, while Big Cottonwood glacier scarcely extended six miles.

Valleys carved out of glaciers are U-shaped, and their slopes smoothed off as far up their sides as the glacial ice reached. These stand in sharp contrast to the V-shaped canyons and the rugged slopes of those not worked by the ice (Atwood 1909:91). As approached from the west or Bonneville Basin, Big Cottonwood Canyon does not appear to have been glaciated. However, check your speedometer at Wasatch Boulevard and proceed 2.1 miles up to a point just below the narrows and you see the first signs of glaciation. From this point on until your speedometer stands at 4.0, the canyon shows unmistakable signs of glaciation. This is where the glacier that worked the full length of Mill B Fork entered and moved down the main canyon. The mouth of Mill B Fork is blocked by morainic material which was dropped as the ice finally receded and is now piled along the south wall of Cottonwood Canyon. A person, who can take the time to hike a little way up Mill B Canyon, will see some of the clearest and most notable glacial striae to be found anywhere. The evidence indicates the depth of the Mill B ice was from five to six hundred feet.

Now back to the speedometer reading and on to 6.6. This portion of Cottonwood Canyon above Mill B and almost to Mill A is totally unglaciated. This clearly indicates that the glaciated portion of Cottonwood Canyon below Mill B represents the maximum extension of the Mill B glacier, not at all the work of the main glacier far on up the canyon. Also this glaciation was the work of the earlier ice sheet (Atwood:86). The terminal moraine of the main glacier is located opposite Mill A, though the ice of the tributary glacier of Mill A extended fully a mile below this (op. cit.:87). At this point both Cottonwood Creek and Mill A stream show definite signs of having their courses altered in places by glacial morainic deposits. From its upper cirques to Mill A Gulch, Big Cottonwood Canyon was glaciated all the way down. There are five tributary canyons on the south above Mill A all of which contained glaciers that reached the ice of the main valley (op. cit.:87). These tributary glaciers persisted longer than the glacier of the main valley and pushed through the lateral moraines of the main glacier. This interweaving of moraines caused local ponding of the streams in a number of places.

Only one of the tributary valleys on the north side of Big Cottonwood Canyon above Mill A contained a glacier and that did not reach the main valley. This was Mill D, north fork, and Lake Desolation was formed at the head of its east fork. Some of the ice from the main glacier, however, pushed up some of these canyons on the north fully one-half mile and formed alluvial dams, partly of their own moraines, but largely of the material carried down by the tributary streams. Look for these standing four or five hundred feet above the floor of the main canyon. They indicate the depth of the ice of the glacier as being somewhat over five hundred feet (op. cit.:88).

As you stand at the head of Big Cottonwood Canyon, you become aware that you are in a circular basin surrounded by rugged mountain peaks, standing from 1200 to 2100 feet above the floor of the basin, which has a bench mark near Silver Lake reading 8730 feet. Silver Lake, in the lower basin, was formed by glacial drift. Twin Lakes are rock basins scooped out of the solid rock by the ice in one tributary cirque. Lakes Mary, Martha and Catherine and Dog Lake are rock basins located in another tributary cirque. The rugged angular forms of the serrated mountain peaks surrounding the basin are set off sharply from the smooth cleaned portion worked by the ice lower down.

In concluding this brief glacial history of Brighton Basin, it is interesting to note that this region was glaciated at two different times, and that the first glaciation was considerably more extensive than the second. The last advance of the ice from the mountains occurred during a late period in the history of Lake Bonneville (op. cit.:92). The interglacial period was of much greater duration than the time that has elapsed since the final melting of the glaciers. This is evidenced by the fact that the weathering and erosion of the morainic material has been very little and that the streams are still clearing away the glacial debris from their courses (op. cit.:93).

The following itinerary of the trip up Big Cottonwood Canyon is taken from The Guidebook to the Geology of Utah #8:

0 General Road junction at mouth of Big Cottonwood Canyon; Butlerville Road joins from west. Turn east up Big Cottonwood Canyon.

.2 Cross Big Cottonwood Creek at Power Plant.

.4 Wasatch National Forest Boundary.

.7 Purplish-black argillite with large mud-cracks (Big Cottonwood series) exposed on north side of road.

1.4 Narrows. Post-glacial stream-cut 30 to 40 feet in old glacial floor of canyon. Rocks exposed in "narrows" are quartzites of the Big Cottonwood series.

2.0 Large mud cracks preserved on steeply-tilted greenish colored shales and argillites of the Big Cottonwood series exposed to the right (west) of the road.

2.1 Cross Big Cottonwood Creek at foot of "Lower Stairs" (shift to 2nd gear for safety).

2.3 Stairs Gulch enters from the right (south).

2.9 Mule Gulch enters from the left (north).

3.0 Whipple Fork enters from the left (north).

3.4 Broads Fork enters from the right (south).

4.0 Mill "B" South Fork (Lake Blanche) enters from the right (south). Dark-colored argillites and light tan quartzites of the Big Cottonwood series are well exposed along the north side of road. Mouth of Mill "B" Fork is blocked by glacial moraines which extend down the canyon, lodged against the south wall.

4.1 Mill "B" North Fork enters from the left (north) at top of winding grade.

4.8 Elbow Fork enters from the left (north).

5.5 Mineral Fork enters from the right (south). Mineral Fork is the type locality of the Precambrian tillite.

5.6 Conglomerate at the base of the Mutual quartzite member of the Big Cottonwood Series outcrops at the north side of the road.

6.0 Abandoned pot holes in purple Mutual quartzite in old creek channel across creek to south side of road.

6.1 Unconformity in small ravine on north side of road between Paleozoic and Precambrian rocks; Cambrian Tintic quartzite on top of the Mutual quartzite with a low angular discordance, 10° to 15°.

6.3 Outcrops of Cambrian Ophir shale on north (left) side of road. Contains poorly preserved trilobite fragments and brachiopods of middle Cambrian age.

6.6 Mill "A" Fork enters from left (north). Note bleached and recrystallized limestones (Miss.) on north canyon wall. A small apophysis of diorite outcrops in the bottom of Mill "A" Fork about 500 yards from the highway.

7.0 Road cut in Weber qtz. (Penn.) on left (north) side of road.

7.7 Butler Fork enters from left (north). Weber qtz. on right (south) side of the road largely buried by till from Mill "D" South Fork glacier.

8.8 Road junct. to right (south) goes to Mill "D" South Fork. Famous Cardiff Mine is located near the head of Mill "D" South Fork.

9.2 Mill "D" North Fork enters from the left. Horse trail up Mill "D" North Fork leads to Mill Creek Canyon by way of Dog Lake and Little Water Fork.

9.4 Days Fork enters from the right (south). Rocks in the prominent ridge on the west side of Days Fork are Carboniferous (Penn. Weber qtz. and Morgan fm.) with N.E. strike and N. W. dip.

10.5 Cross Beartrap Fork creek from left (north). Cliffs of Weber qtz. are prominent on the north canyon wall.

10.7 Silver Fork enters from right (south). Silver Fork is cut through Miss. limestones with N. W. Strike and N. E. dip. Mouth of the tributary fork is blocked by lateral moraine of Big Cottonwood Canyon.

12.3 Cross stream from Mill "F" East Fork. Scott Hill directly east displays hornfels resulting from contact metamorphism of shales of the Triassic Thaynes formation.

12.5 Giles Flat to the right (west). Lake Solitude Fork to the S.S.W. Outcrop of Penn. Morgan fm. to the left, (east).

14.1 Brighton (Silver Lake) Post Office and store.

CLIMATE

The climate of Brighton Basin is generally cool in summer and severely cold in winter. The annual precipitation is large and is chiefly in the form of snow which settles in deep packs in the upper draws and flats. These packs often lie on the slopes far into the summer especially in shaded areas. Afternoon showers are common in the latter part of the summer. Early autumn snows in September generally melt off and are followed by some of the most pleasant weather of the year in October. Calkins and Butler (1943:6) add an interesting thought: Heavy snows frequently give rise to slides, particularly in Little Cottonwood Canyon. These snowslides are largely the result of the almost complete removal of the original forest growth. Far less mining was done in Big Cottonwood Canyon than in Little Cottonwood; hence the Big Cottonwood area was not so completely denuded of its timber for mining operations.

One would suppose and for long years it was assumed that when driving up Big Cottonwood Canyon, an increase in elevation would result in a uniform decrease in temperature. Recent research, however, by Dr. Walter P. Cottam of the University of Utah staff has demonstrated that this is not the case. For example, the temperature is no more severe, and in fact sometimes less, at the top of Mt. Millicent ski lift than it is at its base, a thousand feet below on the valley floor. Nor is the highest part of the canyon floor the coldest, but rather a point about half way down from Brighton was found to be consistently the coldest, due apparently to an inversion of air layers. Much more might be said regarding the weather and climate of Brighton and Big Cottonwood Canyon, but these few general statements must suffice.

PLANT COVER TYPES OF BIG COTTONWOOD DRAINAGE BASIN

GRASS-OAK TYPE AT MOUNTAIN BASE

Viewed from the broad flat Salt Lake Valley, Big Cottonwood Creek is seen to have breached the seemingly invulnerable wall of the Wasatch range and carved a canyon, deep, rugged and grand for fifteen miles back into the mountains where it terminates in the beautiful amphitheater that is Brighton Basin. In this segment of the long Wasatch front from which Big Cottonwood Creek empties its sparkling waters, the steep slopes are partially covered with a scattered growth of scrub oak (Quercus gambelii), mixed shrubs and a few junipers (Juniperus utahensis). Interspersed among the grosser vegetation is a cover of various grasses and both annual and perennial herbs. On the sharply rising south slope a conspicuous burn greets the eye. A dense cover of grasses and perennial herbs, principally Wyethia amplexicaulis seems to be doing a good job of holding the soil in place and preventing erosion. Other grasses and herbs prominent on these hillsides are Agropyron spicatum, Bromus tectorum, Lupinus caudatus, Crepis occidentalis, Eriogonum heracleoides, Gallium aparine, Lomatium dissectum, Melica bulbosa, and Viguiera multiflora.

OAK-MAPLE AND MIXED SHRUBS

This cover type becomes immediately prominent on the slopes above the mouth of Big Cottonwood Canyon particularly on the north side. The inclusion of mixed shrubs with the oak and maple in a single association makes it a large and important one which varies widely in its composition in various parts of the canyon, depending on the steepness and exposure of the slope, the elevation and the amount of moisture.

There are relatively pure stands of oak and of maple, but more often other shrubs are mixed with them. As regards bird habitat, however, there is no significant difference between the pure and mixed stands; so the two will be considered together. I mention only some of the more prominent shrubs which in their appropriate habitat become components of this association.

Of the other shrubs included in this formation: mountain mahogany (Cercocarpus ledifolius) is quite widespread, and there are several large stands (see map) particularly on the south exposed slopes. Snowbrush (Symphoricarpus oreophilus) is another very important shrub and is often found associated with aspen. Oregon grape (Berberis repens) is a low evergreen shrub extremely common, and its berries make it an important food plant for birds. Chokecherry (Prunus virginiana) and serviceberry (Amelanchier alnifolia) are found prominently both on the floor of the canyon and on the slopes as well. Sagebrush (Artemisea tridentata), rabbitbrush (Chrysothamnus viscidiflorus), mountain lilac (Ceanothus velutinus), ninebark (Physocarpus malvaceous), antelope brush (Purshia tridentata), squaw bush (Rhus trilobata), mountain ash (Sorbus scopulina), and several currants (Ribes species) are generally found on open well drained slopes, while elderberry (Sambucus racemosa) may be found with them or in damper more shaded areas.

The fruit of all these shrubs provides some of the most important food for many birds, particularly in the autumn and winter.

LOWER STREAMSIDE

In a narrow band along the lower reaches of Big Cottonwood Creek, from its mouth at an elevation of 5000 feet on up to a point a little above where Mill B empties its waters into the main stream (a distance of about 5½ miles) the streamside vegetation is quite distinctive. Elevationwise some 1600 feet has been climbed. The one tree which more than any other creates the character of this part of the stream is the narrow-leaf cottonwood (Populus angustifolia). Other trees and shrubs in this area, roughly in order of their prevalence are bigtooth maple (Acer grandidentatum), river birch (Betula fontinalis), boxelder (Acer negundo), chokecherry (Prunus virginiana) and scrub oak (Quercus gambelii). Toward the upper part of this portion white fir (Abies concolor), dogwood (Cornus stolonifera), and rose (Rosa woodsii) become more prominent. A few of the more common herbaceous plants are sedge (Carex geyeri), Dactylis glomerata, Ozmorhiza occidentalis, Taraxacum officinale, Smilacina, Stellata, S. racemosa and Lathyrus utahensis.

This association may be said to end when the narrow-leaf cottonwood fades out as the dominant tree, in spite of the fact that a few clumps are scattered along the creek up a few hundred more feet in elevation. The streamside vegetation of Big Cottonwood Creek could be divided into three zones (lower, mid and upper), and John Allan so treats it in his excellent map, which is found in the pocket at the back of this thesis. I could not, however, find sufficient evidence of distinct bird habitats for these three divisions, hence have divided the streamside vegetation into lower and upper.

MID-MONTANE CONIFER

This association is an important one in the lower part of Big Cottonwood Canyon, and five coniferous trees compose it. The first conifer and certainly the most prominent in the lower part of the canyon is the white fir (Abies concolor). Douglas fir (Pseudotsuga menziesii) is the other important tree in the lower part of the zone occupied by this climax. Colorado blue spruce (Picea pungens) occurs in small stands, and only a few small remnants of yellow pine (Pinus ponderosa) remain. In the upper part of this zone alpine fir (Abies lasiocarpa) becomes increasingly common where it is slowly gaining a foothold in the aspen belt which is only a seral stage of the mid-montane conifer climax. The Forest Service has done some planting of a variety of coniferous trees around the area of The Spruces (about 9½ miles above the mouth of the canyon). These latter can scarcely be included in this formation, and some of the species such as lodgepole pine (Pinus contorta) are higher montane trees.

ASPENS

Aspens form the largest plant cover type in Big Cottonwood drainage basin. John Allan (1961:abstract) states: "Despite its subclimax position in succession, the aspen forests of the mid-montane belt

occupy the greatest area of any forest tree. The various forest association types with their percentages are as follows: aspen 25.1%, upper montane conifers 23.5% and lower montane conifers 8.1%. This is of particular interest because aspen is not a climax type in the Wasatch region. In the early days of the pioneers these aspen-covered slopes of today were covered with dense coniferous woods. The answer to this riddle of why goes back, 88 years to the year 1874, when a gigantic fire swept the whole north side of Big Cottonwood Canyon. Now only small patches of conifers remain, most of these on north-facing slopes. Extensive logging operations and smaller fires in other parts of the canyon have created bare areas where aspens have taken over. But even in the most extensive aspen forests a few conifers, mainly alpine fir are appearing, and their numbers are increasing steadily. In the light of what we know concerning ecological succession it is only a matter of time until in the whole canyon the seral stage aspens will have to give way to the relentless march of coniferous legions.

How has this massive replacement of climax conifers affected the avifauna? For the majority of species it has been a boon, and for many years in the future the habitat is bound to improve, for as the clumps of conifers in the aspens increase in number and size the area of ecotones between the two will be greatly increased, and the edge between two types of plant cover seems always to provide the most suitable habitat for birds. But as the aspen, and for that matter any other subclimax association is crowded out by the climax, and these desirable ecotones are gone, the bird population both as to numbers of individuals and number of species will have to change.

To sum up this area of the discussion, due to disturbances introduced by man, the sylvaflora and the avifauna of Big Cottonwood Canyon are both in a definite state of flux with the latter dependent on the former for as the floristic structure changes, the bird inhabitants must also change.

UPPER STREAMSIDE

This association is an important one that merges often with parks and meadows. It forms the favorite habitat for a large number of birds. But to go back to where the lower and upper streamside zones are differentiated, at somewhat more than five miles from the mouth of the canyon at about 6800 feet elevation the narrow-leaf cottonwood fades out, and the streamside vegetation becomes predominantly willow (Salix pseudocordata) and (Salix subcerulea) and dogwood (Cornus stolonifera). This condition prevails for about three miles to about the area of The Spruces. Alder (Alnus tenuifolia) has been creeping in and from The Spruces on up to the head, Big Cottonwood Creek has alder and willow as the principal cover along its banks. In many places aspen and conifers grow right to the edge of the stream. Depending on the nature of the banks, this zone of streamside vegetation may be very narrow in steep walled places to several hundred feet in broader, flatter parts of the canyon. In this latter situation the trees are always interspersed to a greater or lesser extent with grassy meadows. In this upper streamside zone twinberry (Lonicera involucrata) becomes and is a drawing card for a number of birds, particularly the hummingbirds during the flowering season and the Pine Grosbeaks and others after the two black berries in each inflorescence ripen.

UPPER MONTANE CONIFER

Upper montane conifers cover the second greatest area of any of the plant associations in the Big Cottonwood drainage, being exceeded only by the aspens. A look at the map in the back will show the upper montane conifers to be concentrated principally in the southeast corner and all along the south side of Big Cottonwood Canyon. The few clumps on the north side of the canyon are all relatively small and are on north-facing slopes. The two main components of this formation are alpine fir (Abies lasiocarpa) and Engelmann's spruce (Picea engelmanni), however, the Douglas fir (Pseudotsuga menziesii) does not fade out with the white fir and the blue spruce and continues on into this formation and right to the top of the high ridges, where it even contributes to the krummholz.

A large pure stand of conifers is one of the most barren bird areas in the canyon. One may walk a long distance here and never see and scarcely even hear a bird. Move on around to where aspens appear and create a series of transition zones or ecotones between the two cover types, and birds appear. More must be said on this matter of ecotones and edge effect later in the paper.

As regards elevation this formation or climax type in certain areas dips down to quite low elevations. Thus, opposite Mill A Gulch on the north-facing slope to below 7000 feet, there is quite an extensive stand of alpine fir. In the main it is growing on a lateral moraine that extends out from Mill D South Fork, but it extends up the north slope for over 3000 feet in elevation. Probably this low clump of upper mountane conifers can be explained by the steep shady slope and by cold air pockets which settle there.

SUBALPINE SAVANNAH

This cover type will be considered as consisting principally of the sedge and grass meadows and the numerous clumps of willows, alders, aspens and conifers that they contain. It will refer to those areas in which the clumps of trees form a significant component of the cover, in contrast to the open flowering slopes where the larger trees are absent or form only an insignificant part of the cover (e.g. the ski slopes).

The principal plants of this association are the willows (Salix subcerulea) and (S. pseudocordata). There are some alder (Alnus tenuifolia) though this is found mainly along the streams. Salix scularina is found mainly on the slopes and not down in the flats. Twinberry (Lonicera involucrata) and currant (Ribes inerme) are also present. Aspens (Populus tremuloides), alpine fir (Abies lasiocarpa) and Engelman's spruce (Picea engelmanni) are almost always found in greater or lesser amounts.

Some of the more important and prominent herbaceous plants of this association, in systematic order are: grasses (Bromus), (Poa) and several others, several sedges (Carex), rush (Juncus), false Solomon's seal (Smilacina stellata), buckwheat (Eriogonum), starwort (Stellaria), columbine (Aquilegia caerulea), (Delphinium), buttercup (Ranunculus), meadow rue (Thalictrum fendleri), saxifrage

(Saxifraga), alum root (Heuchera), mitrewort (Mitella), cinquefoil (Potentilla), wild strawberry (Frageria), several species of lupine (Lupinus), clover (Trifolium), (Geranium), violet (Viola), fire weed (Epilobium angustifolium) (Ligusticum), cow parsnip (Heracleum lanatum), scarlet gilia (Gilia aggregata), stickweed (Lappula redowski), bluebells (Mertensia arizonica), several species of (Pentstemon), several species of indian paintbrush (Castilleja), elephant's head (Pedicularis), (Valariana), several species of (Aster) and (Erigeron), cone flower (Rudbeckia), milfoil or yarrow (Achillea), (Arnica), (Senicio), thistle (Cirsium), dandelion (Taraxacum officinale).

One item of interest must be mentioned here. With the possible exception of old woodpecker holes in trees, the favorite single nesting site in the whole Brighton area is in the young conifers that are to be found creeping into these mountain meadows. A total of 70 nests was found in these young fir or spruce at the following heights above the ground: 2-3 feet 16 nests; 4-6 feet 28 nests; 7-9 feet 17 nests; 10-12 feet 9 nests.

HERBACEOUS FLOWERING SLOPES

This cover type will be considered as consisting of those clearings on slopes where the larger trees do not form a significant part of the cover and range in elevation from the floor of the lower basin right on up to the slopes of the upper basin. The ski slopes form a large part of this association while the remainder are in areas that have been completely logged and or burned off, and where larger types of vegetation have not regained a foothold or are just beginning to seed in. The slopes above Solitude Lake are a good example of this latter type. The vegetation is almost entirely herbaceous, and it is entirely beyond the scope of this paper to name these in any kind of detail. The difference in altitude, slope exposure, amount of moisture and character of soil results in such a variety of species, it would merely be a cumbersome list. Following are the vernacular names if quite common, genera, and a few species in systematic order of some of the more prominent herbaceous plants: grasses (Bromus, Poa, Agropyron, Sitanion, Deschampsia, and Stipa), sedge (Carex), rush (Juncus), corn lily (Veratrum californicum), buckwheat (Eriogonum), knotweed (Polygonum), starwort (Stellaria), columbine (Aquilegia), (Delphinium), buttercup (Ranunculus), meadow rue (Thalictrum fendleri), hedge mustard (Sisymbrium), (Ivesia), cinquefoil (Potentilla), lupine (Lupinus), vetch (Vicia), geranium (Geranium), fire weed (Epilobium angustifolium), sweet cicily (Osmorhiza), wild parsley (Lomatium), (Polemonium), (Gilia), (Linanthus), stickweed (Hackelia floribunda), bluebells (Mertensia arizonica), horse mint (Agastache), (Monardella odoratissima), several species of (Pentstemon), several species of indian paintbrush (Castilleja), (Orthocarpus), bed straw (Galium), goldenrod (Solidago), several species of aster (Aster), several species of fleabane (Erigeron), everlasting (Antennaria), cone flower (Rudbeckia), golden eye (Viguiera), mule's ear (Wyethia), (Helianthella), milfoil (Achillea), wormwood (Artemisia), (Arnica), Senicio), thistle (Cirsium), dandelion (Taraxacum officinale).

MOUNTAIN LAKES

Within the limits of this transect there are several dozen mountain lakes, fully one dozen of these being found in the Big Cottonwood drainage basin. The only point on the rim from which all six lakes of Brighton Basin proper can be seen is the summit of Pioneer Peak. Unless the surrounding areas of meadow and forest be included this can scarcely be referred to as a botanic association. Divisions have to be made, however, and I've chosen to isolate the lakes to themselves as the surrounding vegetational areas form no significant habitat different from similar areas elsewhere in the transect.

The two birds which limit themselves wholly to the lakes and surrounding shores are the Spotted Sandpiper and the Solitary Sandpiper. California Gulls occasionally alight on them when moving across the Wasatch range, while the Violet-green, Tree and Cliff Swallows feed on insects in the air above them.

HIGH SAGE SLOPES

This association is more restricted than some; in fact, the only extensive areas of sage in the Big Cottonwood drainage are found on the slopes of Scott's Hill and on across Guardsman Pass to the Twin Peaks north of Mt. Majestic. Sage is the dominant plant of this association, but in most of the area there are smaller stands and interspersions of other shrubs that tend to grow well on drier well drained slopes. The sage seems able to gain a foothold mainly on the south-facing slopes but then spreads over the east and west slopes as well. There are no areas of sage of any extent on north-facing slopes. It was on the sage slopes of Twin Peaks that Brewer's Sparrows were seen on July 10, 1961.

ALPINE TUNDRA

This is one of the smallest associations in the area, being confined to only the highest peaks and ridges. John Allan has limited it on his map to the few peaks on the south side of the canyon over 11,000 feet, however there are alpine type plants that extend considerably below 11,000 feet. As to the character of the tundra vegetation, Oosting (1958:274) states, "Some grow in mats, some are in clumps, but all are dwarfed. . . . Mountains high enough to have a timberline support tundra, whose upward extent is limited by the snow line." Some of the more prominent families of plants represented in the tundra with genera are: Gramineae, with Poa and Festuca, prominent; Cyperaceae with several species of Carex; Caryophyllaceae with Silene, Stellaria, Cerastium and Arenaria represented; Cruciferae with Draba; Saxifragaceae with Saxifraga and Heuchera; Rosaceae with Potentilla and Ivesia; Linaceae with Linum; Primulaceae with Primula; Polemoniaceae with Polemonium, Phlox and Gilia; Scrophulariaceae with Penstemon, Castilleja and Pedicularis; Compositae with Aster, Erigeron, Senicio, Helianthella and others.

KRUMMHOLZ AND LIMBER PINE

This could be divided into two associations, but it is doubtful if there are any birds to be found in one of these divisions to the exclusion of the other. The Clark's Nutcracker e.g. feeds almost exclusively on the seeds of the limber pine, but they continually range through the krummholz. This formation is limited to the higher ridges and the very rim of the basin. The krummholz refers to the dwarf, stunted conifers at timberline and along the windswept ridges. Four conifers figure quite prominently in the krummholz. The two most common are the Engelmann's spruce (Picea engelmanni) and alpine fir (Abies lasiocarpa). In some spots Douglas fir (Pseudotsuga menziesii) makes up the greater part of the stand. Limber pine (Pinus flexilis), as the other three, depending on the exposure, may and does become a part of the krummholz.

Dwarfs yes, but majestic dwarfs, these trees, sublime in their resistance to the fiercest onslaught of the stormy blasts that lash their hard held domain. Dauntless too, are the birds that live in this challenging environment. The Townsend Solitaire, Rosy Finch, Clark's Nutcracker and the majestic Golden Eagle were the ones observed most consistently in and around the krummholz.

TALUS SLOPES AND HIGHER ROCKY EXPOSURES

This can hardly be called a plant cover type or association; however it does provide habitat for several important birds in this area. Around the rim of the basin, particularly in the Mt. Wolverine area, there are a number of quite extensive talus slopes. Rising above these talus slopes and actually the source of the materials composing them are sheer rock cliffs or steep jagged slopes. Vegetation in these areas is very scarce, being limited to a few scattered trees that have gained a foothold in crevices and small patches of alpine perennials.

Most of these talus slopes are limited to the upper basin just below the rim of the canyon. The few at lower elevations, e.g. just above Silver Lake do not figure in this connection.

The most distinctive bird in the talus slopes is the Rock Wren, while for the rocky cliffs and slopes in suitable locations the Golden Eagle, White-throated Swift, Violet-green and Cliff Swallows are found. A bird ranging in both of these divisions is the Black-crowned Rosy Finch.

PARLEY'S PARK

No attempt has been made to distinguish the various plant cover types in the Parley's Park section of the transect but to give a brief summary of the area past and present, I quote from Emerson and Lockerbie (1949:72-80) "When Ridgway came to Parley's Park, he described it as '. . . a luxuriant meadow, parts of it under cultivation, the hillsides being covered with a thick scrub of dwarf-oaks . . . the higher slopes covered with a dense forest of Coniferae. . . . The higher portions of the ravines are occupied by shady groves of tall aspens . . . bordering the lower portions of the streams grow scattered trees of narrow-leafed cottonwood . . . and luxuriant shrubbery of various species . . .'

"From Ridgway's description of Parley's Park we are able to compare some of the vegetational changes which may have affected its birds since that time. Most any view from a slight elevation on the north side of the valley gives an impression of vegetational luxuriance such as Ridgway described eighty years ago, but a closer examination reveals some drastic changes in the plants of the region.

"Lumbering brought the first great changes by practically eliminating the yellow and lodgepole pine and other large timber of the region . . . The mountains are again heavily wooded as in Ridgway's time, but with spruce and white fir on the lower slopes and with Douglas and black, or alpine fir on the higher slopes, interspersed with stands of quaking aspen. These trees are mostly young, closely spaced and less than one foot in diameter.

"The clearing of the land for farms and the cutting of timber for firewood and fences has reduced the cottonwood groves to two small stands. Ridgway made no specific comment on the large stands of clump willow, common in the upper mountain valleys where it borders springs and streams. It also occupies areas of a hundred acres or more, generally on boggy ground unsuitable for farming. Although pastured, these willow-grown areas are good nesting sites.

"Ridgway does not mention the large tracts of sagebrush that now cover several square miles of valley and on the lower, gentle slopes of mountains in the northeastern part of the park. Although little of the sagebrush land has been broken for farming, it has been badly overgrazed by sheep and cattle.

". . . Grasslands were burned over, small ponds and bogs drained, and willow patches grubbed out to develop hay and pasture. Throughout this upland valley, the higher ground is now planted in alfalfa and wheat. The lower lands, where not too wet, still grow native grasses that are cut for hay and the remaining bog areas are used for pasture. . . . The many small streams that wind throughout the meadows and pastures still provide suitable nesting environments for"(numerous water fowl and shore birds).

ECOTONES

Having described briefly these fifteen plant cover types and habitats, we come to the very important subject of the ecotones. As far as providing suitable habitat for birds is concerned, the ecotones seem to attract more birds than do the individual associations themselves. Odom (1959:278) states that an ecotone is a transition between two or more diverse communities, as e.g. between forest and grassland, and that it may have considerable linear extent but is narrower than the adjoining community areas. He further states that often both the number of species and the population density of some of the species are greater in the ecotone than in the community flanking it. This tendency toward increased variety and density at the ecotone is known as "edge effect."

This edge effect was one of the most interesting and important facts I observed in this study. As already mentioned the upper montane conifer forest is in itself a poor place to find birds, while the ecotone between the conifer and aspen is one of the best. The reason for

this is that the ecotone provides a greater variety of habitat and environment. I have also thought that a transition zone between a coniferous forest and almost any other type of plant cover provides both open forage area and immediate retreat for protection when needed. These ecotones exist wherever two cover types come together. Others which seem to provide favorable habitat for birds are the ones between the forest types and mountain meadows or streamsides. It must always be remembered that these ecotones are constantly changing, and so too are the birds that inhabit them.

