

BIRD  
NOTES

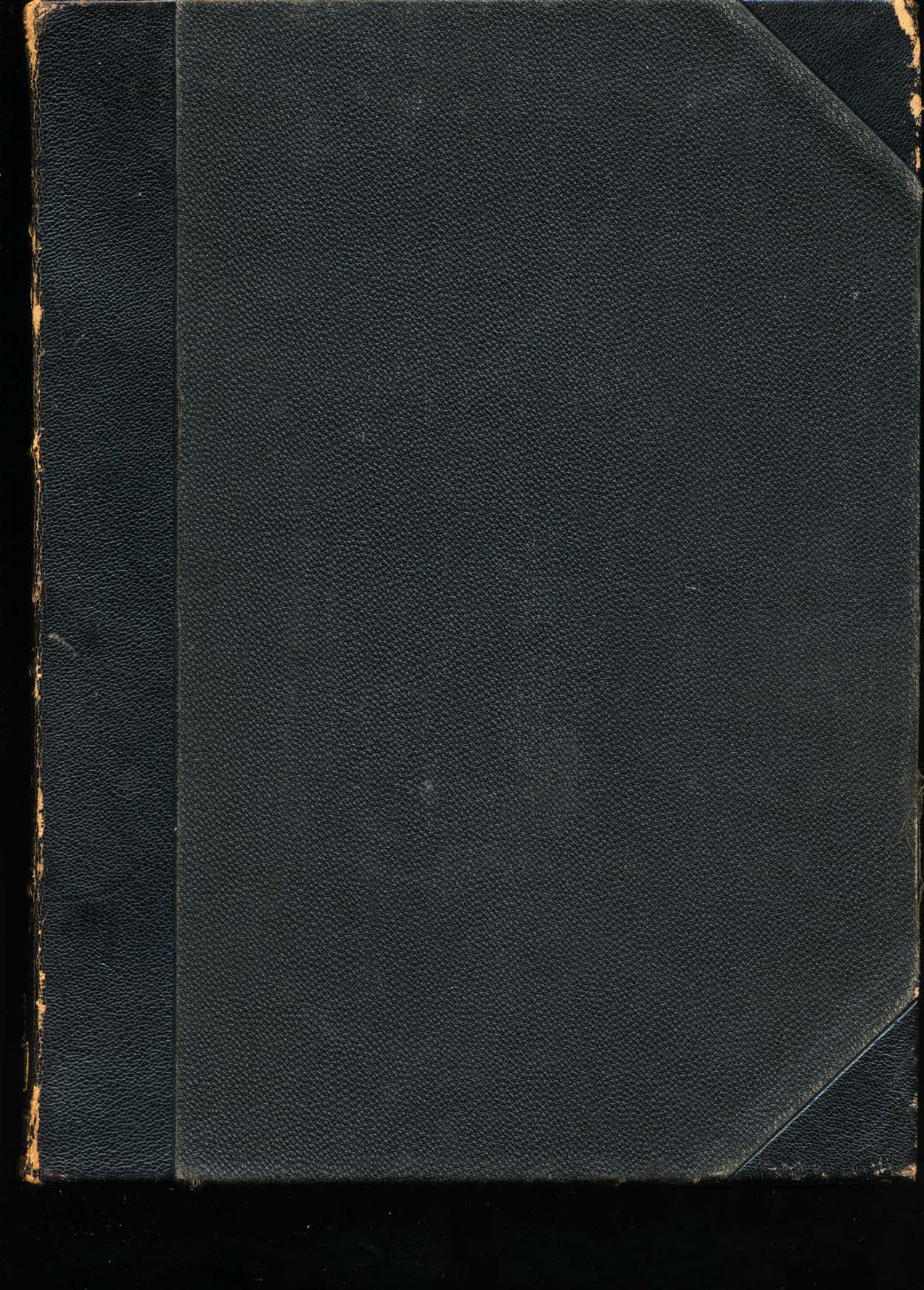
NORTHERN  
COLORADO

DENIS GALE

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JUNIUS

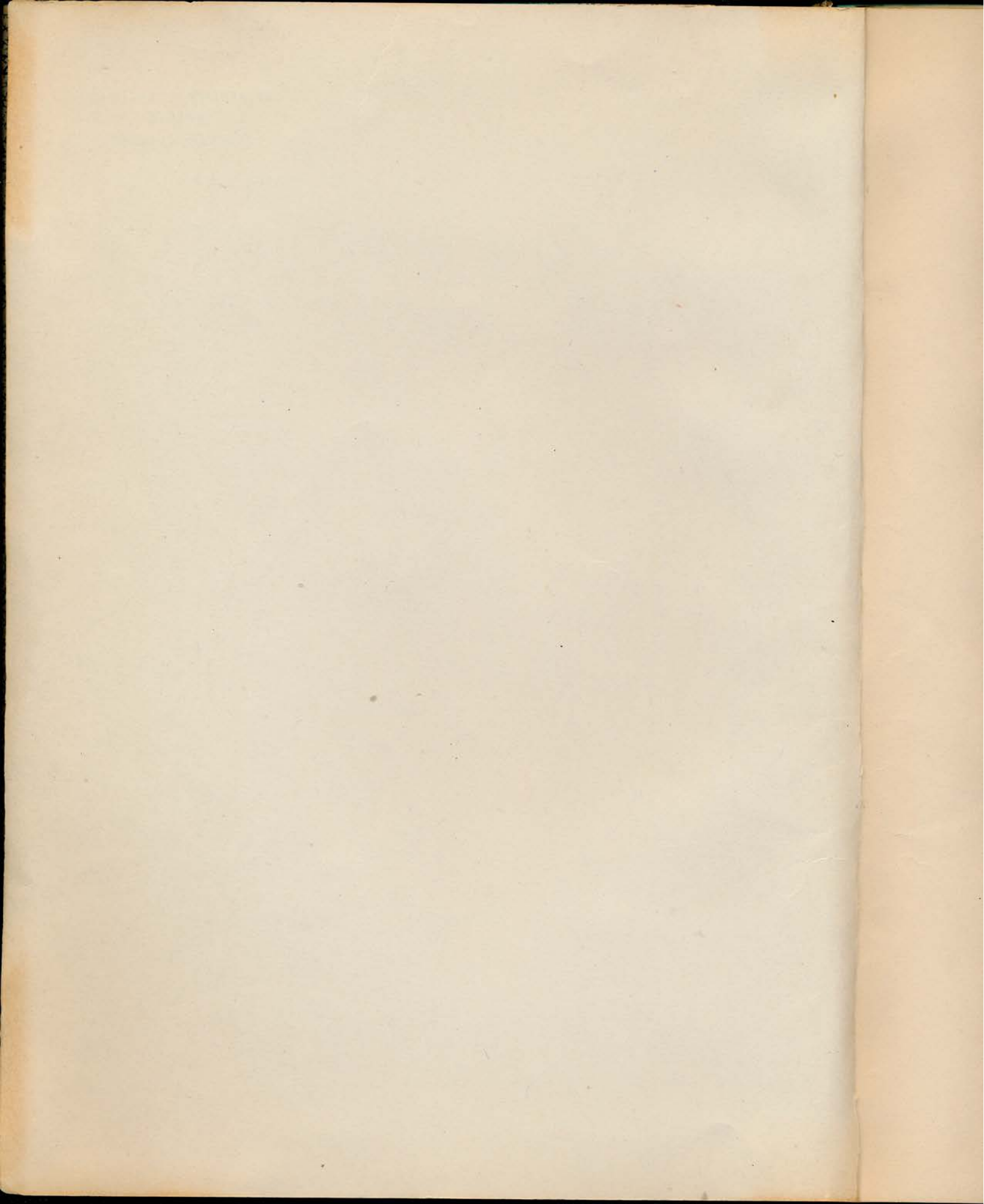
HENDERSON



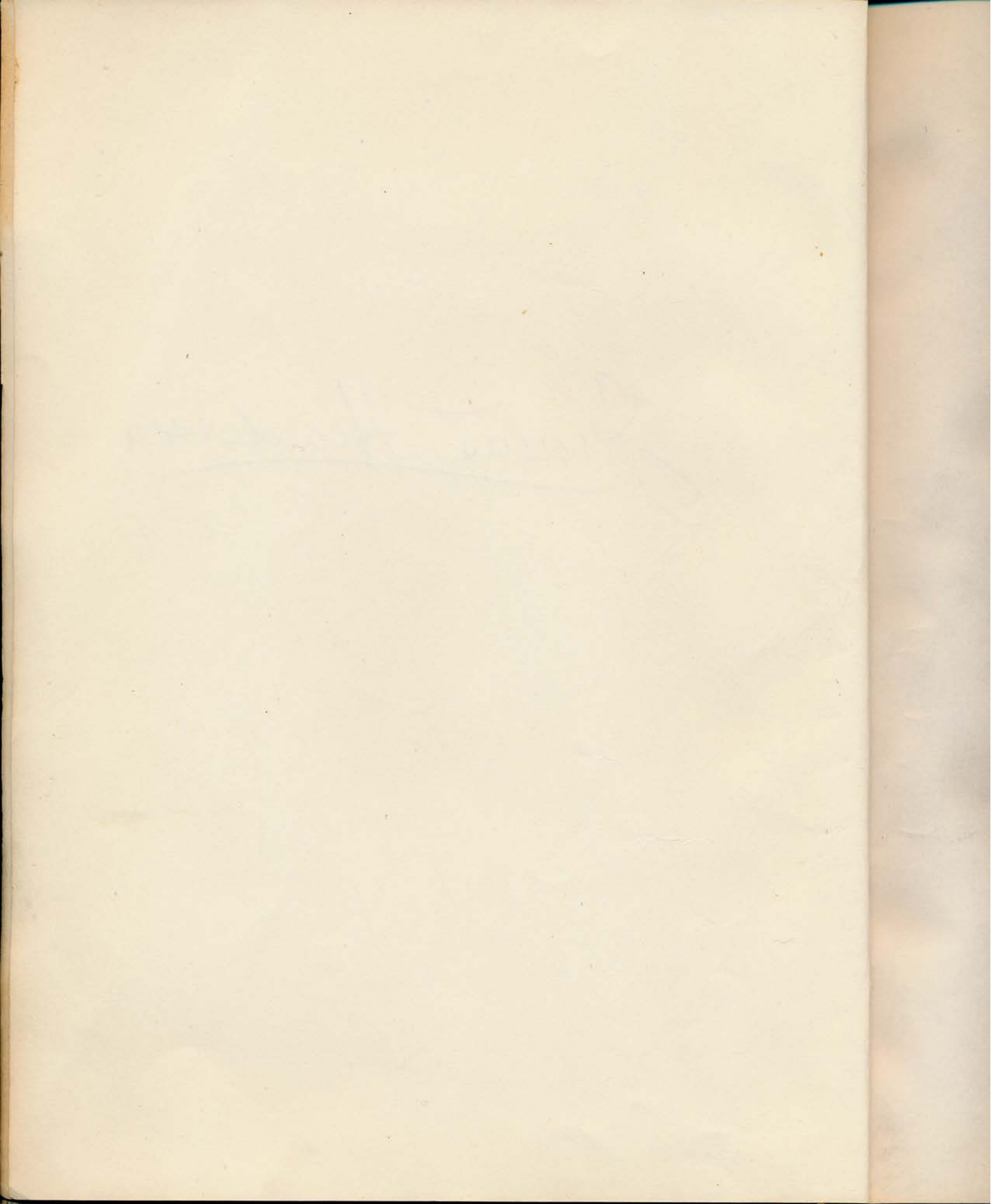
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UNIVERSITY OF COLORADO  
MUSEUM  
BOULDER, COLORADO



Junius Henderson











13  
The following is a list of the  
names of the persons who  
were present at the  
meeting held on the  
10th day of May, 1900.

The following names were present at the meeting held on the 10th day of May, 1900, at the library of the University of Toronto, Toronto, Ontario, Canada: [The following names are faintly visible but illegible due to fading and bleed-through.]

I N T R O D U C T I O N.

In the note books of Denis Gale occurs a great deal of matter of no special importance, such as systematic lists of birds, etc., apparently copied into the books merely for his own convenience to avoid constant reference to manuals. Such matter I have omitted from this transcript, generally indicating the omission in some way. All annotations appear either in footnotes or in parentheses and are signed "J.H." I have taken the liberty to insert punctuation marks in many places, after careful consideration, where it would make the notes more easily readable, and have corrected orthography and grammar in many instances, though not always, by any means. The transcript has been written as rapidly as I could manipulate the keys and proof<sup>-read</sup> very hastily. In the early part of the transcript I omitted the check list numbers, but inserted them in all the pages after page 120. In nomenclature he followed Ridgway's "Nomenclature of North American Birds," Bull. 21, U. S. Nat. Mus., 1881, but in the notes for 1892 he adds the A.O.U. numbers also. The notes are all written with ink, and probably written at home, though quite likely transcribed from some kind of a field memorandum book. At least one of the books was altogether too large to conveniently carry into the field, and they do not bear the usual marks of rough usage in the field in all kinds of weather. In places the notes bear internal evidence of not having been written on the dates they bear. This is particularly true of the large book, No. 6. Most of the localities mentioned

II  
are in the neighborhood of Ward, ~~near~~ Gold Hill and Jamestown,  
in Boulder County, Colorado, the latter place having been  
Mr. Gale's headquarters when in the mountains.

These note books were purchased by the University of  
Colorado, together with such portions of his collection of  
nests and eggs as had not been sent to Smithsonian Institution,  
the purchase price being \$500.00, the purchase being made from  
Mr. Gale's daughter, Dr. <sup>M.</sup> Jean M. Gale, administrator of the  
estate, the money for the purchase price being part of the  
amount presented to the University for biological collections  
by Senator Simon Guggenheim. The notebooks were not numbered  
by Mr. Gale, but have been numbered by me for convenience.

Junius Henderson.

Note Books.

- No. 1. 1887, pp. 1 to 12.  
No. 2. 1883, pp. 13 to 20; 1884, pp. 20 to 32; 1885, pp. 33 to  
48; 1886, pp. 49 to 69.  
No. 3. 1887, pp. 70 to 94.  
No. 4. Miscellaneous, mixed dates, 94 to 104.  
No. 5. 1888, pp. 105 to 166  
No. 6. 1889, pp. 167 to 219; 1890, pp. 218 to 236; 1891, pp.  
236 to 240; 1892, pp. 240 to 259; 1893, pp.  
259 to 278.

Loose sheets p 279 to end.

Letter from Dr. <sup>M.</sup> Jean X. Gale.

1210 Ogden St.,  
Denver, Colo.

Judge Junius Henderson.

Dear Sir:

. . . . . The few times I had the pleasure of accompanying my father on any of his trips I was especially struck with his untiring patience in searching out the habits and nesting places of his feathered friends. In some way they seemed to recognize that he was their friend, going over the same locality year after year as he did. Many of the trees were provided with an aperture which was covered at times, but which he could uncover and observe the birds or eggs as the case might be without in the least disturbing them. His success in the finding of Clarke's crows' nests was obtained only by weeks and even months of careful observation of the knowing birds before the nest was even constructed. Notwithstanding the large numbers of eggs taken and prepared by him, not one was taken ruthlessly or where the nest could not be refilled the same season. It was a labor of love from his first youthful efforts until the more enduring ones in Colorado were finished. It seemed eminently fitting that as he was quietly laid to rest the air should be filled with low, soft twitterings of a host of feathered harbingers of spring--his friends until the last.

Yours Sincerely,

M. Jean Gale.



D E N I S   G A L E .

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By Junius Henderson.

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The Auk, Vol. XXII, Oct., 1905, p. 422.

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The name of Denis Gale will bring to the minds of many ornithologists, particularly those who have worked in the mountains of Colorado, the picture of an elderly gentleman whose energy in bird study knew no bounds, who was willing to brave wind and heat and cold and storm in his tramps from valley groves to snow-clad mountain crests in the interests of ornithology, whose collections have helped enrich the splendid collections of the Smithsonian Institution, and whose notes were of great assistance to Capt. Bendire and others, for Mr. Gale, while always willing to furnish information to others, was not much given to publishing his observations himself. Failing health stopped his work several years ago, and a few months ago he passed to his eternal rest in Denver. It will no doubt interest ornithologists to know that through the generosity of Mr. Simon Guggenheim, all of Mr. Gale's collections not heretofore sent to the Smithsonian Institution are now deposited in the museum of the University of Colorado, at Boulder, including his valuable notes on migration, food and nesting habits, covering a period of more than ten years in the mountains. The notes are now being transcribed, annotated and indexed by the undersigned, so as to make them available for the use of bird students visiting



VI.  
University. It occurs to me that a note of this in 'The Auk' ~~would be~~  
would be ~~of~~ appreciated by those who are familiar with Mr.  
Gale's work.--Junius Henderson, University of Colorado, Boul-  
der, Col.