1- TOTAL INDIVIDUAL SPECIES WEIGHTS (1-4) FOR EACH COVER TYPE

2- ESTIMATE FROM AERIAL INTERP. LINEAR FT. OF EDGE EFFECT FOR EACH SUB-BASIN

3- BASED ON WATER FEATURES & FORAGE (WET MEADOW) ESTIMATE SPECIALIZED HABITAT FOR MOOSE

TABLE I. ECOLOGICAL OCCURRENCE OF NATIVE BIRDS IN A BRIGHTON - PARLEY'S PARK TRANSECT OF THE WASATCH MOUNTAINS, UTAH

P - Permanent resident W - Winter visitant
S - Summer resident T - Transient C - Casual

X - Where observed 1 - Rare 2 - Moderate
O - No longer present 3 - Common 4 - Abundant
Nesting Habitat + = Greater degree - = Lesser degree

Name	Seasonal status	Cover Types: Parley's Park	Talus slopes and rocky exposures	Krummholz and limber pine	Alpine tundra	High sage slopes	Mountain lakes	Herbaceous flowering slopes	Sub-alpine savannah	Upper montane conifers	Upper streamside	Aspens	Mid-montane conifers	Lower streamside	Oak-maple and mixed shrubs	Grass-oak type at mountain base	Elev.: 6500 average (Parley's Park only)	9000 feet to top of ridge	7500 feet to 9000 feet	4800 to 7500 feet	Nesting Habitat: Small conifers in willows & meadows	Holes in trees	Covered bldg, rock and root ledges	Coniferous trees	Aspens and/or other trees	Willows, shrubs or low trees	Behind loose bark of trees	Utility poles, bare limbs, snags	In buildings or holes and caves	Holes in dirt banks or walls	Under waterfall, rocks along stream	Under bridges, vert. walls, cliffs	Bird houses	Talus slopes or cliff clefts	Rocky crags, cliffs or exposures	On ground, base of rocks, trees etc.	On ground, grassy meadows or fields	On ground, bare or sandy areas	On ground, fields, hedgerows, weeds	Sagebrush	Wet meadows, swamps, reeds, marsh
Great Blue Heron	S																		1	1																					+
American Bittern	S																		1	1																					+
Mallard	P																		2	2																					+
Gadwall	S																		1	1																					+
Pintail	S																		2	2																					+
Green-winged Teal	S																		3	3																					+
Cinnamon Teal	S																		3	3																					+
Turkey Vulture	S	1	1				1	1										1	1	1	1	1																			
Goshawk	P		1				1	1		1									1	1	1	1	1					+	+		+									
Sharp-shinned Hawk	P	2	2	2			2	1	1	1										2	1	1			+	-														
Cooper's Hawk	P		1	1			2	2	1	2	2								1	2	1	1			+	+														
Red-tailed Hawk	P	3	2				2	2		1							1	2	3	2	1	2			+	+														
Swainson's Hawk	S	2	2				1	1											3	2	1	3			+	+														
Amer. Rough-legged Hawk	W																		X																					
Ferruginous Hawk	P	1	1																1	1		1			+	+														
Golden Eagle	P		1				2	1		2										3	3				+	-														
Bald Eagle	T																			1	2	3	1																	
Marsh Hawk	P																		X						+	-														
Osprey	T																		3			3																		
Prairie Falcon	P	1	wide ranging flight																																					
Peregrine Falcon	P						1			1									1																					
Pigeon Hawk	T	+																							+														
Sparrow Hawk	P	3	2	1	1	2	1	1	1	1								1	3	2	1	1	3	+															
Blue Grouse	P		1		2	1	2	3	2	1									2	1	3	2	2			-	-													
Ruffed Grouse	P	1	3		2	2	2	3	2	2									2	3	3	1	2																
Sharp-tailed Grouse	P																		0			+																	
Sage Grouse	P																		2			2																	
Valley Quail	P	2	introduced																2	2		2																	
Ring-necked Pheasant	P		introduced																2			2																	
Sandhill Crane	S																		0																				
Sora Rail	S																		2			2																	
Black Rail	S																		?			?																	
American Coot	S																		2			2																	
Killdeer	P																		3			3																	
Common Snipe	S		1		1			1											3	1	1	1	3																
Long-billed Curlew	S																		1				1																
Spotted Sandpiper	S		1		1			3											3	2	3	3																	
Solitary Sandpiper	S				1			2											2	1	1	2		+		+		uses deserted nests										
Willet	S																		1			1																	
Least Sandpiper	T																		X																				
Western Sandpiper	T																		X																				
Wilson's Phalarope	S																		2			2																	
California Gull	S							1											2			2																	
Franklin's Gull	S																			1	1	1																	
Mourning Dove	S	2	1			1													3	1	1	1	3		+	+													
Barn Owl	P																		1			1																	
Screech Owl	P	1	1	1		1														1				+															
Great Horned Owl	P	2	2		2	2	2												2	2	2	1	2	+															
Pigmy Owl	P	1	1	1	1	1													1	1	1		1	+															
Spotted Owl	P						1														1	1		+															
Long-eared Owl	P	2	2	1																	1	1		+															
Short-eared Owl	P																			2	2																		
Saw-whet Owl	P	1	1	1															2			2			+ uses deserted nests													
Poor-will	S	2	2		2	2	2		1										1					+															
Common Nighthawk	S	3	2			1													2	2	2	2	2																
Black Swift	S			1			1												3	3			3																
White-throated Swift	S	wide ranging flight																			1	1																	
Black-chinned Hummingbird	S		2			1		1	1	1									2	1	1	2	1				+												
Broad-tailed Hummingbird	S		2	2	2	4	3	4	3	2	1								2	2	3	2	3		-	+													
Rufous Hummingbird	T								X										3	2	3	2	3		+	+	+												
Calliope Hummingbird	S		2			2		2	2	1									2	2	2	2	2																
Belted Kingfisher	S		2			1													1	2	1		1		+	+	+												
Red-shafted Flicker	P	2	2		2	3		3	2									2	3	2	3	3	3	+				+										
Red-headed Woodpecker	C																		X																			
Lewis' Woodpecker	P	1	1	1																1				+															
Yellow-bellied Sapsucker	S				2	3		3	2										2		3	2	2	+														
Williamson's Sapsucker	S							1										1	1		1	1	1	+														
Hairy Woodpecker	P		2		2	3		3										2	1	1	3	3	1	+														
Downy Woodpecker	P	1	1	1	1	2		2											1	1	2	1	1	+														
No. 3-toed Woodpecker	P				2			2										1			2	2		+														
Eastern Kingbird	S	1																	1	1			1		+	+	+												
Western Kingbird	S	2	1																2	2			2		+	+	+	-											
Scissor-tailed Flycatcher	C																		X																			
Ash-throated Flycatcher	S																		1			1		+														
Say's Phoebe	S																		1			1		+			-											
Traill's Flycatcher	S		1		1	1		1											3	1	1		3		-	+												
Hammond's Flycatcher	S				1		2												1		2	2	1		+	-												
Dusky Flycatcher	S	1			1	1	1	1											2	1	1		2		-	+	+											
Western Flycatcher	S				3	3	3																															

MATCH 1 ↓

[illegible]	S	1				1	1 1		+ +	+				
Western Kingbird	S	2 1				2	2 2		+ +	+ -				
Scissor-tailed Flycatcher	C					X								
Ash-throated Flycatcher	S					1	1	+						
Say's Phoebe	S					1	1	+			-			
Traill's Flycatcher	S	1	1 1	1		3	1 1 3		- +					
Hammond's Flycatcher	S		1	2		1	2 2 1		+ -					
Dusky Flycatcher	S	1	1 1	1 1		2	1 1 2		- + +					
Western Flycatcher	S		3 3	3		2	3 3 2	+						
Western Wood Pewee	S	2 2	2 3	3 3		3	2 3 2 3		+ -					
Olive-sided Flycatcher	S		1	2		2	2 1 2		+					
Horned Lark	P					1	1						- -	+ +
Violet-green Swallow	S	1 2	1 3 2	3 3	3	2	2 3 3 2	+			-	- + -		
Tree Swallow	S		2 2	2 2	2	3	1 2 2 3	+			-	-		
Bank Swallow	S					1	1				+			
Rough-winged Swallow	S					2	2				+	-		
Barn Swallow	S					3	3			+	+			
Cliff Swallow	S		3	3	3	3 4	2 3 4				+	+		
Purple Martin	S		1	1		1	1 1	+		-		+		
Gray Jay	C		1 1	1 1			1 1		+ -					
Steller's Jay	P	1 2	2 1 2	2		2	2 2 2 2		+					
Scrub Jay	P	3 3 2					3 1		+ +					
Black-billed Magpie	P	3 3 2				2	3 2		+ +					
Common Raven	P	1 wide ranging flight				1	1 1		-			-		
Pinon Jay	T	X				X								
Clark's Nutcracker	P			2 2	1 1	3 1 1	1 2 3 1		+					
Black-capped Chickadee	P	2 2 2	2 2 1	1 1		3	2 2 3	+						
Mountain Chickadee	P		2 2 3	4 3		2 2	2 4 3 2	+						
Common Bushtit	P	1					1		- +					-
White-breasted Nuthatch	P			1		2	1 2	+						
Red-breasted Nuthatch	P		2 2	3 2		2	2 3 2 2	+						
Pygmy Nuthatch	P	1	1 1				1 1	+						
Brown Creeper	P		1	2 1		1	2 2			+				
Dipper	P	2	3		1	1	2 2 1 1				+			
House Wren	S		3 2	3 2		3	3 2 3	+	- -	- -				
Winter Wren	W		1	1			1							
Long-billed Marsh Wren	P					1	1							
Canyon Wren	P	1 1 1	1 1	1			1 1							+
Rock Wren	S				1	2 3 2	2 3 2			-		+ -		
Catbird	S	1				2	1 2		+			+ -		
Sage Thrasher	S					3	3							+
Robin	S	2 2 2	3 3 4	4 4 2	2 1 1	2 4	4 4 4 4	+ -	+ - -					
Varied Thrush	T			X										
Alaska Hermit Thrush	T	X												
Rocky Mt. Hermit Thrush	S		1 2 2	3 3		2 2	1 3 2 2	-	+ - -				-	
Swainson's Thrush	S	2	3 3 3	3 3		3	2 3 3 3	+	- +					
Veery Thrush	S	1	1			1	1 1 1		+					
Western Bluebird	S		1 1	1			1	+		-		+		
Mountain Bluebird	S		2	2		2 3	2 2 3	+		-		+ -		
Townsend's Solitaire	S			1	2 2	2 1	1 2 1					-	+	
Golden-crowned Kinglet	P		2	2 2		1	2 1 1		+					
Ruby-crowned Kinglet	P		2 3 3	4 3		3	3 2 3		+					
Water Pipit	P				2	2 2	2						+ +	
Loggerhead Shrike	S					1	1		+					
Starling	P	2				2	2 2	+ -		+		+		
Solitary Vireo	S	2 2	1			2	2 1 2		+ +					
Red-eyed Vireo	T					X								
Warbling Vireo	S	2 3	3 2	2		3	3 3 1 3		+ +					
Orange-crowned Warbler	S	2	2 2	2		3	2 2 3		+				+	
Nashville Warbler	S		1 1	1 1			1 1		+				+	
Virginia's Warbler	S	1 1	1 1	1 1		2	1 1 2						+	
Yellow Warbler	S	3	1 1			3	3 1 3		+ +					
Audubon's Warbler	S		1 2 2	3 2		2	1 3 2 2		+					
Blk-throated Gray Warbler	S	1				1	1 1		- +					
Townsend's Warbler	T					X								
MacGillivray's Warbler	S	1	2 2	2		2	1 2 1 2		+				-	
Yellowthroat	S					1	1		+				+	+
Yellow-breasted Chat	S					1	1		+					
Wilson's Warbler	S	1	2	2			1 2						+ +	
American Redstart	S		1 1	1		1	1 1 1		+ +					
House Sparrow	P	2				4	2 4		+ +	- -		+		
Bobolink	S					2	2						- +	
Western Meadowlark	P					3	3						+ +	-
Yellow-headed Blackbird	S					3	3							
Red-winged Blackbird	P					4	4							+
Bullock's Oriole	S					1	1		+ -					+
Brewer's Blackbird	P					4	4		- +				+	-
Brown-headed Cowbird	P					2	2	parasitizes nests of other birds						
Western Tanager	S		2 3	3 2		2	3 2 2		+ +					
Black-headed Grosbeak	S	2 3	2 2	2		3	3 2 1 3		+ +					
Lazuli Bunting	S	2 2	1 2 1			3	2 2 3		+ +				-	-
Evening Grosbeak	S					1	1							
Cassin's Finch	S		1 2 3	4 3		2 2	2 4 3 2		+					
House Finch	P	2 1	1 1	1		2	2 1 2		+ +	-				
Pine Grosbeak	P	1	1 2	2 2			1 2 1		+					
Gray-crowned Rosy Finch	W	transient in transect												
Black Rosy Finch	P					1 1	1					+		
Pine Siskin	P		2 3 4	4 4	2	4	2 4 3 4		+ + +					
American Goldfinch	P					2	2		+					
Lesser Goldfinch	P	1	1 1			2	1 1 2		+					
Red Crossbill	P			3		2			+					
Green-tailed Towhee	S	2 2	2 2	2 2		2	2 2 2 2		+				+ +	-
Rufous-sided Towhee	P	2 2				2	2 2		+				+	-
Lark Bunting	S					1	1							
Savannah Sparrow	S					3	3						- +	- -
Grasshopper Sparrow	S					1	1						+	- -
Vesper Sparrow	S			1	1	3	3						- +	-
Lark Sparrow	S	1				2	2		+				+ +	+
Oregon Junco	W	3 3 3	2 2											
Pink-sided Junco	S		2	2 2	2 2	1 2	2 2 2						+	
Gray-headed Junco	S		3	3 3	3 2	1	3 3 2						+	-
Tree Sparrow	W		X											
Chipping Sparrow	S	2	2 2 3	3 3 2		3	2 3 3 3	+	+ - -					
Brewer's Sparrow	S				2 1	1 3	2 3						+	+
White-crowned Sparrow	S		4	2 4		2 2	4 3 2	+					+ +	
Fox Sparrow	S		2	2		2	2 2	+	+				+	
Lincoln's Sparrow	S		3	3		2	3 2						+ +	
Song Sparrow	S	3 2 3	1			3	3 2 1 3		- +	-			+ -	

TABLE 2 EARLIEST AND LATEST OBSERVANCES
OF BIRDS IN THE TRANSECT

Ridgway's field data
for Parley's Park, 1869
S - species seen
N - nest collected
C - bird collected

A - Audubon Society
L - C. W. Lockerbie
Ri - Robert Ridgway
R - E. B. Robinson
O - other

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Great Blue Heron						R-22				L-4			
American Bittern					L-21			L-6					
Mallard	S					L-5					L-13		
Gadwall				O-13			A-						
Pintail						A-		L-6					
Green-winged Teal						L-4		L-6					
Cinnamon Teal	S				L-21				L-7				
Turkey Vulture	S					R-17	A-10						
Goshawk						L-12						R-27	
Sharp-shinned Hawk	S					L-8					A-8		
Cooper's Hawk	S					A-13				L-4			
Red-tailed Hawk	S			L-18								R-20	
Swainson's Hawk	NC				L-27				L-7				
Amer. Rough-legged Hawk	S						A-8						
Ferruginous Hawk						L-15	A-13						
Golden Eagle	S	O-14										R-27	
Bald Eagle										O-			
Marsh Hawk	S				L-30				L-30				
Osprey				R-26									
Prairie Falcon	S						A-12						
Peregrine Falcon													
Pigeon Hawk									L-9				
Sparrow Hawk	S				O-5				L-30				
Blue Grouse	C		R-26								L-25		
Ruffed Grouse	C				O-14					O-23			
Sharp-tailed Grouse	S						Ri-						
Sage Grouse	C					L-13			L-7				
Valley Quail		O-12										R-27	
Ring-necked Pheasant		L-8											
Sandhill Crane	S						Ri-						
Sora Rail	C						O-1,26						
Black Rail	S						Ri-						
American Coot	S					L-5							
Killdeer	S				L-30				L-7				
Common Snipe	C	L-15								L-15			
Long-billed Curlew	S					L-29							
Spotted Sandpiper	C					L-5		R-19					
Solitary Sandpiper	S						A-8	R-23					
Willet	S						Ri-						
Least Sandpiper	S						Ri-						
Western Sandpiper					O-6								
Wilson's Phalarope						L-5	A-						
California Gull						L-11	A-14						

TABLE 2--Continued

Ridgway's field data for Parley's Park, 1869
S - species seen
N - nest collected
C - bird collected

A - Audubon Society
L - C. W. Lockerbie
Ri - Robert Ridgway
R - E. B. Robinson
O - other

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Franklin's Gull							R-18						
Mourning Dove	N					L-30			L-7				
Barn Owl									O-30				
Screech Owl					O-28								
Great Horned Owl	S		O-15									O-15	
Pygmy Owl								O-13					
Spotted Owl												R-7	
Long-eared Owl						R-10							
Short-eared Owl							L-7						
Saw-whet Owl							O-4						
Poor-will	S						L-10		R-19				
Common Nighthawk	NC						L-5			L-7			
Black Swift							R-24						
White-throated Swift	S					R-21				O-15			
Black-chinned Hummingbird	NC						L-12						
Broad-tailed Hummingbird	NC					R-21			R-25				
Rufous Hummingbird							R-6		L-12				
Calliope Hummingbird	S						L-11	L-31					
Belted Kingfisher	C						A-11		L-19				
Red-shafted Flicker	C			O-9									R-27
Red-headed Woodpecker	S						Ri-						
Lewis' Woodpecker							Ri-						
Yellow-bellied Sapsucker	C				O-16					L-21			
Williamson's Sapsucker	C					R-21			O-16				
Hairy Woodpecker	C			R-12								R-7	
Downy Woodpecker	S				O-16							A-8	
No. 3-toed Woodpecker						R-22					A-25		
Eastern Kingbird	C					A-30			O-10				
Western Kingbird	N					A-30				L-6			
Scissor-tailed Flycatcher							L-13						
Ash-throated Flycatcher	S						Ri-						
Say's Phoebe						R-14							
Traill's Flycatcher	NC						L-2			L-6			
Hammond's Flycatcher						R-21				L-6			
Dusky Flycatcher	NC					L-25				O-4			
Western Flycatcher	C					R-21			R-25				
Western Wood Pewee	NC						A-10			L-6			
Olive-sided Flycatcher	C					L-25			R-25				
Horned Lark	S						Ri-						
Violet-green Swallow	C					R-22				L-7			
Tree Swallow	NC					L-30			R-25				
Bank Swallow	S						Ri-						
Rough-winged Swallow	S						L-7		L-6				
Barn Swallow	N					L-30				L-7			
Cliff Swallow	S					L-27			R-25				

TABLE 2--Continued

Ridgway's field data for Parley's Park, 1869
S - species seen
N - nest collected
C - bird collected

A - Audubon Society
L - C. W. Lockerbie
Ri - Robert Ridgway
R - E. B. Robinson
O - other

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Purple Martin	S						L-12,29						
Gray Jay								L-14					O-27
Steller's Jay	NC		R-6										R-27
Scrub Jay	S												
Black-billed Magpie			L-15										R-27
Common Raven	S												
Pinon Jay										L-3			
Clark's Nutcracker	C			R-12								A-26	
Black-capped Chickadee	C		L-15										R-27
Mountain Chickadee	S		R-6									A-26	
Common Bushtit	S												
White-breasted Nuthatch	S						A-13				A-22		
Red-breasted Nuthatch	S		R-6									A-26	
Pygmy Nuthatch	S												
Brown Creeper	S			L-23								A-8	
Dipper	S			A-25									R-20
House Wren	NC						L-4			O-3			
Winter Wren							L-12				A-21		
Long-billed Marsh Wren	C							Ri26	Ri-8				
Canyon Wren								A-9				A-10	
Rock Wren							L-7			L-2			
Catbird	N						L-7		R-15				
Sage Thrasher							L-5		L-10				
Robin	N	L-1										R-23	
Varied Thrush											R12,21		
Alaska Hermit Thrush					R-24								
Rocky Mt. Hermit Thrush	C					R-21					L-4		
Swainson's Thrush	NC					R-22			R-25				
Veery Thrush	S						L-30	L-12					
Western Bluebird							O-3						
Mountain Bluebird	C					L-30				L-30			
Townsend's Solitaire						R-22						R-8	
Golden-crowned Kinglet				L-19							R-21		
Ruby-crowned Kinglet	S					R-22						R-7	
Water Pipit						R-22				A-5			
Loggerhead Shrike	S						Ri						
Starling									L-10	L-12			
Solitary Vireo	S						L-7		L-10				
Red-eyed Vireo							L-12						
Warbling Vireo	NC						L-3			O-3			
Orange-crowned Warbler	C					L-25				O-4			
Nashville Warbler							O-26		O-18				
Virginia's Warbler	C						L-5			O-6			
Yellow Warbler	N					L-19				L-7			
Audubon's Warbler	N					R-21					L-4		

TABLE 2--Continued

Ridgway's field data for Parley's Park, 1869
S - species seen
N - nest collected
C - bird collected

A - Audubon Society
L - C. W. Lockerbie
Ri - Robert Ridgway
R - E. B. Robinson
O - other

		Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Blk-throated Gray Warbler	S						Ri-						
Townsend's Warbler							O-28		L-18				
MacGillivray's Warbler	NC			O-30					L-22				
Yellowthroat	S						L-1						
Yellow-breasted Chat	S					L5,29							
Wilson's Warbler						L-8			L-18				
American Redstart	C						A-11						
House Sparrow			L-15										R-27
Bobolink						L-25		L-6					
Western Meadowlark	S				L-30				L-7				
Yellow-headed Blackbird	S					L-27		L-6					
Red-winged Blackbird	S		L-15					L-6					
Bullock's Oriole	NC					O-27		L-10					
Brewer's Blackbird	NC				L-30				L-7				
Brown-headed Cowbird	N						L5,23						
Western Tanager	N					O-27			O-5				
Black-headed Grosbeak	NC					L-30			O-4				
Lazuli Bunting	N					L-30			O-3				
Evening Grosbeak								O-6		L-11			
Cassin's Finch	NC			R-12							R-8		
House Finch	NC				L-29				L-7				
Pine Grosbeak		O-21								L-25			
Gray-crowned Rosy Finch											A-8		
Black Rosy Finch							R-23		L-12				
Pine Siskin	NC			R-12									R-27
American Goldfinch	S						L-4		L-7				
Lesser Goldfinch	NC						Ri19				A-8		
Red Crossbill							R-19		L-17				
Green-tailed Towhee	NC					L-27			L-7				
Rufous-sided Towhee	S				O-19			L-25					
Lark Bunting	C							Ri30					
Savannah Sparrow	NC						L-4		L-7				
Grasshopper Sparrow	S							A-1					
Vesper Sparrow	NC						L-4		L-18				
Lark Sparrow	S						L-4		L-7				
Oregon Junco					O-9								R-27
Pink-sided Junco					O-9					L-3			
Gray-headed Junco	S				O-16						A-8		
Tree Sparrow											A-13		
Chipping Sparrow	S					R-22			L-22				
Brewer's Sparrow	NC					L-21			L-7				
White-crowned Sparrow	NC					O-6							R-27
Fox Sparrow	N						L-4		L-19				
Lincoln's Sparrow	N					R-22			O-5				
Song Sparrow	NC	L-18											R-27

CHECK LIST OF BIRDS IN THE TRANSECT

Species

SPECIES ACCOUNTS

The following accounts for the 178 species of birds that have been observed within the transect are listed in the order of and under the scientific and vernacular names given in the 5th Edition of the American Ornithological Union Check List (1957). The seasonal status was determined from personal observation or from the manuscript of Dr. William H. Behle on "The Birds of Utah."

The sources are generally given in the following order:

1. Personal observations and nesting data of Paul Harkin
2. Utah Audubon Society
3. C. W. Lockerbie
4. Others
5. University of Utah Ornithology Museum
6. Robert Ridgway

Ardea herodias Linnaeus: Great Blue Heron
Summer resident.

The only records of this bird in the area of the transect are two observations by C. W. Lockerbie at Parley's Park, one on Sept. 7, 1947 and one in August, 1950. These are both late dates and probably pertain to migrants. Ridgway failed to note the species in the area. Peterson (1961:24) describes the nest as "A platform of sticks in tree in swamp or on rocky island; sometimes in marsh; rarely on cliff; in colony. Eggs (3-6) bluish."

Botaurus lentiginosus (Rackett): American Bittern
Summer resident.

The only two records for this bird are both for the Parley's Park area where C. W. Lockerbie observed two bitterns on May 21, 1950, and on August 6, 1950 he observed one. The nest, according to Peterson (1961:29) is "A platform of dead stalks among marsh plants; not in a colony. Eggs (3-7), olive."

Anas platyrhynchos Linnaeus: Mallard
Permanent resident.

C. W. Lockerbie has eight observations for Parley's Park totaling about 60 individuals, which indicates they are fairly common. Since all the dates were between June and September, they probably breed there in limited numbers. N. R. Whitney (Utah Aud. News, March, 1953:16) observed Mallards at Parley's Park in April and on July 1, 1951. A pair in partial eclipse plumage was seen on the latter date.

Ridgway (1877:373) includes this bird in his Parley's Park list and indicates its habitat as meadows, marshes and brooks. The nest is built, generally in marshy spots of grass and reeds and lined with down. Occasionally they will build in a tree; eggs (8-15) are greenish gray.

Anas strepera Linnaeus: Gadwall
Summer resident.

N. R. Whitney (Utah Aud. News, March, 1953:16) observed Gadwalls breeding in Parley's Park during the summer of 1951. There is one

specimen in the University of Utah museum taken near Park City on April 13, 1930. The nest is similar to that of the Mallard; eggs (7-13) dull white.

Anas acuta Linnaeus: Pintail
Summer resident.

C. W. Lockerbie on Aug. 6, 1950 observed ten pintails at east Parley's Park, and N. R. Whitney (Utah Aud. News, March, 1953:16) notes that during the breeding season of 1951 most pintails were in the marshy ponds of Salt Lake valley and Parley's Park. The nest is of grass and reeds, lined with down and may be built some distance from water--or near it. Eggs, (6-12) are olive green.

Anas carolinensis Gmelin: Green-winged Teal
Summer resident.

C. W. Lockerbie provides all the data for this bird. He has records for six trips, all to Parley's Park. On five trips during June and July he saw from one to four per trip. On Aug. 6, 1950 he observed about 50. They probably breed sparingly at Parley's Park. Gleb Kashin has observed Green-winged Teal on and around Mt. Dell Reservoir. The nest is of grass and reeds, lined with down, placed on the ground near or some distance from water; eggs, (6-18) dull white or buff.

Anas cyanoptera Vieillot: Cinnamon Teal
Summer resident.

C. W. Lockerbie has observed this bird on seven trips to Parley's Park with a total of 60 individuals, which indicates they are fairly common in the area. The nest is similar to that of the Green-winged Teal, and the eggs, (6-14) are dull white.

Ridgway (1877:376) includes this teal in his Parley's Park list and gives its habitat as meadows, marshes and brooks.

Cathartes aura teter Friedmann: Turkey Vulture
Uncommon summer resident.

On the afternoon of June 17, 1960 one was observed flying over Big Cottonwood Canyon opposite the Episcopal church campground. The small bare head and uniform dark color made the identification unmistakable. This was the only vulture that I observed in the Wasatch. The nest, according to Booth (1960:92) "Eggs laid on bare ground in caves, ledges of cliffs, or even in hollow stumps or logs; eggs, 1 to 2, creamy white blotched with brown."

The Utah Audubon Society records two Turkey Vultures at Brighton seen on July 11, 1954 and one each for July 10, 1955 and July 8, 1956. Gleb Kashin observed one on the Twin Lakes-Solitude Trail in 1958 and another at Mt. Dell the same year.

Ridgway (1877:375) includes it in his list of birds for Parkley's Park. He does not, however, mention any center of abundance or give any nesting data.

Accipiter gentilis (Linnaeus): Goshawk
Uncommon permanent resident.

One sight record by Gleb Kashin and myself on July 24, 1960 high on the east slope of the basin is the only observation I have for the Brigh-

ton area for that year. We got only a fleeting view, but its size and shape preclude its being any other hawk. It was in the same general location where the Goshawk has been seen before.

On June 24, 1961 Gleb Kashin and I observed from Silver Fork a large hawk soaring in the neighborhood of Redman's Flat. We both identified it as a Goshawk from its large size and general configuration. We drove to the camp and again scanned the sky but saw nothing. Taking a chance, we hiked to a large nest located the year before, 200 yards from my 1960 summer camp. Before we even got to the nest, the female came screaming at us from high in spruce-fir woods. A climb up an adjacent tree disclosed that the old nest was empty, as it had been the year before. The hawk was very bold in diving down on us, once knocking Gleb's hat off. Gleb, aided by the adult, located the new nest about 50 yards west of the old one, 25 feet up in a dead alpine fir. The nest contained three young in full down, judged to be about one week old. The next day with Reed Ferris, pictures were taken of the nest and young. An interesting side note at this point: a mountain chickadee was feeding young in an aspen less than 30 feet from the Goshawk nest and at about the same height. We flushed what appeared to be a Cooper's Hawk from a thick spruce about 100 yards from this nest, and very close to the tree where I found a Cooper's Hawk nesting in 1960. However, we could not locate a nest, but on Aug. 24, 1961 we did find a large hawk nest 50 feet up in a large spruce. It was empty. This would be an interesting observation if two accipiters could be shown to nest in such close proximity.

The next day Dean Stock and I drove to the site, and Dean secured one of the young for observation and study. This bird we had with us on the Gunnison River trip in Colorado, during which time it grew to large size with perfect feathering throughout. Dean Stock and Clayton White visited the nest July 22 to take pictures and found the other two young had been banded by Reed Ferris and were able to fly. While climbing the tree Clayton was hit twice by the adult hawk, both times receiving lacerations from her talons. The second stoop she hit him on the back and knocked the wind out of him. Dean noted that the bird he had raised was in better feather condition than either of the two left in the nest, suggesting that food may not have been abundant for hawks in the Brighton area.

The Utah Audubon Society lists sight records for two Goshawks on their July field trip to Brighton for 1949 and one each for 1948, 1955, 1957, 1958 and 1959. C. W. Lockerbie lists a questionable sight record for June 1938 and one definite record for a Goshawk sailing over the Mt. Majestic region on Sept. 3, 1951.