By Prof. A. H. Felger, Denver, Colo.

The Auk, Vol. XXII, Oct., 1905, pp. 442-443.

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Denis Gale, a well-known ornithologist, died at his home in Denver, Colorado, Feb. 26, 1905. Mr. Gale was born in London Aug. 10, 1828. When he was a boy of but five years his parents came to America and settled in Quebec, Canada. While in Quebec he attended school at a boys' seminary until he was fifteen years of age, when he quit school to work in the lumber business.

His duties in this business necessitated his travelling many miles to visit logging camps in the environs of Quebec, these journeys being often made on snowshoes and in sleds. It was while he was thus engaged that his propensity and love for natural history received their quickening impulse from his natural surroundings. Laborious journeys were made light by his keen interest in every bird that flitted across his path, and with his notebook ever ready to receive his daily contributions he there began active work in the ornithological studies that he pursued with few interruptions through life. He was possessed of keen vision and hearing, was quiet and reserved in disposition, and even as a boy of thirteen or fourteen he shunned the play of his schoolboy friends and sought solitude in fields and woods. He remained in Quebec

till he had reached the age of forty when he moved to Albany, N.Y., where he became engaged as an artist and art dealer, giving lessons in painting and drawing. Three years later he moved to Philadelphia, Pa., and there followed the same occupation. He was a recognized critic in the fine arts and was honored with numerous <sup>responsible</sup> appointments. In 1878 he was given charge of the United States art exhibit in Paris, and in 1880 was honored with a similar appointment at the exhibition in California. In 1881 he became interested in mining at Gold Hill, Boulder Co., Col. During the first eleven years of his mining venture he continued to make his home in Philadelphia, coming to Colorado each year in April and remaining through November. Although he had been forced on account of his business and urban surroundings to practically discontinue his nature work while in Albany and ~~New York~~ Philadelphia, when he first came to Colorado he became so impressed with this new field and the excellent opportunities before him that his natural inclinations were again given reign and he became one of the pioneer naturalists of our state. In 1892 he moved with his family from Philadelphia to Denver, where he continued to live up to his death, making his summer home at Gold Hill.

His natural history work was chiefly along oölogical lines, although he did some work in collecting and preparing bird skins. With mammals he did but little but in this work he has the discovery of one new mouse to his credit. Of all the new material that he collected he generously sent the first and best to the National Museum at Washington, which has been the recipient from him of several hundred bird skins

viii.  
and sets of eggs. He took the first set of Clark's Crow's eggs ever taken in Colorado, which set is now in the National Museum. He was a personal friend of Capt. Bendire, and in his book 'Life Histories of Birds of North America,' as well as in other bird publications, his name may be found mentioned along with an interesting note on birds. Being of a retiring disposition he avoided publicity, and it is to be regretted that he seldom, if ever, wrote of his interesting observations and discoveries.

In 1892 he was accidentally shot in the knee, which accident made it difficult for him to get about on foot to study the habits of birds. Thus again his nature work was interrupted never again to be resumed. The collection of birds' eggs which he was at that time making, and which he retained until his death, is now in the possession of the University of Colorado. (See also antea, p. 422.)

In the history of our state the name of Denis Gale will be recorded as a faithful, enthusiastic pioneer bird student, and the memory of his life and work among us will ever serve as an impetus to us younger bird students to take up the work where he left it and do our little part in carrying it to completion.--A.H.F.

Gale's Contributions to Bendire's "Life Histories."

"Life Histories of North American Birds with Special Reference to Their Breeding Habits and Eggs," by Capt. Charles E. Bendire, Special Bulletin U. S. Nat'l Museum, 2 parts, 1892, 1895, contains reference to Gale's notes on the following species:

- For bob-white and sage grouse see below.
- 297 Dendragapus obscurus--Dusky grouse.  
 304? Lagopus leucurus--White-tailed ptarmigan.  
 308b Pedioecetes phasianellus campestris--Prairie sharp-tailed grouse.
- 333 Accipiter cooperi--Cooper hawk.  
 349 Aquila chrysaetos--Golden eagle.  
 356 Falco peregrinus anatum--Duck hawk.  
 372 Nyctala acadica--Saw-whet owl.  
 373e Megascops asio maxwelliae--Rocky Mt. Screech owl.  
 375a Bubo virginianus pallescens--Western horned owl.  
 393e Dryobates villosus monticola--Rocky Mt. hairy woodpecker (as D. v. hyloscopus).  
 394b Dryobates pubescens homorus--Batchelder woodpecker (as D. p. oreoecus.)
- 402a Sphyrapicus varius nuchalis--Red-naped sapsucker.  
 404 Sphyrapicus ruber thyroideus--Williamson sapsucker.  
 457 Sayornis saya--Say phoebe.  
 459 Nuttallornis borealis--Olive-sided flycatcher.  
 464 Empidonax difficilis--Western flycatcher.  
 Empidonax pusillus--trailli - Trail flycatcher  
 468 Empidonax hammondi--Hammond flycatcher.  
 469 Empidonax wrightii--Wright flycatcher--  
 478b Cyanocitta stelleri diademata--Long-crested jay.  
 491 Nucifraga columbiana--Clarke crow.
- 289 Colinus virginianus--Bob-white.  
 309 ~~Centrocercus urophasianus--Sage grouse.~~



Papers by Capt. Chas. E. Bendire based wholly or in part on Denis Gale's notes and specimens, and published in The Auk.

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- "Notes on the Habits, Nests and Eggs of the Genus Sphyrapicus." The Auk, Vol. V, July, 1888, p. 225 et seq. Quotes Gale as to S. muchalis and thyroideus.
- "A Peculiar Nest of Cinclus Mexicanus." The Auk, Vol. VI, Jan., 1889, p. 75. Describes Gale's roofless nest found under a bridge.
- "Picicorvus columbianus (Wils.), Clarke's Nutcracker. Its Nest and Eggs, etc." The Auk, Vol. VI, July, 1889, pp. 226-236. Describes nest and eggs found by Gale, followed by general account of all known as to the habits of the species. Five pages of Gale's notes.
- "Description of the Nest and Eggs of Megascops asio maxwelliae, the Rocky Mountain Screech Owl." The Auk, Vol. VI, October, 1889, pp. 298-302. Two pages Gale's notes.
- "Megascops asio maxwelliae." The Auk, Vol. VII, Jan., 1890, p. 91. Describes three pellets sent by Gale, one containing a meadow mouse and Crayfish, one containing crayfish and beetles, one containing crayfish.
- "A second nest and eggs of Picicorvus columbianus taken in Colorado." The Auk, Vol. VII, Jan., 1890, p. 92. Records the second nest collected by Gale.



A.

Systematic List of Species Discussed in Gale's Notes.

(I omit species known to have been incorrectly  
Identified, and have placed question  
marks after others.--J.H.)

163 species listed -o-

A.O.U. Gale's  
Nos. Nos.

Order Pygopodes--Diving Birds.

Family Podocipidæ--Grebes.

- 4 733a *Columbus nigricollis californicus*--American eared grebe.  
6 735 *Podilymbus podiceps*--Pied-billed grebe.

Order Longipennes--Long-winged Swimmers.

Family Laridæ--Gulls and Terns.

- 54 669 *Larus delawarensis*--Ring-billed gull.

Order Anseres--Lamellirostral Swimmers.

Family Anatidæ--Ducks, Geese and Swans.

- 132 601 *Anas boschas*--Mallard.  
140 609 *Querquedula discors*--Blue-winged teal.  
141 610 *Querquedula cyanoptera*--Cinnamon teal.  
143 605 *Dafila acuta*--Pintail.  
152 619 *Clangula islandica*--Barrow goldeneye.  
153 621 *Charitonetta albeola*--Bufflehead.  
167 634 *Erismatura jamaicensis*--Ruddy duck.  
172 594 *Branta canadensis*--Canada goose.

Order Herodiones--Hérons, etc.

Family Ardeidæ--Hérons, Bitterns, etc.

- 190 497 *Botaurus lentiginosus*--American bittern.  
194 487 *Ardea herodias*--Grest blue heron.

Order Paludicolæ--Cranes, Rails, etc.

Family Rallidæ--Rails, Gallinules and Coots.

- 212 572 *Rallus virginanus*--Virginia rail.  
214 574 *Poranza carolina*--Sora rail.  
221 580 *Fulica americana*--American coot.



Order Limicolae--Shore Birds.Family Phalaropodidae--Phalaropes.

- 223 564 Phalaropus lobatus--Northern phalarope.  
 224 565 Steganopus tricolor--Wilson phalarope.

Family Recurvirostridae--Avocets and Stilts.

- 225 566 Recurvirostra americana--American avocet.

Family Scolopacidae--Snipes, Sandpipers, etc.

- 230 526a Gallinago delicata--Wilson snipe.  
 263 557 Actitis macularia--Spotted sandpiper.  
 264 558 Numenius longirostris--Long-billed curlew.

Family Charadriidae--Plovers.

- 273 516 Oxyechus vociferus--Killdeer.  
 281 523 Podiceps montanus--Mountain plover. (?)

Order Gallinae--Gallinaceous Birds.Family Tetraonidae--Grouse, etc.

- 289 480 Colinus virginianus--Bob-White.  
 297 471 Dendragapus obscurus--Dusky grouse.  
 304 476 Lagopus leucurus--White-tailed ptarmigan.  
 308a 478a Pedioecetes phasianellus campestris--Prairie sharp-tailed grouse. (?)

Order Columbae--Pigeons.Family Columbidae--Pigeons.

- 312 456 Columbo fasciata--Band-tailed pigeon.  
 316 460 Zenaidura macroura--Mourning dove.

Order Raptores--Birds of Prey.Family Cathartidae--American Vultures.

- 235 454 Cathartes aura--Turkey vulture.

Family Falconidae--Hawks, Eagles, etc.

- 331 430 Circus hudsonius--Marsh hawk.  
 332 432 Accipiter velox--Sharp-shinned hawk.  
 333 431 Accipiter cooperi--Cooper hawk.  
 337b 436b Buteo borealis calurus--Western red-tailed hawk.  
 342 442 Buteo swainsoni--Swainson hawk.  
 348 448 Archibuteo ferrugineus--Ferruginous rough-legged Hawk.  
 349 449 Aquila chrysaetos--Golden eagle.  
 355 413 Falco mexicanus--Prairie falcon.  
 356 414 Falco peregrinus anatum--Duck hawk.  
 358 418 Falco richardsonii--Richardson merlin.  
 360 420 Falco sparverius--American sparrow hawk.

Family Bubonidae--Horned Owls, etc.

- 366 395 *Asio wilsonianus*--American long-eared owl.
- 368 397 *Syrnium varium*--Barred owl.
- 372 401 *Nyctala arcadica*--Saw-whet owl.
- 373e 402c *Megascops asio Maxwelli*--Rocky Mt. screech owl.
- 374 404 *Megascops flammeola*--Flammulated screech owl.
- 375a 405a *Bubo virginianus pallescens*--Western horned owl.
- 378 408 *Speotyto cunicularia hypogaea*--Burrowing owl.
- 379 409 *Glaucidium gnoma*--Pygmy owl.

Order Coccyges--Cuckoos, etc.

Family Alcedinidae--Kingfishers.

- 390 382 *Ceryla alcyon*--Belted kingfisher.

Order Pici--Woodpeckers, etc.

Family Picidae--Woodpeckers.

- 393e 360b *Dryobates villosus monticola*--Rocky Mt. hairy Wdpr.
- 394b 361a *Dryobates pubescens homorus*--Batchelder woodpecker.
- 402a 369a *Sphyrapicus varius nuchalis*--Red, naped sapsucker.
- 404 370 *Sphyrapicus ruber thyroideus*--Williamson sapsucker.
- 406 375 *Melanerpes erythrocephalus*--Red-headed woodpecker.
- 408 376 *Asyndesmus lewisi*--Lewis woodpecker.
- 413 378b *Colaptes cafer collaris*--Red-shafted flicker.

Order Macrochires--Goatsuckers, Swifts, etc.

Family Caprimulgidae--Goatsuckers, etc.

- 418 355 *Phalaenoptilus nuttallii*--Poor-will.
- 420a 357a *Chordeilus virginianus henryi*--Western nighthawk.

Family Micropodidae--Swifts.

- 422 350 *Cypseloides niger borealis*--Black swift. (?)
- 425 349 *Aeronautes melanoleucus*--White-throated swift.

Family Trochilidae--Humming Birds.

- 429 336 *Trochilus alexandri*--Black-chinned hummingbird. (?)
- 432 339 *Selasphorus platycercus*--Broad-tailed hummingbird.

Order Passeres--Perching Birds.

Family Tyrannidae--Tyrant Flycatchers.

- 444 304 *Tyrannus tyrannus*--Kingbird.
- 447 306 *Tyrannus verticalis*--Arkansas kingbird.
- 457 316 *Sayornis saya*--Say phoebe.
- 459 318 *Nuttallornis borealis*--Olive-sided flycatcher.
- 462 321 *Contopus richardsonii*--Western wood pewee.
- 464 323 *Empidonax difficilis*--Western flycatcher.
- 466 325a *Empidonax traillii*--Traill flycatcher.
- 467 326 *Empidonax minimus*--Least flycatcher. (?)

- 468 327 Empidonax hammondi--Hammond flycatcher.  
469 328 Empidonax wrightii--Wright flycatcher.

Family Alaudidae--Larks.

- 474c 300a Otocoris leucolaema--Desert horned lark.

Family Corvidae--Crows, Jays, Magpies, etc.

- 475 286 Pica pica hudsonia--American magpie.  
478b 290c Cyanocitta stelleri diademata--Long-crested jay.  
480 292 Aphelocoma woodhouseii--Woodhouse jay.  
484a 297a Perisoreus canadensis capitalis--Rocky Mt. jay.  
487 281 Corvus cryptoleucus--White-necked raven.  
488 282 Corvus americanus--American crow.  
491 284 Nucifraga columbiana--Clarke crow.  
492 285 Cyanocephalus cyanocephalus--Pinon jay.

Family Icteridae--Blackbirds, Orioles, etc.

- 495 258 Molothrus ater--Cowbird.  
497 260 Xanthocephalus xanthocephalus--Yellow-headed blackbird.  
498d 261 Agelaius phoeniceus fortis--Thick-billed red-wing.  
501b 264 Sturnella magna neglecta--Western meadowlark.  
507 271 Icterus galbula--Baltimore oriole. (?)  
508 272 Icterus bullocki--Bullock oriole.  
510 274 Scolecophagus cyanocephalus--Brewer blackbird.  
511b 278b Quiscalus quiscula aeneus--Bronzed grackle.

Family Fringillidae--Finches, Sparrows, etc.

- 514a 165 Hesperiphona vespertina montana--Western evening grosbeak.  
515a 166 Pinicola enucleator montana--Rocky Mt. pine grosbeak.  
518 169 Carpodacus cassinii--Cassin purple finch.  
519 170 Carpodacus mexicanus frontalis--House finch.  
521b 172 Loxia curvirostra bendirei--Bendire cross-bill.  
524 175 Leucosticte tephrocotis--Gray-crowned leucosticte.  
524a 175a Leucosticte tephrocotis littoralis--Hepburn leucosticte.  
526 177 Leucosticte australis--Brown-capped leucosticte.  
528 179 Acanthis linaria--Redpoll.  
529 181 Astragalinus tristis--Goldfinch.  
533 185 Spinus pinus--Pine siskin.  
540a 197a Poecetes gramineus confinis--Western vesper sparrow.  
542b 193a Passerculus sandwichensis alaudinus--Western savannah sparrow. (?)  
552a 204a Chondestes grammacus strigatus--Western lark sparrow.  
553 205 Zonotrichia querula--Harris sparrow. (?)  
554 206 Zonotrichia leucophrys--White-crowned sparrow.  
559a 210 Spizella monticola ochracea--Western tree sparrow.  
560a 211a Spizella arizonae--Western chipping sparrow.  
563a 214 Spizella pusilla arenacea--Western field sparrow.  
566 216 Junco aikeni--White-winged junco.  
567b 218 Junco hyemalis shufeldti--Shufeldt junco.  
569 220 Junco caniceps--Gray-headed junco.  
581b 231a Melospiza cinerea montana--Mt. song sparrow.  
583 234 Melospiza lincolni--Lincoln sparrow.

- 588 238 *Pipilo maculatus arcticus*--Arctic towhee.  
 588a 238a *Pipilo maculatus megalonyx*--Spurred towhee.  
 591.1 239 *Oreospiza chlorura*--Green-tailed towhee.  
 595 245 *Zamelodia melanocephala*--Black-headed grosbeak.  
 599 249 *Cyanospiza amoena*--Lazuli bunting.  
 605 256 *Calamospiza melanocorys*--Lark bunting.

Family Tanagridae--Tanagers.

- 607 162 *Piranga ludoviciana*--Louisiana tanager.

Family Hirundinidae--Swallows.

- 612 153 *Petrochelidon lunifrons*--Cliff swallow.  
 613 154 *Hirundo erythrogastra*--Barn swallow.  
 614 155 *Iridoprocne bicolor*--Tree swallow.  
 615 156 *Tachycineta thlassina lepida*--Northern violet-green swallow.  
 616 157 *Riparia riparia*--Bank swallow.

Family Ampelidae--Waxwings.

- 618 150 *Ampelis garrulus*--Bohemian waxwing.

Family Laniidae--Shrikes.

- 621 148 *Lanius borealis*--Northern shrike.  
 622a 149a *Lanius ludovicianus excubitorides*--White-rumped shr.

Family Vireonidae--Vireos.

- 629a 141b *Vireo solitarius plumbeus*--Plumbeous vireo.

Family Mniotiltidae--Wood warblers.

- 652 93 *Dendroica aestiva*--Yellow warbler.  
 656 96 *Dendroica auduboni*--Audubon warbler.  
 680 121 *Geothlypis tolmei*--Macgillivray warbler.  
 681a 122 *Geothlypis trichas occidentalis*--Western yellowthroat.  
 683a 123a *Icteria virens longicauda*--Long-tailed chat.  
 685a 125 *Wilsonia pusilla pileolata*--Pileolated warbler.  
 687 128 *Setophaga ruticilla*--American redstart.

Family Motacillidae--Wagtails.

- 697 71 *Anthus pensylvanicus*--American titlark, or pipit.

Family Cinclidae--Dippers.

- 701 19 *Cinclus mexicanus*--American dipper.

Family Troglodytidae--Wrens, Thrashers, etc.

- 702 10 *Oreoscoptes montanus*--Sage thrasher.  
 703 11 *Mimus polyglottos*--Mockingbird.  
 704 12 *Galeoscoptes carolinensis*--Catbird.

- 705 13 *Toxostoma rufum*--Brown thrasher.  
 715 58 *Salpinctes obsoletus*--Rock wren.  
 717a 57 *Catherpes mexicanus conspersus*--Canyon wren.  
 721b 63a *Troglodytes aedon aztecus*--Western house wren.

Family Certhiidae--Creepers.

- 726b 55 *Certhia familiaris montanus*--Rocky-Mt. Creeper.

Family Paridae--Nuthatches and Tits.

- 727a 51a *Sitta carolinensis aculeata*--Slender-billed nuthatch.  
 728 52 *Sitta canadensis*--Red-breasted nuthatch.  
 730 54 *Sitta pygmaea*--Pygmy nuthatch.  
 735a 41a *Parus atricapillus septentrionalis*--Long-tailed chickadee.  
 738 40 *Parus gambeli*--Mountain chickadee.

Family Sylviidae--Warblers, Kinglets, etc.

- 749 30 *Regulus calendula*--Ruby-crowned kinglet.  
 751 27 *Polioptila caerulea*--Blue-gray gnatcatcher.

Family Turdidae--Thrushes, etc.

- 754 25 *Myadestes townsendii*--Townsend solitaire.  
 756a 2 *Hylocichla fuscescens salicicola*--Willow thrush.  
 758a 4a *Hylocichla ustulata swainsonii*--Olive-backed thrush.  
 759a 5a *Hylocichla guttata auduboni*--Audubon hermit thrush.  
 761a 7a *Merula migratoria propinqua*--Western robin.  
 766 22 *Sialia sialis*--Bluebird.  
 769a 23 *Sialia mexicanus bairdi*--Chestnut-backed bluebird.  
 768 24 *Sialia arctica*--Mountain bluebird.

NOTE BOOK No. 1.

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(Systematic list of orders and families, terms used in describing external forms of birds, a numerical list of birds headed "up to 1886, Colorado," another list headed "Eastern Eggs," and some measurements of wings, eggs., etc., of various species, are all omitted.--J.H.)

1887.

## Birds notes

- March 21. Single Sialia articus (<sup>Mt. Bluebird</sup> Sialia Arctica--J.H.) at Gold Hill 8500 ft.
23. Flock of <sup>American goldfinch</sup> Astragalinus tristis 12 to 15 in number, entrance to Spring Gulch (Probably near Sunset--J.H.) 7500 ft. Flock of 20 to 25 <sup>Robin</sup> Merula same locality 8000 ft. <sup>Gray-headed Junco</sup> Junco caniceps in pairs along the gulch, also at Ward, 10,000 ft.
24. Saw several Picicorvus columbianus, <sup>Clark's nutcracker</sup> (Nucifraga columbiana--J.H.) and Perisoreus c. capitalis <sup>Rocky Mt. Jay</sup>—captured a ♀ of each species, their ovaries differing nothing one from the other, each being but slightly advanced from a normal state. Each bird seemed to be mated. Saw 3 pairs of Sialia artica (<sup>Mt. Bluebird</sup> Sialia Arctica--J.H.) on plateau between Gold Lake and Ward, 9000 ft. These birds seemed to have reached their nesting grounds, but they are the first to have reached this altitude to my knowledge to date. I note

a singular absence of Cyanocitta s. macrølopha  
 (Cyanocitta steæleri diademata--<sup>Longeared Jay</sup>J.H.). Weather very  
 warm--has been so for the last 2 or 3 weeks. No snow  
 below 10,000 ft. From Nov. to Feby. 20th almost con-  
 stant prevalence of high winds with very little snow.

March 26. Slight flurry of snow. Saw flock of about 50 Sialia  
 in Four Mile Gulch below Cold Hill, their destination  
 probably 9 to 10,000 ft to distribute at those points  
 for nesting purposes, or more correctly speaking, pre-  
 paratory to nesting, as they are to be found singly or  
 in pairs at their nesting sites nearly a month before  
 entering upon their active cares. With such as favor  
 the highest altitudes--the extreme limit of timber, much  
 loitering in the valley and in the foothills is ob-  
 served, where their food is more plentiful. Their line  
 of easy flight to their destination is by way of the  
 canyons and gulches, working up slowly and in case of  
 severe cold or snow retrograding to the foothills, or  
 valley if sore pressed, again advancing under more fav-  
 orable circumstances. Saw flock of Ememophila alpes-  
tris (Probably Otocoris alpestris leucolaema--<sup>Sweet Horned Lark</sup>J.H.),  
 about 30, in flight at Cold Hill, their destination the  
 plateau above timber line, which, according to circum-  
 stances, they will probably reach about 15th April,  
 where they nest about 3 weeks later than on the valley.  
 No intermediate choice is made between the valley and

the high plateaux to my knowledge. At present writing these birds may be found in twos and threes all over the valley. The early nest may be looked for latter part of April and may be found as late as early part of June. Cannot satisfy myself that positively they raise more than one brood, but think they do, from their number and the few eggs they cover at a time, seldom 4 in number, mostly three and quite often two. From the exposed situations of their nests no doubt many are destroyed, and the persistence to raise a brood may urge many attempts. Three years ago a very heavy snow fell over the valley on the 25th April, followed up by another on the 7th May. It was heavy and damp, consequently covered the ground completely, not only covering up the nests, but closed and cut off every chance of a food supply for several days. Many nests were destroyed, no doubt. The birds re-nested and towards end of May they were quite plentiful and of a very even freshness, which is not usually the case. In early winter these birds collect in large flocks and are preyed upon by hawks, owls and shrikes. If the winter is severe and deep snow covers the ground these birds perish in numbers if the blockade continues for any length of time.

March 28. Flocks of rollicking redwings (Red-wing blackbirds-J.H.)  
Some winter with us.

April 1. Noticed a single song sparrow. Also several pairs of  
sparrow hawks



4  
April 10. Noticed the arrival of white-throated swifts, cliff  
at Left Hand entrance. Also think I saw a velvet green  
in their company. Sialia arctica still favoring the  
foothills.

11. Quite cold at evening. Slight flurries of snow on the  
range for three days at intervals. Noticed the swifts  
1st April also at Big Thompson Canyon.

16. Cache a la Poudre, saw two mourning doves. Also Den-  
droica auduboni. Noticed 14 buzzards roosting--pecu-  
liar gyrating in close circles before settling.

17. Noticed altered song of redwings. Perceived some ♀  
among the number just arrived.

21. Little Thompson. Noticed bird in flight supposed to  
be a kite--Black crown, white throat, light slate back,  
darkish square tail. High wind prevailing. Saw what  
I supposed were cross bills, flock of 20. Saw Sayornis  
sayi. Also Colaptes auratus mexicanus (Colaptes cafer  
collaris--J.H.) <sup>red-capped flicker</sup> excavating their nests at several  
points.

24. Boulder Creek, Boulder. Heard Dendroica aestiva sing-  
ing. Trees just leafing. Saw a second Sayornis sayi  
(saya--J.H.). <sup>Yellow warbler</sup>

Rock Creek. Saw Lanius l. excubitorides. Also Hyl-  
ocichla swainsonii. <sup>white-rumped shrike</sup> Evidences of much beaver labor on  
<sup>olive-backed thrush</sup> Ralston and Rock Creek, east of Erie.

26. Noticed barn swallows.

- May 5. Tyrannus verticalis, <sup>Arkansas Kingbird</sup> Sayornis saya building nest.
7. Captured two Xanthocephalus icterocephalus (<sup>yellowhead blackb.</sup> Xanthocephalus xanthocephalus--J.H.), 2 Phalaropes and small marsh wren, supposed to be.
13. Pipilo chlorurus, <sup>Arcoaspiza chlorura - green-tailed towhee</sup> Dendroica aestiva. <sup>yellow warbler</sup>
15. Captured kingfisher within <sup>a</sup> few days of laying, chewink and catbird. Saw <sup>Louisiana</sup> western tanager, brown thrasher, lark <sup>Lark bunting</sup> finch and mockingbird.
17. Swainson's thrush, <sup>Probably olive backed thrush</sup> longtailed chat, Bullock's oriole, all at Little Thompson.
20. Macgillivray's warbler, E. Creek valley.
- May 10. Yellowheads (blackbirds--J.H.) and tyrant flycatchers just arrived south of Valmont.
- May 11. Lewis' woodpeckers excavating.
- May 31. Ward district, 10,000 ft altitude. White bellied swallows building nests. Saw black-crowned yellow warbler, Audubon's warbler, (Probably pileolated, possibly Wilson's--J.H.), Lincoln' sparrow, white-crowned sparrow, Rufous-crowned kinglet, greentailed towhee, spotted sandpiper and unidentified. flycatcher--old nest of latter secured. Saw parent Parisorcus c. capitalis with four young accompanying the adults in easy flight. Plumage darker than parents. Must have been hatched out 30th April.
- June 8. Saw flock of bandtailed pigeons in Spring Gulch (Near Sunset, Colo.--J.H.), 10 or 12 in number. Saw same

flock afterwards the same day. They seemed dissatisfied and unsettled--no food to speak of. Saw none after this date. Doubtless they recrossed the range, west. Saw western tanager, 2 pairs, near Andy Johnson's, about to build nests.

11. Noted this bird (Probably Louisiana tanager, above--J.H.) carrying materials to build nest in pine tree near Stacey's. Ten days after failed to find nest; suppose the site was changed as is sometimes the case with other birds. After the 5th June they may be profitably watched in order to discover their nests. No better way presents itself to my mind.

14. Cyanocitta s. macrolopha (C. s. diademata--J.H.). Nest with nest of this bird with 4 young, matured enough to leave the nest in couple of days. They were sprawling over edge of nest, which was built on lateral bough close to stem of small fir tree 8 feet from ground, nest quite prominent to view, parent birds not present, Ward Gulch to Left Hand. Hatched out end of May, no <sup>doubt</sup>.

May 31. Scolecophagus cyanocephalus, also Quiscalus purpureus aeneus (Q. q. aeneus--J.H.) have nest with full complement of eggs, 5 to 6 in number, about this time, in a few cases perhaps 10 days earlier and 5 days later. Nests of <sup>the</sup> former in open trees or bushes, in tree cavities, holes in walls or rock ledges. Nests made of grasses, somewhat bulky and roomy, lining of finer grasses, etc. If tree cavities are chosen as sites

they are occupied consecutive years. So far as my experience goes the grackle selects tree cavities alone.

- July 15. About this date Scolecophagus cyanocephalus visits the range for some purpose or other. Do not know why.
- July 1. Pipilo maculatus <sup>P. c. montana Rocky Mt. Pinegrove</sup>. Saw and heard several of these birds. Watched a pair feeding upon pine and spruce buds. They did not seem to have any nest cares.
- July 2. Canace obscura (Dendragapus obscurus--J.H.), at Giles' Spring Gulch saw a hen with chicks a day or two old. ♀ clucked like a fowl.
- July 4. Astragalinus tristis. At Boulder saw young quite able ~~June 30.~~ to fly chasing each other about.
- June 30. Chrysomitris pinus (Spinus pinus--J.H.), Duck Lake. Saw young of this species, also in families with their parents a few days ago, say 30th June.
- July 5. Dendroica auduboni, Duck Lake. Saw young birds out of nests, able to fly, being fed by parents.

Back of Note Book No. 1.

(List of skins, eggs and nests omitted--J.H.)

(The following notes seem to all refer to skins, etc, sent to Washington, omitting the check list numbers and sometimes other <sup>or</sup> important data--J.H.)

1885.

Nests of 7a, 13, 24, 63a, 149a, 245, 260, 264, 300, 304 and 323. Eggs belonging to these nests forwarded to Washington last year.

Bird Skins.

Zonotrichia leucophrys (typical) 7/27/85 *White-crown sparrow*

Hylocichla ustulata swainsonii 6/26/85 olive backed thrush  
Sitta carolinensis aculeata 11/4/85 slender billed nuthatch  
Sitta canadensis 11/4/85 Red breasted nuthatch  
Chrysomitris (Spinus--J.H.) pinus 5/20/85 Pine siskin  
Geothlypis trichas 11/4/85 Rocky Mt. creeper  
Carpodacus cassinii 12/3/85 Cassin finch  
Junco annectens (Hybrid J. Caniceps x J. Kearnsi--J.H.) 12/10/85  
Junco oregonus (Probably J.o. shufeldti--J.H.) 12/10/85  
Leucosticte australis, winter, 1/20/86  
Leucosticte tephrocotis winter 1/20/86  
 Fly in three stages of development, the food for young of Circus  
mexicanus, maturing about end of June.

### Eggs, Nests and Birds.

Hylocichla nest, 4 eggs, 6/13/84  
 Do. ustulata swainsonii nest, ♀, 2 eggs, 6/26-85  
Spinus mexicanus nest, 4 eggs, 6/27/85 Mt. chickadee  
Parus montanus (P. gambeli--J.H.) nest, 4 eggs badly broken, 6/16/85  
Sitta pygmaea, nest, ♀, 3 eggs, 6/9/85 Pygmy nuthatch  
Salpinctes obsoletus, nest, ♀, 7 eggs, 6/11/85 Rock wren  
 \*Anthus ludovicianus, 7 eggs blown at ends, 6/30/85 Titlark or pipit  
Chondestes grammacus strigatus, nest, 5 eggs, 6/2/85  
Zonotrichia leucophrys, nest, ♀, 3 eggs, 7/27-85  
Junco caniceps, nest, 4 eggs, 7/10/85  
Pipilo chlorura (Oreoaspiza chlorura--J.H.), nest, 4 eggs, 6/11/85  
Calamospiza bicolor (C. malenocorys--J.H.) nest, 5 eggs, 6/4/85  
Tyrannus verticalis, nest, 5 eggs, 6/3/85 Ark. Kingbird  
Sayornis saya, nest, 3 eggs, 6/23/85  
Contopus richardsonii, nest, 5 eggs, 6/21/85 Western Wood Pewee  
Chordeiles pubetula henryi (C. virginianus henryi--J.H.), 2 eggs, 6/2/85  
Hylocichla ustulata swainsonii, nest, 3 eggs, 7/18/84  
 identified at Washington 1884

1886.