The nest is a platform of branches and twigs. Each time the nest above was observed there were several sprays of fresh foliage, both coniferous and broadleaf, seemingly brought in to keep the nest fresh. Eggs are 3-5, whitish occasionally with brown spots.

Ridgway does not even mention the Goshawk in the Parley's Park area, but a specimen in the University of Utah museum taken in the aspens at 6900 feet elevation two miles southeast of Snyderville in Summit County shows they do inhabit that area.

Accipiter striatus Vieillot: Sharp-shinned Hawk

Sparse resident.

I have only two sight records of this hawk. The first was in the neighborhood of The Spruces on Oct. 9, 1959 when Clayton White spotted a small hawk in a dead tree along Big Cottonwood Creek as we drove by enroute to Brighton. The other observation was of two birds flying around the basin on June 26, 1960. They were some distance away, but their small size and square tails identified them as this species. The nest and eggs are similar to that of the Goshawk only smaller. Harkin (1961:33) records this nesting record: June 18, 1922 eggs (4) Brighton. Gleb Kashin has observed nests at Brighton, at the mouth of Big Cottonwood Canyon and at Mt. Dell.

The Utah Audubon Society has records of one seen on their July field trips for 1951, 1952, and 1953. They also have a record for June 12, 1938.

C. W. Lockerbie has personal records of one each for June 8, 1937 and June 13, 1937 at Community Camp and one on Sept. 7, 1947 at Parley's Park. Tom Dewey (Utah Aud. News, Dec. 1950:64) observed a Sharp-shinned Hawk striking at a Junco at Lake Catherine. Again on Nov. 8, 1952 Dewey (Utah Aud. News, Dec. 1952:33) observed one in the upper Brighton Basin.

A specimen in the University of Utah museum was taken from Brighton on Sept. 1, 1945 at an elevation of 9500 feet.

These last three records are the only ones I have for higher elevations, and although not conclusive, they do seem to lend credence to the generally accepted idea that the Sharp-shinned Hawk ranges lower in elevation than the Cooper's Hawk. It would seem that some of them move up to the higher mountains in the fall, but generally speaking the Sharp-shinned Hawk is a hawk of the lower stream bottom and scrub oak zone.

Ridgway (1877:375) includes this hawk in his Parley's Park list, though he did not record any nests. He lists quite a wide range of habitats occupied, such as shrubbery along streams, scrub oak and aspen groves.

Accipiter cooperii (Bonaparte): Cooper's Hawk

Common Permanent resident

The Cooper's Hawk was the most commonly observed hawk in the Brighton area with twelve different observations being made between May 22 and Aug. 3, 1960. The first one was about 6:30 a.m. on May 22, when a large female flushed out about 30 feet ahead of me at the north edge of Silver Lake and beat a hasty retreat in the direction of Evergreen Mountain. Just a few feet further along the trail a Ruffed Grouse flushed out and headed in the opposite direction. At this time there was still considerable snow on the ground. Whether the hawk was stalking the grouse, I don't know.

Two nests were found. The first on June 26, 1960 was about 40 feet up in a large dense fir between the Episcopal Camp and Redman's Flat. It was well concealed in heavy spruce-fir woods, and Gleb Kashin and I had difficulty spotting the nest, even after we saw the female take off on our approach. The second nest was found Aug. 3, 1960 about one mile below Lake Blanche right along the trail about 30 feet up in a large aspen. I had walked past the nest and stopped to rest. A faint cry uttered several times by a young one just out of the nest attracted my attention to him and then to the nest about 40 feet back down the trail. Two young were still in the nest. The mother returned while I was up an

adjacent tree taking pictures, but apart from a few shrill cries, she remained quite calm and kept on the outskirts of things. The nest was similar to that of the preceding two species.

The Cooper's Hawk is not a soaring bird but rather is a fast flying marauder of woodland areas. One morning while returning to Redman's flat from an early trip to Silver Lake, I was alerted by a shrill chorus of alarm notes as small birds dashed into thick cover. A few seconds later a female Cooper's Hawk sped by in a swift arc barely 30 feet overhead. She was only about 200 yards from her nest, the first noted above.

There must have been another nest somewhere on the lower slopes of Evergreen Mountain, as that was where I saw the Cooper's Hawk most frequently. Five of the twelve observations were in that area; four were near the first nest; two on the east slope of the basin, and one observation of four birds up Mill B.

The Utah Audubon Society has observations of one each on its July field trips for the years 1945, 1947, 1950, 1956, 1958 and 1959. The one in 1945 was questionable.

C. W. Lockerbie has five additional records for Brighton, one for Mill Creek Canyon, and three for Parley's Park area. N. R. Whitney (Utah Aud. News, April, 1953) observed one at The Spruces on May 27, 1951, which was his highest record at the time. Gleb Kashin has observed the Cooper's Hawk at Mt. Dell.

There are two specimens from the transect area in the University of Utah museum: one from Alta, 9000 feet; the other from the head of Mill Creek Canyon, 8000 feet in spruce-fir woods.

Ridgway (1877:375) has a Cooper's Hawk on his list for Parley's Park. He mentioned its habitat as being shrubbery along streams, aspen groves and scrub oaks. My own observations showed that this bird occurs mostly in spruce-fir habitat. The Cooper's Hawk in general ranges higher than the Sharp-shinned Hawk which is very similar to it in behavior.

Buteo jamaicensis (Gmelin): Red-tailed Hawk
Common Permanent resident

The red-tailed Hawk is the most common of the buteos or soaring hawks in the Wasatch. My observations number four. On April 9, 1960 a pair was observed at the mouth of Big Cottonwood Canyon. They were obviously courting and finally were observed mating after alighting together atop a flat topped conifer. On July 27, 1960 we observed a pair soaring over the east slopes of the canyon at Silver Fork. On Aug. 8, 1960 one was observed near the top of the ridge west of The Spruces. The fourth observation and the only one of the Red-tailed Hawks in the Brighton Basin was on Aug. 11, 1960 of a pair soaring in the neighborhood of Scott's Peak. Peterson (1961:65) describes the nest as, "A platform of sticks in forest tree, isolated low tree, saguaro, cliff, etc. Eggs (2-4) spotted." Harkin (1961:36) records these nesting data: April 5, 1925 eggs (3) Cottonwood Canyon, Salt Lake County and April 11, 1925 eggs (3) Cottonwood Canyon, Salt Lake County.

The Utah Audubon Society records observations of Red-tailed Hawks on its July field trips for 18 out of the past 26 years as follows: four for 1950, three each for 1949 and 1953, two each for 1951, 1952, and 1959, and one for each of the years 1936, 1937, 1940, 1941, 1942, 1944, 1945,

1948, 1954, 1955 and 1956. The four in 1950 are accounted for by a nest at Twin Lakes. This indicates that the bird does nest at higher elevations. Reed Ferris and party observed an adult feeding a young bird at the nest near Twin Lakes on July 9, 1950 (Utah Aud. News, Aug. 1950:41).

C. W. Lockerbie lists fourteen observations for Brighton exclusive of the July field trips, three for Big Cottonwood Canyon, three around The Firs in Mill Creek Canyon, and four observations for Alta Basin. One of these was of particular interest in that over twenty-five redtails were seen on Sept. 1, 1940, evidently migrating south. On May 21, 1950 he observed fifteen and found one nest along the Old Mormon trail. He also made thirteen observations totaling 26 birds in the Parley's Park area. Most of these were in pairs. Tom Dewey (Utah Aud. News, Dec. 1950:63) observed a Red-tailed Hawk at Lake Catherine on Oct. 22, 1950.

There are three specimens in the University of Utah museum: one from Brighton 8750 feet, one from Parley's Park and the third from the junction of Parley's and Lamb's Canyons.

Ridgway (1877:375) notes the Red-tailed Hawk in his list of birds in Parley's Park and mentions it as appearing in coniferous woods, but he obtained no specimens.

Buteo swainsoni Bonaparte: Swainson's Hawk
Summer resident.

The Swainson's Hawk is much more confined to the valleys than the Red-tailed Hawk. A pair was observed about one mile up the creek from the head of Mt. Dell Reservoir during the latter part of May 1960. The nest is similar to that of the Red-tailed Hawk. Harkin (1961:39) records these nesting data:

May 16, 1897 eggs (2) Parley's Canyon 25 feet up a pine
May 3, 1898 eggs (2) Parley's Canyon 20 feet up a cottonwood

The Utah Audubon Society reports one on their July field trip in 1957 and one with a question mark for 1941. C. W. Lockerbie has twelve observations totaling 17 birds for the Parley's Park area. In all cases they were seen singly or in pairs. N. R. Whitney (Utah Aud. News, April, 1953:20) has an interesting observation for this same area for July 1, 1951 in which he observed a Swainson's Hawk alternating with a Marsh Hawk in attacking a Golden Eagle.

Interestingly enough the Swainson's Hawk is the only raptor which Ridgway (op. cit.:586-8) collected in the Parley's Park area. Between June 25 and July 2, 1869 he collected three adult males and two adult females and one egg fragment. Coming back to Parley's Park on Aug. 10, 1869 he collected three hawks with normal plumage and two with fuliginous plumage and one female juvenile. He also makes the note that they were common in Parley's Park. Many nests were found, always low down, often merely a few feet from the ground in scrub oaks or aspens. His party reared four young ones while in the area. He (op. cit.:375) mentions Swainson's Hawk as common in the shrubbery along streams and scrub oaks.

Buteo lagopus (Pontoppidan): American Rough-legged Hawk
Winter visitant.

I do not have any observations of this hawk in the area of this study, for the reason that its breeding range is farther north. However, the

Utah Audubon Society has one lone record of two Rough-legged Hawks seen in the Brighton area on July 8, 1956. This seems questionable. Equally strange is that Ridgway (1877:373) includes this species in his list of birds seen at Parley's Park and gives its habitat, coniferous woods, rocks, banks, etc. This was a case of mistaken identity, his observations probably applying to the following species.

Buteo regalis (Gray): Ferruginous Hawk
Permanent resident.

This species was not observed personally in the area of the transect. The nest according to Peterson (1961:71) is, "Of sticks on cliff or tree. Eggs (3-5) blotched."

The Utah Audubon Society records one at Brighton on its July field trip for 1958. C. W. Lockerbie does not list the bird for Brighton, but he does have two observations for Parley's Park, one on June 29, 1947 and two on June 15, 1948. Ridgway did not include this species in his list for the Parley's Park area.

Aquila chrysaetos (Linnaeus): Golden Eagle
Permanent resident.

The Golden Eagle was the most frequently seen of the raptors in my summer's work, with 29 sight records. On Oct. 12, 1959 while climbing from Twin Peaks to Mt. Majestic, two immature Golden Eagles, as evidenced by the white patches on their under sides, were observed. Again on Oct. 18 on the same ridge, though much lower down, a pair of eagles was obsered, but these were adults with full solid color. On Nov. 7, 1959 on a snowshoe trip to the top of Mt. Majestic a pair of adults was seen soaring over the peak. On Nov. 7, 1959 on a circuit of the basin rim an adult pair soared overhead several times and disappeared over the Honeycomb Cliffs. On June 8, 1960 a pair was seen soaring over Twin Peaks. From June 8 to July 7 eagles were sighted only four times, though they were doubtless around. But from July 8 on into August there were only five out of the next 26 days I was at Brighton that I did not see eagles. I would surmise from this that young were maturing about this time, and that the parents were out early and late foraging for the young. On July 22, 1960 two eagles were observed from the Solitude saddle as they circled the Honeycomb Cliffs. One of them had a Snowshoe Rabbit dangling from its talons. Hoping to find the location of their nest, I watched this one for almost twenty minutes, but finally it disappeared far to the northwest over the ridge.

Booth (1960:103) describes the nest as, "A bulky platform of sticks placed either high in trees or on ledges of cliffs; eggs, 2 to 3, white, either unmarked or, more often, heavily spotted and blotched with brown."

The Utah Audubon Society has records of Golden Eagles on twelve of its July field trips as follows: two seen on the trip for 1954, 1955, 1956, 1958 and 1960 and one each for 1940, 1947, 1950, 1952, 1953, 1957 and 1959.

C. W. Lockerbie saw two at Community Camp and two at the North Fork of Mill D on June 12, 1938, three at the South Fork of Mill B on July 4, 1938 and two on July 14, 1940 at Brighton, two at Alta on Sept. 1, 1940 and one each at Alta on April 9, 1950 and Aug. 12, 1950, one at Brighton on July 13, 1947, and one in September 1947 at Hi Ute Ranch at Parley's

Park and two at Brighton on July 8, 1956. On July 1, 1951 N. R. Whitney (Utah Aud. News, April, 1953:20) observed a Golden Eagle at Parley's Park being attacked alternately by a Swainson's and a Marsh Hawk. Gleb Kashin has observed the Golden Eagle in the Mt. Dell area.

There is one specimen in the University of Utah museum from The Spruces, Big Cottonwood Canyon.

Ridgway (1877:375) includes the Golden Eagle in his Parley's Park bird list and notes its habitat as coniferous woods, rocks, banks, etc. Certainly it is a lover of the highest crags and ridges we have to offer in Utah.

Haliaeetus leucocephalus (Linnaeus): Bald Eagle

Fall and spring migrant.

It was not my privilege to see this magnificent bird in the study area. However, Mrs. Fern Tainter reports one observation in 1956 near the mouth of Parley's Canyon, and the rangers in Brighton reported they had seen it passing south over the west ridge several times in the late fall. It probably does not now nest in this part of Utah, but merely passes through on its semi-annual migrations. Peterson (1961:73) describes the nest as, "A bulky platform of sticks in tall tree, cliff. Eggs (2-3) white."

Circus cyaneus hudsonius (Linnaeus): Marsh Hawk

Permanent resident.

Only in the Parley's Park area of our cross-section do we have any record of observations of the Marsh Hawk, and this is to be expected since, as Peterson suggests, it breeds in marshy country throughout its range (1941:41). It nests on the ground most of the time. The nest is made of grasses and reeds, placed on the ground in marshy area, or as I have observed, high on a dry hillside a half mile from water. Eggs, 4-9, dull white sometimes spotted with brown.

C. W. Lockerbie has eight observations totaling eleven birds. They were all seen in Parley's Park and range from May 30 through to a Sept. 30. N. R. Whitney (op. cit.) records an interesting observation of a Marsh Hawk teaming up with a Swainson's Hawk, and the two alternating in making attacks on a Golden Eagle. Gleb Kashin has observed the Marsh Hawk both in Mt. Dell and City Creek Canyons.

Ridgway (op. cit.:375) includes the Marsh Hawk in his list of birds for Parley's Park and gives as its habitat meadows, marshes and brooks.

Pandion haliaetus carolinensis (Gmelin): Osprey

Occasional migrant.

Although this bird does not apparently breed in this part of Utah, and none of my regular sources report it, it does migrate through, and I do have one observation just north of our cross-section of the Wasatch. Early on the morning of April 26, 1960 just after getting out of the car on the road above the upper end of Mt. Dell Reservoir, I heard a splash and looked down expecting to see where a beaver had dived. Instead, I saw an Osprey rising in narrow circles from a dive. About 100 feet above the water it paused in mid-air to give a tremendous shake to rid itself of the water. Later, after I got down to the meadow, the

Osprey circled unafraid overhead. I watched the bird dive twice more, and each time the dive was followed by the water-ridding shake. In none of the three dives did I see any evidence of a successful catch; although it may have secured a small fish on any one of them. The nest according to Peterson (1961:76) is "A bulky mass of sticks in dead tree, rock pinnacle, or on ground. Eggs (2-4) blotched." Ospreys may build year after year on top of the old nest till quite a tower results. A variety of smaller birds have been observed to nest in crevices in these structures while the Ospreys nest on top.

Falco mexicanus Schlegel: Prairie Falcon
Permanent resident.

I have no personal observations of the Prairie Falcon in this area. The Utah Audubon Society reports observations for July 1946, July 12, 1953 and a probable record for July 1959. Gleb Kashin observed two soaring above the trail to Alta. One was a light color phase and the other dark. Ridgway (1877:577) includes them in his Parley's Park list and makes the following comment: "They were ... common in the rocky canyons of the Wahsatch". As their name suggests, they feed over the prairies but nevertheless like rocky cliffs in which to nest. Thus they would be found in rocky canyons along the facing slopes of many mountain ranges. They occasionally make a swing back into the deeper part of the mountains, especially up a canyon such as Big Cottonwood. The eggs are laid on a bare ledge or hole in a cliff, 3-6 in number and reddish brown spotted.

Falco peregrinus Tunstall: Peregrine Falcon
Permanent resident.

I have no records at all for the transect of this study but will include it as a "Bird of the Wasatch", because of a pair once known to nest in the Wasatch near Ogden, only 50 miles to the north. This magnificent bird is becoming quite rare and should be protected. The nest according to Peterson (1961:78) is, "In scrape on ledge high on cliff. Eggs (2-4; 7) reddish, spotted."

Falco columbarius Linnaeus: Pigeon Hawk
Migrant, spring and fall.

There is just one record that I have run across for this little falcon. It nests north of Utah; so is only seen here as it migrates. C. W. Lockerbie observed one in American Fork Canyon on Sept. 9, 1933. Booth (1960:104) describes the nesting situation as follows: "Eggs laid in cavities in trees or on ledges of cliffs; eggs, 4 to 5, white to rich chocolate brown."

Falco sparverius Linnaeus: Sparrow Hawk
Permanent resident.

Ten observations, and the longest sustained dive and glide I've ever seen made by a bird, make up my record for this smallest of our hawks. On the afternoon of June 23, 1960 while on a circuit of the basin rim from Honeycomb Cliffs around to Scotts Hill, I was sitting on a rock near the top of Mt. Majestic when I noticed a Sparrow Hawk sailing around in the direction of Heber City. It finally alighted on a dead snag. After a few

minutes a Clark's Nutcracker swooped in, and the two occupied the same tree together for several minutes. Finally the little falcon soared out and spiraled slowly upward for several hundred feet. Suddenly the bird went into a dive, steep enough to give it the speed of an arrow, and it headed straight for Sunset Peak. In this straight-away-dive it became a floating speck, and it finally dipped over the saddle between Pioneer and Sunset Peaks and thence went into Catherine Basin. This single event, more than anything else, impressed on me how widely certain individual birds range, and how two people might report having seen a Sparrow Hawk at the same time, miles apart and never dream they were talking of the same bird. Gleb Kashin reports observing a similar dive from Mt. Majestic in the summer of 1958. The dive, however, was toward the east in the direction of Heber City.

On the afternoon of June 20, 1960 a pair of Sparrow Hawks was observed circling over the meadow at Redman's Flat. They were noisy while in flight. A pair might have nested somewhere near the Majestic saddle, since I saw them in that general area on three times there, namely on June 23 and July 10 and 24, 1960. The nest is placed in hole in a tree (often an old woodpecker hole), in buildings or cavities in stumps, cactus, cliffs, house gutters etc. The eggs are 3-6, cream with red brown spots. Harkin (1961:46) records these nesting data: May 17, 1931 eggs (5) Parley's Summit, hole in aspen.

Rather strangely, the Utah Audubon Society has only one record for its July field trips, that of July 10, 1955 when one bird was seen. They also saw the species at the Community Camp on June 6, 1937 and Brighton on June 12, 1938.

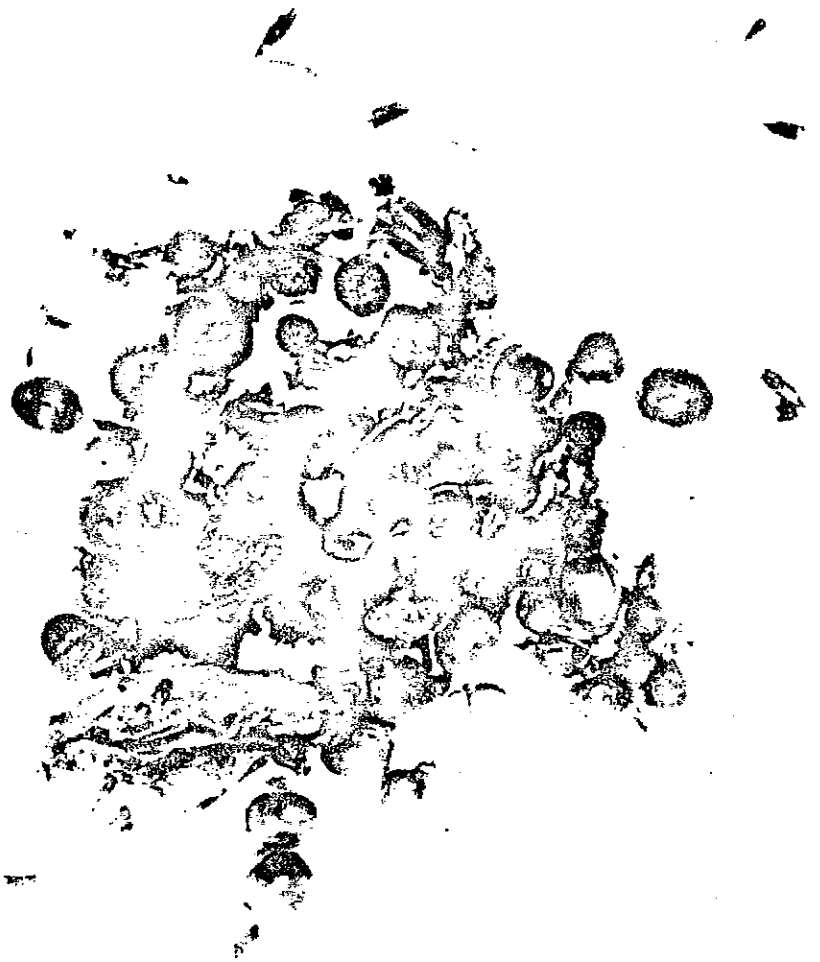
C. W. Lockerbie has two records for the Brighton area, one of them over the Twin Lakes-Solitude Ridge. He has a May 27, 1944 record for Alta; one for the summit of Mt. Timpanogos on July 15, 1939, and one on Aug. 7, 1938 for the Mill Creek-Lake Desolation Divide; one on June 21, 1936 at the head of Lamb's Canyon. The latter locality is just over the ridge from both Brighton and Parley's Park. For Parley's Park he has twelve records for a total of 38 birds. One observation on July 31, 1946, was of three broods, totaling fifteen birds, seen near Snyderville. A last note of interest by Lockerbie was a record of a concentration of about 25 Sparrow Hawks on May 21, 1950 along the old Mormon Trail. Some of them were migrants moving back to their summer range.

There is one specimen in the University of Utah museum from near Park City. Ridgway (1877:375) includes the species in his list for Parley's Park and indicates their habitat as shrubbery along streams, scrub oaks, rocks, banks etc. He also mentioned that these falcons were seen everywhere along the route of the King expedition for which he was the naturalist.

Dendragapus obscurus (Say): Blue Grouse
Permanent resident.

When this bird goes out with a flurry from where your next foot was to be placed, it provides one of the most exhilerating experiences of the ornithologist's field work. On Nov. 23, 1959 one was observed near the top of the Majestic ski lift. On March 26, 1960 Gleb Kashin and I saw one down in Brighton Basin. On June 30, 1960 on the Solitude trail at the north end of Evergreen Mountain, one flushed right at my feet and

PLATE II



Contents of the crop of a Ruffed Grouse struck by car in Emigration Canyon; 28 acorns including four cups, 26 rose hips, 20 birch buds, several small mallow leaves and a number of other unidentified plant bits.

flapped around in the brush for about 100 feet, in an injury-feigning display before flying to a low branch in a conifer about another 100 feet away. It cackled at me from this perch for a full five minutes. I combed every likely nesting site within a 100 foot radius without finding a nest or uncovering a chick. Rechecks of the area on following days also turned up nothing. A trip up Mill D Fork with John Allan and my two boys, thence on to the top of Superior Peak turned up seven Blue Grouse--all in spruce-fir timber. Four of them were very near to timberline. July 24, 1960 provided the best observation when Gleb Kashin and I saw two adults and six young together about one-fourth mile up the trail toward Lake Mary while still in the Majestic ski lift clearing. The young were almost as large as the adults, and all were so tame that it was easy to get pictures. My total of nine observations with 28 birds indicates that this grouse is common in this area. On Aug. 2, 1961 Fred Rowland and I were descending from the top of Mt. Timpanogos, when we flushed a hen and three chicks, next a single adult and finally seven chicks. All the chicks were about one-half grown.

The nest is a depression in the ground under trees, bushes or logs, more or less lined with grass or feathers. The eggs, 5-15, are cream, with or without brown spots.

The Utah Audubon Society has one record of a family of four Blue Grouse at Brighton on July 14, 1940 and records one bird being seen on each of the trips for 1953, 1954 and 1960.

C. W. Lockerbie has two observations for July 15, 1939, the first being of a single male, the other of a female and five young on Mt. Timpanogos. Alta provides his best area of observation for this grouse with his records totaling 16, and the number varying from three to nine individuals. His observations were all made in July, September and October, from 1939-1949. He has an interesting record of four seen on the Brighton-Majestic trail on Nov. 25, 1942. On June 11, 1948 he reports one at Parley's Summit which had been hit by a car. Tom Dewey (Utah Aud. News, Nov. 1952) observed four of these grouse at The Spruces in Big Cottonwood Canyon. Gleb Kashin has observed them in American Fork Canyon.

Ridgway (1877:598) made collections of Blue Grouse in October, 1868 in the Wasatch Mountains near Salt Lake City and at Parley's Park of one male (adult) on June 25, 1869 and of one male (juvenile) on July 23, 1869. He also makes the note that they literally abounded in certain localities of the Wasatch and Uinta Mountains. He lists (op. cit.:375) a wide range of habitat, "Higher flowery slopes, scrub oaks, aspen groves and coniferous woods." My own observations show that they favor spruce-fir forest with adjacent shrubbery.

Bonasa umbellus (Linnaeus): Ruffed Grouse

Permanent resident.

My introduction to this species came on the evening of Nov. 14, 1959 when the car ahead of me struck one as it flew across the road in Emigration Canyon. It is now in the University of Utah museum. The most interesting feature, however, was its crop. As the accompanying picture, kindly made for me by Dr. Walter P. Cottam, shows, it contained 28 acorns, including four cups, 26 rose hips, 20 birch buds, several small mallow leaves and a number of other pieces of miscellaneous uniden-

tified vegetation.

Early on the morning of May 22, 1960 while walking along the north edge of Silver Lake I flushed a large female Cooper's Hawk which sailed up toward Evergreen Mountain. About a hundred feet farther along the trail a single Ruffed Grouse flew up and headed in the opposite direction. Possibly the hawk was stalking the grouse. After cutting over the shoulder of Evergreen Mountain and dropping down to Solitude Lake, I flushed a Blue Grouse. This was one of two days when both Ruffed and Blue Grouse were seen. On Aug. 3, 1960 five Blue and three Ruffed Grouse were seen around the Lake Blanche area. The best observation of Ruffed Grouse was on Aug. 10, 1960 when a family of two adults and five young was seen along Big Cottonwood Creek at Redman's Flat. On June 20, 1960 one was observed on the lower slopes of Evergreen Mountain. On June 24, 1961 Gleb Kashin and I photographed a nest of Ruffed Grouse shown us near Dixie's Aspen Inn at Silver Fork. The person who found it had started to cut down a small aspen, and had made two deep cuts when he caught sight of the hen brooding under the very tree. She did not flush then, nor on either of two trips when Leon Stanley came to photograph her. When Kashin and I got there, the eggs had hatched, and the brood was gone. We counted seven eggs. The nest was in a depression under the aspen and was lined with grasses and leaves. The egg shells were buff with brown spots. The number of eggs that may be laid varies greatly. Different authorities report a range as wide as 5-23.

The Utah Audubon Society has records of one for each of its July field trips in 1943 and 1955, one for June 12, 1938, and seven (a family) for July 9, 1961.

C. W. Lockerbie has seven records for the Brighton area including one brood of five and another of three. The latter was seen on July 4, 1936. He has one observation for Sept. 30 and two late October dates. He also notes two late September observations for The Firs in Mill Creek Canyon. He has a record of a family on Aug. 7, 1938 at South Fork of Mill D. One observation is all that he has for the Parley's Park area, when he saw eight. Mrs. Tainter and Mrs. Worthington (Utah Aud. News, Dec. 1952) on Nov. 2, 1952 found a decapitated specimen with most of its breast eaten away on the hillside east of the Brighton store. Gleb Kashin observed a family of Ruffed Grouse at Mt. Dell, and I observed young on the road on three different occasions during the late summer of 1960 that had been hit by cars. There are seven specimens in the University of Utah museum: five from Brighton 8750 feet, taken in spruce and aspen, one from Parley's Park 6600 feet in willows and choke cherry, and one from Lamb's Canyon 8000 feet from streamside willows.

Ridgway (1877:599) makes this note, "This bird we did not see alive . . . It was said to be common in the pine forests of the Wahsatch, where it is known as the 'Pine Hen'." He (op. cit.:375) lists its habitat as aspen groves, coniferous woods and scrub oak.

Pedioecetes phasianellus (Linnaeus): Sharp-tailed Grouse

Permanent resident.

This bird is included because of a note by Ridgway (op. cit.:599) to the effect that it was abundant in rye grass meadows in a few localities in the Wasatch district. He (op. cit.:375) included it in his Parley's Park list and gave its habitat as sagebrush and meadows. This

grouse has apparently become extinct in this area since it cannot stand human pressures, but it still persists in a few restricted areas in the northern part of the state.

Centrocercus urophasianus (Bonaparte): Sage Grouse
Permanent resident.

The Sage Grouse is not a bird of the mountains, and I never saw it anywhere in my field work in the Wasatch. However, C. W. Lockerbie has the following records for the Parley's Park area: June 21, 1946 one chick; Sept. 7, 1947 seven adults; and June 13, 1948 one female and four young.

Ridgway (op. cit.: 600) noted that for several specimens killed in Parley's Park, there was nothing but grasshoppers in their crops. He called attention to the circumstance that they have no gizzard. Ridgway (op. cit.:375) lists their habitat as sagebrush. The nest is merely a hollow depression in the ground most often under a sagebrush, lined with grass. The eggs numbering 7 to 15 are dull olive drab with brown spots.

Lophortyx californicus (Shaw): Valley Quail
Permanent resident.

This bird is not a bird of the mountains, but rather of the plains and lowland valleys. It was not here in Ridgway's time, having been introduced to Utah about 1872. It is a bird that does well in association with man and often moves into heavily populated areas if there is sufficient cover around. It is very common around, "This is The Place Monument" and other similar areas along the Wasatch front. The nest is a grass-lined hollow on the ground, generally under a bush or grass clump. The eggs vary greatly in number from 10 to over 20, and are buff in color with brown spots.

There is one specimen in the University of Utah museum, taken from two miles northeast of Ecker's Hill near Parley's Park.

Phasianus colchicus Linnaeus: Ring-necked Pheasant
Permanent resident.

Like the Valley Quail this is an introduced game bird of the lowland valleys and plains, and it does well under the advance of civilization. The nest is a hollow in the ground, lined with grass and leaves and placed in grassy fields or brushy areas (often in hayfields or hedgerows). The eggs are 6-15 in number and olive green or brown in color, unspotted.

C. W. Lockerbie observed twelve in Parley's Park on March 12, 1952 and one at the Denver and Rio Grande Railroad crossing near Parley's Park on Feb. 8, 1953.

Grus canadensis (Linnaeus): Sandhill Crane
Summer resident.

This bird has practically vanished from this region with the advance of civilization but is included here since Ridgway (op. cit.:376) lists it among the birds observed at Parley's Park. He gave its habitat as meadows, marshes and brooks. The eggs are two in number and are light brownish with darker brown spots. The nest is built on a mound of reeds and grasses in marshland.

Porzana carolina (Linnaeus): Sora Rail
Summer resident.

There is one modern reference to this bird of the marshes. N. R. Whitney (Utah Aud. News, April, 1953:20) on July 1, 1951 observed the species in Parley's Park. Peterson (1961:95) describes the nest as "A loose grass cup in fresh marsh. Eggs (6-15; 18) buff, spotted."

Ridgway (1877:613) collected one male adult at Parley's Park on July 26, 1869.

Laterallus jamaicensis (Gmelin): Black Rail
Summer resident.

The Black Rail is strictly a marsh bird and is included here because Ridgway (op. cit.:376) included it in his Parley's Park list and gave its habitat as marshes and brooks. Ridgway (op. cit.:613) stated that several were shot at Parley's Park, but none recovered. He admitted the description of these birds did not fit with that of the Little Black Rail, but that it could have been no other species known at present. Booth (1960: 122) describes the nest as, "A mass of Salicornia concealed among the living salt marsh plants; eggs, 4 to 8, white with reddish brown and lavender spots."

Fulica americana Gmelin; American Coot
Summer resident.

C. W. Lockerbie on June 5, 1949 observed ten of these birds at Parley's Park. Peterson (1961:96) describes the nest as, "A shallow reed basket among reeds or on raft of vegetation. Eggs (8-12; 22) buff, dotted."

Ridgway (op. cit.:376) includes the coot in his Parley's Park list and gives its habitat as marshes and brooks.

Charadrius vociferus Linnaeus; Killdeer
Permanent resident.

This bird of lowland meadows and fields is quite common in the Parley's Park area. C. W. Lockerbie observed it on fourteen trips to Parley's Park with a total of about 240 individuals. On two trips as many as 50 birds were seen. N. R. Whitney (op. cit., May, 1953:25) observed this bird in Parley's Park during 1951. Gleb Kashin has observed the Killdeer at Parley's Park and also at Mt. Dell. The nest is generally an unlined depression on bare ground or sand or gravel in open field, pasture, roadway or along a stream. The eggs are four in number; cream or buff with black or brown spots.

Ridgway (1877:376) includes it in his Parley's Park list of birds and gives its habitat as marshes and brooks.

Capella gallinago (Linnaeus): Common Snipe
Common summer resident.

C. W. Lockerbie observed a Snipe near the old Community Camp below Brighton on Oct. 15, 1933. It is not known from the Wasatch Mountains although a note by Jon Ghiselin (1956:88) of one observed in Naturalist Basin in the high Uintas is of interest to show this bird does range into the higher mountains. Lockerbie has fifteen observations for the Parley's Park area as follows:

June 7, 1946	20	June 4, 1949	10
June 21, 1946	50	May 21, 1950	1
July 31, 1946	1	June 25, 1950	2
June 29, 1947	50	Aug. 6, 1950	8
Sept. 7, 1947	3	May 30, 1951	3
Feb. 15, 1948	2	July 1, 1951	observed
June 5, 1948	20	May 30, 1952	common
June 11-13, 1948	10		

Peterson (1961:105) describes the nest as, "A grass-lined hollow in wet meadow, marsh, muskeg. Eggs (4) olive-brown, spotted."

Ridgway (1877:607) collected three adult females at Parley's Park on July 26, 1869 and made this note, "In Parley's Park, either this species or Macrohamphus griseus was breeding." He undoubtedly refers here to Limnodromus griseus or the Long-billed Dowitcher. Ridgway (op. cit.:376) lists their habitat as meadows, marshes and brooks.

Numenius americanus Bechstein: Long-billed Curlew
Summer resident.

C. W. Lockerbie on June 29, 1947 heard the call of this bird at Parley's Park.

Ridgway (1877:376) includes it in his Parley's Park list of birds and notes its habitat as meadows, marshes and brooks. The nest, one of which was observed on Antelope Island May 7, 1960, is a grass-lined hollow in the ground out in open prairie or hillsides. The eggs are four, olive drab with brown spots.

Actitis macularia (Linnaeus): Spotted Sandpiper
Summer resident.

You get to looking for this little bobber with its plaintive call whenever you approach a Wasatch lake. I first saw one at Silver Lake on June 10, 1960 and two days later on June 12 I saw two at the same place. On June 19, 1960 Gleb Kashin and I found a nest with three eggs right on the sloping edge of the main path to the upper end of the lake. The female probably chose the spot because of good drainage before people started using the path regularly. She was still brooding on June 21, 22 and 26, but two days later everything was cleaned out. The pair probably tried a second nesting, but although hours were spent looking, the nest was not found. Twenty-one observations were made of the species during the summer; fourteen at Silver Lake, one at Twin Lakes, two at Lake Mary, two at Lake Catherine and one each at Lake Blanche and Lake Lillian. Young were observed with their parents at Lake Lillian on Aug. 4, 1960 and at Lake Catherine on Aug. 5. On June 17, 1961 I again observed a pair of these birds at Lake Lillian at the head of Mill B Canyon. The nest is a grass-lined shallow depression along a stream or mountain lake or in open meadow. The eggs are four, buff to gray with darker spots. Harkin (1961:66) records nesting data as follows:

June 7, 1917 eggs (3) Parley's Canyon, a stream bank
July 15, 1961 eggs (4, young) Silver Lake, Salt Lake County

The Utah Audubon Society has records for everyone of the last 26 yearly July field trips except 1936, 1947, 1949, 1952, and 1953. In 1940, 1955, 1956, and 1957 they reported six, five, five, and six birds respectively. They also have records for June 13, 1937 and June 12, 1938.

C. W. Lockerbie has nine other observations for the Brighton area for June trips in 1935 and 1937. He has eleven records for Parley's Park between 1946 and 1951 for a total of 60 birds. He never had less than two and upon occasion had up to 20 birds a trip. Gleb Kashin has observed this bird around Mt. Dell Reservoir.

Ridgway (1877:610) collected one juvenile specimen July 28, 1869 in Parley's Park, and (op. cit.:376) lists their habitat as marshes and brooks.

Tringa solitaria Wilson; Solitary Sandpiper
Uncommon summer resident.

One Solitary Sandpiper at Desolation Lake in Upper Mill D Basin in mid-August of 1961 was the sum of my observations over two summers. N. R. Whitney (Utah Aud. News, May, 1953:26) observed this species at both Parley's Park and at Brighton, with at least one breeding pair at Silver Lake July 8-9, 1950. Booth says (1960:146) regarding the nest: "Placed in trees, usually in an old nest of a robin or other thrush, placed near water; eggs, 4, buff with dark spots."

Ridgway (op. cit.:376) observed a single individual in Parley's Par in August 1869. He (op. cit.:610) gives its habitat as marshes and brooks.

Catoptrophorus semipalmatus (Gmelin): Willet
Summer resident.

Ridgway (op. cit.:376) includes the Willet in his list of birds observed at Parley's Park and gave its habitat as marshes and brooks. Peterson (1961:111) describes the nest as, "A depression or grassy cup among grass. Eggs (3-4) olive-buff, spotted."

Erolia minutilla (Vieillot): Least Sandpiper
Migrant.

Ridgway (op. cit.:376) includes the Least Sandpiper in his Parley's Park list of birds and gives its habitat as marshes and brooks. Peterson (op. cit.:116) describes its nest as, "A hollow in moss in tundra marsh or bog. Eggs (4) buff, spotted."

Ereunetes mauri Cabanis: Western Sandpiper
Migrant.

There is one specimen of the Western Sandpiper in the University of Utah museum taken May 6, 1950 along a streamside in Parley's Park 6500 feet. The nest is similar to that of the Least Sandpiper.

Steganopus tricolor Vieillot: Wilson's Phalarope
Summer resident

This bird was observed by C. W. Lockerbie on four occasions at Parley's Park all in June from 1947-1949 with a total of 16 individuals. N. R. Whitney (op. cit.:26) observed these birds breeding at Parley's Park during July 1951. Peterson (op. cit.:124) describes the nest as "A grass-lined hollow in wet or dry meadow. Eggs (4) buff, spotted."

Larus californicus Lawrence: California Gull
Summer resident.

On July 10, 1960 Hans Frei and I observed three California Gulls sailing high overhead near Brighton as we stood in the saddle between Twin Peaks and Mt. Majestic. They came from the Brighton side and were apparently headed for Deer Creek Reservoir. I have also observed them in the Little Mountain and Mr. Dell Reservoir area settling on the grassy hillsides evidently to feed on some king of insect. Gleb Kashin has made the same observation on several occasions during April and May. On June 18, 1961 thirty or forty California Gulls were observed wheeling high overhead at Brighton. The most unusual thing about this was, that mingled with them were at least a dozen Franklin's Gulls. (See note, next species.)

The nest of the California Gull is a hollowed out depression in the ground lined with grass, feathers and dung or unlined; generally on a bare or rocky island in large colonies; the eggs are 2-3, drab buff with brown spots and splotches.

Larus pipixcan Wagler: Franklin's Gull
Summer resident.

On the morning of June 18, 1961 C. W. Lockerbie, Gleb Kashin, Derrell McCullough and I observed at least a dozen of these birds wheeling high overhead at Brighton along with 30 or 40 California Gulls. This was the first time any of us had ever seen the Franklin's Gull at Brighton or even heard of it reported in that area, and some of these men had been going to Brighton several times a year for 30 years. They were not moving through as to or from Deer Creek Reservoir but were circling. We observed them off and on for almost one half hour. The day before (June 17) I had spent in lower Big Cottonwood Canyon and in Mill B Canyon up as far as Lake Blanche. The scrub oaks were literally filled with cicadas. In seeking an explanation for the action of these birds this prevalence of cicadas in the hills seemed the only logical answer since cicadas are one of the Franklin's Gull's favorite items of food. Peterson (1961:133) describes the nest as "Among reeds in prairie marsh; in colony. Eggs (3) brown, spotted."

Zenaidura macroura (Linnaeus): Mourning Dove
Summer resident.

The Utah Audubon Society observed two Mourning Doves at Brighton on July 7, 1959. I have recollections of seeing this species near the mouth of Big Cottonwood Canyon but have no exact data. The nest of the Mourning Dove is a flimsy platform of small sticks and twigs placed in a tree, a bush or on the ground. The eggs are 2, white. Harkin (1961:89) records these nesting data:

June 16, 1918 (several nests) fresh to young. Parley's Canyon
June 23, 1918 eggs (3, 2) Parley's 5' to 7' up scrub oak.

C. W. Lockerbie has eleven records for Parley's Park between 1946 and 1951 with a total of 140 individuals. His earliest record is May 30, 1951 when ten birds were seen. The latest record was Sept. 7, 1947 with six. N. R. Whitney (Utah Aud. News, May, 1953:27) observed them in the fields and orchards of Parley's Park and in the surrounding bench lands during 1950-1951. Gleb Kashin has observed birds and nests at Mt. Dell.

Ridgway (1877:597) collected four sets of two eggs in Parley's Park on June 26-28, 1869 and one set of two eggs on Aug. 16, 1869. The nests were all in aspen or willow. On June 18, 1869 he collected a nest and two

eggs from a mountain mahogany in City Creek Canyon. He (1877:375) lists their habitat as sagebrush, shrubbery along streams, and scrub oaks.

Tyto alba (Scopoli): Barn Owl
Permanent resident.

It seems rather strange, but only one record of the Barn Owl has turned up for the area of the transect. Tom Dewey (Utah Aud. News Dec. 1954:61) during the last week of September 1954 observed one individual sitting on a fence post near Gorgoza in the Parley's Park area. The time was during the evening. These birds nest most anywhere they can get in the dark, in old buildings, holes in trees or cliffs or old mine shafts. The eggs are 5-7 in number and white.

Otus asio (Linnaeus): Screech Owl Permanent resident.

This little owl is probably more common than the number of observations of it indicates. The only definite record I have found is that of Harkin (1961:92) who records six eggs for Parley's Canyon taken on April 28, 1928.

Booth (1960:181) describes the nest situation as being "In deserted woodpecker holes or natural cavities of trees; eggs, 2 to 5, white."

Bubo virginiana (Gmelin): Great Horned Owl
Permanent resident.

I have two records for this species. Both were in the same location, in the spruce-fir timber on the ridge north of Silver Lake. The first was seen on the evening of June 22, 1960; the second, on the morning of July 28, 1960. In both cases the bird flushed 100 feet or more ahead and flew straight away. No nest could be found. These owls nest in hollows in trees, or cliffs, in caves and old mine tunnels or on a platform of sticks placed in a tree. The eggs, numbering 2 to 4, are white.

C. W. Lockerbie observed one at Dog Lake, Brighton July 11, 1937 and four at the west end of Parley's Park June 20, 1948. Gleb Kashin (op. cit., Nov. 1959:65) observed one at Redman's Flat Aug. 15, 1959. He has also observed one at Mt. Dell. N. R. Whitney (op. cit., May, 1953:27) observed one in open country at Parley's Park Oct. 1, 1950.

There are two specimens in the University of Utah museum, one from the mouth of Lamb's Canyon, taken Nov. 1953 and the other from near Kimball's Junction Feb. 15, 1953. These records show their extensive range in the Wasatch, and also that they are permanent residents.

Ridgway (op. cit.:375) includes the Great Horned Owl in his list of birds for Parley's Park and gives its habitat as shrubbery along streams, scrub oaks, aspen groves and coniferous woods.

Glaucidium gnoma Wagler: Pigmy Owl
Permanent resident.

Only two records have been found for this species. R. K. Selander took a male specimen on Aug. 13, 1949 in a spruce-aspen habitat at 8000 feet four miles south of Snyderville in the Parley's Park area. It is now in the University of Utah museum. C. W. Lockerbie observed one on two successive week ends near the mouth of Little Cottonwood Canyon. Booth (1960:184) describes the nest of this owl as, "In deserted woodpecker holes or natural cavities of trees; eggs, 3 to 5, white."

Strix occidentalis (Xantus): Spotted Owl
Permanent resident.

On Nov. 7, 1959 when heavy snow was on the ground, I observed near the top of the Majestic ski lift, a large owl fly into a dense grove of conifers. A while later I was startled to hear from the same spot what I thought was a dog barking. I did not know until later after talking with Dr. Behle that the barking and the owl went together. Booth (1960:180) describes the nest as, "In hollow trees or crannies of cliffs; eggs, 2 to 3, white."

Asio otus (Linnaeus): Long-eared Owl
Permanent resident.

The only record discovered was of a pair nesting in a scrub oak 20 feet above the ground in a draw on the north slope of Little Mountain. The nest was observed a number of times during the spring and summer of 1960. There were four eggs, two of which hatched. This nest was less than 100 yards from a Cooper's Hawk nest 35 feet up in an erect scrub oak. The Long-eared Owl's nest is a platform of sticks in a tree. Often they appropriate the old nest of a magpie, crow or some other large bird. The eggs are 3-6 and white.

Asio flammeus (Pontoppidan): Short-eared Owl
Permanent resident.

C. W. Lockerbie observed a Short-eared Owl at Parley's Park on June 7, 1946. Booth (1960:178) describes its nest as, "A pile of dried grass and feathers, placed on the ground usually in a marsh, but sometimes in a grassy meadow in wilderness areas; eggs, 4 to 8, white."

Aegolius acadicus (Gmelin): Saw-whet Owl
Permanent resident.

The Saw-whet Owl has been observed several times around Salt Lake City, but Clayton White provides the only record for one in the transect. On July 4, 1961 he observed three young just out of the nest along the creek above the City Farm near the junction of the road from East Canyon to Little Mountain. Young Cooper's Hawks were found in a nest the same day nearby. Booth (1960:183) describes the nest as, "In deserted woodpecker holes or natural cavities of trees; eggs, 3 to 6, white."

Phalaenoptilus nuttalli (Audubon): Poor-will
Summer resident.

Two of six observations of this bird were by their call at night. One was heard along the trail near Lake Blanche after dark on Aug. 3, 1960; the other was heard at Lake Catherine on the night of Aug. 4, 1960. Two other records were momentary views as they flushed from the roadside as I drove down Big Cottonwood Canyon on the nights of Aug. 8 and 11, 1960. The last two observations pertain to dead birds hit by cars and found along the road. On Aug. 10, 1960 I observed one at Silver Fork, and on Aug. 19, 1960 I picked up two that had been hit the night before, both below Silver Fork, Big Cottonwood Canyon.

The hearing of birds at both Lake Blanche and Lake Catherine indicates that they nest at these higher elevations in the Wasatch. Actually there is no discernible nest; the two white or lightly spotted eggs being placed on the ground.

The Utah Audubon Society has no records for the species on its field trips. C. W. Lockerbie, however, has one record of calls at Brighton July 5, 1939 and observed one at The Spruces on July 7, 1940. He has three more notations of calls heard at The Spruces on June 10, 1939 at ten p.m. and four o'clock the next morning, July 3, 1939 and again on Aug. 16, 1942. He has two sight records at Parley's Park namely two on June 29, 1947 and one on June 12, 1948.

Ridgway (1877:375) includes the Poor-will in his list for Parley's Park and gives its habitat as sagebrush.

Chordeiles minor (Forster): Common Nighthawk
Summer resident.

This bird does not seem to range up into the mountains as does the Poor-will. I have observed it throughout the summer in Emigration Canyon and along the Wasatch front.

C. W. Lockerbie has recorded it on five trips to Parley's Park for a total of 30 individuals, which indicates it is quite common there. N. R. Whitney (Utah Aud. News, May, 1953:27) observed one flying over the streams and wet fields of Parley's Park on July 1, 1951. Gleb Kashin has observed them both at Mt. Dell and at the mouth of Big Cottonwood Canyon. Peterson (1961:168) describes the nest as, "Eggs (2) speckled; laid on bare ground, flat city roof."

Cypseloides niger (Gmelin): Black Swift
Rare summer resident.

This bird has been identified in areas near the transect, and it would be strange if they did not sometimes range into it. One somewhat questionable record was obtained on June 24, 1961 when Gleb Kashin and I walked up to Hidden Falls opposite Mill B in Big Cottonwood Canyon. A large, dark-colored swift flashed out from the falls and was tentatively identified as a Black Swift. The lack of white precluded its being a White-throated Swift. Peterson (1961:169) describes the nest as, "Of green algae, moss, in crevice of sea cliff or wet mt. cliff, often behind waterfall. Eggs (1) white."

Aeronautes saxatalis (Woodhouse): White-throated Swift
Summer resident.

Two observations were made on the same day when, on May 21, 1960 on the Timpanogos Loop, Ken Tanner and I observed them sailing high overhead near Aspen Grove and again at Bridal Veil Falls in Provo Canyon. I made a tentative identification of the White-throated Swift on June 23, 1960 between Twin Lakes and Alta Divide. Gleb Kashin and I observed several pairs of them on June 18, 1961 feeding for about an hour over the cliffs on the north side of the canyon at Storm Mountain. Then about nine a.m. they all disappeared. Apparently they are nesting in this area. On Aug. 2, 1961 from the very summit of Mt. Timpanogos, Fred Rowland and I observed several of these swifts feeding above us and down into the cirque above Emerald Lake. They flew within 50 feet of us at times. Booth (1960:188) describes the nest as, "A cup-shaped structure of feathers glued with saliva to the rocks in crannies of cliffs (sometimes to buildings); eggs, 4 to 5, white."

The Utah Audubon Society reported one for July 10, 1955 and one for July 7, 1959. It was also reported in the Utah Audubon News for

December 1959:72 that eight were feeding about two miles below Brighton Sept. 15, 1959. Gleb Kashin observed a flock of about 50 of these birds in American Fork Canyon in October 1956. He also observed several near Silver Fork, Big Cottonwood Canyon in late September 1956.

Ridgway (1877:564) records that it was seen in City Creek Canyon near Salt Lake City, but that it was not abundant there. He lists it (op. cit.:375) under the name Panyptila saxatalis in the Parley's Park list.

Archilochus alexandri (Bourcier and Mulsant): Black-chinned Hummingbird

Summer resident.

This hummingbird ordinarily ranges at lower elevations than Brighton. Peterson (1961:172) gives its habitat as semiarid country near water, chaparral, river groves and foothill suburbs.

The records for this species are very sparse for the Wasatch. I have only one sight record for Redman's Flat June 22, 1960. Booth (1960:191) describes its nest as "A cup of plant down placed in bushes or small trees near water; eggs, 2, white."

The Utah Audubon Society reports one for each of two regular trips to Brighton on July 14, 1940 and July 13, 1958; also one for June 13, 1937 at Community Camp.

C. W. Lockerbie saw two at Parley's Park June 12, 1948.

Ridgway (1877:559) collected a nest and two eggs on June 25-30, 1869. The nest was located on a branch of scrub oak at Parley's Park. He also obtained an adult female and a juvenile male. He stated that this was the only hummingbird found along every portion of the route from Sacramento to Parley's Park; that in the Wasatch it nested on the higher slopes and thus showed a vertical breeding range of fully 9000 feet.

Selasphorus platycercus (Swainson): Broad-tailed Hummingbird

Common summer resident.

This is the first species in this systematic list for the Brighton area which is in any sense abundant. My observations of it number in the hundreds beginning May 21 on the Timpanogos Loop and ending Aug. 25, when I terminated my field work at Brighton. It was observed every day that I was in the Wasatch between these dates. I have found no earlier or later records in any of the literature. Elevation extremes were from the mouth of Big Cottonwood Canyon to over 13,000 feet on a shoulder of Mount King in the Uintas. On Aug. 13, 1960 at 13,000 feet one flew right up to Byron Anderson, who was wearing a bright red wind breaker, and hovered there as though looking for a flower. A duplication of the same experience earlier the same day at Farmer Lakes, Uinta Mountains, caused us to conclude these birds are very sensitive to color. Hayward (1952:116) noted that in alpine areas this bird is frequently seen hovering over the brightly colored alpine flowers.

This species was to be found in every part of the transect where there were any meadows or flowery slopes and also along streams and around lakes. They were most abundant at Brighton in the meadows of the basin floor, around Silver Lake and in the cleared or slash land of the ski lift areas, where many flowers have sprung up. It was also

common on the slopes around Lake Solitude. Two nests were found, both in dead twigs under heavy green fir boughs. The first was detected above Redman's Flat on June 27, 1960, three feet above the ground. The second was found by Gleb Kashin on level ground 200 yards north of Silver Lake on June 23, 1960. It was located six feet above the ground and was built on top of an old nest. This building on top of old nests seems to be a common practice of this species. On July 25 there were two young present, and on Aug. 10 they were about ready to fly. On Aug. 19 the nest was empty. The nest is made of various items, such as plant down, spider web, lichens, bits of leaves, woven into a neat little cup. The two eggs are white.

The Utah Audubon Society has records of this species for everyone of its 26 July field trips (1936-1961). The smallest number of individuals recorded was eight, the largest number was 32. Additional notations such as "many" and "common" indicate that they, too, found it to be abundant in the region.

C. W. Lockerbie has 25 additional listings for the Alta and Albion Basins, eleven for Parley's Park, four for The Spruces, and one each for Lake Blanche, Mill D, and upper Mill Creek Canyon. Descriptive notes indicate that he, too, found the bird to be abundant. On July 4-5, 1936 he found two nests at the Community Camp, below Brighton; on June 27, 1937 one nest with two young, and on July 17, 1937 the young were ready to leave; on June 12, 1938 one nest with young, which were gone July 17. On June 4, 1939 he found one nest at The Spruces, and on June 11 there was one egg in this nest.

Harkin (1961:100) records the following nesting data:

July 3, 1913 nest and eggs (2) Brighton, low pine bough four feet up
July 7, 1913 (set) Brighton
July 1, 1918 nest and eggs (2) Brighton dead pine three feet up.
June 26, 1919 nest and eggs (1) Brighton on pine bough
June 28, 1925 nest and eggs (1) Brighton on pine bough
July 3, 1925 nest and eggs (2) Brighton on balsam bough
June 4, 1928 (set) Cottonwood
June 22, 1930 nest and eggs (2) (2) Brighton four and six feet up
June 21, 1931 nest and eggs (2) Brighton

Ridgway (1877:562) collected between June 23 and 28, 1869 one adult female, six adult males, two nests with two eggs each and one empty nest. The nests were on bushes or cottonwoods along stream. On Aug. 21 and 23, 1869 he collected one adult female, one adult male, two nests with two eggs each in the willows. He also collected four adult males in City Creek Canyon on May 20 and 29, 1869. He (op. cit.: 375) lists as their habitat, shrubbery along streams and higher flowery slopes. My own observations agree with this, and I would add, they may often be seen sitting on top of a dead snag or a dead branch in meadows or on the utility lines of the basin floor.

Selasphorus rufus (Gmelin): Rufous Hummingbird

Transient and possibly some summer resident.

Five observations with a total of ten birds were made as follows: on July 6, 1960 one on the flowery slopes at the Tarbaby Mine in Mill D; on July 22, 1960 a pair on the flowery slopes above Lake

Solitude; on July 24, 1960 two along the trail in the clearing in the Majestic Ski lift, and two at Dog Lake Mine; on Aug. 5, 1960 a pair near Lake Catherine; and on Aug. 8, 1960 one on a slope high above The Spruces. In all of the observations the birds were extremely active. These observations show that Rufous Hummingbirds were at Brighton during the breeding season. Whether they nest here is not yet known, but it seems likely they do. According to Booth (1960: 192) the nest is, "A cup of plant down covered over with lichens and mosses up to 40 feet in trees; eggs, 2, white."

C. W. Lockerbie has four additional observations for Brighton of nine birds. On Aug. 12, 1950 and Aug. 10, 1954 he observed ten birds in the upper Alta Basin. These could be migrants going south.

Ridgway does not mention this bird in the Wasatch.

In the literature the species is listed as a transient or through-migrant. Both Peterson (1941:99) and Booth (1960:192) give Oregon and southwest Montana as the southern limit of its breeding range and state that they migrate in autumn through all the western states or mountains. Peterson further states that they migrate north in the spring through the valleys of the Pacific states. Though I have no nesting data to substantiate my suspicions, I do not think that all of these birds reported above were migrants. The dates range from an early July 6 to Aug. 12 when ten were seen in Albion Basin. These do not conform to spring migrants going north, nor fall migrants going south. I'm rather confident that intensive observations will show the Rufous Hummingbird to be a sparse summer resident in the Wasatch.

Stellula calliope (Gould): Calliope Hummingbird
Summer resident.

This is the smallest member of the avifauna of the Wasatch. Between June 12, 1960 and July 23, 1960 fourteen observations were made, all on the floor of Brighton Basin or at Redman's Flat. An almost sure place to see this bird is atop one of the several dead snags at the northeast corner of Silver Lake. They are not common as compared to the Broad-tailed Hummingbird, and all observations were of only one or two birds. Gleb Kashin and I found a nest on July 8, 1960 at Lower Redman Flat campground. It had apparently been destroyed by campers. It was a neat cup of plant fibers and lichens attached to a lower dead twig of a conifer. The eggs were two and white. According to Booth (1960:193) this species may build as high as 75 feet up in a tree. Harkin (1961:102) records nest and eggs (2) Millcreek Canyon for June 25, 1922.

The Utah Audubon Society has records ranging from one to seven birds for fifteen of its 26 July field trips for a total of 47 birds. C. W. Lockerbie has six additional observations for Brighton with a total of seven birds; one observation for The Spruces with three birds and two for Parley's Park of four birds. On June 10, 1949 he found a nest in a building at Brighton. On June 29, 1949 a nest was found along the Solitude Trail with one egg hatched. A half-built nest was found at Brighton July 7, 1949. The nest was revisited on July 16 and had two eggs. By July 30, one egg had hatched, and on Aug. 17, 1949 the nest was empty except for shell fragments (Utah Aud. News, Sept. 1949:3). On June 16, 1951 a pair was observed in their

breeding territory at Brighton (Utah Aud. News, May, 1953:28). Gleb Kashin has observed this bird both at Lake Solitude and also around Mt. Dell Reservoir.

Ridgway (1877:375) includes this species in his list for Parley's Park and gives its habitat as shrubbery along streams and higher flowery slopes. However, my own observations do not bear this out, for on the higher flowery slopes I failed to see a single one. As previously noted all were on the floor of the basin or canyon. Neither do C. W. Lockerbie nor the Utah Audubon Society list a single observation in the upper portion of the basin.

Megaceryle alcyon (Linnaeus): Belted Kingfisher
Summer resident.

On the morning of Aug. 4, 1961 I observed one kingfisher for five minutes along the creek in Emigration Canyon. Three times it dove with a splash for small water creatures in a small pond on Emigration Creek, three miles above Hogle Zoo. The Utah Audubon Society reports one for July 11, 1954. C. W. Lockerbie saw one Sept. 19, 1943 at The Firs, Mill Creek Canyon. On Sept. 19, 1959 two were observed near Silver Lake, Brighton (Utah Aud. News, Dec., 1959:72).

The evidence seems to indicate this species breeds in the valleys and suitable foothill localities and then moves up into the higher mountains in the late summer and fall along streams like Big Cottonwood Creek. Gleb Kashin, Bob Sundell and others have reported them in the Brighton area at this time. The Belted Kingfisher nests in holes dug back into an earth bank near water. The two eggs, white in color, are laid on a pile of fish bones or other litter at the back of the hole.