Bird skins sent to Washington.

- ✓ Mimus polyglottos, foothills, June 27 ♂
- ✓ Regulus calendula, 10,000 ft., July 5 ♂ ♀
- ✓ Pinicola enucleator, 10,000, July 15 ♂
- ✓ Leucosticte tephrocotis, 8,000, March 30, ♂  
 8,000, Jan 2/85 ♂  
 9,500, July 5
- Perisoreus c. capitalis, 10,500, July 17, yg. white-throated swift
- Cypselus saxatilis (Acrornantes melanoleucus--J.H.), 5,500, June 26 ♂ ♀
- Podiceps montanus, 5,000, June 1, yg. Mt. plover
- Two mice, 7,500, Nov. 17 (Possibly Galea red-backed mice--J.H.)  
 Eggs.
- ✓ Mimus polyglottos, set 4 eggs, May 31, Valley
- Sitta c. aculeata set 3 eggs, May 25, 8,000 ft.  
 Do. " 2 " " 28, 9,000
- Picus villosus harrissi (Probably Dryobates villosus monticola--J.H.), set 4 eggs, May 28, 9,000  
 Rocky Mt. hairy wood pkr
- \*Anthus pensilvanicus--J.H.

Valley.

Harporhynchus rufus (Toxotoma rufum--J.H.) set 3 eggs, June 5,  
Scops (Megascops--J.H.) asio maxwelliae set 4 eggs, these slight-  
 ly sat upon, nest C, April 20, Valley.

1887.

Bird skins sent to Washington.

♂ Hylocichla unalascae (guttata--J.H.) auduboni, taken July 17,  
 foot of range, 10,500 ft.

Astragalinus tristis taken March 23/87

♀ Bubo virginianus subarcticus (B.v. pallascens--J.H.) <sup>W. great horned owl</sup> March 18/87  
 4 specimens of Canace obscura (Dendragapus obscurus--J.H.) of  
 different dates of capture, adults of both sexes  
 and young. *Dusky grouse*

Eggs and nests.

March 10, 3 eggs slightly incubated Bubo v. subarcticus (B.v. pal-  
lescens--J.H.)

April 21, 5 eggs Do. Asio americanus (A. wilsonianus--J.H.) <sup>Longland</sup> owl

May 30, 3 eggs Do. Buteo swainsoni. *Swainson hawk*

" 31, 7 eggs, fresh and nest, Parus montanus (P. gambeli <sup>2nd</sup> J.H.) <sup>Chickadee</sup>

June 5, 7 eggs do. and nest Sitta pygmaea *Pygmy nuthatch*

June 15, 8 eggs badly broken and nest, Regulus calendula *r.c. bright*

July 1, nest only, having young, Dendroica auduboni  
 June 12, 5 eggs fresh and nest, Myiocidites pusillus (Wilsonia  
pusilla or W.p. pileolata--J.H.)

June 13, 3 eggs Do. Melospiza lincolni

June 15, 5 eggs Do. and nest Do.

May 20, 5 eggs fresh, Sturnella neglecta (S. magna neglecta--J.H.)

" 26, 6 eggs Do. S. thyroideus (Sphyrapicus thyroideus--J.H.) <sup>williamson sapsucker</sup>

June 1 4 eggs Do. S.v. michalis (Sphyrapicus varius michalis--J.H.) <sup>red naped sapsucker</sup>

" 17, 6 eggs Do. and nest, Tachycineta (Iridoprocne--J.H.) bi-  
color. *White bellied or tree swallow*

June 15, 4 eggs Do. and nest Carpodacus cassinii

July 8, 4 eggs Do. and nest, Zonotrichia leucophrys

Plants.

So-called mountain sage, Artemisia frigida wilsonoides ?  
 sent last year, Do.

Lichen and moss.

Peltigera canina (Koff.)

XXXX. 1888.

Bird skins.

Hermit thrush Rocky Mts.

Hammond's flycatcher, Wright's Do.

Cantopus richardsoni, Macgillivray warbler

Eggs and nests.

Picicorvus (Nucifraga--J.H.) columbiana, nest in place, 3 eggs, <sup>March 5.</sup>  
Corvus frugivorus (C. americanus--J.H.) 5 eggs, April 18 <sup>^</sup>

Apl. and May  
Apl. and May

Pica rustica hudsonica (Pica pica hudsonica--J.H.), assorted, 14, Apl. & May  
Cinclus mexicanus, nest and 3 eggs, May 31  
Myadestes townsendi, nest and 3 eggs June 6  
Dendroica auduboni, nest in place, 3 eggs, July 1  
 Do. Do. 3 eggs, July 6  
Regulus calendula Do. 6 eggs, July 2  
Contopus richardsoni Do. 3 " July 7  
Empidonax obscura Do. 4 " June 26 (E. wrightii--  
H. unalascae auduboni Do. 4 " July 11 J.H.)  
Hylocichla guttata auduboni--J.H.)  
Contopus richardsoni, 2nd nest, yg. in alcohol, July 17  
Empidonax hammondi " Do. July 24  
Selasphorus platycercus " Do. " 18

Old nest H. u. auduboni made of mosses

Icterus bullocki, old nest made of hair.

1028, nest for identification, site in small spruce tree 7 ft. from ground, rifled by jay, 2 eggs pale blue sparse peppery markings, long pointed oval, about the size of house wren.

Cinclus mexicanus, nest under a bridge, the top open, being covered by a plank of the platform, something like a barn swallow's nest hole at the top side.

Contopus richardsoni, nest saddled like the first upon a horizontal bough of a naked tree, their make-up identical, differing from those of the valley, along the creeks.

Empidonax hammondi is in place. Its site was in a tall spruce tree near the top, about 30 feet from the ground. Its small dimension at that height rendered it pretty safe from casual observation. It was not concealed in the location. The birds had an open sweep to it from either side.

Humming bird nest captured in an alder bush about 3 feet from the ground. These birds when they have eggs or young betray them without much ado.

Addressed to U. S. National Museum, Washington, D.C., for the  
 Zoological Department.

1889.

Eggs sent to Washington this season.

1 set 4 eggs Scops (Negascops--J.H.) saisi maxwelliae  
 1 " 4 " Microfalco mexicanus polyaxus (Falco mexicanus--J.H.) *Prairie falcon*  
 1 " 3 " Nyctala acadica *Sawwhet owl*  
 2 broken eggs 1 set with nest, auduboni (Genus not given--J.H.)  
 1 set 2 eggs Sitta canadensis  
 1 " 4 " Dendroica aestiva Col. var.  
 1 " 4 " Cyanocitta stelleri macrolopha (C. s. diademata--J.H.)  
 1 " 3 " Contopus borealis (Huterea borealis--J.H.) *Olive sided flycatcher*  
 1 " 4 " Empidonax difficilis *Western flycatcher*  
 1 " 4 " Empidonax pusillus (Probably E. trailli--J.H.)  
 1 " 3 " Picus pubescens gairdneri (Dryobates pubescens homerus--J.H.) *Colorado variety*

pl. &amp; May

1889.

Nests sent to Washington.

- 3 nests of Hylocichla unalascae auduboni (H. guttata auduboni—J.H.)  
one containing broken shells.
- 1 nest Sitta canadensis
- 1 " Dendroica aestiva, Col. var.
- 1 " Cyanocitta stelleri maculolopha (C. s. diademata—J.H.)
- 1 " Contopus borealis *clivoides flycatcher*
- 1 " Empidonax difficilis *weaver* "
- 1 " Empidonax pusillus (cf. E. trailli—J.H.)
- 1 old nest of Vireo.
- Flower and stem of plant for identification.

Three parcels for Dr. C. Hart Merriam.

- Mammals, 1 prairie dog
- 1 weasel
- 2 bush tailed wood rats
- 3 round tailed Do.
- 1 bat
- 1 chipmunk
- 1 gopher
- 2 swamp mice and 2 small shrews

1890.

Sundries sent to Washington, D.C., Capt. Bendire.

- |                               |   |      |              |
|-------------------------------|---|------|--------------|
| Set <u>Cooper's hawk</u>      | 4 | eggs |              |
| " <u>Wilson's phalarope</u>   | 4 | "    |              |
| " <u>American avocet</u>      | " | "    |              |
| " <u>American coot</u>        | 6 | "    |              |
| " <u>Am. eared grebe</u>      | 5 | "    |              |
| " <u>Brown creeper</u>        | 4 | "    | and nest     |
| " <u>Hammond's flycatcher</u> | 4 | "    | Do. in place |
| " <u>Little flycatcher</u>    | 4 | "    | Do.          |
| " <u>Dwarf thrush</u>         | 3 | "    | Do.          |
| " Do. damaged                 | 2 | "    | Do.          |
| " <u>W. Chipping sparrow</u>  | 3 | "    | Do.          |

Richardson's hawk for R. RidgewaySet Western yellowthroat 3 eggs Do.

For Dr. Hart Merriam (C. Hart Merriam—J.H.)

- Mammals, 1 ground hog, adult
- 1 Do. yg.
- 1 musk rat, yg. baby

Eggs sold to U.S. National Museum, Washington, D.C., May, 1892.

- |                             |      |
|-----------------------------|------|
| 3 sets <u>hermit thrush</u> | \$6. |
| 1 " <u>kinglet</u>          | 7    |
| 2 " <u>chickadee</u>        | 6.30 |
| 2 " ---Nuthatch             | 6.   |
| 3 " <u>Wilson's warbler</u> | 16.  |
| 1 " <u>north towhee</u>     | 3.   |



1 set	<u>shore lark</u>	.60
2 "	-----	5.
3 "	<u>cabanis (Woodpecker--J.H.)</u>	10.50
		<hr/> \$60.40

less 10%

Dec., 1892.

1 set	<u>H. thrush</u>	\$2.00
1 "	<u>nuthatch</u>	2.50
2 "	<u>Wilson warbler</u>	11.
3 "	<u>Cassin's finch</u>	14.00
1	<u>little flycatcher</u>	1.
1	<u>Lincoln (probably sparrow--J.H.)</u>	2.40
1	<u>olive sided (Flycatcher--J.H.)</u>	4.50
1	<u>screech owl</u>	4.50
2 sets	<u>golden(eagle, perhaps--J.H.)</u>	20.00
		<hr/> \$61.90

Note Book No. 2.

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1883.

Bird Notes, Boulder County, Colorado.

Cinclus Mexicanus.

May 20. Below Jintown on the creek about half a mile is a ledge of rock 20 feet high partly overhanging the creek. In a crevice of this ledge about 3 feet above the rushing water, a pair of these interesting little birds construct their nest year after year at the above date\* they have their complement of eggs 4 or 5 in number, pure white, pointed at one end and blunt at the other, in this case like the eggs of a sandpiper. Other sets do not discover this peculiarity. The season for having their eggs differs also according to locality. The nest proper is enclosed in an outside covering not at all void of interest. Set upon a flat, even base, it is oven shape, a little longer than broad. The one before me partakes of the shape of the crevice in which it was placed and measures exteriorly 7 in. high, 8 in. long and 7 in. broad. The entrance, a small aperture about 1 1/2 in. diameter, is placed about 4 in. from the bottom. The inner rim of nest proper is about 2 in. from the outer edge of outside structure, and is partially concealed by a portion of this outside covering hanging over it. The direction of entrance by the bird is upwards and its exit downwards. This outside covering is about 1 1/4 in. thick above the rim of

\* Lack of punctuation leaves some doubt as to whether the author intended to say they construct their nest at that date, or have their eggs at that date - probably the latter was intended. - J. H.

the inside nest and about 2 in. thick below the rim and under the nest. This covering is composed chiefly of moss, with bark and grass fibre securing it together. This outside covering is always dank and wet from the spray of the dashing water. The nest proper is a perfect circle, saucer shaped, about 1 1/2 in. deep and 3 1/2 in. wide (inside cup). This is composed of a peculiar nonabsorbent, coarse, wiry grass, lined with a few willow leaves, flat and intact, all perfectly dry. This nest wall of grasses is about one inch thick. The whole structure in place is scarcely distinguishable from the surroundings, all being of the same color. The material entering into the construction of the nest is chosen to match the site ~~xx kx~~ it is intended to occupy. Moss is sometimes ignored, and decayed and other debris and rubbish is substituted to keep the outside in harmony with its surroundings. The nest inside in shape and material seems ~~x~~ always to be the same. Robbed of their treasures the little birds become fearless and evince great distress and concern at their loss, going in and out of their rifled nest even though you have your hand upon it, and with the most plaintive appeal in action, as well as speech, almost, implores your forbearance. The appeal disregarded, with the joint labor of her mate another nest is made, generally on the same site, and in ~~xx~~ 3 weeks after she sits covering a second set of eggs. The nest is seldom or never betrayed by the bird itself, unless when the young are hatched and her journeys to and from the nest with food <sup>and</sup> is easily noted. Previous to having hatched out her young she will drop from the opening in the nest like a stone into the fierce, rush-

ing waters and under their surface, allowing herself to be carried quite a distance before taking flight. Its aquatic feats are remarkable, going into and against the strongest current with perfect ease, and like a fish seeming not to touch the water, coming out of it perfectly dry, without a shake or flutter, to swim, sink or dive and even walk or run under the water in search of the food it loves to hunt for. In all clear and unpolluted streams running from the melting snowbanks near the mountain peaks it is equally proficient, nor in flight is it wanting in grace or power, darting down a stream with the rapidity of a flash and again noiselessly flying from the water up to and about its nest site, when in danger, with the ease and grace of a hummingbird. A peculiarity of this interesting little fellow is that while watched as he is searching for food in the creek bed he courtesies continually and at each courtesy gives a little sharp twit, keeping time to every 4th or 5th twit by a sudden working of the eye and eyelid, causing the eye to sparkle brilliantly with light. Our little friend is no mean songster, either, in early spring (he bears us company all winter). On sunny mornings in March and April, when the noisy creeks are less obtrusive, his beautiful, clear, liquid notes are heard with rapture. Singularly sweet and enchanting is this early choral of the vernal year, / the line is past once more he comes this way to unbind the frozen creeks.

Junco caniceps.

May 30. Nest with 3 eggs fresh located close to tree root in canyon on hillside, nest sunk in ground. Nest made of grasses and lined with hair, etc.

Colaptes auratus mexicanus (C. cafer collaris--J.H.)

May 30. Nest of 6 fresh eggs. also two nests complete but without eggs.

Merula migratoria propinqua.

June 2. Nest with 4 fresh eggs, deserted by the birds, a heavy fall of snow having disheartened them. June 10 several nests slightly

incubated, 2 to 4 eggs in nests. July 3. Nest 4 eggs fresh, 2nd

July 18. Nest with 5 young Junco caniceps, half grown. Location of nest Aiken's gulch, well hid in side of bank under shrub root

Agelaius phoeniceus.

May 30. Several nests with fresh eggs among bullrushes, reeds, willow-canes attached in the usual way. Have also taken them in comparatively dry places in the cultivated fields, attached to plants of a somewhat dense foliage; also in bushes 5 to 6 feet from the ground. In these latter cases the wild hemp fibre was largely used in the nest construction. June 15 other nests, some fresh, while quite a number were advanced in incubation and a few with young birds.

Scolecophagus cyanocephalus.

June 2. Secured nest of 4 fresh eggs in low bush about 2 1/2 feet from ground well hid from observation, having one egg of the cowbird in it. Nest composed of coarse, stiff grass stems exteriorly, with earth and grasses for middle structure and fine grasses for lining.

Zenaidura carolinensis (Z. macroura--J.H.)

June 10. Several nests, one and two eggs each, in trees and bushes, also on the ground, the latter always fewer in number than the former. No seeming reason for this being the case, either having the same advantages as the other for either mode of nidification.

Parus montanus. (P. gambeli--J.H.)