Ridgway (1877:545) collected two adult females at Parley's Park, July 26-28, 1869. He (op. cit.:375) lists their habitat as marshes and brooks.

Colaptes cafer (Gmelin): Red-shafted Flicker
Permanent resident.

This flicker can be classed as ubiquitous throughout this area, being equally abundant on the floor of the basin and upper slopes. It was the most often observed woodpecker in the Brighton area, being seen or heard on 55 different days. It was first seen on Oct. 10, 1959. As late as Nov. 8, after a heavy fall of snow, several were still present at the Brighton-Alta Divide and the Lake Catherine Divide. On Dec. 27, 1959 we observed it in Red Butte Canyon and Emigration Canyon. May 21, 1960 was the next time the flicker was seen on the Timpanogos Loop. From then on until Aug. 25, 1960 it was seen almost daily. One nest was found June 22, 1960 with the young in a dead limber pine on the slope between Twin Lakes and Evergreen Mountain. On June 18, 1961 a second nest was found in an aspen across the road from Silver Fork Cafe. Within a hundred foot radius at this spot six species of associate birds were found nesting. The other five were: Violet-green Swallow (three nests), Tree Swallow (one nest), House Wren (one nest), Hairy Woodpecker (one nest) and Wood Pewee (one nest).

The flickers nest in a hole in a tree or a building. The eggs number 5-10 and are white. If eggs are taken from the nest, the

flicker will continue to lay eggs indefinitely. Harkin (1961:103) records the following nests:

May 20, 1928 eggs (1) (2) Parley's Divide
May 20, 1929 eggs (5) Parley's Divide
June 8, 1930 eggs (7) Snyderville, willow cavity

The Utah Audubon Society has seen the Flicker on every one of its July field trips to Brighton from 1936-1961, in numbers ranging from one to fifteen birds per trip. It also records a late date, Nov. 8, 1952 when two were seen at Brighton in the upper basin (Utah Aud. News, Dec. 1952:53).

C. W. Lockerbie has fifteen observations for Brighton, exclusive of the July field trips. He lists three for The Spruces in Big Cottonwood Canyon, one on the East Fork of Mill F, one for The Firs in Mill Creek Canyon, one for the head of Lamb's Canyon, eight for Alta and Albion Basins, one for upper American Fork Canyon, eleven for the Parley's Park area. He lists as high as twenty flickers seen on one day at Parley's Park on June 11, 1948 and one along the Old Mormon Trail on June 19, 1948.

Ridgway (1877:556) collected one juvenile male in Parley's Park on June 28, 1869 and one juvenile male on July 19, 1869. He (1877: 375) gives their habitat as shrubbery along streams, scrub oaks, aspen groves, coniferous woods, rocks, banks etc.

Melanerpes erythrocephalus (Linnaeus): Red-Headed Woodpecker
Casual.

The only record for this bird in this area is a note by Ridgway (1877:554-5) that only one was seen on the whole trip from Sacramento, California to the Salt Lake region, that one being observed among the willows along the stream flowing from Parley's Park. Peterson (1960: 184) describes the nest as, "In hole in pole or tree. Eggs (4-6) white."

Asyndesmus lewis (Gray): Lewis' Woodpecker
Permanent resident.

This interesting woodpecker was observed at the mouth of Big Cottonwood Canyon and nowhere else. Apparently it nests in holes in cottonwoods or sometimes a suitable location in an old building along the Wasatch front. The eggs are 6-8 and white. After rearing the brood and as the acorns ripen, the birds migrate up into the scrub oak zone during the late summer and fall. Since the species has always been found sometime during the year around the mouth of Big Cottonwood Canyon until this year (1961), it is beginning to look like the Lewis' Woodpecker has yielded to the pressure of human beings and Starlings and evacuated the area. Recent visits to the area failed to turn up a single Lewis' Woodpecker, but did show every available hole taken over by the Starlings.

Ridgway (1877:553) has this notation, "None were observed in the Wahsatch or Uintah Mountains, nor in the Salt Lake Valley. We cannot account for this apparent irregularity of its distribution, which is somewhat parallel to the case of Pica hudsonica in the same region." It is interesting to ponder why Ridgway saw no Black-billed Magpies in Parley's Park while they are abundant there now.

Sphyrapicus varius (Linnaeus): Yellow-bellied Sapsucker
Summer resident.

This bird is one of the most common woodpeckers in Brighton and was observed on 29 days during the summer of 1960. The earliest date was May 21 and the latest date Aug. 5, 1960. The complete absence of them after this last date, suggested that they migrate, or at least leave the nesting area rather early. However, C. W. Lockerbie does have observations for Aug. 8, Aug. 5, Aug. 17, and Sept. 21 for Brighton, which show some remain in the area rather late. Five nests were found, all in holes in live aspens. The eggs are 4-6 and white. The aspen groves seemed to be their favorite habitat, but they were often seen in conifers. Many aspens in the area showed rings or squares of holes pecked into the bark of the trees, a habit which has gained them the name, sapsucker. However, the reason held by some for this peculiar habit is not so they can suck the sap which exudes, but to return from time to time to pick up the insects which are attracted to the sap.

Two of the nesting trees found were shared with other birds. The first of these was a large deformed aspen on an open slope one-fourth mile above Redman's Flat. This apartment tree housed three families. The sapsucker hole was highest, 20 feet up on the east side. A Mountain Chickadee hole was thirteen feet up on the same side, and a House Wren was about ten feet up on the southwest side. The other tree was a duplex, with two openings 40 feet up and twelve inches apart. The Sapsucker hole was on the northwest and a Red-breasted Nuthatch faced the northeast. Both species were feeding young. Indeed, the Sapsuckers were feeding young both in and out of the nest.

The Utah Audubon Society observed this bird on all but two of its 26 July field trips to Brighton. Only 1940 and 1950 failed to turn up these birds. The years 1959 and 1961 yielded high counts of fifteen and sixteen individuals respectively. The total number of individuals was 160.

C. W. Lockerbie has records for the species on 51 field trips in the area of the transect, all but six being at Brighton, five at Parley's Park, and one at upper Mill Creek Canyon.

The above mentioned observations include thirteen nests. Twelve of these were at Brighton; the other one was at Parley's Park, which proves they do nest at Parley's Park, but not commonly. N. R. Whitney (Utah Aud. News, May, 1953:28) observed one male in a dead tree above Lake Solitude on July 9, 1950.

There are five specimens in the University of Utah museum: three from Brighton, 8750 feet, in coniferous woods and two from Parley's Park area, 6500 feet in cottonwoods and 7500 feet in conifers and aspens.

Ridgway (1877:549-50) collected one adult male and one adult female at Parley's Park on July 1, 1869. The stomachs of both were filled with ants. On July 17-23, 1869 he collected four adult males and three adult females. He noted that this species was found to be more abundant in the Wasatch and Uintas than elsewhere in his experience.

Sphyrapicus thyroideus (Cassin): Williamson's Sapsucker
Summer resident.

This is the only woodpecker in our area in which the two sexes

differ markedly in color. This bird is not nearly so common around Brighton as is the Yellow-bellied Sapsucker, and ranges higher, having been found only in the upper basin. It has been seen most commonly on the ridges between Lake Solitude and Twin Lakes, but I observed a pair at Lake Catherine on Aug. 5 and a female at the Dog Lake mine on Aug. 6, 1960. Ken Tanner and I observed two of them on the Alpine Loop May 21, 1960. No nests were found. However, members of the Utah Audubon Society have found them nesting on the ridge between Twin Lakes and Lake Solitude. Peterson (1961:186) gives its habitat as "Higher conifer forests, burns," and describes the nest as, "In hole in stub or tree. Eggs (3-7) white."

The Utah Audubon Society has observed this sapsucker on twelve of its 26 July field trips with a total of only 27 individuals. Their high count was six in 1954.

C. W. Lockerbie recorded the species on only seven trips with a total of only eight individuals. His observations include one nest at Twin Lakes on July 17, 1949.

Ridgway (1877:552) collected one juvenile male at Parley's Park on Aug. 5, 1869 and on Aug. 16, 1869 one juvenile female, and noted that this species was found both in the Sierra Nevada and in the Wasatch. He further stated that it seemed to be constantly restricted to a habitat of pines, but that it was found during the summer in Parley's Park.

Dendrocopos villosus (Linnaeus): Hairy Woodpecker
Permanent resident.

This is another very common woodpecker of the Brighton area and clearly the most noisy. During the nesting season whenever the observer's presence was detected, they became very wary, and the woods reverberated with their alarm calls. I know that several times I was near a nest but failed to locate it certainly, though I suspected it of being in an observable hole, because they refused to go to it, choosing rather to fly around and utter their piercing cry. The exception to this was in the case of the nest observed in an aspen across from Silver Fork Cafe. People were so common here they apparently had gotten used to them. This tree was shared with a Violet-green Swallow and a House Wren. The nests of the Hairy Woodpecker are in holes in trees or stumps, and the eggs 3-6 are white. This bird was observed on 35 days in the Wasatch, and besides the Downy Woodpecker and Flicker, was the only woodpecker observed during the winter. It was seen at Brighton Oct. 12, and 18, and Nov. 7, 1959. The earliest date it was seen in the spring was March 12, 1960 and again on March 26. Three nests were found, all in aspens in the Brighton area in 1961, the one mentioned above, and two well up on the Solitude Trail.

The Utah Audubon Society observed it on 21 of its 26 July field trips to Brighton. The total number of individuals was 78, with the high count of seven seen on five different years.

C. W. Lockerbie has observations of the Hairy Woodpecker on 39 field trips to the Brighton area. He found the species occurring in all parts of Big Cottonwood Canyon and the lower and upper Brighton Basin. He has records for only two trips to Parley's Park, which would indicate they are less common at lower elevations, particularly on the eastern slopes of the Wasatch, during the breeding season.

Tom Dewey (Utah Aud. News, Dec. 1950:64) on Oct. 22, 1950 observed one Hairy Woodpecker at Lake Catherine.

There are eight specimens in the University of Utah museum: six from Brighton 8750-10,000 feet in conifers, one from Parley's Park 7000 feet, and one from the head of Mill Creek Canyon, 9000 feet in spruce.

Ridgway (1877:546) collected one juvenile male at Parley's Park on July 21, 1869 and one adult female on Aug. 16, 1869.

Dendrocopos pubescens (Linnaeus): Downy Woodpecker
Permanent resident.

This little woodpecker is almost a counterpart of the Hairy Woodpecker except on a smaller scale. So striking is the similarity that I sometimes wonder if the Hairy Woodpecker is not possibly a polyploid of the Downy Woodpecker. At least it poses an interesting question that someone might solve sometime. I observed this bird in upper Emigration Canyon, near Pinecrest in the winter of 1959, but not at Brighton until July 23, 1960 when one was seen near Silver Lake in the aspens. The only other times it was seen were on the two succeeding days when two were seen in the aspens on the slopes of the local Twin Peaks on July 24 and one on the 25th about one-half way up the Majestic ski clearing. In the same grove where the two were seen on the 24th, we found three new holes in aspens, but we failed to prove any of them were the work of this species. The nest is always in a hole in a tree and the eggs, 4 to 7 in number, are white. Gleb Kashin reports two nests found at Mt. Dell Reservoir.

The Utah Audubon Society observed this species on only twelve of its 26 July field trips to Brighton with a total of 26 individuals. The high count was nine in 1955. It is thus seen to be much less common than the larger Hairy Woodpecker.

C. W. Lockerbie has records for only thirteen field trips to Brighton with only 18 individuals. Tom Dewey (Utah Aud. News, Dec. 1950:64) observed one at Lake Catherine on Oct. 22, 1950 and (Utah Aud. News, Dec. 1952:53) he observed one in upper Brighton Basin on Nov. 8, 1952. N. R. Whitney (Utah Aud. News, May, 1953:28) observed two in dead trees below Twin Lakes.

There is one specimen in the University of Utah museum from Kimball's Junction, Parley's Park 6500 feet, in cottonwoods.

Ridgway (1877:546) made the notation that two families of young were met with on separate occasions in Parley's Park during July and August, but that they were not able to obtain a specimen. He also noted that they were unaccountably rare everywhere they were encountered.

Picoides tridactylus (Linnaeus): Northern Three-toed Woodpecker
Permanent resident.

This interesting woodpecker has a peculiar habit of scaling the bark off a tree in its search for the insects on which it feeds. It will begin at a point low down on a tree and work its way upward, using its chisel beak with a sideward motion to pry off bits of bark. Its presence in an area can be detected sometimes by the huge pile of bark scale at the bottom of the conifers where it has been working. If a tree is productive, it will spend hours on one tree. I watched

one work on a spruce for fully one-half hour with never a let-up. This species was observed on eleven days at Brighton in practically all parts of the basin. One of the most interesting observations was right in the Mt. Majestic saddle. Hearing a woodpecker pecking, I moved closer until I located a male bird working inside a large dead conifer snag, the hole being about fifteen feet up. While I stood at the foot of the tree it came out three times, looked around, then went back to work each time. Whether this was its nest, I did not learn, but it would agree with the situation indicated by Peterson (1961:188) who says they nest in a hole in a dead conifer. Later Gleb Kashin and I found a certain nest where both adults were feeding young 40 feet up in a large living aspen. The eggs are four in number and white in color. Other individuals were seen in the proximity of holes in live aspens high on the slopes of Mt. Majestic, but we could not be sure that they were nesting.

The Utah Audubon Society has observed this bird on only three of its 26 July field trips (1957, 1960 and 1961). However, there are seven different observations reported in the Utah Audubon News as follows:

Citation	Date	
(Utah Aud. News, Dec. 1955:65)	Aug. 3, 1955	------
(Utah Aud. News, Oct. 1957:52)	July 24, 1957	north of big chair lift
(Utah Aud. News, Aug. 1959:45)	Aug. 5, 1957	near "Girls Friendly"
(Utah Aud. News, Aug. 1959:47)	June 28, 1959	male at Brighton
	July 11, 1959	female at Brighton
(Utah Aud. News, Dec. 1959:70)	Oct. 25, 1959	immature, old Brighton store
(Utah Aud. News, Dec. 1959:72)	Sept. 15, 1959	3 observed on one tree, Brighton

C. W. Lockerbie has made three other observations of one each at Brighton.

There are four specimens in the University of Utah museum taken between 1943 and 1951 from Brighton 8000-10,000 feet.

Ridgway apparently did not observe this bird on his whole trip. See note (1877:548) under the heading P. arcticus.

Tyrannus tyrannus (Linnaeus): Eastern Kingbird
Summer resident.

N. R. Whitney (Utah Aud. News, June, 1953:31) observed two individuals on a fence at the edge of a field in Parley's Park on May 30, 1951. The nest: Booth (1960-212) "Of plant fibers, bits of wool or cotton, placed in trees or bushes; eggs, 3 to 4, creamy white with reddish brown markings."

Ridgway (1877:533) on Aug. 10, 1869 collected one juvenile female in Parley's Park and makes this interesting notation: "On the eastern border of the Great Basin it was more abundant, being quite as numerous in the Salt Lake Valley as the T. verticalis, both frequently nesting in the same grove." He (op. cit.:375) stated that it is found mainly in shrubbery along streams.

Tyrannus verticalis Say: Western Kingbird
Summer resident.

The Western Kingbird can be seen quite commonly during the summer

apartment provided lodging for a House Wren and a Mountain Chickadee. From many reports, this bird seems very ready to move right into bird houses provided for it by man. The nest of twigs is lined with feathers or other soft material and placed most commonly in a hole in a tree, but also in bird houses or holes in buildings. Occasionally they will build in thick vines or bushes or ledges around buildings. The eggs are 5-12 and pinkish white with reddish brown spots. Harkin (1961: 134) records this nesting data:

July 1, 1918 eggs (6) Brighton
June 18, 1922 eggs (4) Brighton
June 1, 1924 eggs (7) Parley's Divide, aspens 5 feet up
June 27, 1924 (nest) Brighton 15 feet up
June 14, 1929 eggs (5) (set) Parley's Divide
June 21, 1931 eggs (6) Brighton aspen, 8 feet up
June 17, 1933 eggs (7) Brighton Canyon, in a building
May 25, 1939 eggs (6) Mt. Timpanogos, aspen

The Utah Audubon Society has observations for fifteen of its 26 July field trips with a total of about 50 individuals. The high count was eight in 1961. Between 1937 and 1942 they had six reports of common, or several birds seen.

C. W. Lockerbie has observations for 39 trips as follows:

number of trips	area	number of individuals
1	upper Lamb's Canyon	2 or 3
1	upper Mill Creek Canyon	several
1	Alta	1
1	American Fork Canyon	1
10	Parley's Park	about 90
25	Brighton	common

Of these areas Parley's Park had the greatest number of House Wrens and Brighton the second greatest number. Lockerbie also reported five nests and two families.

N. R. Whitney (Utah Aud. News, July, 1953:38) observed House Wrens singing on a bare rock slide above Twin Lakes, Brighton on July 9, 1950 and on July 1, 1951 saw two nests in hollow trees among the aspens at Parley's Park. C. W. Lockerbie and Leon Stanley (Utah Aud. News, Sept. 1958:54) startled a family of four from hiding at the Daly West Mine, near Park City on July 27, 1958.

There are five specimens in the University of Utah museum, all from Brighton at elevations of 8500 and 8750 feet.

Ridgway (1877:423-4) made the following collections from Parley's Park:

June 23-27, 1869
1 nest (6 eggs) built on old Robin's nest
2 nests (7 eggs) in hollow snag or tree
1 nest (3 eggs) in hollow snag or tree
1 nest (6 eggs) in deserted woodpecker hole
1 nest (6 eggs) behind loosened bark of dead aspen.

He also noted that they were equally abundant in the high canyons of the East Humboldt and Wasatch Mountains, their favorite resort in the latter being the aspen copses of the pine region where they and the Robins were the most abundant birds.

In the case of the Robins this statement still holds true, the House Wren now is far less abundant than many other species.

Troglodytes troglodytes (Linnaeus): Winter Wren
Winter visitant

My observations do not include the Winter Wren, but C. W. Lockerbie has observed it four times in the area of this transect as follows:

July 13, 1947 1 male singing at Brighton
June 12, 1948 2 were seen at Brighton.
July 22, 1954 3 were seen at Timpanoge Camp on the American Fork side of the Alpine Loop.

The Utah Audubon Society reports one seen at Brighton on July 13, 1947. N. R. Whitney (Utah Aud. News, July, 1953:38) observed one feeding under overhanging roots by Parley's Creek in the benchlands on Oct. 21, 1950. Peterson (1961:221) describes the nest as, "Of moss and twigs in exposed roots, crevice, rocks. Eggs (5-7) dotted."

Telmatodytes palustris (Wilson): Long-billed Marsh Wren
Permanent resident.

This wren is found in the marshes of the lower valleys and does not get up to Brighton. The nest is completely domed over, made of the leaves and stems of cat-tails and rushes and laced to the stems of marsh plants, and with an opening in the side. Its shape is variously described by different authors as coconut-shaped, egg-shaped, sack-shaped and globular, see Harkin (1961:137). These birds have the peculiar habit of building trial nests, sometimes several, before they settle down to house keeping. They lay 3 to 10 eggs which are light brown with dark brown spots.

Ridgway (1877:425-6) collected five males, all juvenile, from Parley's Park between July 26-8, 1869 and lists as their habitat, marshes and brooks.

Catherpes mexicanus Swainson: Canyon Wren
Permanent resident.

This bird is known to occur in certain parts of the Wasatch Mountains, but it does not seem to be common anywhere. The Utah Audubon Society observed two at Brighton on July 11, 1954 and two again on July 9, 1959. Ken Tanner (Utah Aud. News, Dec. 1957:60) observed one on the black rocks above Big Cottonwood Creek near the mouth of the canyon. Mrs. Tainter had heard the song from the same spot during the summer of 1957, and C. W. Lockerbie reported one in the same area nearly ten years before. The nest is described by Booth (1960:248) as, "Of twigs, plant fibers and moss placed in crannies of rocks or about buildings, often near streams; eggs, 3 to 6, white with reddish brown and lavender spots."

Ridgway (1877:421) refers to this bird under the common name of White-throated Wren but did not see it in Utah. On this same page he says: " . . . while now and then he pauses to pour forth his piercing song, which is of such volume as to fill the surrounding canyons with its reverberations."

Salpinctes obsoletus (Say): Rock Wren
Summer resident.

This bird was observed a half dozen times, all high up on the basin ridge from the Honeycomb Cliffs, clear on around to Mt. Majestic. I know that I was near nests but looked in vain for an exact location. Seldom have I seen a Rock Wren alone. Always they seemed to be in pairs or family groups. They were very common around Farmer Lakes in the Uinta Mountains during the summer of 1960. Peterson (1961:223) describes the nest as, "In crevice in rocks, walls; often with path of rock chips. Eggs (5-8; 10) dotted."

The Utah Audubon Society has observed it on fifteen of its 26 July field trips with a total of 36 individuals.

C. W. Lockerbie has records for 20 trips as follows:

number of trips	area	number of individuals
7	Alta-Brighton Divide and Mt. Wolverine area	1 per trip to several
1	Guardsman Pass	3
1	Lake Blanche	1
7	Alta Basin	10 plus
4	Parley's Park	10

Tom Dewey (Utah Aud. News, Aug. 1952:36) observed this bird near the top of the ridge near Devil's Castle, Alta.

N. R. Whitney (Utah Aud. News, July, 1953:38) during July and August 1950 observed Rock Wrens on high slides near Alta and Brighton.

Ridgway (1877:418-9) noted that the Rock Wren is by far the most common and generally distributed species of the family in the western region, since the prevailing character of that country is so well suited to its habits. He referred to it all the way across the Great Basin from the Sierra Nevada but did not include it in his list for Parley's Park and does not even mention it in connection with the Wasatch Mountains.

Dumetella carolinensis (Linnaeus): Catbird
Summer resident.

I do not have any personal observations of the Catbird for this transect, but in the Wasatch range I have seen two pairs in Emigration Canyon, where I suspect they were nesting. The nest according to Peterson (1961:224) is "A twiggy, rootlet-lined cup in bush or tangle. Eggs (3-5; 6) blue-green." Harkin (1961:142) reports on nesting data:
June 21, 1933 eggs (4, 4) East Canyon.

C. W. Lockerbie observed one on June 6, 1946 at Parley's Summit and one on June 20, 1950 at Parley's Park.

There are two specimens in the University of Utah museum, both taken from Peterson's Draw, one mile west of Gorzoga at 7000 feet. They were in willows.

Ridgway (1877:399) collected two nests from willows at Parley's Park on June 23, 1869 and one nest with two eggs on June 28, 1869.

Oreoscoptes montanus (Townsend): Sage Thrasher
Summer resident.

This bird did not come under my observation in this transect. C. W. Lockerbie has eight observations, all for Parley's Park area totaling 34 individuals. On one trip July 25, 1947 he counted over

20 birds. The remaining seven trips he observed only from one to four birds each. The nest according to Booth (1960:252) is, "A bulky mass of twigs and leaves of sagebrush, placed in a sagebrush; eggs, 3 to 5, greenish blue with brown spots."

Turdus migratorius Linnaeus: Robin
Summer resident.

The designation of "summer resident" seems hardly appropriate for the Robin, as I saw it in Brighton every month of the year except December and January, when I did not visit Brighton myself. The mild winter probably accounts for their presence so late in the fall and so early in the spring--if indeed, they left at all. They were present on every one of eleven trips to Brighton between Oct. 9 and Nov. 23, 1959, and they were seen every day spent in the Wasatch from Feb. 20 on to Aug. 25, 1960. I do not know how many nests I found, as I stopped recording when I reached 50, that being one-fourth of all the nests found during the summer of 1960. These nests were situated as follows:

Less than 10 feet up in young conifer	29
Above 10 feet or in larger conifer	12
4 feet, 10 feet, and 12 feet up in aspens	3
Willows (both under 6 feet)	2
Alders (1 from 1961 because of this unusual site)	3
Cross timber of a perch	2

Thus it can be seen that conifers, and particularly young conifers, generally out in the willows, provide the favorite nesting site for the Robin. The nest is a deep cup of mud, twigs and grass cemented together and lined with grass, placed on a limb or in crotch or building ledge. The eggs are 3 to 6, deep blue green in color. Harkin (1961:145) records nesting data:

June 1, 1924 eggs (2) Parley's Divide, aspen 7 feet up
April 22, 1930 (set) Brighton
May 31, 1931 eggs (4,3,3,3) Brighton

The term "ubiquitous" can pretty well be applied to the Robin. It nests from the floor of the valley all the way up the slopes of the Wasatch to at least the 10,000 foot level and probably above that. They do, however, seem to prefer areas near water and meadows since they feed so largely on earthworms. By far the greater number of these nests were found on the floor of the basin, along one of the creeks in the area or around one of the six lakes.

The Utah Audubon Society has observed this bird on every one of its 26 July field trips with the number of individuals running way up into the hundreds. The high count was 200; the low count, eleven.

C. W. Lockerbie has records for over 80 field trips covering practically every area of this transect. If anything, they are more abundant in the Parley's Park area, than in Brighton, though that seems difficult to imagine, but in most visits to that area, he lists hundreds.

Tom Dewey (Utah Aud. News, Dec. 1950:63) on Oct. 22, 1952 observed a Robin at the Alta-Brighton Pass. I observed several there on at least three trips to that spot and well up on the slopes of Mt. Wolverine.

The Deweys (Utah Aud. News, Dec. 1950:63) on Nov. 11, 1952 observed a number of Robins in upper Brighton Basin. In 20 trips into upper Brighton Basin, I don't think I ever failed to see Robins, sometimes in the most unexpected places.

N. R. Whitney (Utah Aud. News, July, 1953:39) on July 8, 1950 found a Robin at Silver Lake, Brighton, dead from swallowing a worm on a fishing hook. He also observed a Robin's nest 25 or 30 feet up in a spruce at Brighton on June 16, 1951.

There seems to be but one specimen in the University of Utah museum, that being an adult male taken at 9000 feet on Sept. 4, 1945 from Lake Solitude, Brighton.

Ridgway (1877:391-3) made the following collections from Parley's Park:

June 23, 1869 4 nests and eggs (?) and a single egg from cottonwoods along stream
June 25, 1869 1 nest and 4 eggs from bushes along stream
June 27, 1869 1 nest and 2 eggs from aspen
June 28, 1869 1 nest and 4 eggs from willows along stream
July --, 1869 1 nest and 4 eggs

Ixoreus naevius (Gmelin): Varied Thrush
Transient.

On Oct. 19, 1959 I made a routine trip to check bird nets I had set on Oct. 11, and in walking along the slope on the east side of the basin, I observed probably a dozen of these birds feeding in the mulch under the conifers. They were quite tame and allowed me to approach to within a few yards, so that I was able to observe them quite closely. It was wholly unknown to me that there was no record of this bird for the state, for one could have easily been collected for a record specimen. C. W. Lockerbie reports observing one repeatedly back in the 1930's, which wintered over at Jordan Park, remaining close to a row of brushy unattended almond trees, now long since gone. One other observation of the Varied Thrush was by Bert Webb here in Salt Lake City. They do not breed here; so these were migrants. The nest according to Booth (1961:258) is "Of twigs, mosses and grass forming a rather deep cup, placed in trees at moderate heights; eggs, 3 to 4, greenish blue with a few brown spots."

Hylocichla guttata guttata (Pallas): Alaska Hermit Thrush
Transient.

On the morning of April 24, 1960 in picking up a string of snap traps for small mammals, I came to one containing a small Hermit Thrush. It is now in the University of Utah museum (Clayton M. White, male 161). This was one of dozens of others of the same species which were moving through the brush and trees, evidently on their northward migration.

According to the American Ornithologists' Union check list the breeding range of this bird is northern Canada and Alaska. The Hermit Thrush nest is a deep cup of twigs, grass and moss placed in low trees, often near a stream or lake. The eggs, (3-5) are greenish blue.

Hylocichla guttata auduboni (Baird): Rocky Mountain Hermit Thrush
Summer resident.

This bird was observed 27 times during the summer of 1960, and three nests were found. All were about seven to ten feet above the ground in fairly young conifers. It was when Gleb Kashin and I attempted to climb up and look into the first of these, that we learned how different is the temperament of the Hermit Thrush from that of the Swainson's Thrush. The adult birds took turns diving at us, snapping beaks and passing by us with a rush of air only inches from our heads. They kept this up as long as we remained in the vicinity of the nest. This nest was found on July 9, 1960 in quite dense conifer woods and contained three young, able to fly, and about ready to leave the nest. The second nest was eight feet up in a young fir at the corner of Shepherd's cabin near Silver Lake, Brighton. It was first observed by Mr. Shepherd's daughter on July 14, 1960, and the female was still brooding when we first saw it July 25, 1960. On July 27 she was still brooding. On Aug. 19 the young had flown, and one infertile egg remained. The third nest was found in dense conifer woods on Aug. 9, 1960, and the young were out and flying around. Nest and eggs similar to Hylocichla guttata guttata above. Harkin (1961:147-8) records these nesting data:

June 20, 1912 eggs (set) Brighton
June 18, 1922 eggs (4) Brighton
June 28, 1936 eggs (3) Millcreek
July 22, 1936 (young) Millcreek
July 21, 1941 (2 young) The Firs, Millcreek
June 28, 1944 (big young) Millcreek

The Utah Audubon Society has observed the Hermit Thrush on every one of its July field trips except 1936 and 1947, with well over 200 individuals counted. The high count was 25.

C. W. Lockerbie has records for 53 trips on which he observed this species as follows, in part:

number of trips	area	number of individuals
6	upper Alta Basin	30
4	upper Mill Creek Canyon	10
2	upper American Fork Canyon	4
1	Timpanogos Trail	common
4	Parley's Park	9
34	Brighton area	common

They appear most commonly in Brighton and Alta Basins. N. R. Whitney (Utah Aud. News, July, 1953:38) observed a young Hermit Thrush just out of the nest at Alta on July 23, 1950.

There are eleven specimens in the University of Utah museum from Brighton. All from between 8500 and 10,000 feet in conifers. There is one specimen from the Parley's Park area at 7000 feet in spruce and cottonwood.

Ridgway (1877:395) between Aug. 5 and 10, 1869 collected three juvenile males, one adult female and one juvenile female. He noted their habitat as coniferous woods.

Hylocichla ustulata (Nutall): Swainson's or Olive-backed Thrush
Summer resident.

This species was observed much more commonly in Brighton than the Hermit Thrush, being observed in greater numbers on 44 days in the Wasatch. Thirteen nests were found, everyone between three and seven feet up in young conifers. Thus its preference of nesting site is similar to the Hermit Thrush and Robin. This bird we found to be of a much milder nature, and while investigating the thirteen nests found, some with eggs and some with young, if we flushed adult birds, they never attacked us, as did the Hermit Thrush, but rather retreated some distance away and waited quietly for us to leave. Sometimes they moved completely out of sight. The nest is a very neat cup of twigs, plant fibers, some moss and grass placed in low trees, principally conifers. The eggs are 3 to 5, blue with brown spots. Harkin (1961:148) records these nesting data:

May 13, 1897 eggs (4) City Creek Canyon
July 20, 1912 (2 sets) Brighton
July 22, 1912 (set) Brighton

The Utah Audubon Society has observed this species on every one of its 26 July field trips, about 450 individuals being seen. The high count was 100; the low count was six.

number of trips	area	number of individuals
3	upper Mill Creek Canyon	several
1	Mt. Timpanogos Trail	common
2	American Fork Canyon	20
2	Albion Basin	10
4	Alta Basin	10
8	Parley's Park area	41
47	Brighton area	over 400

Lockerbie also noted seven nests seen, all at Brighton.

There are twelve specimens in the University of Utah museum:
2 from Peterson's Draw, 6900 feet in Parley's Park in hawthorne, willows
1 from Alta, 9000 feet in willows
9 from Brighton, between 8730 and 9000 feet in conifers, willows, streamside

Ridgway (1877:397-8) collected the following at Parley's Park:
June 23-27, 1869 4 rests with eggs (4)
1 nest with 1 egg and 3 young
1 nest
1 adult female

All nests were in willows or bushes along streams.

Hylocichla fuscescens (Stephens): Veery or Willow Thrush
Summer resident.

I have no positive identification of this species from my own observations. The nest, see Harkin (1961:149) is made of twigs, hay, grass and bark placed in streamside thickets. It is a species of lower elevations than the Hermit Thrush. The eggs are 3 to 5 and blue. He also gives two nesting dates:

June 27, 1925 eggs (3) Brighton
Feb. 28, 1925 eggs (3) Brighton

C. W. Lockerbie has three observations, all at Community Camp,

Brighton, and all in 1935 and 1936. On July 7, 1936 he observed adults feeding young in bushes, indicating they do breed in the Brighton area.

Ridgway (1877:398) noted that the Veery Thrush was fairly common in the Wasatch range, always in dense willows along streams.

Sialia mexicana Swainson: Western Bluebird
Summer resident.

This is not a common resident in northern Utah. I have heard reports of their presence in this area, but I have no definite data. The nest is placed in a hole in a tree or building or nesting box and lined with feathers. The eggs, 4 to 8 in number are pale blue. Harkin (1961:149) gives the only positive records in some interesting data:

June 3, 1907 eggs (4) Parley's Canyon
June 4, 1910 eggs (4) Brighton, cavity, aspen limb

Sialia currucoides Bechstein: Mountain Bluebird
Summer resident.

This bird I observed mostly right up on the high ridges of Brighton Basin, one near the summit of Mt. Timpanogos. The only other place I observed it was on three occasions when it was seen in the aspens across from Silver Fork Cafe. We suspect it was nesting in some of these aspens but were never able to locate a nest. These birds nest mainly in holes in trees, but also in holes or crannies in buildings or cliffs and in bird houses. The nest is lined with feathers or shreds of bark or fine grass. The eggs are 4 to 8 in number and pale blue. Harkin (1961:150) records these nesting data:

June 14, 1929 eggs (5,5) Parley's Divide (a) in tree cavity 4 feet up
(b) in fence post cavity

June 1, 1930 (adult on nest) Parley's Divide

By way of interest he records one which nested in a can on a post.

The Utah Audubon Society observed it on 17 of its 26 July field trips with a total of 85 individuals. In 1957 there seemed to be an abundance of them, and 22 were reported; in 1954, fifteen; in 1956, twelve, and in 1959, eleven.

C. W. Lockerbie observed this bird on 40 field trips as follows:

number of trips	area	number of individuals
6	upper Alta Basin	38 and 3 nests
1	Alpine loop, near summit	1
1	Park City mine	10
15	Parley's Park	150
17	Brighton	46

Twenty-four of this last number of 46 individuals were for two trips on July 8, 1956 and July 8, 1957; so the remaining fifteen trips had very few per trip, indicating they are not very common in Brighton.

N. R. Whitney (Utah Aud. News, July, 1953:39) observed a nest under the eaves of an old cabin at Alta on July 23, 1950.

The Lockerbies and Deweys (Utah Aud. News, Jan. 1959:5) observed flocks of hundreds moving south along East Canyon at Parley's Park and Woolf Creek Pass on Aug. 12, 1956.

Ridgway (1877:406) collected at Parley's Park on Aug. 14, 1869 two juvenile males and two juvenile females and made this interesting note that this species is one of the class whose habits are undergoing much modification (adjustment to civilization), for, although it is naturally a bird of the high mountains, at Salt Lake City they were numerous. He went on to explain this as due to cultivation of vegetation.

Myadestes townsendi (Audubon): Townsend's Solitaire
Summer resident.

This bird was observed on fifteen trips, always up on the higher ridges above Brighton. The first time I saw the Solitaire was high on the shoulder of the local Twin Peaks. I did not recognize it, but the size, its manner of flight and the distinctly barred wings enabled me with the aid of Peterson's Field Guide to quickly identify it. On June 23, 1960 in a circuit of the basin rim from Honeycomb Cliffs on around to Scott's Hill, I encountered fully one-half dozen pairs. They display remarkable behavior when they mount upward in spiralling circles with song uttered enroute until just a speck--then comes a breath-taking series of dives and a landing on some tall dead snag. No nests were found, but they build their nests of plant fibers and grass on the ground at the base of a tree or rock, or in rocks, stumps or cliffs. The eggs, 3-5 are white with brown spots. Harkin (1961:151) records these nesting data: July 4, 1943 eggs (4) Alta, 9000 feet.

The Utah Audubon Society observed the Solitaire on 22 of its July field trips, the total number of individuals being 57. Only the years 1936, 1937, 1938, and 1958 failed to yield a representative. The high count was seven.

C. W. Lockerbie has observations from 30 trips to the field in the transect area as follows:

number of trips	area	number of individuals
1	upper Mill Creek Canyon	1
1	Mt. Timpanogos	1
3	Alta	8 plus nest and 4 eggs
1	Parley's Park area	1
2	Albion Basin	10
1	Alpine Loop	1
21	Brighton area	37

Almost every one occurred in the upper basins or on the higher slopes.

Tom Dewey (Utah Aud. News, Dec. 1950:64) observed a Solitaire at Lake Catherine on Oct. 22, 1950, also (Utah Aud. News, Dec. 1952:53) he observed several Solitaires in upper Brighton Basin on Nov. 8, 1952. N. R. Whitney (Utah Aud. News, July, 1953:38) observed a pair feeding on a snowbank well above Twin Lakes, Brighton on July 9, 1950.

There are two specimens in the University of Utah museum from Brighton, 8750 feet.

Ridgway (1877:408) comments on this bird, but only in connection with the pygmy forest where it feeds mainly on juniper berries. Hence it can be seen this species differs widely in its habits and habitat in different localities.

Regulus satrapa Lichtenstein: Golden-crowned Kinglet
Permanent resident.

This tiny bird is much more secretive than the similar Ruby-crowned Kinglet and has a much less noticeable song. Hence it was observed less often than its close relative, being seen on only 17 days during the year 1959-1960. My first encounter with this bird was with one caught in a net in the Brighton circle on Oct. 21, 1959. Booth (1960: 260) describes the nest as, "A bulky mass of mosses fastened in a thick branch of a conifer; eggs, 5 to 11, white to buff with reddish brown spots." Harkin (1961:151-2) gives these nesting data:

June 21, 1922 eggs (7) new nest Brighton, conifer bough 10 feet up
July 8, 1928 (young) Brighton
June 23, 1931 eggs (8) Brighton, spruce bough 50 feet up
June 26, 1931 (set) Brighton spruce 20 feet up

The Utah Audubon Society observed this species on 17 of its July field trips for a total of 112 individuals. High counts were twelve, thirteen, fifteen and eighteen per trip.

C. W. Lockerbie has records for 25 field trips in the transect as follows:

number of trips	area	number of individuals
1	Timpanogos	1
3	upper Mill Creek Canyon	common
2	Parley's Park area	4
19	Brighton area	70

From this data it can be seen that this bird is not abundant, or is at least elusive.

N. R. Whitney (Utah Aud. News, July, 1953:39) refers to it as a permanent summer resident of spruce-fir forests around Brighton.

There are eight specimens in the University of Utah museum. One is from upper Mill Creek Canyon, 7600 feet, in heavy spruce-fir forest. The other seven are all from Brighton, six being from spruce forest and one from willows on the floor of the basin.

Ridgway (1877:410) fails to mention it in connection with the Wasatch Mountains.

Regulus calendula (Linnaeus): Ruby-crowned Kinglet
Permanent resident.

No bird in the Brighton area advertises its presence so well, yet is so difficult to see. Its loud call, so amazing in view of its diminuitive size seems to resemble most often "dear dear dear dear--birchy birchy birchy birchy birchy." However, it remains so constantly in large dense conifers that it is seldom seen unless one is very patient. Though I found no nests for either of the kinglets, they build a rather bulky nest of mosses and plant fibers, which they fasten on a thick conifer bough, often at the very tip. The eggs of the two are very similar. They generally raise a large brood, up to eleven. Gleb Kashin and I observed one family of seven feeding through the trees near Silver Lake and several other families of varying size. Harkin (1961:152) records these nesting data: June 22, 1931 eggs (8) Brighton, in fir 25 feet up, near stream.

The Utah Audubon Society observed it on every one of its 26 July field trips with the number of individuals running over 500. High

counts were 74, 60, 50 etc. The low count was six.

C. W. Lockerbie observed this bird on 75 trips to the field in the area of this transect as follows, in part:

number of trips	area	number of individuals
1	head of Lamb's Canyon	common
3	upper Mill Creek Canyon	observed
5	Alta Basin	24
2	Albion Basin	8
6	Parley's Park	30
50	Brighton	hundreds seen--common

The Deweys (Utah Aud. News, July, 1952:53) observed on Nov. 11, 1952 a number of Ruby-crowned Kinglets in upper Brighton Basin. N. R. Whitney (Utah Aud. News, July, 1953:39) referred to this species as widely distributed as breeding birds in scattered spruce groves of Brighton and Alta.

There are ten specimens in the University of Utah museum, all from Brighton and all were taken from conifers between 8500 and 10,000 feet.

Ridgway (1877:409-10) made no collections but gives a statement concerning their winter habitat in the willows of lower valleys and summer habitat in coniferous forests. He added that in early spring it became abundant to such an extent as to exceed all other birds in numbers.

Anthus spinoletta (Linnaeus): Water Pipit
Permanent resident

Three observations of the Water Pipit were all I had in the Wasatch Mountains. On May 22, 1960 I observed two or three high on the shoulder of Mt. Wolverine while the snow was still deep. On July 6, 1960 near the summit of Superior Peak at the head of Mill D Canyon, I observed a small flock of Pipits, and on Aug. 2, 1961 in the cirque above Emerald Lake, Fred Rowland and I observed from the top of Mt. Timpanogos a flock of about 30 Pipits fly up the cirque and then back. A Cooper's Hawk was sailing above them, but we did not observe it attempt a stoop on the Pipits. A flock of Black Rosy Finches was feeding just below us among the rocks at the same time. The nest according to Peterson (1961:236) is, "Of grass, on ground. Eggs (4-7) spotted."

The Utah Audubon Society has an observation of ten Pipits for July 13, 1952 (Utah Aud. News, Aug. 1959:45) by Dr. and Mrs. Vandermeer on Mt. Wolverine. Also in the Utah Audubon News (Nov. 1954:52) there is general note that Pipits have been seen at Brighton. Tom Dewey (Utah Aud. News, Dec. 1954:61) observed a Pipit in upper Brighton Basin.

C. W. Lockerbie has one observation for July 15, 1939 in the Mt. Timpanogos cirque, where he at the same time saw one nest with young.

There are six specimens in the University of Utah museum, all taken on Aug. 4, 1949 from talus slope, 10,000 feet on Devil's Castle at the head of Little Cottonwood Canyon.

Lanius ludovicianus Linnaeus: Loggerhead Shrike or White-rumped Shrike

Summer resident.

The only information I have for this bird is that Ridgway (1877: 374) includes it in his list of birds observed at Parley's Park and

gives its habitat as sage brush and scrub oaks. He referred to it as the Southern Shrike. Booth (1960:266) describes the nest as, "A bulky mass of twigs placed in thorn trees or thick shrubs; eggs, 4 to 7, gray with brown spots."

Sturnus vulgaris Linnaeus: Starling
Permanent resident.

Doubtless this bird will have to be reckoned with in the Wasatch in coming years, hence I include it here, though the only records I have of its encroachment into the Wasatch are now just at the edge of the study area. The nest according to Booth (1960:267) is, "A bulky mass of twigs and debris placed in holes in trees or about buildings; eggs, 4 to 5, plain blue, but paler than those of the Robin."

C. W. Lockerbie on Aug. 10, 1956 observed 35 of these birds along the Big Mt. Trail to Parley's Park. They have practically taken possession of every hole and cranny at the Old Mill at the mouth of Big Cottonwood Canyon and I predict it will not be many years until the Starling will be seen at Brighton as well as Parley's Park.

Vireo solitarius (Wilson): Solitary Vireo
Summer resident.

This bird would seem to be either extending its range upwards into the Wasatch or is more widely distributed than commonly believed. I have not personally observed it, but Gleb Kashin has observed it well up in both Big Cottonwood and City Creek Canyons. The nest according to Booth (1960:270) is, "A compact cup of plant fibers and down suspended from several twigs at the end of a branch in a tree; eggs, 4 to 5, white with reddish brown spots about the large end." C. W. Lockerbie has an observation of one male on Parley's Summit, June 7, 1946 and of one individual on Big Mountain Aug. 10, 1956.

Ridgway (1877:374) included it in his list of birds observed at Parley's Park and lists its habitat as scrub oaks.

Vireo olivaceus (Linnaeus): Red-eyed Vireo
Transient.

C. W. Lockerbie on June 12, 1948 observed three red-eyed Vireos at the Ute Ranch, Parley's Park. The nest according to Peterson (1961:244) is, "A small basket-like cup hung from forked twig of bush, tree. Eggs (3-4) dotted."

Vireo gilvus (Vieillot): Warbling Vireo
Summer resident.

This sweet singing bird was observed on some 27 days during the summer of 1960 at Brighton, and four nests were found, three of them (see comment on Ridgway) were well up in fairly small aspens, generally where they would sway freely in a good breeze. This bird has a peculiar habit of singing with great volume, while brooding on the nest, which job the male shares. Gleb Kashin and I observed a pair change places on the nest on two different occasions, and both sat and sang on the nest. All four nests were in aspens on the west side of the floor of the basin, one north of Silver Lake, the other three north and south of the Millicent ski clearing. The nest is a neat cup of plant fibers, string, rags, etc. hung neatly from a crotch, generally

far out on a branch of a tree. The eggs, 3-5 are white with reddish brown dots. Harkin (1961:153) records these nesting data:

July 8, 1928 eggs (4) Brighton, aspen 4 feet up
July 21, 1930 eggs (4) Brighton, aspen 10 feet up
June 13, 1937 (nest) Cottonwood Canyon
July 26, 1914 (young) left this day, Mill Creek Canyon

The Utah Audubon Society has observed the Warbling Vireo on every one of its 26 field trips to Brighton with some 230 individuals. There were high counts of 19 and 26 and a low of two.

C. W. Lockerbie has records for 66 field trips in the area of the transect summarized as follows, in part:

number of trips	area	number of individuals
3	upper Mill Creek Canyon	a few
1	Lamb's Canyon Lakes	common
1	Alpine Loop	10
1	Timpanogos Trail	songs
4	Alta	songs
6	Parley's Park	100, common
16	Brighton	about 90

If anything they seem to be more common on the east slope of the Wasatch.

N. R. Whitney (Utah Aud. News, Aug. 1953:48) on July 9, 1950 observed two in the aspens at Brighton.

There are four specimens in the University of Utah museum: two from Brighton, 8750 feet in willows and aspens, one from upper Mill Creek Canyon, and one from Parley's Park 7600 feet.

Ridgway (1877:449) made the following collections at Parley's Park:

June 23-27, 1869 4 nests and eggs, all nests about 4 feet from the ground in aspens
Aug. 10-12, 1869 2 adult males

I only found one nest about two or three feet above the ground as to compare with Ridgway's notation.

Vermivora celata (Say): Orange-crowned Warbler
Summer resident.

This secretive little warbler was observed only ten times during the summer of 1960 and four times more in 1961 always in thick willows or box elder or brush along streams. Its call could be heard, but it was extremely difficult to see, often just fleeting glimpses being obtained as it kept ever on the move. The nest according to Booth (1960:279) is, "A rather loose cup of grasses and plant fibers placed either on the ground or near it, most often under bushes; eggs, 3 to 5, white with reddish brown spots." Harkin (1961:154) records these nesting data: July 2, 1936 (young just flying), The Firs, Millcreek Canyon.

The Utah Audubon Society observed this bird on all but three of its 26 July field trips with 87 individuals.

C. W. Lockerbie has records made on 51 trips to the field in our transect as follows:

number of trips	area	number of individuals
1	Head of Lamb's Canyon	several
3	Alta	3
1	Albion Basin	1
1	Mt. Timpanogos	songs
3	upper Mill Creek Canyon	a few and songs
6	Parley's Park	50
36	Brighton	hundreds plus songs, common

Thus they seem to be quite common on both the east and west slopes of the Wasatch.

There are five specimens in the University of Utah museum: 4 from upper Mill Creek Canyon (one very young) 7500 feet; 1 from Brighton, Lake Solitude, 9033 feet.

Ridgway (1877:430) collected one juvenile male from Parley's Park July 17, 1869 and two adult males on Aug. 12-16, 1869. He noted that full fledged young were numerous in the high aspen woods of the Wasatch Mountains in July and August. He gave their habitat as aspens and coniferous woods, but I always found them in willows or along streams.

Vermivora ruficapilla (Wilson): Nashville Warbler
Summer resident.

This bird was not observed personally but apparently is not only present but occasionally breeds in the Brighton area as is indicated by a nesting record by Harkin (1961:164): June 26, 1931 eggs (4) Brighton at the base of a large willow clump, nest of loose construction, mostly bark, some grass and hair. On marshy ground. He (op.cit.:154) adds a note: "A. O. Treganza (in litt. 1/5/30) reported that this species is very rare in the Wasatch Mountains, never below 6,500'. There is only the one record in the University files." The eggs of this bird are 3-5 in number, creamy white with brown spots.

C. W. Lockerbie on July 31, 1938 observed one adult and possibly one young on the Lake Mary trail, Brighton, and on Aug. 8, 1938 he observed two or three on the North Fork of Mill D in Big Cottonwood Canyon.

There is one specimen in the University of Utah museum of an immature female taken Aug. 18, 1949 in Lamb's Canyon 9000 feet.

Vermivora virginiae (Baird): Virginia's Warbler
Summer resident.

This bird I did not observe. It is not common in this part of the Wasatch Mountains and as in the case of V. ruficapilla according to Harkin (1961:154) there is only one nesting record in the University files: June 8, 1930 eggs (4) Snyderville, aspen area at head of a draw on ground under bush, of grass, bark and hair. The eggs are 3-5 in number, spotted with brown.

The Utah Audubon Society has only one July field trip record July 13, 1952, of two individuals.

C. W. Lockerbie has six records for Parley's Park with a total of 37 individuals. One of these on June 26, 1950 was of 20 individuals. He also observed one at the Woodbury cabin, Upper Mill Creek Canyon on July 18, 1948 and three in Albion Basin on Aug. 12, 1950.

From these records it would appear this warbler is more common in the Parley's Park area of the transect.

There are two specimens in the University of Utah museum, one from Brighton 10,000 feet and one from Parley's Park in the willows 6600 feet.

Ridgway (1877:428-29) made collections on May 24, 1869 of an adult male and female (mates) at City Creek Canyon and of an adult male and female and nest and four eggs at Salt Lake City. He also notes that on the Wasatch and Uinta Mountains it was more abundant being particularly plentiful among the scrub oaks of the foothills. He made no collections at Parley's Park, though he (op. cit.:373) does include this species in his Parley's Park list where he gives its habitat as scrub oak.

Dendroica petechia (Linnaeus): Yellow Warbler
Summer resident.

This warbler, particularly the male, was very conspicuous both because of its brilliant coloration and because it emerges into the open more often and spends more time in larger trees along streams. It is, however, a bird essentially of the lower foothills and valleys, and I have only one record of it for Brighton, that of Tom Dewey (Utah Aud. News, Dec. 1954:63) who saw one at Brighton on Sept. 5, 1954. This is possibly a good example of the habit of some birds after breeding season, to migrate higher into the mountains. I found the species quite common in the Storm Mountain area of Big Cottonwood Canyon and from there on down to the mouth. I also observed them a short distance above that point.

They are one of the most common birds in Emigration Canyon. The nest according to Harkin (1961:156) is cup-shaped or dome-shaped, made of plant fibers, bark shreds, grass and plant down and is placed in brush and thicket, not too high and attached to forked twigs. The number of eggs is 3-6. The color is white with various dark colored spots. He also lists these nesting data:

June 1, 1912 eggs (4) Parley's Park
June 16, 1918 eggs (4) (young) Parley's Park
June 23, 1918 (2 sets) Parley's Canyon

C. W. Lockerbie has records for thirteen field trips, all to Parley's Park with the number of individuals totaling over 250 and such notations as: common, everywhere. N. R. Whitney (Utah Aud. News, Aug. 1953:48) observed them in Parley's Park, in City Creek Canyon and Emigration Canyon.

There are two specimens in the University of Utah museum, both from Parley's Park area 6900 and 7000 feet, from willows and cottonwoods.

Ridgway (1877:432) collected on June 23-27, 1869 three nests and eggs from Parley's Park and one nest with eggs (4). On July 16, 1869 he collected one nest and eggs (1). All nests were in willows or rose bushes along streams.

Dendroica auduboni (Townsend): Audubon's Warbler
Summer resident.

Observations of this bird were made on 39 days during the summer of 1960 between May 21 and Aug. 25. It is an inhabitant of the

coniferous forests and was seldom seen outside this habitat, though occasionally it ventured into the aspens. In August several family groups were seen feeding through the trees. One nest was found twelve feet up and out on a bough of fir. It was quite bulky, made of plant fibers and small twigs. Eggs number three to five, are greenish in color with various colored darker spots. Harkin (1961:158) records these nesting data:

June 21, 1921 eggs (4) Brighton concealed against trunk of small balsam

July 4, 1936 (young) Cottonwood Canyon

The Utah Audubon Society observed this bird on every one of its 26 July field trips to Brighton with a total of well over 300 individuals. High counts were 46 in 1949 and 35 in 1955. There was one low count of 2 in 1944.

C. W. Lockerbie has observations for 89 trips to the field in the transect as follows, in part:

number of trips	area	number of individuals
1	head of Lamb's Canyon	several plus nest
5	upper Mill Creek Canyon	several plus nest
1	Mt. Timpanogos Trail	observed
5	upper Alta Basin	common
2	Albion Basin	6
1	Alpine Loop	10 plus 1 nest
8	Parley's Park area	50
50	Brighton area	hundreds, common

On Oct. 4, 1936 he observed a flock of Audubon Warblers and Mountain Chickadees feeding together. N. R. Whitney (Utah Aud. News, Aug. 1953: 49) observed two males singing in aspens at Alta.

There are fourteen specimens in the University of Utah museum:

12 from Brighton from coniferous woods and aspens 8500-10,000 feet

2 from Parley's Park, spruces and aspens 6900 and 7000 feet

Ridgway (1877:434) collected a single egg on June 23, 1869 and noted that there were young in the nest ten feet above the ground near the tip of a horizontal pine branch. He (op. cit.:373) listed their habitat as coniferous woods.

Dendroica nigrescens (Townsend): Black-throated Gray Warbler
Summer resident.

Ridgway (1877:373) includes this species in his list of birds seen at Parley's Park where he observed them in scrub oak. Booth (1960:276) describes the nest as, "A neat cup of plant fibers lined with feathers, placed in low trees or shrubs; eggs, 3 to 5, white with reddish brown spots."

Dendroica townsendi (Townsend): Townsend's Warbler
Transient.

I did not personally observe this bird. It does not breed in Utah. Booth (1960:282) describes the nest as made of plant fibers and grasses and placed from a few feet to at least 60 feet up in conifers. Eggs, 3 to 5, are white with fine lavender and chestnut spots, mainly about the larger end.

C. W. Lockerbie on Sept. 18, 1938 observed one male on the south fork of Mill Creek.

There are three specimens in the University of Utah museum, two from The Firs, upper Mill Creek Canyon in aspens 7100 and 7200 feet and one from Alta in conifers 9000 feet.

Oporornis tolmiei (Townsend): MacGillivray's Warbler
Summer resident.

This warbler was observed ten times during the summer of 1960 and occurred most often in the snowbrush and other shrubs on slopes above water rather than down in the willows and damp meadows. It was observed a few times in the latter habitat; however, the slopes above the south shore of Silver Lake was the place it was most often observed.

Booth (1960:282) describes the nest as, "Of grasses and plant fibers, placed near the ground in small bushes; eggs, 3 to 5, white with dark brown and lavender spots." Harkin (1961:158-9) describes one nest as lined with porcupine fur. He records these nesting data:

June 16, 1913 (set) Brighton
June 18, 1922 eggs (5) (5) Brighton in willows 2 feet up
June 21, 1931 eggs (4) Brighton
March 30, 1936 eggs (3) above The Firs, Mill Creek Canyon

The Utah Audubon Society observed this bird on all of its July field trips to Brighton except 1951, 1953 and 1958 with a total count of about 90 individuals. Never were more than a few seen per trip, the three high counts being twelve, eight and six. There were several low counts of one.

C. W. Lockerbie has records for 71 field trips to the area of this transect summarized (in part) as follows:

number of trips	area	number of individuals
3	upper Mill Creek Canyon	3, a few
1	Timpanogos trail	several
5	upper Alta Basin	30
1	Alpine Loop	3
50	Brighton	from 1 to several per trip

Never were more than ten observed per trip. They are fairly common, but they remain concealed most of the time. Gleb Kashin has observed adults and young in the Mt. Dell area in late summer.

Miss Betty Jones (Utah Aud. News, Aug. 1950:41) observed MacGillivray's Warblers feeding young at a nest in Alta on July 23, 1950. N. R. Whitney (Utah Aud. News, Aug. 1953:49) observed a singing male three feet up in aspen at Brighton on July 9, 1950.

There are twelve specimens in the University of Utah museum as follows:

1 from Lamb's Canyon, 9000 feet in marsh
6 from Parley's Park area, 6900 and 7000 feet from rose, hawthorne, choke cherry and spruce
5 from Brighton 8716 to 10,000 feet, all from willows

Ridgway (1877:436) made these collections at Parley's Park:

June 23-27, 1869	2 nests and eggs 1 nest and eggs (4)	Nests 1 foot to 18 inches above ground in briars, weeds or bushes near stream
July 19, 1869	1 juvenile male	

Geothlypis trichas (Linnaeus): Yellowthroat
Summer resident.

No personal observations were made of this bird, nor were any nests found. Booth (1960:279) describes the nest as, "A deep cup of leaves, grasses and plant fibers, placed on or near the ground, usually in a marshy area; eggs, 3 to 4, white with black, brown and lavender spots."

C. W. Lockerbie has one observation of one bird at Parley's Park on July 1, 1951.

Ridgway (1877:373) includes the Yellowthroat in his list of birds observed at Parley's Park and lists its habitat as marshes and brooks.

Icteria virens (Linnaeus): Yellow-breasted Chat
Summer resident.

This species is a bird of the valleys, and no personal observations of it were made in the transect. Booth (1960:280) describes the nest as, "A bulky mass of grass, plant fibers, leaves and debris placed in bushes or low trees; eggs, 3 to 5, white with reddish brown and lilac spots."

C. W. Lockerbie has three observations of this bird in Parley's Park each of one individual: June 29, 1947, June 6, 1948 and June 11-12, 1948. Gleb Kashin has observed this bird around the Mt. Dell area in Parley's Canyon.

Wilsonia pusilla (Wilson): Wilson's or Pileolated Warbler
Summer resident.

This little warbler was observed only six times during the summer of 1960, but each time in the willows of the Brighton circle or on the south and west shores of Silver Lake. Booth (1960:278) describes the nest as "A mass of grass and moss placed on the ground or in low bushes; eggs, 3 to 4, white with reddish brown and lavender spots."

The Utah Audubon Society has observed this bird on only four of its 26 July field trips: two in 1956, four in 1957, three in 1960 and one in 1961. It remains so constantly in deep cover that it is difficult to observe.

C. W. Lockerbie has seven observations of this bird from 1932 to 1960 as follows:

number of trips	area	number of individuals observed
1	American Fork Canyon	2
1	The Firs, upper Mill Creek Canyon	10
1	upper Alta Basin	7 and 1 nest with 3 young
4	Brighton floor and Dog Lake	

Gleb Kashin (Utah Aud. News, Oct., 1957:51) on June 27, 1957 found a nest thirty feet from Silver Lake on a grassy slope wet from seepage. The nest was on dry ground in a clump of green grass at the base of an aspen and was made of dry grass. There were three eggs, light gray with red-brown spots. On July 14 the nest was still intact, and the young were about. Another pair was observed one-fourth mile away bringing food, but the nest was not found.

There are five specimens in the University of Utah museum all from Brighton taken in August and September of 1945, from 8500-10,000 feet in spruces and willows.

Setophaga ruticilla (Linnaeus): American Redstart
Summer resident.

Richard Waite (Utah Aud. News, Dec. 1954:63) on July 11, 1954 observed one fly across in front of his car at Brighton.

Booth (1960:275) describes the nest as, "A rather deep cup of plant fibers and grasses placed at moderate elevations in trees; eggs, 3 to 4, white with reddish brown spots." Harkin (1961:161) records these nesting data: July 22, 1939 (nest) Cottonwood Canyon, in boxelder.