June 11. Nest of 5 eggs slightly incubated. Eggs slightly sprinkled with



Colaptes auratus mexicanus (C.C.collaris--J.H.) May 30. Nest of 6 eggs fresh, also two nests complete but without eggs.

Merula migratoria propinqua, June 2. Nest with 4 fresh eggs, deserted by the birds, a heavy fall of snow having disheartened them. June 10, several nests slightly incubated, 2 to 4 eggs in nests. July 3, nest 4 eggs fresh, 2nd trip.

July 18. Nest with 5 young Junco caniceps, half grown. Location of nest Aiken's gulch, well hid in side of bank under shrub root.

Agelaius phoeniceus. May 30, several nests with fresh eggs among bullrushes, reeds, willow-canes, attached in the usual way. Have also taken them in comparatively dry places in the cultivated fields, attached to plants of a somewhat dense foliage, also in bushes 5 to 6 feet from the ground. In these latter cases the wild hemp fibre was largely used in the nest construction. June 15, other nests, some fresh, while quite a number were advanced in incubation and a few with young birds.

Scolecophagus cyanocephalus. June 2, secured nest of 4 fresh eggs in low bush about 2 1/3 feet from ground well hid from observation, having one egg of the cowbird in it. Nest composed of coarse, stiff grass stems exteriorly, with earth and grasses for middle structure and fine grasses for lining.

Zenaidura carolinensis (Z.macroura--J.H.) June 10, several nests, one and two eggs each, in trees and bushes, also on the ground, the latter always fewer in number than the former--no seeming reason for this being the case, either having the same advantages as the other for either mode of nidification.

Parus montanus (P. gambeli--J.H.) June 11, nest of a eggs slightly incubated. Eggs slightly sprinkled with

reddish speckles, very fine in character and faint. Nest in crack of a rotten vein in an otherwise live and healthy spruce tree, quite a quantity of matted fur and feathers, to appearance like rabbit's fur, but think it to be mostly composed of feathers of the bird's own moulting. June 28 discovered another nest with young half grown, in old woodpecker's nest site.

Sialia arctica.

June 12. Nest of 6 eggs slightly set upon in old flicker's nest site. Eggs of pale blue. Nest of grasses altogether.

♀ retained her position covering her eggs all through the chopping and splintering unavoidable in opening the excavation. I have to lift her off the eggs. This singular devotion has been witnessed by me on several occasions. In one instance the ♀ was covering her young, half-fledged brood. Took nest of this bird in old mining shaft 304 feet from surface between the timbers.

Sphyrapicus varius nuchalis.

June 7. Two nests 4 and 5 eggs each, one fresh and one slightly incubated, eggs resting, as in the case of woodpeckers generally, upon a few fine wood chips at bottom of cavity. This woodpecker, above all others <sup>with us</sup> in this county, is the most industrious and capable in boring into the aspens that seemingly are quite healthy, but soft and pithy, if not absolutely rotten in the middle. For an inch to inch and a half under the bark the wood is healthy and tough, notwithstanding this bird pierces it and is the only one that seemingly can do so. She invariably selects the aspen for her nest site and changes



it every year, selecting the same tree 2, 3 and even 4 years in succession.

Sturnella neglecta (S. magna neglecta--J.H.)

June 10. Nest with 4 fresh eggs. Bird flushed when approached within 4 feet. June 30. Discovered young larke full grown and full fledged; also well-grown and fledged Eremophila alpestris (Otocoris alpestris leucolaema--J.H.). Both birds nest in April sometimes. Do not think they nest twice.

Troglodytes Aedon parkmanni (T. a. aztecus--J.H.)

June 5. Several nests of this bird taken during the week succeeding this date, mostly fresh eggs, some slightly incubated, great variety in the color of the markings and their character. Also the bird is a plucky little fellow and sings very sweetly in a low voice.

Dendroica aestiva.

June 10. Three nests, 2, 3 and 4 eggs respectively, fresh. Two nests, 1 of 4 eggs, fresh, and one nest of 3 eggs with a cow-bird's egg, June 15th. June 22, three nests all more or less incubated. This bird, having its first nest despoiled, will build another and lay a second complement of eggs. The greater number of nests will be found when the cotton is beginning to be thrown off the cottonwood trees, which is used universally for lining the nests, together with a few horsehairs. The nests are a beautiful piece of architecture, very compact and warm and well secured to the small branches and twigs of the bushes chosen for a nest site. occasionally a crotch or fork of a tree is selected.

Empidonax pusillus. (Cf. E. trailli--J.H.)

June 15. Two nests, one with two eggs fresh, the other empty, similarly located to Dendroica aestiva, in size and appearance exactly alike exteriorily. No cotton is used in the lining. Fine grasses are used instead. Their location perhaps a little more favoring the shade. I noticed that these birds were much more numerous some years than others. The eggs of this bird are a delicate creamy white when fresh and unemptied, but a purer white afterwards, but not a brilliant white. This ground is sparsely speckled with small markings of rich, reddish brown, some only with 3 or 4 markings on the entire surface.

Tyrannus carolinensis. (Tyrannus tyrannus--J.H.)

June 18. Nest of 3 eggs fresh, another with only two fresh eggs. July 2, two nests with 3 and 4 eggs respectively, both badly incubated. It is with this bird as with other of the flycatchers. They are not consecutive in their laying, one or more days intervening between the third and fourth eggs, sometimes also between the second and third eggs, incubation commencing when the full complement is arrived at. I notice the western bird is not so pugnacious and demonstrative as his eastern cousin is, far more tolerant to allowing doves, shrikes, mockingbirds, blackbirds and Tyrannus verticalis to nest in the same tree.

Harpornychus rufus. (Troglodytes rufum J.H.) *Brown thrasher*

July 25. Nest of this bird, 4 fresh eggs, in thick, bushy branches of small cottonwood tree. Nest very large, about 8 feet from <sup>the</sup> ground, outside construction of small branches and

9 June  
1897

twigs, middle structure of coarse, stiff plant stems, fibrous tree and plant bark, with dead leaves, lined with fine rootlets. Eggs small for the size of the bird, who is very shy, exercised at having its nest discovered, but keeping at a distance, flying around.

1884.

Bird Notes, Boulder County, Colorado.

Scolecophagus Cyanocephalus. *Brewer's Skbird*

May 27. Four nests of 6 eggs each, fresh or nearly so in every case. Location of nests in thick scrub willow trees, well hid from observation, make up, coarse grass stems exteriorly, the same cemented with earth for middle structure, with fine grass leaves for lining. These nests were taken within a radius of 50 feet in a small clump of trees, nearly all having a nest in them, one having two.

Lanius ludovicianus excubitorides. *Whiterumped Shrike*

May 27. Nest of 5 eggs fresh, nest about 7 feet from ground in scrub tree of thick-twigged willow variety. June 8, two other nests, with 7 and 8 eggs, each somewhat incubated; also nest with 8 young birds, that had a naked, bald appearance, without down or hair upon their bodies, and of a dark, plumbeous color.

Buteo borealis calurus. *Western Red Tailed Hawk*

May 27. Nest of 3 eggs, nearly fresh. At a distance of 80 yards & vacated nest situated in crotch of upper limbs of cottonwood, about 35 feet from ground, made of sticks and twigs <sup>out</sup> ~~inside~~, with smaller twigs and plant stems for middle structure, having some grasses, inner bark fibre, a spray or two of cottonwood with the green, juicy young leaves attached, and also a few feathers.

Buteo swainsoni.

May 30. Nest of large, dark hawk that took flight when within 100 yards and circled round at about 150 yards, at intervals uttering a loud, screaming whistle. 4 eggs somewhat incubated, location of nest in upper forks of branches in cottonwood tree about 36 feet high, isolated in a meadow. Nest about 24 feet from ground, its make-up similar to the preceding one, having in addition some Indian corn cob sheaves as part lining, with the spray ends of the cottonwood tassels of the green leaves. Under parts of this hawk were dark dusky.

Colaptes auratus mexicanus. (C. cafer collaris--J.H.)\*

May 30. Nest of 7 eggs fresh, in natural cavity of horizontal branch of cottonwood. Nest of 4 eggs, fresh, in cottonwood tree. Nest of 7 eggs, somewhat incubated, in old rotten stump 6 feet high. Nest of Scops asio maxwelliae (Megascops a.m.--J.H.) and also nest of Troglodytes aedon parkmanni (T.a.aztecus) all in same stump.

Scops asio maxwelliae (Megascops asio maxwelliae--J.H.)\*

May 30. Nest with two young owlets nearly fledged, the stump being so rotten that it almost fell to pieces when breaking in to secure the eggs of C. auratus mexicanus (Colaptes cafer collaris--J.H.). The base and interior was so rotten and decayed, its utter destruction alone seemed sufficient to disturb the ♀ covering her young.

Troglodytes aedon parkmanni (T.a.aztecus--J.H.)\*

May 30. Nest with 4 fresh eggs in same stump. Several nests of this bird taken between this date and 10th of July, fresh and  
\* see note on p. 73 as to last species on this page

all the different stages of incubation. Complement seems to be 7 eggs in a full set. When despoiled of their first nest they will proceed at once to prepare a new nest and lay a fresh complement of eggs. Choice of locations seems to be an old woodpeckers nest. The entire cavity they fill with small twigs, leaving a small space at the back near the opening in which they construct their nest proper of a few grasses, feathers and hair for lining. Both birds unite their labors in building, and the ♂ feeds the female while sitting. Almost any place affords a nesting place, it would seem. I have met with their nests in the natural holes of trees, in very soft, rotten old stumps, excavating for themselves, also in holes in a sand or earth bank, like the sand martin. A certain quantity of small twigs seems indispensable. My attention was drawn to what seemed to be a squabble between one of these little birds and a Parus montanus (P. gambeli--J.H.). The latter, as I soon discovered, had its nest in an old woodpecker's hole about 14 feet from the ground in an aspen tree. I proceeded at once to snare <sup>the</sup> ♀ Parus montanus, and after a little while accomplished it. The Troglodytes ♂ and ♀ were both seemingly watching the proceedings, for no sooner had I disengaged the Parus from the snare and reached the ground to dispose of it, the ♀ Troglodytes entered the aperture and almost immediately flew out with an egg and dropped it 50 feet distant. The ♂ Troglodytes was close at hand and with a small twig in his mouth proceeded to effect an entrance with it. I appropriated the nest and eggs of Parus, and 10 days after captured the ♂ Troglodytes and 6 eggs. This bird is plentiful at 9,000 ft., but are not met with nesting above 10,000.

Erremophila alpestris (Otocoris alpestris leucolaema--J.H.)

May 30. Several nests from this date to 15 June, fresh, slightly and somewhat incubated. In most cases only 3 eggs, in 6 nests, and 1 nest of 4 eggs. Nest sites upon open, dry places on prairie, where the vegetation is most scant. Nest sunk in ground, of slight construction, entirely of grass. The ~~xxxx~~<sup>eggs</sup> being of a light gray color, the nest also, they are indistinguishable from the surroundings when looking at the spot pointblank. Upon this the bird must count for security, scarcely ever seeking a tuft or plant to hide her nest ~~xxxx~~ in. Thus exposed on her nest, she flushes at a distance of 30 to 40 feet in manner nothing different from taking wing under ordinary circumstances. The bird when covering her young is less skittish, permits a closer approach, and when flushed she skips away on wing 4 or 5 skips of about equal length. The skips then are lengthened into a short continuous flight, settling for a moment, then returning and circling over and about her nest. I once witnessed a bird gathering material for her nest. In a straight line she ran along the ground with her head down gathering the grass leaves as she ran, until her mouth was full, when she flew off to the nest site. Going to it I found it nearly completed. Should judge from what I saw that the construction of a nest from beginning to end was a labor of only a few hours. These birds nest at points all over the valley, and are found also on the mountains above timber line

Pica rustica hudsonica (P. pica hudsonica--J.H.)

May 3. Several nests all badly incubated and young. Some young ready to fly.

Asio americanus (A. Wilsonianus--J.H.)\*

May 30. Nest of two eggs chipped and two young just out, old crow's nest, surface nearly flat, only a few owl feathers as lining. Location, a box elder tree about 12 feet from ground. Eggs of pure white. Both ♂ and ♀ circled and at ~~xxxxx~~ intervals settled on a bough in close proximity, snapping their mandibles and uttering cries of mournful distress. Disturbed from their nest, they will return to it very soon after the cause of their disturbance retreats. While occupying their nest the nearest approach is permitted. They will lay very close with a view of escaping observation, but cannot, it would appear, refrain from watching the intruder from over the ~~edge~~ edge, <sup>(cocking)</sup> cocking the head as a cat will sometimes do. The ear tufts will sometimes betray their presence. They seem to know when they have escaped being seen, in which case a stick thrown into the tree or a sharp blow with a stick on the tree stem will sometimes fail to start them. If sitting for some time their nest is robbed, they will return to it and continue to occupy the empty nest to my knowledge for some hours after. Upon making a second laying, however, they will choose another nest, and have another set in about three weeks, within a short distance of their former nest site.

Corvus frugivorus (C. americanus--J.H.)\*

May 30. Nest of 5 young crows about 5 weeks old in cottonwood tree, about 40 feet from ground. These five last species all on the Little Thompson.\*

\* Though these notes are headed "Bird Notes, Boulder County" (p. 20), as only a small portion of the Little Thompson is in this county, it may be that the last five records should not be credited to Boulder County.

Merula migratoria propinqua.

May 30. Several nests with fresh eggs, others slightly incubated. Second nesting in early part of July.

Zenaidura carolinensis (Z. macroura--J.H.)

May 30. Several nests on ground and in trees. Fragile nests like passenger pigeon. Complement of eggs two, sometimes only one. About this time most nests with fresh eggs are to be met with. This bird nests a second and perhaps a third time in the season.

Tyrannus verticalis.

June.3. Six nests of this bird taken at Rock Creek, containing respectively 6, 3, 2, 2, 1 and 2 eggs, each perfectly fresh. This bird nests like Tyrannus carolinensis (T. tyrannus--J.H.) and often shares the same tree, eggs very similar, ground color the same, a creamy white, markings the same in color, the splotches not so large nor are they confluent at the larger end, but more generally disposed on the entire surface, only perceptibly fewer at smaller end, the full set of 6 eggs very general and probably rule a little smaller. Tyrannus c. (T.tyrannus-J.H.) seldom has 4 eggs and I do not remember more than one or two instances of five. The nests of verticalis, like carolinensis, are compact, warm and well secured in forks, crotches and suitable sites in trees and bushes, mostly isolated. Composition of nests varies according to location, like that of its congener. The bird is plucky and very demonstrative upon having its treasures rifled.



Sialia arctica.

June 10. Nest of 4 eggs in old rotten pine tree, eggs fresh, nest quite bulky, composed of soft grasses lined with some feathers. Removing the whole mass from the cavity, I discovered that I had two nests, one built over the other, which contained 3 eggs also fresh. The owner of the last nest, no doubt, finding her nest site of the previous year occupied, fought the intruder away and made good her prior claim. June 25, secured 3 nests with 5, 6 and 7 eggs respectively. The 7 egg set were slightly incubated, the others all perfectly fresh. Color of eggs a delicate light blue, tint varying in intensity with different sets. Feathers not always present as a lining to nest.

Parus montanus. (P. gambeli--J.H.) *Mt. Chickadee*

June 10. Nest of 5 eggs, somewhat incubated, located in old woodpecker's hole. Eggs slightly speckled reddish on pure white ground. This nest was the one referred to in the note of Troglodytes aedon parkmanni (T.s.aztecus--J.H.). This bird seldom excavates for itself; avails itself sometimes of a natural hole in a partially or wholly decayed tree, but more generally appropriates an old woodpecker's hole; hence an aspen tree is very often chosen. Am of opinion they change their nesting site each year, shaking out and picking over the old nest and removing it in large masses to the new site, adding to it their spring moult of underfeathers, which they spatter and felt until it has the appearance of fur. I believe this is largely of what their nest is composed. I think it likely that the old nest or the site of the new one is patronized by both birds, ♂ and ♀, who seen all the year round together to

sleep and hide in during the worst winter weather. A whole family is frequently met with foraging together, and not infrequently augmenting a flock of nuthatches and creepers, all seemingly associating upon the most friendly terms. The favorite choice for a nest site would seem to be abandoned cavities made by Sphyrapicus varius nuchalis (by far the most industrious and capable of all our woodpeckers for hole-making), who, having pierced the hard, living, outside zone of living wood of the aspen and well advanced the larger excavation in the more central part, which is, from their perfect choosing, always more or less without life or quite rotten from some defect, they will abandon it half executed to suit their requirements, but quite sufficient for little Parus. This home selected, the little ♀ holds against all comers--never leaves it, except for a moment, perhaps, from having her nest made till the young ones are quite <sup>well</sup> grown and their demand for food requires the joint labors of the old birds to furnish it. The ♂ is very affectionate and attentive, feeds and waits upon the ♀ during the period of incubation and while yet the brood is young, and seemingly ever within call. The devotion to her charge is very remarkable, sacrificing her life, if necessary, before she can be induced to desert it. You cannot frighten her off her nest by hammering the outside never so hard. In one instance, chopping the cavity open, it was half filled with chips in the operation. removing them by the hand, what was my surprise to find her buried up with them, still covering her eggs. I had to lift her off and was rejoiced to find she was unharmed. Such devotion affected me, I am not ashamed to say. The nest has no

form when removed from cavity. Being of a soft, matted mass, it flattens out. Usually at the bottom of the cavity, upon which the mass of fluff rests, is to be found a little moss. The eggs of this nest were almost pure white. Only 3 of the set had any markings. June 15, nest of 4 eggs in old stump about 5 feet from ground, excavation by the bird itself. In addition to a limited mass of fluff, matted or felted, were a few barnyard feathers. Eggs of perfectly pure white. Did not see the bird, <sup>al</sup> tho' I waited round for a full hour, this circumstance leading me to doubt its authenticity. July 23, nest with young almost ready to fly, site in old woodpecker's hole in aspen tree 10 feet from ground, the young meeting the old birds at the entrance and taking the food from them. At first I supposed the nest to be of rabbit's fur. Part of it may be, but largely if not in whole is the fine hair-like feathers--under feathers of the bird's own.

Zamelodia melanocephala. *Bleached-headed grosbeak*

June 10. Nest of 3 eggs, fresh, in aspen bush. June 15, 3 nests containing 8 fresh eggs, and one nest 3 eggs, somewhat incubated. July 14, nest of 3 eggs fresh, ~~containing 3 eggs fresh,~~ second brood. In some cases nests well hid in thickest of bushes, in others the reverse, being in open, exposed situations, all moderately low, in no case more than 10 feet from the ground. All nests, in whatever locality found, seemed to be made alike of the same material, nest shallow. A marked difference and variety in different sets of this bird's eggs, in size, shape, ground color and markings, and color of markings as well as character.

Xanthocephalus ~~xantho~~<sup>icter</sup>cephalus (X. xanthocephalus--J.H.)

June 13. 2 nests of 3 and 4 eggs, fresh. Location of nests invariably in bullrush marsh well flooded with water, composed of fine leaves of that plant and lined with fine grasses, no earth entering its composition, is deep, quite roomy and securely fastened to two or more bullrush stems, in manner like the nests of *Agelaius phoeniceus*, and like them, also, the material for its construction is used wet. At this same date nests of young birds were found well advanced in growth.

*Agelaius phoeniceus*.

June 13. Several nests with eggs varying from 1 to 5 in number a few fresh but the greater majority badly incubated.

*Pipilo chlorurus* (*Oreospiza chlorura*--J.H.)

June 13. Nest of 4 fresh eggs, located near to and partly under small plant on the ground, tolerably well hid from observation, made of stiff grass and plant stems exteriorly, lined with fine grasses, roots and horsehair. Eggs have a clear, white ground, with warm, brown speckled markings.

*Sphyrapicus varius nuchalis*.

June 15. Nest with 4 fresh eggs, in aspen tree 10 feet from ground. Other two nests with eggs slightly incubated.

*Sphyrapicus thyroideus*.

June 15. Nest of 5 eggs, slightly incubated, in old pine stump 5 ft. from ground. This bird does not, perhaps cannot, pierce the tough, sound wood of the aspen, but chooses a somewhat rotten tree or stump, mostly of coniferous kind, in this respect as well as using the old nest site of 367 (three-toed woodpecker--J.H.) in aspens, like No. 360b (Harris woodpecker--J.H.) does

Tyrannus carolinensis (T. tyrannus--J.H.)

June 15. Several nests with 3 to 4 eggs each, fresh.

Dendroica aestiva.

June 15. Several nests with 3 to 4 eggs each, fresh. June 23, nests of 4 eggs each, one fresh and one somewhat incubated.

Molothrus ater.

June 15. Secured several ~~nests~~ eggs in nests of No. 93 (Dendroica aestiva--J.H.) 245 (Zamelodia melanocephala--J.H.) 325 (Empidonax traillii--J.H.) 274 (Scolecophagus cyanocephalus--J.H.) and 261 (Agelaius phoeniceus--J.H.). In a nest of the latter I found two eggs of the cowbird perfectly fresh, with one legitimate egg of 261 four or five days incubated. In another nest of Agelaius phoeniceus containing only one egg and that one a cow-bird's egg, for the protection of this egg and nest the Agelaius showed remarkable solicitude. Found in a nest of Empidonax pusillus (E. traillii--J.H.) an egg of the cow-bird completely covered over in the bottom, and 3 legitimate eggs of the Empidonax in it.

Galeoscoptes carolinensis.

June 15. Nest of 4 fresh eggs, location in willow bushes on border of creek, coarse stems, decayed leaves and strips of inner bark and coarse grasses outside and middle structure, lining of fine roots, the whole seemingly made up in a wet state. June 20, found 3 other nests with young just hatched.

Hylocichla fuscescens.

*Wilson thrush* 28/2/75

June 13. Nest of 4 fresh eggs, in color resembling wood thrush's eggs. Nest in low evergreen bush 3 feet from ground, location shady, woody canyon, stiff plant stems outside, finer materials

of same with mosses and grasses in middle structure and lined with fine roots; very few grasses and no earth in its construction. Size of eggs, 2 70x80, 1 69x90 and 1 70x92.

ustulata  
Hylocichla swainsoni (H.guttata swainsoni--J.H.)

July 14. Nest with a sterile egg and 2 young birds ready to fly. Color of egg a delicate light bluish green, peckled with soft rufous or tan-colored markings. July 18, a nest returned from Washington as belonging to this same bird. Female secured and forwarded. Eggs 3 in number, quite fresh, but wholly different in size, shape, ground color and markings. Nest resting upon low alder bough nearly over the creek, 3 feet from ground. Outside of stiff grass and grass stems, with clay at base, seemingly to cement or stay it in its position on the bough; same material in its middle structure, with semi-decayed oat and grass fibre for lining, the whole apparently made up in a wet state.

Contopus richardsonii.

June 21. Nest of 3 fresh eggs like miniature verticalis. Fond of nesting in the crotch of a rotten limb. Nest being very small, it is difficult to discover it.

Icterus bullocki.

June 21. Nest of a single sterile egg and 4 young birds. Nest open mouthed, stayed open, having rim of nest secured to vertical twigs, mouth of pocket-shaped nest being its greatest diameter, the nest looking longer than the nest of galbula, altho' the smaller bird.

Icterus galbula.

June 25. Nest of 5 eggs somewhat incubated. Secured only one

egg. Structure of nest purse shaped, contracted at the mouth and nicely fastened in most cases to horizontal branch and its lateral, forming a fork or triangle. Outside of hemp fibre, lined with cotton and hair.

Empidonax pusillus(E. trailli--J.H.)

June 25. Several nests with fresh eggs. June 30, several nests somewhat incubated.

Empidonax difficilis.

June 29. Nest taken from rocky ledge over creek, swift running, about 4 feet above the water. Nest composed of moss, interlaced with decayed leaves, grasses, small roots, bark fibre, etc., with similar material of a finer character as lining. The structure had been used the previous year. The inside only had been made up new. Eggs white ground, with red peckles.

Anthus ludovicianus(A. pensilvanicus--J.H.)

July 5. 3 nests containing 6, 6 and 5 eggs respectively, all nearly fresh, only slightly sat upon. This bird nests above timber line in sheltered places where a certain green, leafy grass grows quite thick, making a velvety sward. The grass never grows to stiff stems. In such places under and at the sides of rocks, well hid, is the nest constructed, entirely of the dry blades of the grass referred to, moderately thick walls and warm. The bird is always timid and flushes at 30 to 50 feet distant. Arrives at nesting ground early in June and leaves for the valley en route south early in September.

1885.

## Bird Notes Boulder County, Colorado

Scops (Megascops--J.H.) asio maxwelliae.

May 6. Nest with 3 or 4 young owlets, 3 or 4 days old, in natural hole of horizontal branch of cottonwood occupied by flicker last year, to get at whose eggs I enlarged the entrance and better fitted it in this respect for this interesting little owl. The nest site was about 12 feet from the main trunk, which was large, about 10 feet from the ground. The cavity had quite a number of tail and quill feathers of Sialia arctica and Spizella montana (S. <sup>ochroea</sup> ~~monticola~~--J.H.). In a large cavity in a trunk where a large limb had been taken off I discovered the male, who made a kind of larder of his hiding place, there being a whole Sialia arctica and a portion of another and a ~~part~~ headless Spizella montana (S. ~~monticola~~--J.H.), with a quantity of quill and tail feathers of both species. I captured the ♂ with my hand at the expense of having my finger pierced with his claw.

May 9, nest with 3 young owlets a week old, covered with yellowish white down. Had to remove the female off the nest with my hand. The young probably a week old. Location an old flicker's nest site in old stump 5 feet from ground. No covering over nest, being like a chimney.

Bubo virginianus subarcticus (B.v.pallescens--J.H.)

May 6. 3 young in old red-tailed hawk's nest about 50 feet high in cottonwood tree. Young pretty well fledged, over a month old. May 10, a second nest in old magpie's nest about 14 feet from ground in bushy willow tree, also with 3 young a little



older than the first. Old birds in neither instance evincing much anxiety for their young. In the ~~first~~ case saw one of the owls at 300 yards distance. In the latter I did not see either ♂ or ♀ about.

Asio americanus(A. wilsonianus--J.H.)

May 7. Nest of 4 eggs, fresh, in box elder 15 feet from ground, old magpie's nest. ♀ flushed from nest, ~~xxx~~ upon a stick being thrown, striking a branch of the tree near the nest. The old nest had its top and a gap in its side removed. The ♂ was sitting on low branch of a bush close by the nest. May 7, found 4 eggs slightly damaged by being frozen. They appeared to have been the least thing sat upon. Nest and eggs deserted. The tree being a willow, in a heavy fall of snow 10 days previous, became so loaded that the nest almost touched the ground. Three of the eggs were thrown out of the nest into snow. The bush when it straightened was about 15 feet, the nest 12 feet from the ground. May 9, nest with 4 young about 10 days old. Old magpie's nest same as other two in box elder, 15 feet from the ground.

Cinclus mexicanus.

May 23. Nest secured on Jim Creek, with 4 eggs slightly incubated. Eggs perfectly white. Location of nest upon rocky ledge, 3 feet above rapid running water. The crevice in which it was placed had a shelving bottom sloping out. Make-up, moss, old decayed leaves, bark fibre, grasses and other similar material evidently taken from the water. This was the outward covering, varying in shape and wall thickness induced by the shape of crevice it was placed in. Front view of nest about 5 inches, entrance aperture ~~near~~ the bottom half, broad-face to it scarcely perceptible, particles

of rough outside covering it.

Picus hudsonica rustica (Pica pica hudsonica--J.H.)

May 25. Several nests, mostly too badly incubated to be emptied, some with full-grown and nearly full-fledged young. With difficulty secured nests of 6, 4 and 2 eggs that I successfully emptied. Nests mostly in evergreens, when offering, but found in almost every kind of bush or tree, from four to forty feet from ground. Nest viewed from outside appears a clumsy structure. A closer inspection, however, will find that it is carefully and judiciously built, like the outside layer of sticks and twigs of a crow's nest in appearance and size. These sticks and twigs are cemented with clay <sup>or</sup> ~~and~~ mud, making the body of the nest, having its inside well and completely plastered, like a ~~deep~~ <sup>deep</sup> cup, when this is dry. From the extra thickness of its walls it is very strong, foamy also, in some cases having to accommodate 7 or 8, and even more, young ones. This bowl-shaped cavity is lined variously with fine roots, pine needles, leaves, grasses, hair, bark and plant fibre, etc., having the whole covered with a canopy of small sticks and twigs, which not only interlace with those on the outside of nest, but are wattled in with the twigs and branches of the tree or bush in which the nest is built. If an early nest, this covering will be quite dense and large, sometimes being larger than the lower part holding the nest proper.

Zenaidura carolinensis (Z. macroura--J.H.)

May 25. Several nests, some on ground and others on trees, the former about one in ten of the latter, each having the same facilities as the other in locality and surroundings. From one

to two eggs in nest, fresh, slightly incubated, somewhat and badly incubated.

Oxyechus vociferus.

May 25. Nest of 4 eggs badly incubated. Simply a slight depression in the ground in rather a bare, stony place on the prairie. The ♀ in a crouched, swimming way, got off the nest for a matter of 20 feet or so, when she straightened up, stopped a moment and ran about the same distance or more, on a different tack, stopped a moment again and repeated the maneuvers again, and when quite a distance from her nest took wing, and with her mate flew round, becoming more demonstrative the further away from her nest.

Merula migratoria propinqua.

May 26. Several nests, two to four eggs each, fresh, slightly, somewhat and badly incubated, mostly partaking of the two former states. Nests of twigs or stiff, dry plant stems outside, cemented with wet earth and lined on the inside with wet earth, making it a perfect bowl. When this is thoroughly dry it is lined with fine grasses. Nest very compact and strong, generally low down in trees or bushes. Having a better opportunity in the mountain canyons to observe this bird, it constructs a second nest and commences laying before the first brood is quite ready to take care of themselves, the ♂ taking upon himself this duty, leaving the ♀ free to attend to her new cares. Judging from the greater number of nests of this second family raising, which is early in July, I opine some of the birds have their first nests in the valley or foothills and choose the higher mountain canyons for their second. They are not uncommon at timberline, 11,000 feet above sea level, and at this point, in many situations in which

they are seen, young could not be raised until July.

Agelaius phoeniceus.

May 26. Several nests, some empty and others with one to five, or even 6 eggs, fresh, a few incubated slightly and somewhat. One and sometimes two eggs of Molothrus ater found in this bird's nest. Mostly in wet swampy places, but sometimes in dry localities, in bushes and stiff-stemmed plants, in open prairies. In every case the nest is pensile, having its rims fastened to surrounding twigs and stems by grasses and plant fibre. The nests are light and compact, being securely woven together. In wet localities sedgey grasses are used in a wet state, permitting the necessary manipulation, for the same reason plant fibre, such as wild hemp, is used in dryer localities. Having grasses for middle structure and lining.

Xanthocephalus icterocephalus (X. xanthocephalus--J.H.)

May 26. Several nests of 2 to 5 eggs each, in a few cases somewhat incubated. Nests larger and more bulky than those of Agelaius phoeniceus, being made of bull-rush leaves woven together in a wet state and fastened securely to two or more stems of the rush at two-thirds of the growth. When at full growth the protection and security afforded the nest is increased. Sometimes there is a slight lining of grass. Nest is compact and light.

Zamelodia melanocephala.

May 26. Nests of 2, 3 and 4 eggs each, fresh, two or three eggs more often than four. Nests very light and rather insecure, made of slight, stiff, wiry plant stems outside and middle structure, and lined with fine tendrils of a clinging plant. For size of bird not bulky, and very open, so much so that looked

at from beneath it can be seen through. Location generally within reach and in bushes. Birds very fearless and demonstrative when their nest is approached with a view to robbing it. The ♂ divides the duties of incubation with the ~~xxxx~~ ♀, and sings with great power and sweetness near by when the ♀ occupies the nest.

Virginia rail Carolina Rail  
Rallus virginianus ? Porzana carolinensis.

May 27. Nest with 7 eggs badly incubated. Locality low, wet places. Nest of sedge or bullrush leaves exteriorly, lined with grasses, very low down, near ground or water, very securely hid in clump of weeds, grasses or rushes. Bird flushed when only close upon it (two or three feet).

Dytes nigricollis californicus (Colymbus n.c.--J.H.)