Ridgway (1877:438) includes this bird in his list for Parley's Park and noted: " . . . common in summer throughout the Wahsatch district, being one of several eastern species which have their westward range limited only by the commencement of the arid and treeless region of the Great Basin."

Passer domesticus (Linnaeus): House Sparrow
Permanent resident.

This hearty sparrow, introduced from Europe, has attained a wider range probably than any native bird in North America, having moved far north into Canada, all over the United States and deep into Mexico and Lower California. It seems to thrive best around the haunts of man, and more often than not, nests in any opening it can find in or near buildings or in thick trees. I've even observed them nesting back in a two and a half inch piece of iron pipe, the cross member of a clothesline pole. The nest is often very bulky, made of sticks, grass, feathers and every kind of debris. I know of one fire started in the belfry of a country school house when a house sparrow carried a lighted cigarette butt to its nest, and on another occasion I observed one pick up a butt and start flying, only to drop it when it got too hot to handle. The nest has a small opening on one side. Eggs are four to seven, brownish-white with numerous darker brown and black dots. They ordinarily raise several broods a year. Harkin (1961:161) has a note to the effect that they breed as early as Feb. 10. They are common around the Old Mill at the mouth of Big Cottonwood Canyon, where they are apparently the only bird which can compete with the Starling--another species introduced from Europe and which is becoming a pest throughout the country. The only other place I've observed them is in Parley's Park where they are common around yards and buildings.

C. W. Lockerbie had six different observations of them, all at Parley's Park where he comments, "flocks in barnyards," "many," "over fifty" etc.

Dolichonyx oryzivorus (Linnaeus): Bobolink
Summer resident.

The Bobolink is a bird of the meadows and marshes and does not occur at Brighton but does in Parley's Park. Booth (1960:286) describes its nest as, "A cup of grasses and plant fibers placed in a depression in the ground; eggs, 5 to 7, grayish brown with irregular brown and purple spots and blotches."

C. W. Lockerbie has observations from eleven trips, all in Parley's Park area. They do not appear to be common, and only a few were seen on any one trip. They presumably nest in the Parley's Park area.

N. R. Whitney (Utah Aud. News, Aug. 1953:49) on July 1, 1951 observed four males singing in the tall grass of fields at Parley's Park.

Sturnella neglecta Audubon: Western Meadowlark
Permanent resident.

The Meadowlark is a bird of the meadows and open fields and only occasionally ranges up into the mountains. Gleb Kashin observed one at Brighton on July 13, 1958. However, it is quite common in the Parley's Park area, and I observed it several times sitting on fence posts, telephone poles and in the fields. Its nest is made of grasses or is located under some object so that it often appears to be back in a shallow tunnel. The eggs are 3 to 7, white to buff with brown spots.

C. W.Lockerbie has records for twelve trips, all to Parley's Park area with an average count per trip of eight to ten individuals. They thus are quite common, and he so comments for one trip.

Ridgway (1877:374) includes the Meadowlark in his Parley's Park list and indicates its habitat as sagebrush and meadows.

Xanthocephalus xanthocephalus (Bonaparte): Yellow-headed Blackbird
Summer resident.

This is another bird of the meadows and marshes and only occurs in the Parley's Park area of the transect. I observed it only once while driving through that area. It nests in tules, cat-tails, and sometimes in brush or weeds over or very near water. Booth (1960: 288) describes the nest as, "Of grasses and rushes woven about stems of cat-tails and rushes, and placed one to three feet above water; eggs, 3 to 5, grayish white heavily speckled with dark gray and brown."

C. W. Lockerbie has observations for six trips to Parley's Park with an average of 25 individuals per trip. N. R. Whitney (Utah Aud. News, Aug. 1953:50) observed these birds breeding in large numbers in Parley's Park in 1950.

Ridgway (1877:374) included the Yellow-headed Blackbird in his Parley's Park list and indicated its habitat as marshes and brooks.

Agelaius phoeniceus (Linnaeus): Red-winged Blackbird
Permanent resident.

This bird occurs only in the Parley's Park area of the transect. It is very common and especially in the fall occurs in large flocks, numbering into the hundreds. I've seen several flocks in the area while driving through in addition to a number of individuals and small groups. Nests can be seen quite commonly in marshes or along streams near meadows. The nest is composed of grasses and reeds and is placed in reeds and in bushes low to the ground or over water. The eggs, three to five, are bluish with quite a variety of brownish spots, blotches and scrawls.

C. W. Lockerbie has numerous records obtained on thirteen trips to Parley's Park, averaging 40 to 50 individuals per trip, which indicated they are quite common. N. R. Whitney (Utah Aud. News, Aug. 1953:49) observed them in large numbers at Parley's Park in 1950.

Ridgway (1877:374) includes this bird in his Parley's Park list and indicates its habitat as meadows, marshes and brooks.

Icterus bullockii (Swainson): Bullock's Oriole
Summer resident.

There are no records of the Bullock's Oriole for Brighton. C. W. Lockerbie, on Aug. 10, 1956, observed two of these birds on the Big Mountain Trail to Parley's Park. Ridgway (1877:509) on May 27-29, 1869 collected three nests and eggs, and on June 28, 1869 he collected two nests and eggs from City Creek Canyon, and on June 28, 1869 he collected an adult male at Parley's Park. All nests were in mountain mahogany or maple near the top of the tree. The nest is a deep basket or pouch of horsehair, string and plant fibers swung from the tip of a branch well above the ground. Eggs are from three to six, bluish with black lines and scrawls.

Euphagus cyanocephalus (Wagler): Brewer's Blackbird
Permanent resident.

This bird occurs only in the Parley's Park area of the transect. I observed several of them along the road while driving through Parley's Park. It is a bird of meadows and open fields. Peterson (1961:272) describes the nest as, "A twiggy grass-lined cup, on ground, in bush or tree, in loose colony. Eggs (4-6; 8) heavily spotted."

C. W. Lockerbie has records for 19 trips to the Parley's Park area with about 100 as an average number if individuals per trip. Thus they are seen to be very common in the Parley's Park area. N. R. Whitney (Utah Aud. News, Aug. 1953:50) observed them to be widely scattered through Parley's Park in 1950.

Ridgway (1877:510-12) made several collections at Parley's Park: June 18-24, 1869 one adult male, one nest and eggs (2), one nest and eggs (3), one nest and eggs (4). On July 28, 1869 he collected one juvenile male and noted that in Parley's Park among the Wasatch Mountains they were observed to be abundant during the breeding season and that toward the latter part of July and during the month of August they became exceedingly abundant in Parley's Park, a large proportion of the flocks being composed of young birds.

Both Booth (1960:292) and Peterson (1961:272) indicate the Brewer's Blackbird as being gregarious during the nesting season, or in loose colonies. Ridgway (op. cit.: 510-11) relates of finding the same conditions around Pyramid Lake, Nevada. Then at Parley's Park he seeks to explain the difference saying the nests were scattered, since they had plenty of room, while at Pyramid Lake the trees were few and bunched. He indicates too that during the breeding season they migrate up into the lower mountains and nest in the trees of the lower canyons and slopes, rather than down in the marshes.

Molothrus ater (Boddaert): Brown-headed Cowbird
Permanent resident.

The cowbird is primarily a lowland bird as are all other members of the family Icteridae treated in this paper. It is listed here since it appears in Parley's Park. This bird does not build a nest of its own but generally deposits one egg each in the nests of smaller birds. The eggs are blotched with brown on dirty white.

Harkin (1961:172) quotes information to the effect that the incubation period of the cowbird is 10 days, thus being somewhat shorter than that of the species whose nests it utilizes and also that they probably do not lay more than two eggs a year. He gives the following nesting data for Utah:

June 16, 1918 eggs (1, 1) Parley's Park, Black-headed Grosbeak and Song Sparrow

June 23, 1918 eggs (3) (1, 1) Parley's Park, Black-headed Grosbeak and Traill's Flycatcher

His list of birds parasitized and the number of times follows:

Red-winged Blackbird	2	Black-headed Grosbeak	2
Brewer's Blackbird	3	Traill's Flycatcher	1
Lazuli Bunting	3	Swainson's Thrush	1
Chipping Sparrow	1	Blue-gray Gnatcatcher	1
Brewer's Sparrow	2	Abert's Towhee	1
Song Sparrow	2	Yellow-breasted Chat	1

These birds were not all from the Wasatch transect, but this serves to show the range of birds whose nests are utilized by the Brown-headed Cowbird.

C. W. Lockerbie on June 5, 1948 observed a pair of cowbirds at Parley's Park, and on June 5, 1949 he saw three males.

Ridgway (1877:501) on June 23, 1869 collected one egg deposited in the nest of Passerella schistacea. He listed its habitat as meadows and shrubbery along streams.

Piranga ludoviciana (Wilson): Western Tanager

Summer resident.

This is one of the most colorful birds in Brighton Basin. It was observed 27 times during the summer of 1960, and two nests were found, both in conifers. The first was on July 22, 1960 about 40 feet up on a limb of a large spruce very near the top of Evergreen Mountain. The second was on July 25, 1960 about 25 feet up in a spruce south of Silver Lake, Brighton. The parents were feeding young in both cases. The nest is built of small twigs and plant fibers and placed generally several feet off the ground on a horizontal limb. There are from three to five eggs, greenish with brown spots. They apparently breed down in the scrub oaks as well as in the higher aspens and coniferous woods. I generally saw them in coniferous woods. Harkin (1961:174) records the following nesting data:

June 24, 1928 (nest) Brighton aspen 20' up

June 21, 1930 (nest) Brighton high on a conifer bough

June 19, 1932 (eggs bad) Big Cottonwood, spruce 35' up

June 27, 1936 (eggs bad) Mt. Timpanogos, aspen bough

July 4, 1936 (bldg. nest) Cottonwood, spruce

June 4, 1944 (eggs 4) Millcreek Canyon, fir 16' up

The Utah Audubon Society observed this bird on every one of its 26 July field trips with a total of over 250 individuals, and high counts of 25 and 20 and a low count of one were recorded.

C. W. Lockerbie has records for 62 field trips to the area of the transect summarized in part as follows:

number of trips	area	number of individuals
1	Lamb's Canyon	11
1	Timpanogos Trail	several

1	upper Mill Creek Canyon	1
6	upper Alta Basin	14
1	Aspen Grove Mt. Timpanogos	2
8	Parley's Park	60
40	Brighton area	250

Thus they appear quite common on both slopes of the Wasatch. N. R. Whitney (Utah Aud. News, Aug. 1953:50) on May 27, 1951 observed the Western Tanager at The Spruces, and also comments that the heaviest breeding concentration around Brighton and Alta is in the aspens. This differs somewhat from what I observed. Leon Stanley and the Lockerbies on July 27, 1958 observed one on a wire at Brighton. They often become quite tame, and elsewhere I've enjoyed watching them, when camping, come right to the table and eat items while we were eating. Butter seemed to be a favorite food.

There are nine specimens in the University of Utah museum:
1 from The Pines, Mill Creek Canyon
5 from Brighton, 8750-9000 feet
3 from Parley's Park area 6900-7200 feet in aspens

Ridgway (1877:455) on June 25, 1869 collected at Parley's Park one nest and eggs (3) from the extreme end of a horizontal pine branch. He noted that from June to August they were abundant in the pine forests of the Wasatch Range while in September they fed extensively on the fruit of Cretaegus rivularis. He (op. cit.:373) lists their habitat as scrub oak, aspens and coniferous woods.

Pheucticus melanocephalus (Swainson): Black-headed Grosbeak
Summer resident.

This bird apparently has a great altitudinal range in the Wasatch Mountains from the valley at the base of the mountains up to 9000 feet. I did not observe it at Brighton until July 24, 1960 when Gleb Kashin and I observed a family group, with three young, in the aspens on the northeast slopes of the basin. The next day I observed two young in the Majestic ski clearing about one-half way to the top. On June 18, 1961 they were very common at Storm Mountain in Big Cottonwood Canyon and were observed feeding on Populus angustifolia berries, and on Aug. 10, 1961 I watched one feeding in the willows along the edge of coniferous woods near Brighton store. Booth (1960:299) describes their nest as a loose mass of twigs and plant fibers placed in shrubs and small trees; eggs, three to four, bluish white with brown spots. Harkin (1961:175) records these nesting data:

June 9, 1912 eggs (3) Millcreek, willows 6' up
June 16, 1918 eggs (4, 3) Parley's Divide, limb 6' up
June 23, 1918 eggs (3) Parley's Divide, wild rose 6' up

The Utah Audubon Society has observed this bird on thirteen of its 26 July field trips at Brighton with a total of more than 30 individuals. The high count was five.

C. W. Lockerbie has records for 38 field trips summarized in part as follows:

number of trips	area	number of individuals observed
1	Lamb's Canyon	4 and songs
3	upper Mill Creek	4
3	upper Alta Basin	

1	Alpine Loop of Timpanogos	10
9	Parley's Park	120
remainder	Brighton area	a few, several etc.

He listed them as common at The Spruces. From all these observations it seems evident that the Black-headed Grosbeak is more common at lower elevations, particularly during the breeding season. It is very possible the young we saw at Brighton had moved up as so many birds do after nesting is over. N. R. Whitney (Utah Aud. News, Aug. 1953:50) on June 17, 1951 observed this species high on Mt. Timpanogos.

There are two specimens in the University of Utah museum: one from one mile north of Snyderville, 7000 feet, cottonwoods near stream and one from Brighton, 9000 feet in spruce.

Ridgway (1877:488-9) collected at Parley's Park on June 27-28, 1869 one nest and eggs (3) and one nest from willows along stream. On July 29, 1869 he collected one juvenile female. He also noted that they were quite abundant in the lower canyons and fertile valleys all along the route from Sacramento to the Wasatch and Uinta Mountains, but that they were rare in Parley's Park.

Passerina amoena (Say): Lazuli Bunting
Summer resident.

This, like the Black-headed Grosbeak, is more a bird of the lower mountains rather than the higher ranges. I did not observe it at Brighton. On Aug. 3, 1960 I noted several in Mill B Canyon on the way up to Lake Blanche. I find them very common in Emigration Canyon where I lived and found one nest there. Gleb Kashin has found a number of nests in City Creek Canyon. Booth (1960:311) describes the nest as, "Of grasses and plant fibers placed in a bush or a small tree, sometimes in weeds or even on the ground; eggs, 4 to 5, pale bluish white without spots." Harkin (1961:176) records these nesting data:

June 3, 1903 eggs (3) Cottonwood Canyon, in oak
June 21, 1912 eggs (3) Cottonwood Canyon, raspberry 2' up
June 23, 1918 eggs (3) Parley's Canyon, scrub oak 2½' up

The Utah Audubon Society reports this bird on only nine of its 26 July field trips with a total of only eleven individuals which is an interesting commentary on its scarcity as high up as Brighton.

C. W. Lockerbie has records for 27 field trips as follows:

number of trips	area	number of individuals
3	upper Alta Basin	4
2	Alta trail and Alta	2
9	Parley's Park	20, mostly males
remainder	Brighton	1 or 2 per trip

He does have "several" and "common" indicated for three times at Community Camp. But all in all it is not common in the higher Wasatch range. N. R. Whitney (Utah Aud. News, Aug. 1953:50) on June 17, 1951 observed the Lazuli Bunting just above Aspen Grove Campground on Timpanogos.

There are two specimens in the University of Utah museum: one from cottonwoods in Parley's Park, 7000 feet and the other from willows in Brighton, 8750 feet.

Ridgway (1877:491) on June 23-27, 1869 collected from Parley's Park two nests and eggs (4), one nest and eggs (3), one nest and eggs; all nests were in rose bushes near stream.

Hesperiphona vespertina (Cooper): Evening Grosbeak
Summer resident.

I observed one in Emigration Canyon Aug. 4, 1961 which appeared to be a juvenile. The others, including two large flocks, were seen late in the year and appeared to be migrating birds. Booth (1960:299) describes the nest as, "Of twigs, plant fibers and rootlets, placed in trees at moderate heights; eggs, 3 to 4, bluish green with a few brown spots."

C. W. Lockerbie on Oct. 11, 1953 observed three Evening Grosbeaks on Big Mountain.

There is one specimen in the University of Utah museum taken Aug. 6, 1949 at Parley's Park in cottonwoods.

Carpodacus cassinii Baird: Cassin's Finch
Summer resident.

This was one of the most common birds at Brighton and was observed on 62 days in the Wasatch. It was seen at Brighton as late as Nov. 1 and 7, 1959, while the earliest date was March 12, 1960, and from thence on every time I was at Brighton through Aug. 25, 1960. One nest was found on a branch against the trunk fifty feet up in a young spruce, ten feet from the top of the tree, on July 10, 1960. A heavy shower caused us to take temporary refuge under heavy conifers, and while waiting it out, we observed both adults fly into the tree, and one settled onto the nest where it remained brooding. I collected the nest July 28, but it was empty. It was made almost entirely of coarse hair that looked like it was stuffing from some piece of furniture. Booth (1960:307) describes the nest as "A cup of grasses and plant fibers usually placed at the end of a branch of a pine or a fir, often rather high; eggs, 4 to 5, bluish green with a few small spots of purple and black." Harkin (1961:177) records these nesting data:

May 28, 1920 eggs (5) Brighton, top of balsam
June 18, 1922 eggs (4) Brighton, top of young evergreen
July 2, 1922 eggs (5) Brighton, top of young balsam
June 12, 1925 eggs (4) Brighton, top of young balsam
June 28, 1925 eggs (5) Brighton, evergreen 20' up
July 8, 1928 eggs (3) Brighton, top of conifer

The Utah Audubon Society observed this bird at Brighton every July field trip except 1936 with a total of several hundred individuals. A high of hundreds and lows of zero and six were recorded.

C. W. Lockerbie has records for 71 field trips summarized in part as follows:

number of trips	area	number of individuals
1	Alta Divide	common
1	Mt. Timpanogos	several
9	upper Alta Basin	common, several, 50 etc.
1	Alpine Loop	10
8	Parley's Park	from 1 to 10 per trip
remainder	Brighton	hundreds, common, young and adults

Tom Dewey (Utah Aud. News, Dec. 1950:64) observed Purple Finches at Lake Catherine on Oct. 22, 1950 and again (Utah Aud. News, Dec. 1952:53) in upper Brighton Basin, ten birds, on Nov. 8, 1952. N. R. Whitney (Utah Aud. News, Aug. 1953:51) observed Cassin's Finches nesting in spruces at Brighton.

There are seven specimens in the University of Utah museum, three seem to be missing, and 30 are on loan at the present writing. All are from Brighton 8750 feet.

Ridgway (1877:457-58) on June 23-28, 1869 collected at Parley's Park two nests, eggs (4), one nest, eggs (3), one nest, eggs (1). Nests were high in aspens or cottonwoods, also one adult male and one adult female were collected. On July 19, 1869 he collected one adult male and a nest from a horizontal branch of a cottonwood and on Aug. 8, 1869 one juvenile male and one juvenile female. He noted that in the pine belt of the Wasatch and Uinta Mountains, they were abundant from May to August, nesting the whole time. Most nests were in aspens and narrow leaf cottonwoods in higher portions of ravines where these replaced the conifers. This note compared with Harkin's data shows the wide range of nesting habitat these birds will use.

Carpodacus mexicanus (Muller): House Finch
Permanent resident.

This is primarily a bird of the lowlands, and I did not see it at Brighton. However, there is a report by the Utah Audubon Society of one being seen at Brighton on the July 13, 1957 field trip, and again on July 8, 1961 three were seen. This is one of the birds that seems to thrive near civilization, and more often than not, builds its nest around or on the dwellings of man. The nest is a neat cup built of grass, plant fibers, string and hair placed fairly low to the ground in a tree or shrub. Vines twining on buildings seem to be a favorite site. There are many of their nests in the ivy and creepers on walls of the University buildings. The eggs, four to five, are light blue with a few black dots.

C. W. Lockerbie has records gained on twelve trips, all to Parley's Park with a total of over eighty individuals. His high count was 25, low count was one. Thus in certain lowland areas it is common.

Ridgway (1877:459-61) made a number of collections from City Creek Canyon and Salt Lake City. On June 23, 1869 he collected a nest and eggs (2) from a cottonwood tree near a stream at Parley's Park. He adds this note: "Although chiefly a bird of the lower valleys, this species was sometimes found in the lower canyons of the mountains." Several nests were found 4800 feet (elevation) above the city in City Creek Canyon, where it met the lower limits of the Cassin's Finch.

Pinicola enucleator (Linnaeus) Pine Grosbeak
Permanent resident.

The Pine Grosbeak is fairly common in certain localities of Brighton and was seen on 34 days during the summer of 1960. This bird has two distinct color phases--red and yellow--which seem to be about equally divided in number. There is some question among ornithologists as to whether this coloration is a distinct sexual

character (red for male and yellow for female). At this date it is safer to leave this as an unsolved problem. There are seven specimens in the University of Utah museum that are quite yellow males. Peterson (1961:284) and Booth (1960:297) both make the color to be a sexual character. One nest was found about fifteen feet up and out on a horizontal limb of a large spruce 150 yards west of the Brighton store. The young were out in the trees around the nest on July 16, 1960. The nest is a rather flimsy shallow cup of twigs and plant fibers generally in a conifer bough. The eggs, three to four, are light blue with brown spots.

The Utah Audubon Society observed this bird on 21 of its July field trips with over 200 individuals. High counts were 19 and 18. Low counts were zero and two. Either the club's observations have improved, or the Pine Grosbeak is increasing in the Brighton area, for the 26 years' counts show a definite progression upward through the years.

C. W. Lockerbie has records for 41 field trips summarized (in part) as follows:

number of trips	area	number of individuals
6	upper Alta Basin	few and calls
remainder	Brighton	200

It is interesting to note that Lockerbie never noticed this bird at Parley's Park, and that Ridgway apparently never saw the bird either at Parley's Park or indeed anywhere on his trip. N. R. Whitney (Utah Aud. News, Sept. 1953:55) on July 9, 1950 observed a Pine Grosbeak nest 30 feet up in a spruce at Brighton and also saw several individuals at Lake Solitude and Twin Lakes the same day. Gleb Kashin has observed this species at the mouth of Big Cottonwood Canyon.

There are ten specimens in the University of Utah museum, two from the summit of Parley's Canyon and eight from Brighton, 8700-9500 feet, from firs, spruces and aspens.

Leucosticte tephrocotis (Swainson): Gray-crowned Rosy Finch
Winter visitant.

This bird breeds farther north than Utah, hence is only seen on its migratory flights. It is strictly an alpine bird, living above timber line during the breeding season. Booth (1960:308) describes the nest as, "A neat cup of moss, grasses and plant fibers placed in a cranny of a cliff or under a boulder on a rock slide; eggs, 4 to 5, pure white." Tom Dewey (Utah Aud. News, Dec. 1952:53) on Nov. 8, 1952 observed about 365 of these birds in upper Brighton Basin. They were first seen in limber pines, apparently feeding. They took flight and lit on top of Twin Lakes dam and went to pecking, presumably after insects. They are quite common in parts of Salt Lake Valley during the winter, and there are a number of specimens in the University of Utah museum from there.

Leucosticte atrata Ridgway: Black Rosy Finch
Permanent resident.

The Black Rosy Finch is a hardy little bird that lives in the high Alpine regions of the Wasatch. I always looked for it when up in the high peaks but only saw it in three localities. On June 23, 1960 I observed two near the crest of Mt. Wolverine. They both dropped

down into the Wolverine cirque on the Brighton side, though one, in deep undulating flight, flew almost to Mt. Millicent before dipping down. I found no evidence of nesting, and a subsequent trip to the spot on July 10 revealed no Black Rosy Finches. The second observation of this bird in the Wasatch was on Aug. 2, 1961 when Fred Rowland and I observed two flocks of them on Mt. Timpanogos. The first, a flock of about 30, was feeding among the rocks right at the summit and in the deep cirque above Emerald Lake. The second flock of about 20 was just below the summit of Mt. Timpanogos on the west side overlooking Utah Lake. This flock was also walking around feeding among the rocks. The third observation was of hundreds of this finch all along the ridges and talus slopes of Mt. King in the Uinta Mountains. I had hoped to find this bird nesting in the Brighton-Wolverine cirque, but failed to find any evidence. The nest and eggs are similar to L. tephrocotis.

The Utah Audubon Society has records for only four of its 26 July field trips to Brighton. On July 11, 1954 eight were observed; on July 10, 1955, thirteen; on July 8, 1956, two; and on July 9, 1959, five.

C. W. Lockerbie has records for nine trips as follows: on July 15, 1939 five or six were observed feeding around a snowdrift in the Mt. Timpanogos cirque. His other eight observations were all at Alta. On four of these trips to Mt. Lake, Secret Lake and Devil's Castle adults were observed feeding young. Thus it is certain they do breed in this section of the Wasatch.

Tom Dewey (Utah Aud. News, Aug. 1952:26) observed fourteen fly over Alta Divide from Brighton. Dewey also (Utah Aud. News, Oct. 1957:52) on July 24, 1957 flushed a small flock from a snowbank near the mine above Dog Lake, Brighton. Reed Ferris and Tom Dewey (Utah Aud. News, Aug. 1959:45) in July 1954 observed five at one point and three at another point. Norman R. French in The Auk (1959:160) states: "In 1953 Black Rosy Finches were observed on the breeding grounds at 11,000 feet elevation in the Wasatch Mountains of Utah on April 5. Bleak winter conditions still prevailed." French again in The Condor (1959:23) states that they have been known to occur in the Wasatch Mountains, and that breeding of the birds was established when adults and young were collected (Behle and Selander, 1952:31), and that in the fall of 1952 several trips to observe their autumnal behavior were made to Mount Timpanogos where the birds were abundant. There are four specimens in the University of Utah museum all from talus slopes, 10,000 feet, Devil's Castla, Alta.

Spinus pinus (Wilson): Pine Siskin
Permanent resident.

This bird could make a strong bid to being the most abundant bird at Brighton. It was observed on 63 days in the Wasatch the year round. It provided one of the most thrilling experiences I had. On Nov. 8, 1959 on a snowshoe trip around the basin rim, I had just entered the small divide between Mt. Wolverine and Tuscorora when from the Alta side a flock of four or five hundred filled the air all around me and flew on down into the Brighton Basin. Some flew almost within inches of me. The whole flight was over in a minute or two. They are

very gregarious, often mingling with other birds particularly the Cassin's Finch. They reputedly have "nest trees" where dozens of pairs may nest in a single tree. I was unable to find a single nest, though I climbed many suspected trees searching. In the winter I've observed them in small flocks in the scrub oaks of the lower valleys and mountain edge. Booth (1960:303) describes the nest as, "A compact cup of plant fibers and grasses placed in shrubs or trees; eggs, 4 to 5, bluish green with a few brown and black spots." Harkin (1961:179) records these nesting data:

Feb. 2, 1922 eggs (4) Brighton, young conifer 8 feet up
June 24, 1928 eggs (3) Cottonwood Canyon

The Utah Audubon Society observed Pine Siskins on every one of its 26 July field trips with a total of thousands. A high count was 1000 plus, and a low count was 30 plus.

C. W. Lockerbie has records for 84 trips to the area of this transect summarized (in part) as follows:

number of trips	area	number of individuals
1	head of Lamb's Canyon	several
2	upper Mill Creek Canyon	common
8	upper Alta Basin	common, hundreds, 50 etc.
1	Mt. Timpanogos Trail	common
1	Alpine Loop	50
8	Parley's Park	common, hundreds etc.
remainder	Brighton	abundant

Tom Dewey (Utah Aud. News, Dec. 1950:64) on Oct. 22, 1950 observed them to be abundant around Lake Catherine. On Nov. 8, 1952 twenty-two were observed by the Deweys in upper Brighton Basin. N. R. Whitney (Utah Aud. News, Dec. 1953:55) on May 27, 1951 observed several (apparently establishing territories) at Brighton and reported they apparently were breeding in the spruces of Alta and Brighton.

There are four specimens in the University of Utah museum: one from spruces at Brighton, 9000 feet, one from conifers at Alta, 9000 feet, and two from Parley's Park area 6700 and 7000 feet in willows.

Ridgway (1877:463-4) collected on June 23, 1869 a nest and eggs (1) from the end of a horizontal fir bough fifteen feet up. On Aug. 10, 1869 he collected a juvenile male. He also noted that the range of the siskin was similar to that of the Cassin's Finch, and that invariably, they were found together during migrations or nesting and in summer were abundant in all pine forests.

Spinus tristis (Linnaeus): American Goldfinch
Permanent resident.

This bird has not been reported from Brighton, being mainly a bird of the lower valleys and fields. I've observed it commonly in Emigration Canyon winter and summer. It nests in this area. Booth (1960:303) described the nest as "A compact cup of plant fibers and down placed in low trees or tall shrubs; eggs, 4 to 5, bluish green with a few brown and black spots." I've observed them repeatedly feeding on the seeds of Helianthus annuus (Common Sunflower).

C. W. Lockerbie has records for ten trips, all from Parley's Park with a total of between 40 and 50 individuals, ten being the high

count and two the low count for any one trip. June 20, 1948 he found a pair nesting there.

Ridgway (1877:374) includes the American Goldfinch in his Parley's Park list and gives its habitat as shrubbery along streams.

Spinus psaltria (Say): Lesser Goldfinch or Willow Goldfinch
Permanent resident.

This bird seems to range higher in the mountains than the American Goldfinch and so has been observed at Brighton. Its nest and nesting habitat are similar to that of Spinus tristis.

The Utah Audubon Society lists observations for three July field trips to Brighton: two on July 7, 1951, one on July 13, 1952 and two on July 10, 1960.

The Deweys (Utah Aud. News, Dec. 1952:53) on Nov. 8, 1952 observed small flocks of the Willow Goldfinch in upper Brighton Basin.

Ridgway (1877:462-3) on June 22, 1869 collected a nest and eggs (1) in the top of a willow along the stream at Parley's Park and wrote: " . . . found only among Wahsatch and Uintah Mountains, where it was not common and usually found associated in small numbers with large flocks of C. Pinus." He used the generic name Chrysomitris instead of Spinus.

Loxia curvirostra Linnaeus: Red Crossbill
Permanent resident.