May 27. Nest of 3 eggs on heap of muck in pond of bullrushes, which, at short distance surrounding it, part of the pond open clear water. Eggs fresh and level with the water, quite wet and covered with muck. Could not discover the bird anywhere about. June 4, found 3 eggs more, also fresh, in same nest, also covered as were the others.

Sialia arctica.

May 31. Nest with 5 eggs, fresh, in old flicker's nest, 5 feet from ground. June 13, Nests of 5, 6 and 5 eggs each, slightly sat upon. Two other nests badly sat upon.

Zamelodia melanocephala.

June 1. Four nests, each 4, 3, 2 and 2 eggs, latter with one egg of Molothrus ater. June 17, two nests, 2 eggs slightly and 3 eggs badly incubated.

Dendroica aestiva.

June 1. Two nests with 3 and 1 egg, fresh, respectively. June 7,

two nests 3 and 4 eggs each slightly incubated, others badly set upon. Nest pensile, light, compact, and beautifully felted, outside of wild hemp fibre, combined with fine, soft, wiry grasses for middle structure, and lined with cotton and a few horsehairs. The nest is sometimes placed in the crotch of a small tree, in which case it is somewhat higher than those of far more general location in low bushes, securely fastened to the stems and surrounding twigs by its rim, the bottom in the greater number of cases being without support, pensile. Molothrus ater patronizes the nest of this bird.

Galeoscoptes carolinensis.

June 1. Four nests of 4, 3, 2 and 1 eggs each fresh. Nest of strips of inner bark and old leaves outside, with grasses and leaves for middle structure, lined with fine roots. Location, thick, low bushes, upon or near the borders of creeks.

Buteo borealis calurus.

June 2. Nest of 3 eggs, somewhat incubated. Three eggs taken from same nest last year. Nest in crotch or fork of upper branches in cottonwood tree, Coal Creek. ♀ rose from the nest and flew some distance, allowing its nest to be despoiled without protest.

Buteo swainsoni.

June 3. Large hawk's nest, 3 eggs, slightly incubated. Bird light and speckled entire under parts.

Buteo swainsoni.

Large dark hawk 3 eggs, slightly incubated. Nest in upper part of willow tree. Under parts dark and dusky same as B. nest of 1884. Nest of 2 eggs slightly incubated. This nest again se-

cured 1886 and bird disturbed.

Buteo swainsoni.

Nest of two fresh eggs, Bird with chestnut colored neck. Nest in cottonwood.

Lanius ludovicianus excubitorides.

June 3. Nest of 8 eggs, slightly incubated, others badly so and several with young ones. Nest of solid structure, made of small twigs exteriorly, harsh plants and stems, woven with wool and hair, etc., for middle structure, and lined also with wool and hair. Nest of dull, dingy appearance, securely fixed between the branches and twigs of thick willow bushes, closely matching in color its surroundings and otherwise securely hid from observation.

Empidonax pusillus (E. traillii--J.H.)

June 3. Several nests of this bird, 3, 2, 2, 1, 3 eggs in each, quite fresh. Several empty nests, a week or ten days too early. Location of nests mostly along creek borders in low bushes, willows, etc., low down, like the nests of Dendroica aestiva, having outside and the middle ~~xxx~~ structure the same, using instead of the cotton and hair of aestiva, fine grasses--In size and appearance they are alike. Their manner of attachment to the twigs and branches of the bushes is also the same, invariably pensive. Molothrus ater patronizes the nest of this bird also. Took a nest in which the egg of this bird was found in the bottom completely bedded over.

Chondestes grammacus strigatus. W. lark sparrow

June 3. Nest of 3 fresh eggs on the ground by the side and under small plant tuft in open prairie. Close upon nest (3 feet) when bird flushed in manner like Poocetes gramineus. Nest well set in  
(C. g. couguis) vesper sparrow

the ground. Outside of old dry grasses and other plant stems, middle structure of wiry grasses and lined with hair, 4.75x2.50 outside, 2.85 by 1.25 inside.

Calamospiza bicolor (C. melanocorys--J.H.)

June 4. Two nests of 5 and 4 eggs each, first slightly and second much sat upon. Nest 5x2.75 outside, 3.25x1.65 inside, composed of grass and grass stems, lined with a finer grass, seemingly beetled. Locality, open prairies, away from water, choosing more grassy situations than Eremophila alpestris (Otocoris alpestris leuculaema--J.H.). Nests placed at the side or in the middle of greese weed, a tufted plant from 6 inches to 24 inches high, bird flushing only on close proximity to nest.

Eremophila alpestris (Otocoris alpestris leuculaema--J.H.)

June 4. Nest of 3 eggs fresh; also nest just complete, others to appearances beginning to nest. Nests made entirely of grasses, the finest grass leaves for lining, placed well in the ground, walls of nest slight. Found in dry parts of the prairies, where vegetation is scantiest. From the exposed situation the bird early discovers the approach of the oncomer and flushes at 30 to 60 feet distant. Nothing unusual in the manner of doing so. at this late date, the general nesting of this bird suggests its second effort to rear a nest of young, their first attempt being prevented by a heavy fall of snow as late as the 10th of May, which doubtless covered over their nests and eggs while in the act of incubating them. Have taken nests as early as 25th April.

Fulica americana--Coot.

June 4. Nests of coot, one empty and one with a single egg, at



edge of small lake among bullrushes, of which the nest was composed, raised above the water about 2 1/2 inches, quite dry, slightly depressed in center. The top appeared to be new, probably upon the foundation of the old nest site of several year's patronage.

Sitta carolinensis acuelata.

June 7. Nest with young a week old, in tree hole of spruce tree, 20 feet from ground. Excavation made by bird itself, about 8 inches in depth, somewhat roomy nest proper being a mass of matted fur or feathers exactly in character like that of Parus montanus (P. gambeli--J.H.). There were other holes with their excavations in the same old rotten tree, used by the same bird doubtless two or three consecutive years previous. They had every appearance of being so.

Sitta pygmaea.

June 8. Nest without eggs in old tree 30 feet from ground. June 9, nest of 3 eggs fresh in old stump 4 1/2 feet from ground, excavation about 5 inches deep. June 17, nest of 6 eggs, badly incubated, in old rotten pine tree about 20 feet from ground. This little bird excavates for itself and will pierce with its untiring exertions, portions of very hard dry wood that is sometimes met with in otherwise soft, rotten trees. The entrance hole does not generally extend far into the tree. Bottom of excavation cup-shaped, in which is gathered particles of the soft, rotten wood chipping to rest the nest proper upon. This is composed of the softest materials to be found-- a soft, velvety leaf of a plant, combined with cobwebs, beetled bark fibre, hair, feathers, fur, etc.

Out of its cavity the nest flattens out like a muff, but in position is about 2.25 x 1.13 outside by 1.75 x 0.90 inside.

Tinnunculus sparverius (Falco sparverius--J.H.)

June 11. Nest A, 5 eggs slightly sat upon. Nest B, also 5 eggs one broken, slightly sat upon, both in old pine trees, the former sites of flickers' nests, the first 20 feet, the second 12 feet from ground. Bottom of excavations hard and flat, with a very few weed stems beetled or torn up, no feathers. In each case the eggs appeared in two rows, separated, suggesting that the bird sat between the rows and held the eggs under her wings to her sides during the process of incubation. In each case the bird flushed upon striking the tree trunk. Boulder foothills

June 18. Nest of 4 eggs, one broken. Dalton.

Salpinctes obsoletus.

June 11. Nest of 7 eggs somewhat sat upon. Nest of stiff grass and plant stems outside, middle structure of finer material of same character, with wool, lining of fine roots, hair, etc. 5 x 2! outside, 3 x 1.40 inside. Very secure from observation under rock upon hillside, bird flushing at a little distance, timid and premature in this respect, but not so much so as Anthus ludovicianus (A. pensilvanicus--J.H.)

Melanerpes erythrocephalus.

June 11. Nest of 2 eggs in tree hole of old pine tree, 15 feet from ground. Eggs resting on small chips made in excavating. A second nest just completed in old spruce tree, without eggs. Both excavations by the birds themselves, who are not good borers and therefore choose very ripe old trees to nest in, or select holes already prepared.

Melanerpes torquatus (Asyndesmus torquatus--J.H.)

June 11. Nest A, 7 eggs fresh in old spruce tree, excavated by bird itself. Nest B, 4 eggs somewhat incubated, in old flicker's nest, resembling that bird in the way their eggs are packed in the wood chips in the excavation. The eggs in size, shape and color also resemble each other. June 18, nest with young week old.

Troglodytes aedon (T.a.aztecus--J.H.)

June 13. Nest of 6 eggs fresh. Nest of 4 eggs fresh, nest of 7 eggs fresh. June 17

Parus montanus (P. gambeli--J.H.)

June 13. Nest of 7 eggs somewhat incubated, nearly white, in aspen 3 feet from ground, abandoned woodpecker's nest. 15th June, nest of 5 eggs badly sat upon. June 16, nest of 4 eggs fresh, perfectly white, nest with feathers, query. June 16, nest with 6 eggs badly sat upon.

Picus villosus harrissi (Dryobates villosus monticola--J.H.)

June 13. Several nests, all with young, too late.

Sphyrapicus varius nuchalis.

Nest of 5 eggs fresh. June 15, 2 nests 4 eggs each fresh, male bird secured. June 16, nest of 4 eggs fresh. July 1, nest of 3 eggs fresh, not done laying.

Sphyrapicus thyroideus.

June 13. Nest of 5 eggs fresh. June 15, nest of 4 eggs fresh, also nest with young. June 23, nest also with young.

Sayornis saya.

June 23. Nest of 4 eggs fresh, perfectly white when emptied, of a cream color before. Composition of <sup>nest</sup> plant stems and fibre outside, manilla shreds, cotton twine, rags, hair and cobwebs for mid-

dle structure, and lined with a mass of ox-tail hair, the whole matted together, placed upon a rafter of an old outbuilding. size of nest 4.25 x 2.25 outside, 2.75 x 1.25 inside, size of egg averaging .60 x .78.

Tyrannus carolinensis(T. tyrannus--J.H.)

June 17. Two nests with 2 and 3 eggs respectively, fresh, 10 and 12 feet from ground in willow trees, Boulder Creek.

Hylocichla ustulata swainsonii.

June 26. Nest of 4 eggs, slightly sat upon. July 1, nest of 4 eggs quite fresh. ♂ captured in both cases. Nests identical in character, size, make, both near the creek and similarly attached to willow twigs and branches, neither above easy reach. The first nest was found within 20 feet of the previous year's nest site that contained 3 young and a sterile egg, marking on egg exactly similar as set of this year. Nests in all three instances alike suspended by their side or rim, pensile like the nest of Agelaius phoeniceus, somewhat bottle-shaped, the bottom leading to a long point, seemingly as though two or three long stems of grass were first brought together and their upper leafy ends were incorporated with the nest, while the thicker ends were left to hang down. Nest is very securely and compactly made, composed of coarse, stiff grass stems on the outside, middle structure of bark fibre, leaves and grasses worked in a wet state and suggesting their having been taken out of the water. Inside of similar material but finer in character. No moss or earth used in the construction of either of these three nests. All have the peculiar long points, with streamers, as it were, pendant. This must have some object. Inside mea-

surements 2.25 x 1.75. N.B.-- Nest and eggs sent to Smithsonian as Hylocichla ustulata swainsonii returned by them is in both particulars widely different, eggs disagreeing in size, ground color and markings. Nest sitting upon horizontal branch of alder limb, bottom of nest having mud or clay combined with the grass stems and other half decayed fibrous matter in middle structure to bind it together, wanting ~~at~~ <sup>the</sup> ingenious weaving shown in the other nests. Nest with fresh eggs taken much later also in season, being 18 July.

Leucosticte australis.

July 3. Captured ♂s and ♀s of this bird. Discovered eggs in ♀ size of small beans. Testes of males very highly developed. Chose upon the period at which this bird nests in this locality, altho' I saw several of them in flocks, chiefly, if not altogether ♂s, flying round quite wild and restless. July 25, visiting this locality again, captured two ♂s whose testes were much decreased in size, soft and shrinking, seemingly busy, very intent feeding upon the soft, newly developed grass seeds in the milk state--had their mouths and throats full of them. Evidently this food was for their sitting mates, none of which I saw. I should judge their nesting places in this locality--Bald Mountain--11 to 12,000 ft. above sea level, to be far in among the rocks and stones to be met with in large patches on mountain sides and slopes. By having the earth washed from them by the water running down from the melting snow, they possibly go far into this stone bed to nest.

Anthus ludovicianus (A. pensilvanicus--J.H.)

July 3. Nest of 5 eggs slightly incubated. Two or three nests taken by \_\_\_\_\_ a week previous quite fresh. Complement 5 to 6 eggs, most commonly 6 in number. Nests made of dried grasses.

Lining also of grass, very fine. Walls much thicker than that of Eremophila alpestris (Otocoris alpestris leuculaema--J.H.). A sheltered locality is chosen, where a peculiar soft, velvety grass grows thickly, covering the bank. In such a place, quite under or at the side of some stone, well sunk in the ground and remarkably well hid, the nest is discovered by observing the bird rise from it. . She flushes easily at a distance of 20 to 50 feet. The nest would otherwise be exceedingly difficult to find. This bird resembles Leucosticte australis in its jerky flight, also in its restlessness. Both are to be seen on the snowbanks, one feeding upon the insects, the other upon the seeds that likewise are held captive by the snow. July 25, young full-fledged and out of their nests, with wonderful capacity for hiding.

Piranga ludoviciana.

July 8. Nest with two young birds, week old. Nest placed on horizontal branch of spruce tree, about two-thirds distant from trunk and 20 feet from the ground, to appearances slightly made, like that of blackheaded grosbeak. This tanager seems to prefer the evergreens to nest in and is to be found from the foothills to 10,000 feet above sea level.

Junco caniceps.

July 10. Nest of 5 eggs somewhat incubated, situated on side hill, 2nd nesting. Nest on ground under small tufted plant, well secured from observation. Flushed the ♀ off the nest at 3 feet distant. Nest of coarse grasses outside, with finer grasses, hair and sometimes feathers inside. Size 4.50 x 3.50, inside 2.50 x 1.75.

Contopus borealis (Nuttalornis borealis--J.H.)

July 10. Nest with three young a week old. Nest placed upon horizontal branch of spruce tree, two-thirds from trunk, about 30 feet from ground. Height of tree 50 to 55 feet. Nest of slight structure and small for the bird, but securely fixed into the small twigs and laterals of brush. Outside of nest, small twigs and plant stems., middle structure and lining of bark fibre and small, fine roots. Similar in appearance and location to Piranga ludovicianus.

Zonotrichia querula<sup>\*</sup> (This Mr. Gale first numbered 205, which is correct for the species in the check list he used, but he then corrected it to 206, which is the number of Z. leucophrys in that list--J.H.)

July 25. Nest with 3 eggs fresh, 2nd laying. Nest made entirely of grasses, lined with the finer description, moderately dense, well set in the ground, rather damp situation and well hid from observation. Flushed the bird 3 feet distant. Size of nest 3.85 x 2.60 outside, 2.75 x 1.75 inside measurement.

\* as there are but 2 records of this species in the state, both migrants, the specific name is probably an error, as the number indicates. The two species could hardly be confused by any observer. Ridgway says (Bull. 50 U. S. Nat. Mus.) that the breeding range of Z. querula is unknown. - J.H.

1886.

## Colorado Bird Notes.

March 31. Arrived from the east.

23. Sturnella neglecta singing. Merula migratoria propinqua in pairs. Male Agelaius phoeniceus in flocks. Scolecophagus cyanocephalus also in flocks, singing in the trees a perfect orchestra.

24. On the Little Thompson creek captured nest of Bubo virginianus subarcticus (B.v.pallescens--J.H.), 3 eggs about 10 days covered, old nest of Buteo borealis calurus in cottonwood tree about 30 feet from ground, male bird in waiting from 200 to 300 yards distant. Colaptes mexicanus (C. cafer collaris--J.H.) making nests. Met with Picus pubescens gairdneri (Dryobates p. homorus--J.H.) also in this locality for the first time.

25. Junco annectens (now considered a hybrid, J.caniceps plus J.nearcticus--J.H.) in numbers at entrance of canyons. Noted a few Sialia arctica, single birds. Nests of Pica rustica hudsonica (P. pica hudsonica--J.H.) several newly constructed.