The year 1960 was a good one for the Red Crossbill in the Wasatch, and hundreds of them were observed on the rim and in the upper Brighton Basin. In addition, single birds and small flights were seen frequently in the lower basin. The sporadic occurrence of these birds in the Brighton area (large numbers one year and very few or none another) does not seem to fall into any cyclic pattern. A note by Peterson (1961:288), "Wanders irregularly," probably gives the more logical explanation. They were observed on 23 of my days in the field in the Wasatch, and with the exception of a small flight on June 19, 1960 they were all seen after July 2. No nests were found. Booth (1960:309) describes the nest as, "A rather loose cup of plant fibers and rootlets placed usually at the tips of branches in conifers; eggs, 3 to 4, dull white with brown and dark gray spots."

The Utah Audubon Society has observed the Crossbill on fourteen of its 26 July field trips for a total of about 400 individuals. On July 10, 1960 Hans Frei and I observed one flight of over 100 in the Twin Peaks--Majestic saddle, and another flight of about 50 on the peak east of Pioneer Peak; then a lone bird later. Ninety had been reported by the rest of the club for a total of around 240.

C. W. Lockerbie has records for ten trips, nine to Brighton for a total of about 90 individuals and one to Mountain Lake, Alta where he observed ten. Gleb Kashin has observed this bird in upper American Fork Canyon and also in the Mt. Dell area.

There is one specimen in the University of Utah museum taken on July 19, 1949 from conifers at Brighton 10,018 feet.

Chlorura chlorura (Audubon): Green-tailed Towhee
Summer resident.

This bird was observed on fifteen days in the Wasatch in widely

scattered areas: both sides of the floor of the basin, Redman's Flat, Lake Solitude, the trail between Lake Mary and Twin Lakes, Mill B Canyon, Mill D Canyon, The Spruces and Storm Mountain. They nest at Brighton, as young were seen, but no nests were found. Booth (1960: 301) describes the nest as, "A cup of grass, plant fibers and rootlets, placed either on or near the ground in or under bushes or cactus; eggs, 4, white with a few brown spots." Harkin (1961:181) records these nesting data:

May 17, 1913 eggs (3, 5) Parley's
June 1, 1924 eggs (1, 4) Parley's Divide, sage 1½ feet up
June 2, 1928 eggs (4, 4) (4) Parley's Divide sage 2 feet up
June 8, 1930 eggs (3) Parley's Divide

The Utah Audubon Society has observed this bird on all but four of its 26 July field trips with about 90 individuals. The high count was twelve, and the low count was one.

C. W.Lockerbie has records for 66 days in the field summarized (in part) as follows:

number of trips	area	number of individuals
1	head of Lamb's Canyon	1
3	upper Mill Creek Canyon	common, songs and 2
1	Timpanogos Trail	several
6	upper Alta Basin	25
9	Parley's Park	over 150
remainder	Brighton	common, several

They thus seem to have a wide altitudinal range and are common both in the lower valleys and the higher flowering slopes. Their range of habitat varies widely too, from moist stream-side meadows and higher flowering slopes to dry brushy hillsides, sage flats and even open woods.

N. R. Whitney (Utah Aud. News, Sept. 1953:56) on June 18, 1950 observed singing males on perches ten to twenty feet up at Alta. Gleb Kashin observed a number of these birds around Mt. Dell.

There are eight specimens in the University of Utah museum: five from Brighton taken in aspens and willows, 8750-9500 feet, and three from Parley's Park area in willows, scrub oak and sage 6000 feet.

Ridgway (1877:496-8) on June 23-8, 1869 collected at Parley's Park two nests and eggs (4), five nests and eggs (3), two nests and eggs (2). Two of these nests were on the ground, the rest were in low bushes by the stream. On July 30, 1869 he collected one juvenile male and one juvenile female. He noted that in the position of its nest there was a rather unusual uniformity of habit manifested; especially by the birds of one locality; thus those found at Parley's Park were all placed in the thickest part of low bushes of Symphoricarpos montanus, at a height of eighteen inches to two feet above the ground. Sometimes other shrubs, as wild currents were selected. He (1877:374) indicated their habitat as being the higher flowering slopes.

Pipilo erythrophthalmus (Linnaeus): Rufous-sided Towhee
Permanent resident.

Though I see this bird commonly in Emigration Canyon and have seen it near the mouth of Big Cottonwood Canyon, it was never seen at Brighton. It occurs on the fringes of the transect very sparingly at

lower elevations. Booth (1960:302) describes the nest as "A cup of plant fibers and shreds of bark placed on the ground or in low bushes; eggs, 3 to 5, whitish with reddish brown spots."

C. W. Lockerbie has only three records of this bird. In June and July of 1947 and 1948 he observed three single individuals at Parley's Park.

N. R. Whitney (Utah Aud. News, Sept. 1953:56) observed numerous of these birds in the thickets of Parley's Park and City Creek Canyon.

There are two specimens in the University of Utah museum, both from the Parley's Park area, taken in sage, scrub oak and cottonwood, 6900 and 7000 feet.

Ridgway (1877:494-5) made eleven collections from City Creek Canyon and Salt Lake City but none from Parley's Park. He did comment on this bird as being very abundant in the Salt Lake region extending up into the scrub oak.

Calamospiza melanocorys Stegneger: Lark Bunting
Summer resident.

No records of this bird have turned up for Brighton or any other area of the transect, save the one by Ridgway (1877:487). On Aug. 30, 1869 he collected one juvenile male at Parley's Park, where it was shot on the ground. He reported this to be the only individual of this species observed on the whole trip and figured it was a straggler from the Great Plains on the eastern side of the Rocky Mountains. Its nest is described by Booth (1960:310) as "A cup of grasses placed in a depression on the ground; eggs, 4 to 5, pale blue without spots."

Passerculus sandwichensis (Gmelin): Savannah Sparrow
Summer resident.

This bird is evidently a bird of the lower valleys, and none have been reported from Brighton. The Savannah Sparrow is a ground nester, and Booth (1960:319) describes its nest as, "Of grasses placed in a depression on the ground, often concealed under a clump of thick grass; eggs, 4 to 6, bluish white heavily spotted and washed with reddish brown."

C. W. Lockerbie has records for ten field trips, all to Parley's Park. On June 29, 1947 he observed over 100 individuals. On all the rest of the trips he reported from two to ten for a total of 163. N. R. Whitney (Utah Aud. News, Sept. 1953:56) on July 1, 1957 found a nest at Parley's Park.

Ridgway (1877:465) on July 26-30, 1869 collected two juvenile males and one juvenile of undetermined sex. He (1877:374) listed their habitat as meadows, marshes and brooks.

Ammodramus savannarum (Gmelin): Grasshopper Sparrow
Summer resident.

This is another lowland and plains dweller, and the only area of the transect in which the species has been reported is Parley's Park. Booth (1960:330) describes its nest as, "An arched structure of grasses lined with grass and placed on the ground; eggs, 4 to 6, richly spotted with reddish brown."

N. R. Whitney (Utah Aud. News, Sept. 1953:56) observed this bird singing in sage flats at Parley's Park on July 1, 1951.

Ridgway (1877:374) includes it in his list of birds observed at Parley's Park and gives its habitat as meadows.

Pooecetes gramineus (Gmelin): Vesper Sparrow
Summer resident.

This bird is apparently quite common in the Parley's Park area. It nests on the ground, and Booth describes the nest as, "A compact cup of grasses placed in a depression on the ground; eggs, 4 to 5, white with reddish brown spots."

C. W. Lockerbie has records for fifteen field trips. The first is interesting in that it seems to verify a statement by Ridgway (1877:374) that its habitat is meadows and higher flowering slopes. Lockerbie observed two on the south fork of Mill Creek summit. His last observation of one was on the Old Mormon Trail. The remaining thirteen are from Parley's Park with 130 individuals. For five trips he observed 20 per day; so they are evidently common. We observed them very commonly in sagebrush on the Gunnison River in Colorado. Gleb Kashin observed these birds nesting around Mt. Dell during the summer of 1958.

N. R. Whitney (Utah Aud. News, Sept. 1953:56) observed them in the sagebrush at Parley's Park in 1951.

There are two specimens in the University of Utah museum, both from Parley's Park, 6600 feet, taken in grassy field and meadow.

Ridgway (1877:466) on June 23-25, 1869 collected two nests and eggs (3) from the ground, along a grassy brook bank. In July 1869 he collected one nest and eggs (1) from the ground beneath sagebrush and on July 28, 1869 one juvenile male.

Chondestes grammacus (Say): Lark Sparrow
Summer resident.

This is another bird represented only at lower elevations in the transect. It was observed around Mt. Dell and along the roads in Parley's Canyon. Booth (1960:321) describes the nest as, "Of grass and plant fibers, placed either on the ground or in low shrubs; eggs, 4 to 5, bluish white with purple and brown spots and lines, especially about the larger end." Harkin (1961:187) records these nesting data:

June 16, 1918 eggs (4) Parley's, under squawberry
June 2, 1936 eggs (4) Emigration Canyon

C. W. Lockerbie has records for seven trips all to Parley's Park for a total of about 30 individuals, and notes that it was common. Gleb Kashin in 1958 observed Lark Sparrows at Mt. Dell and found a nest on the slopes of Little Mountain.

Ridgway (1877:470) made a number of collections around Salt Lake but none from Parley's Park. He noted that all nests were on the ground under sagebrush.

Junco oreganus montanus Ridgway: Oregon Junco
Winter visitant.

Since this bird breeds to the north and only occurs in Utah in the late fall and winter, it would only be a rare straggler that would be seen here in the summer. Nevertheless, I observed one on a partly open and partly brushy slope near the summit of Guardsman

Pass on June 23, 1960. The Utah Audubon Society reports another unusual observation for Brighton on July 11, 1954, and they also saw one on Oct. 22, 1950. For nest, see description under Gray-headed Junco.

As to more regular occurrences of the Oregon Junco, I observed it at Brighton on Nov. 8, 1959 and on Dec. 12 and 20, 1959 in Red Butte and Emigration Canyons. It is common in Emigration Canyon throughout the winter, and I caught one in a snap trap set for small rodents in January of 1960. Then on March 12, 1960 I observed one in Big Cottonwood Canyon along the road two miles below Brighton.

C. W. Lockerbie has two records for Brighton. On Sept. 30, 1936 he observed several with other species of juncos, and several again on Oct. 25, 1942. C. W. Lockerbie's numerous records show clearly that the Oregon Junco stays primarily at lower elevations in this section of Utah and is here only in the fall, winter and spring. Tom Dewey (Utah Aud. News, Dec. 1950:63) on Oct. 22, 1950 observed Oregon Juncos to be quite common along the path from Brighton to Lake Catherine, and (Utah Aud. News, Dec. 1952:53) on Nov. 8, 1952 he observed them in upper Brighton Basin.

Junco oreganus mearnsi Ridgway: Pink-sided Junco
Summer resident. Some few stay here permanently.

I have observed this bird on a number of occasions in the winter but always lower down in the mountains.

The Utah Audubon Society has records of this species for three of its July field trips: one on July 8, 1956, two on July 13, 1957 and two on July 9, 1959.

C. W. Lockerbie observed several on Oct. 3, 1937 on South Fork of Mill D.

Gleb Kashin (Utah Aud. News, Dec. 1955:65) observed three on July 10, 1955, two on Aug. 3, 1955 and two on Aug. 24, 1955. He also (op. cit., Aug. 1957:39) flushed an adult from her nest three feet from the summit of Mt. Majestic on July 13, 1957. She was mated to a male Gray-headed Junco.

There are three specimens in the University of Utah museum: one from the head of Mill Creek Canyon, 8000 feet taken in willows among coniferous woods and two from Parley's Park area, 6900 feet in cottonwoods and rose.

Junco caniceps (Woodhouse): Gray-headed Junco
Summer resident.

This bird is abundant in the Brighton area, though not as common as Siskins. It was observed on 49 days in the Wasatch and in every part of the basin. Oct. 9 and 11 and Nov. 7, 1959 are the latest dates of occurrence, and May 22, 1960 is the earliest date for Brighton. Four nests were found. One was at Redman's Flat July 9, 1960 at the base of an aspen, right at the edge of one of the camp sites, eggs (4). A second was found on July 10 by Reed Ferris under a flat rock on a slope along the trail above Lake Catherine, eggs (4). A third, found on July 24, which we were attracted to by observing the adults fighting off a chipmunk, was beneath an overhanging rock near the

Dog Lake mine, eggs (3). It was right out in the open. The fourth nest found on July 22 was at the base of a small vertical rock, placed out in the open on the slope one-half mile above Lake Solitude, eggs (4). Two days later one of the eggs was hatched. During the latter part of July and in August I observed several families out of the nest foraging around on the ground. The nest of Juncos is a neat little cup of grass, rootlets and plant fibers placed under the sloping trunk of a tree, a log, stump or rock but often out in the open (see above). The eggs (4 or 5) are cream colored with brown spots. Harkin (1961: 190) records these nesting data:

June 18, 1922 eggs (4) Brighton
June 28, 1925 (young can fly) Brighton
June 19, 1934 (nest) Millcreek Canyon
June 27, 1936 (young) Millcreek Canyon, under aspen
July 1, 1936 (young) Millcreek Canyon
July 18, 1942 (5 big young) Mill Creek Canyon, under bush

The Utah Audubon Society observed this bird on every one of its 26 July field trips with a total of over 600 individuals. The high count was 100, and the low count was two.

C. W. Lockerbie has records for 80 trips in the field summarized (in part) as follows:

number of trips	area	number of individuals
1	head of Lamb's Canyon	songs, several
4	upper Mill Creek	common
1	Timpanogos Trail	several
1	Alta Trail	common
7	Albion Basin	common, 50, 20, etc.
1	Alpine Loop	hundreds
5	Parley's Park	45
remainder	Brighton	common, hundreds

Thus they seem to be more common in the higher mountains. Tom Dewey (Utah Aud. News, Dec. 1950:63) observed a few along with many Oregon Juncos on the trail to Lake Catherine on Oct. 22, 1950, and again (Utah Aud. News, Dec. 1952:53) on Nov. 8, 1952 he saw six in upper Brighton Basin. N. R. Whitney (Utah Aud. News, Sept. 1953:56) observed several at 9800 feet near Secret Lake, Alta, and on May 8, 1951 he observed a flock of 20-25 in the aspens at Silver Fork, Big Cottonwood Canyon.

There are 17 specimens in the University of Utah museum:

6 from Parley's Park area, 6900 and 7000 feet in spruce, cottonwood and rose
6 from upper Mill Creek Canyon
1 from the head of American Fork Canyon
4 from Brighton 8500 to 9000 feet, spruces and aspen edge

Ridgway (1877:474) made no collections, but noted that it was met with only in the pine forests of the Wasatch and Uinta Mountains, where they were rather common from May through August. He (1877:374) gave their habitat as coniferous woods.

Spizella arborea (Wilson): Tree Sparrow
Winter visitant.

Only one record of this bird has come to my attention for the Brighton area. N. R. Whitney (Utah Aud. News, Sept. 1953:56) on

Nov. 13, 1949 observed one feeding under brush along a stream at Brighton. Peterson (1961:299) gives the summer habitat of this bird as Arctic shrub and willow thickets and its winter habitat as brush, roadsides and weedy edges. He describes its nest as a feather-lined cup on the ground or in a bush; eggs, four to five, are pale blue, speckled.

Spizella passerina (Bechstein): Chipping Sparrow
Summer resident.

This bird was observed on 44 days in the Wasatch, and on the date first observed, May 22, 1960, it appeared to be one of the most abundant birds in the slash of Mt. Millicent ski clearing, especially along the creek down from Twin Lakes and among the willows along the west side of the basin floor. Six nests were found, all on the west side of the basin between Redman's Flat and the slope below Lake Mary. Five of these were in conifers, two out on boughs of large trees, and three next to the trunk in small conifers. The sixth nest was ten feet up in a small aspen, in a dense aspen thicket on the north side of Silver Lake, Brighton. The nests were all quite similar, of plant fibers and grass, anchored very well to the base limb or crotch. The eggs, three to five, are white with brownish spots. Harkin (1961: 191) records these nesting data:

April 29, 1912 eggs (4) Brighton
July 16, 1916 eggs (3) Brighton
June 27, 1925 eggs (3) Brighton, pine bough
June 28, 1925 eggs (4) Brighton
June 2, 1931 eggs (2) Brighton
June 21, 1931 eggs (4) (3) Brighton, 12 feet up

The Utah Audubon Society observed this bird on every one of its July field trips to Brighton for a total count of over 500 individuals. High count was 100; low count was five.

C. W. Lockerbie has records for 61 field trips summarized (in part) as follows:

number of trips	area	number of individuals observed
1	Timpanogos trail	common, large flock, 10 etc.
7	upper Alta Basin	10
1	Alpine Loop	220
5	Parley's Park	common
remainder	Brighton	

Two nests were also noted with adults feeding young. They are known to nest right in Salt Lake City and the lower valleys as well; so it can be said this species reaches out into quite a wide range of habitat. N. R. Whitney (Utah Aud. News, Sept. 1953:57) observed singing adults at Brighton, Albion Basin and Mt. Timpanogos.

There are eight specimens in the University of Utah museum:
1 from the head of American Fork Canyon
2 from the head of Mill Creek Canyon 8500 and 8800 feet willows in conifer woods
5 from Brighton, 8500-9370 feet in sagebrush, spruce and aspen

Ridgway (1877:479) collected specimens at City Creek Canyon but not at Parley's Park. He (1877:374) did include the Chipping Sparrow in his Parley's Park list and noted its habitat as shrubbery along streams and scrub oaks. This indicates that he observed them mainly

in the lower mountains, for in the upper mountains they range through the conifers and aspens as well as along streams.

Spizella breweri Cassin: Brewer's Sparrow
Summer resident.

I was unacquainted with this bird until July 10, 1960 when on the sage slopes near the top of the local Twin Peaks, a number were observed. I had Peterson's Field Guide with me, and a close study through the glass indicated it could be no other sparrow. Peterson (1961:300-1) gives its habitat as, "Sagebrush, brushy plains; also near tree line in N. Rockies." He describes the nest as, "On ground, in sagebrush or low conifers (high Mts.). Eggs (3-4) pale blue, speckled."

C. W. Lockerbie has records for 16 field trips, one on Aug. 4, 1940 on the East Fork of Mill F, Big Cottonwood Canyon of several individuals. The other fifteen were all at Parley's Park with about 425 individuals which clearly indicates they are quite common in that area. N. R. Whitney (Utah Aud. News, Sept. 1953:57) observed them breeding in Parley's Park.

Ridgway (1877:481) collected in Parley's Park on June 27, 1869 two nests and eggs (2), one nest and eggs (1), one nest and eggs. All nests were in sagebrush. On July 28-30, 1869 he collected an adult female and a juvenile female.

Zonotrichia leucophrys (Forster): White-crowned Sparrow
Summer resident.

This is the most abundant sparrow in the Brighton area, being found wherever there are willows and meadows and even in the krummholz. Thus it occurred from the floor of the basin to the highest ridges. It was observed on 57 days in the Wasatch. Six of these observations were between Oct. 11 and Dec. 27, 1959. As to the rest, there was not a day between May 25 and Aug. 25, 1960 on which the White-crowned Sparrow was not seen. The literature indicates that these birds nest on the ground, but this is not so for all the Brighton White-crowned Sparrows. The closest I came to finding a nest of one of these birds on the ground was up in the roots of a willow clump. One other was built on some dead, bent-over willow above eight inches above the ground. A third was in the center of a clump sixteen inches up. All the rest of the 22 nests found were from two feet to five feet up in young conifers growing among the willows in the Brighton circle or along the streams. In fact, this one particular nesting situation of a young conifer in the willows was the most popular kind of nesting habitat, not only for this species, but also for the Swainson Thrush, the Robin and Chipping Sparrow. The thick bunchy dwarf conifers almost never have a nest, and if the spruce or fir is too tightly hemmed in by willows or is too much out in the open, it is not likely to have a nest unless it be that of a Robin.

The finding of one particular nest is noteworthy. (See also Utah Audubon News, May 1961:3). While nest hunting in the willows of the Brighton circle, I observed a pair of these birds twittering and showing great agitation. I sat down to see if they wouldn't eventually reveal the nest location as other pairs had done on other occasions. Finally, I edged close enough to see them alternately darting up and

adults were feeding young in the surrounding willows. The nest was quite bulky, composed of twigs and grass. Booth (1960:316) gives the number of eggs as three to five, greenish gray with reddish brown spots. Harkin (1961:195-7) records these nesting data:

June 5, 1917 eggs (2) Cottonwood Canyon, streamside bush
June 23, 24, 1938 eggs (3, 3) Brighton, berryvine 3 feet up

The Utah Audubon Society has observed the Fox Sparrow on 25 of its 26 July field trips, failing to find one only on July 10, 1938. The number of individuals was about 200. The high count was fifteen, while the low count was three.

C. W. Lockerbie has records for 51 field trips summarized (in part) as follows:

number of trips	area	number of individuals
2	upper Mill Creek Canyon	3
4	upper Alta Basin	12
1	Timpanogos Trail	1
1	upper American Fork Canyon	observed
5	Parley's Park	
remainder	Brighton area	20
		average per trip under 10

Lockerbie reports this bird as one of the best singers at Brighton, both as to volume and quality, and I found this to be true in my own observations.

There is one specimen in the University of Utah museum taken June 19, 1943 from Brighton 8700 feet. It was a breeding bird.

Ridgway (1877:486-7) collected at Parley's Park:

June 22, 1869, 1 nest and eggs (4) willows, 2 feet up
June 25, 1869, 5 nests and eggs willows and bushes along stream, 1 to 6 feet up
July 26, 1869, 1 nest in willows.

He noted that during the summer months it was one of the commonest birds in Parley's Park where it was a constant associate of the Song Sparrow in the willow thickets.

Melospiza lincolnii (Audubon): Lincoln's Sparrow
Summer resident.

This species, the White-crowned Sparrow and the Chipping Sparrow were the three most common sparrows at Brighton. It was observed on 25 days in the Wasatch, always in grassy meadows and willow swamps of the basin floor or one of the upper basin lakes. Four nests were found, all on the ground on the floor of the lower basin, and always well concealed in thick grass. One of them was found on June 22, 1960. It had two eggs and was located at the base of a willow on the northeast shore of Silver Lake, the other three were out in the open meadow in the Brighton Circle. One of these latter was found first on June 26, 1960 and had four eggs. It was checked subsequently as follows: July 3, still four eggs; July 8, four young; July 22, young gone, nest empty. On Aug. 25, 1960 the nest was collected and placed in the University of Utah museum. The nest is a neat cup of grass placed on the ground under a clump of grass or a bush; eggs, four or five, are buff to bluish white and covered with brown spots. Harkin (1961:197) records these nesting data:

June 19, 1913 eggs (4) Brighton
July 1, 1918 eggs (5) Brighton
June 26, 1919 eggs (5) Brighton, grass in bog
June 18, 1922 eggs (4) Brighton, damp ground
June 28, 1925 eggs (2) Brighton
June 21, 1931 eggs (5) Brighton, swampy area

The Utah Audubon Society observed this bird on all 26 of its July field trips with a total of over 400. The high count was 63, the low count six.

C. W. Lockerbie has records for 52 field trips summarized (in part) as follows:

number of trips	area	number of individuals
1	upper Mill Creek Canyon	2
10	upper Alta Basin	38
1	Alpine Loop (beaver ponds)	40
1	Parley's Park	1
remainder	Brighton	almost 400

Hence Brighton seems to be the most popular area with the most suitable habitat for the Lincoln Sparrow.

There are nine specimens in the University of Utah museum:
3 from Dog Lake, Brighton 9370 feet
1 from Lake Solitude, Brighton 9300 feet
1 from Brighton (Big Cottonwood Canyon) 8750 feet
4 from Parley's Park 6900 and 7000 feet

Ridgway (1877:484-5) collected at Parley's Park on June 24, 1869 a nest and eggs (4) on the ground under a prostrate sagebrush along a stream. He made this note which corroborates the conclusions above as to its habitat: "During the summer we found this species only in the elevated parks of the higher mountain ranges; but during its migrations it was very plentiful in the lower valleys. In Parley's Park it was a rather common summer resident inhabiting the open slopes or level pieces of ground covered by low shrubs, weeds and grass in company with Zonotrichia leucophrys and Pooecetes confinis."

Melospiza melodia (Wilson): Song Sparrow
Summer resident.

The little Song Sparrow is not a common resident of Brighton, and I did not positively identify it there. It seems that a number of Lincoln Sparrows in this area have quite a pronounced brown spot in the middle of the breast, which would tend to confuse it with the Song Sparrow, but the buffy wash over the neck and breast helps distinguish it. I have observed it, however, lower down in Big Cottonwood Canyon, particularly at The Spruces and Storm Mountain. I've noted it in other parts of the Wasatch in the winter, as it seems a few of them winter over, or at least linger long during mild winters, such as we had in 1959. I found one nest in Emigration Canyon the first week in August, 1961. Here the Song Sparrow is quite common during the summer. I was attracted to the nest by a ferral cat, which succeeded in devouring all the young save one before I could intervene. The nest is a rather bulky cup of grasses placed in bushes or trees. This one was at a height of eight feet behind loose bark of a boxelder tree; eggs, three to five, are pale green with reddish brown spots.

C. W. Lockerbie has records for 38 field trips summarized (in part) as follows:

number of trips	area	number of individuals
17	mouth of Big Cottonwood Canyon	57
1	Timpanogos Cave Camp	1
1	Alta	calls
1	Park City tracks	common
1	Old Mormon trail	5
13	Parley's Park	160
3	Brighton (all 3 in July)	1
1	The Spruces	3

These records indicate few birds at higher elevations, while at Parley's Park and other lower elevations, they appear quite commonly. This agrees fully with my own observations.

There are 26 specimens in the University of Utah museum:

1 from the mouth of Big Cottonwood Canyon, 4600 feet
1 from Lake Solitude, Brighton, 8950 feet
2 from Brighton, 8500 and 10,000 feet in willows
1 from 1 mile below Park City in willows, meadows, along stream
21 from Parley's Park area, 6600 to 7000 feet, mostly willows

Ridgway (1877:481-4) collected at Parley's Park:

June 23, 1869 nest and eggs (?), nest and eggs (2) the nests on ground under willows
June 24, 1869 nest and eggs (5) nest in thornapple bush 6 feet up
June 27, 1869 nest and eggs (3) in willow by stream
June 28, 1869 two nests and eggs (4) in willows
July 16, 1869 nest and eggs (?)
July 26-8, 1869 nest in willows, 2 males (juv.) and 1 female (juv.)
Aug. 13, 1869 one male (juvenile)

He added this note: "The Song Sparrow was found to be most partial to dense thickets along streams . . . and was consequently, most frequently seen in the lower valleys; indeed, we have no recollection of having observed it at a greater elevation than the meadow like parks of the Wahsatch Mountains . . . According to our notes it was there confined to the floor of the park, or did not ascend to any great distance up the canyons along the stream."

SUMMARY AND CONCLUSIONS

In summing up the results of this study, 178 species of birds have been dealt with. All of the 116 species observed by Robert Ridgway in 1869 have been included, although a number of them are seemingly no longer found in this area. My own observations were made primarily in Big Cottonwood Canyon and particularly in Brighton Basin at its head. The data for the Parley's Park area of the transect were taken for the most part from the observations of Ridgway, Lockerbie and Emerson.

Ninety species of birds were observed by the writer in Big Cottonwood drainage basin and another 31 species in other parts of the transect for a total of 121 species. Some 230 nests were found representing 36 species--almost all of them in Brighton Basin. Nesting data from other sources were included which brings the total number of species known to nest in Big Cottonwood Canyon to 70.

Four birds were discovered that had not previously been seen at Brighton, namely, the Spotted Owl, Varied Thrush, Brewer's Sparrow and Franklin's Gull. The first of these is rare in this part of Utah, and only a few have been reported from anywhere in the area. The Varied Thrushes were undoubtedly migrants on their way south. The Brewer's Sparrows, observed on the sage slopes of Twin Peaks near Clayton Peak, conform to this species' widely divergent distribution (sagebrush plains or near tree line in northern Rockies). The Franklin's Gulls almost certainly were ranging Big Cottonwood Canyon in quest of cicadas of which the woods were full at the time.

Concerning the seasonal status of the avifauna of this transect 62 were found to be permanent residents, 97 summer residents, 3 winter vistants, 11 migrants, and 5 casuals or accidentals.

As to altitudinal distribution two optimum elevations were indicated. For the Big Cottonwood side of the transect the greatest concentration of birds was found between 7500 and 9500 feet. On the Parley's Park side of the transect a mean 6500 feet provided suitable habitat for 90 species.

The relative abundance is such an individual matter that it can scarcely be summarized. Each species was evaluated on a fourfold basis (rare, moderate or infrequent, common and abundant) for four elevations (4600-7500; Big Cottonwood only 7500-9000; 9000 to top; and 6500-Parley's Park only).

The habitat of each species is summarized in chart form along with the relative abundance in each of fourteen plant cover types. By far the most popular habitat is the upper montane conifer zone and the aspen zone with the greatest concentration being shown in the ecotone between these two. The nesting habitat is also summarized in chart form, each species being noted in one or more of 20 habitats. A description of the nest and eggs of each species is given in the species accounts.

Since the summer of 1869 there has been on record a list of 116 species of birds that were observed by Robert Ridgway in Parley's Park. Although considerable collecting has been done in the Brighton area in recent years, no report has been made on the birds of the Wasatch Mountains. A few old nesting records are included in this report, the oldest being 1897.

As the result of a study by Guy Emerson and C. W. Lockerbie reported in the Audubon Magazine (1949:76) 28 of the 116 birds observed by Ridgway in 1869 seemingly no longer inhabit the area. These men, especially Lockerbie, made extensive observations on numerous trips for three years during the very time of year Ridgway collected. However, they found 21 species that Ridgway did not see.

The advent of white man and his civilization would seem to be the significant factor in this change in the avifauna in the area, although chance occurrence of the species would also be a factor. Destruction of habitat, particularly by deforestation, overgrazing, and the drainage of ponds in the area of Parley's Park, together with hunting pressure are examples of how man has influenced the avifauna in an adverse manner. The circumstance that 21 species have apparently moved in since Ridgway's time would suggest that the effects of civilization have not all been deleterious to bird life. The increase in area of hay and grain fields, of fruit trees and of cleared land has created habitat for certain birds. The greater number of feed lots and corrals, of barns and other buildings has also attracted a number of species.

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