26. Fall of snow, from 8 to 9 inches in the valley.

28. Sialia arctica in force at entrance of canyons, Junco annectens (see above) with Carpodacus cassinii and Eremophila alpestris (Otocoris alpestris leucolaema--J.H.) taking the van headed to the range.

31. Sialia arctica and Eremophila alpestris (see above --J.H.) at Gold Hill, 8500 feet above sea level. Saw a small flock of Ampelis garrulus in flight, seemingly wild.



April 2. Merula m. propinqua, the van only have reached Gold Hill, 10 miles from valley. Saw a family of Sitta Pygmaea 8 or 9 intact, same as in the fall.

April 8. Visited Ward district, 10,000 feet above sea level. Captured Junco aikenii, caniceps and annectens (latter a hybrid--J.H.). Sialia arctica seemingly paired. Sitta canadensis also paired. Sitta pygmaea still in families. Saw a pair of Picicorvus (Nucifraga--J.H.) columbianus apparently mated, on side hill near Ward; several were to be seen in the mornings foraging about the ash heaps among the houses. Too much snow among the green timber to look for their nests.

April 9. Picus villosus harrissi (Dryobates v. monticola--JH.) excavating for nest in aspen tree at Gold Hill.

11. Aquila chrysaetus canadensis (A. chrysaetos--J.H.) nest of 3 eggs 12 or 15 days covered, rocky cliff, entrance to Left Hand canyon, about 60 feet from base of cliff proper, which was about 150 feet <sup>quite 5 feet high</sup> high. Nest, accumulation of sticks, etc., of years, quite 5 feet high wide, having a slight depression, some last year's addition 8 or 9 inches.. Few evergreen twigs and coarse grass for lining. The female left the nest when half the distance was reached by the climber. Neither bird discovered any distress or anger at having their nest robbed, in full view of what was being done. They circled in the air about a mile off.

13. Scops (Megascops--J.H.) asio maxwelliae, nest of 3 eggs in old knot-hole of horizontal branch of cottonwood tree, occupied by the same bird the year before, containing young in the down on the 7th May, 1885. The year previous (1884) Colaptes auratus mexicanus (C. cafer collaris--J.H.) occupied this nest hole,

to obtain the eggs of which the aperture was enlarged sufficiently of doing so.. This rendered the cavity desirable for the nest of Scops, who took and held possession of it for two consecutive years. Eggs nearly fresh. No doubt a fourth<sup>egg</sup> would have been added in a short time--the usual complement. The female sits very close from the time she lays her first egg until the young are old enough to leave for a short time to forage for them with the male, who up to that time takes this care upon himself. He is in close attendance at all times upon his mate while she is sitting, and keeps her well supplied with food, chiefly small birds, taken while roosting in the evening or very early in the morning. Altho' a very small bird (the male) he is an expert and successful hunter, judging from the well-stocked larder sometimes found in a tree hole in the vicinity of his sitting mate, where he also hides himself during the day. Sometimes he is seen on a low bough in a thick bush hugging its stems or trunk immovable, in close proximity to his sitting mate, with eyelids so completely closed that you think he is asleep--this on a bright sunlit day, and while he permits a very near approach, he is perfectly wide awake. On May 5 2 eggs of second laying, 1 egg quite fresh, the other slightly incubated. Eggs as before in the same place in the hole resting upon and surrounded by dust of the rotten surroundings and a few tail and wing feathers of Sialia arctica. Branch 12 feet from ground.

April 14. Asio americanus (A. wilsonianus--J.H.). Three weeks previous to this date I discovered an old magpie's nest in possession of this owl. At this date I found 2 eggs. On the 15th a third was added. On the 16th I was disappointed at not

finding a further addition, and no owl. The eggs were cold and seemingly deserted. The nest was in a box elder about 14 feet from the ground, eggs perfectly fresh.

Bubo virginianus subarcticus (B.v.pallescens--J.H.) This bird's second nest, situated about 150 yards from the former, also an old Buteo borealis calurus nest, about 40 feet from the ground in cottonwood tree. In both instances the nest was 3 feet across with about 3 inches of depression, composed of sticks and twigs and lined with grasses. Feathers of the owl were present in the first nest but not in the second. Discovering the female\* in the vicinity of the first nest, I proceeded to search about and discovered the female on her newly selected nest laying her first<sup>egg</sup> the second time<sup>#</sup> as I now have good reason to suppose. Passing the locality the next day 15th at a little distance I saw the female on the nest. The following day, the 16th, before climbing the tree I struck it on trunk a sharp blow with the head of my hatchet, which immediately started the female off, and at the same moment an egg fell to the ground and broke. The contents were warm and quite fresh. The sudden scare may have caused some clumsiness on the part of the bird, and on her flight from the nest may have thrown out one of the eggs, but I incline to the opinion that the bird was in the act of excluding the egg when her fright started her off the nest and she dropped it. Perceiving the broken egg to be fresh I decided to wait till the next day before climbing to the nest, which I did, and found only 1 egg, which was quite fresh and cold. Neither male or female owl was to be discovered anywhere. They had evidently left in disgust. Just three weeks after being despoiled of their first nest the 1st egg of the 2nd laying was laid. If the second

\* Evidently means male. - J.H.  
 # Probably means 1st egg of second set. - J.H.

nest had been undisturbed until the 4th week I feel certain the complement of the first nest had been duplicated. While despoiling the first nest both male and female were somewhat exercised, flying around the nest from 30 to 100 yards distant, but showing no particular signs of distress.

April 18. Scops (Megascops--J.H.) asio maxwelliae. Nest of 4 eggs, quite fresh, in old flicker's nest in box elder about 8 feet from ground. No feathers in nest. Eggs resting upon few particles of wood like the eggs of flicker. Some difficulty in getting female off the eggs. She showed great courage in defense of her treasures, snapping her bill and striking at the hand with claw. Upon greatly enlarging the aperture the cavity disclosed was quite roomy and 12 inches or more in depth. May 7, set of 3 eggs nearly fresh taken from the same nesting place. Probably a 4th egg would have been added in a day or two. \* Little Thompson Creek. April 20. Nest of 4 eggs 5 or 6 days incubated in old flicker's nest in cottonwood tree about 20 feet from ground, excavation 10 inches deep. Disturbed male sitting near base of tree, which led to discovery of nest. Second nest taken May 17, 4 eggs like the former in different stages of incubation, from being slightly sat upon to the perfectly fresh egg. The second complement of 4 eggs, if that complement is reached, are probably laid (the two last, at least) at longer intervals between than in the first set, which are not consecutively laid either, but the intervals seem mostly between the 3rd and 4th eggs. About 3 weeks seem necessary after the first set is taken before the second laying is begun. The same nesting place occupied, not changed as with Bubo and Asio americanus

(A. wilsonianus--J.H.) C. nest Boulder Creek. Nest on Little Thompson May 6 in old flicker's nest, cottonwood tree, about 20 feet from ground. Slightly incubated, only 1 egg. Probably a young bird of last year. Had no opportunity of visiting this nest, again nor any of the others after taking the 2nd laying.

April 20. Discovered covey of quail, bob-white, Ortyx virginiana (Colinus virginianus--J.H.) banks of the Platte, about 20 in number. Pica rustica hudsonica (P. pica hudsonica--J.H.), several nests on the Platte with 1, 6, 8, 6, 1, 9, 7, 1, 2, 1 and 7 eggs respectively, 7 and 9 slightly incubated, the eggs of 9 being variously affected to appearance from 4 or 5 days to being fresh. Coal and Rock Creeks, 22nd April, several nests from 1 to 2 eggs each, also nests of 6, 8, 7, 6, 5 and 4 eggs each, 6, 8, 6 and 5 all fresh.

April 23. <sup>(Falco-J.H.)</sup> Tinnunculus sparverius, nest in old flicker's home in cottonwood tree about 14 feet from ground, 2 eggs, parents near by. Eggs secured. 4/6 taken May 4, being the complement of six eggs. Female disturbed off the 4 eggs last secured. No distress or much solicitude manifested at the robbery.

24. Corvus frugivorus (C. americanus--J.H.), Rock Creek, nest of 5 eggs in willow 12 feet from ground, 4 eggs fresh, 1 egg with slight tinge. May 2, two nests with 1 and 2 eggs fresh. Same date one nest of 5 eggs slightly tinged by incubation. No nest more than 12 feet from ground, in willow, thorn and plum bushes, in thickets of same.

24. Asio americanus (A. wilsonianus--J.H.) in same localities, occupying the old crow and magpie nests, Rock Creek, only a few owl's feathers added, grasses also. 1 egg. 3 addition-

al eggs May 3, tinged, 4 eggs badly sat upon, 10 days, 4 eggs slightly sat upon, 3 eggs fresh, May 3, 4 eggs slightly incubated May 3, ~~4~~ eggs about 6 days incubated in old crow's nest 25 feet from ground at Little Thompson Creek, May 6. 4 eggs quite fresh same locality. 3 eggs fresh Rock Creek May 21, 5 eggs, two of latter slightly incubated same date. These nests last noted I think were the second sets. No positive way of knowing, for this bird changes her nest when robbed of her first eggs. 3 eggs fresh Rock Creek June 5, 3 eggs slightly incubated same date. 5 three eggs and two young same date. These were all second layings, 2nd and 3rd from last of May 6 and last of April 24. Nest seldom over 10 feet from ground and having some grasses, etc., a few feathers added to the old nest, which showed a depression of 2 to 2 1/2 inches.

Saw Dendroica auduboni first time April 18.

May 3. Colaptes auratus mexicanus (C. cafer collaris--J.H.) 4 eggs in nest, Rock Creek. Nests with 2, 4, 5 and 2 eggs May 5, Little Thompson. 3 nests 11, 8 and 7 eggs Boulder Creek, May 17. 11 eggs slightly sat upon, seemingly joint laying of two females. Nest 6 eggs fresh, May 28, Gold Hill. Nest 4 eggs fresh, May 29, Gold Hill. Nest 7 eggs badly incubated, Gold Hill.

May 4. Numenius longirostris. 4 eggs quite fresh. Nest slight depression in dry, scanty grass meadow bottoms. Flushed the female 30 feet off to my left front. Very demonstrative and noisy. Very noisy with young June 5, flying round in circles and following with noisy clamor for a mile or more.

Eremophila alpestris (Otocoris alpestris leucolaema--J.H.), nest with 2 eggs about 5 days sat upon. Being soiled with yellow of

egg, conclude one or more of set had been broken.

May 17. Merula migratoria propinqua, nest with 4 eggs 6 days incubated. 25th, 3 nests with 3, 4 and 2 eggs each nearly fresh. 27th, 3 nests with 1, 2 and 3 eggs same. 29th, 3 and 4 eggs xxx slightly incubated. Nest with 4 eggs slightly incubated June 11. Early in July in the mountains the second nesting commenced.

May 20. Scolecophagus cyanocephalus. Nest 5 eggs fresh, Coal Creek, in box elder 8 feet from ground, securely hid in bunch of leaves. 25th, nest 4 eggs, 2 and 3 eggs in tree holes at Gold Lake. Nests new and empty in stumps of trees. 29th, 6 eggs and 3 eggs in nest fresh, Gold Lake. 31st, Nest 6 eggs badly incubated. Also nest with newly hatched young. Coal Creek.

May 20. Quiscalus purpureus aeneus (Q. quiscula aeneus--JH.) Nest of 3 eggs fresh two broken in tree hole, old flicker's nest, Boulder Creek.

20th. Sturnella neglecta. Nest on hillside with perfect canopy constructed of stiff grasses, inside lining of same character but finer. Size 7.50 x 5.75 outside, 6 x 3.75 inside, 4 eggs somewhat incubated.

23rd. Cinclus mexicanus. 5 nests on North Boulder Creek.

A.	nest with three young	12 days old
B	Do.	four Do. 7 " " and 1 egg bad.
C	Do.	four Do. just hatched.
D	Do.	five Do. 10 days old.
E	Do.	Hunt's mill flume with young.

Some under bridges over creek and some on rocky ledges over creek

F Nest with 3 eggs 1 fresh, Jim Creek  
G. Nest with 4 eggs fresh near Providence.

Captured nest intact and nest difficult to obtain, situated over dashing water.

May 24. Sialia arctica.

		Nest with 6 eggs	badly incubated
	Do.	4 "	fresh.
25.	Do.	4 "	fresh.
27.	Do.	6 "	somewhat incubated.
	Do.	6 "	Do.

Four nests with young just hatched, Gold Hill, June 11. This bird nests in old trees and tree stumps from 4 to 12 or even 20 feet from ground, taking advantage of old hole or excavating for itself. Nest of soft grasses lined sometimes with a few feathers.

May 25. Sitta carolinensis aculeata. 5 eggs, 3 broken in opening cavity in pine tree 12 feet from ground. Eggs somewhat incubated. Nest same in character as that of Parus montanus (P. gambeli--J.H.), in this case badly matted and old. Had been used before as is often the case with Parus montanus.

May 26. Nest of 5 eggs fresh in pine tree 6 feet from ground. Hole natural in dry part of the tree trunk. Discovered the nest place with young last year. In chopping the chamber open a splinter broke three of the eggs. 'Tis quite possible this nesting place, also the nest, had been used several years. The material composing the nest looked old and mangy.

May 28. Picus villosus harrissi (Dryobates villosus monticola--J.H.) Nest with 4 eggs somewhat incubated in aspen tree 18 feet from ground. Nest with young week old. (Heller's) Nest with young May 30, Gold Lake. Nest with young June 8, Spring Gulch. Each nest in aspen tree, in two instances the same cavities occupied last year.

May 29. Pygmaea sitta (Sitta pygmaea--J.H.) Nest of 7 eggs fresh about 10 feet from ground. Nest of 4 eggs fresh taken from same tree and supposed to be the 2nd setting of same



bird, June 10, nest of 7 eggs from (Dutton), June 3, 4 nests with young June 7, North Boulder, 3 nests of 7, 5 and 6 eggs each badly sat upon, only saved 4 shells. Mountain Chief, June 9, earlier this year than last. Nest invariable in old rotten coniferous trees. Excavation generally made by the bird itself in the rotten wood. Aperture small, so also the cavity, sometimes only 3 inches deep. Curious character of nest described 1835. Nest rarely in old excavations of other birds. Locations sometimes 40 feet from ground, others only 5 feet. Upon being despoiled of their first nests these plucky little birds will at once commence a second nest and lay a second set of eggs equal in number to their first, which is generally in number 7, like the western wren in this particular.

May 29. Cyanocitta stelleri macrolopha (C. s. diademata--JH.)  
 nearly fresh to  
 Nest of 4 eggs from, somewhat incubated, different stages. Average size 1.25 x .85 hundredths (~~this is surely not correct--J.H.~~). Ground color liltish green blue, marked pretty evenly over with small freckles (small for the size of the egg), the larger end having the larger number. Here also the under iron gray markings of the undertones show most, the crown being most thickly marked in both tints, which are there darkest, particularly the olive tone of brown, which there deepens in tone and richness. Very interesting the nest also, being composed of strong twigs having their bases cemented with clay in which the twigs in their center are secured at different angles interlacing. Then other twigs are manipulated, forming a light, strong structure 12 inches in extreme diameter and about 9 inches of more solid structure, with 4 inch opening, 5 inch high 2.75 inch depth of opening, large and roomy. Middle structure having coarse roots interlacing twigs, with a

lining of finer roots. Nest fixed in thick bush of peculiar willow about 6 feet from ground, not otherwise specially concealed and yet easily overlooked. Its construction of far-reaching side twigs intermingling with the twigs of the bush gave it a firm security realized only when forcibly removing it. Its general appearance even at a short distance was misleading, seeming to be a mass of twigs usually seen in such bushes, nothing dense about it from a side, which was the only view in its position. This can be understood when within 7 feet of the nest I could plainly see head and tail of the female sitting on nest. She flew off to a short distance only, and almost immediately returned to the bush, which was about 12 feet high, and hopped about it over my head, slightly demonstrative only in voice and manner, in which the male joined at a little distance. I am of opinion from the number of idle birds about nesting time, usually three together, that birds do not take upon themselves family cares until the second year. Perhaps even adults do not agree to do so consecutive years. Something has to account for the rarity of the nest in comparison with the number of the birds seen, so many of them as before noted seemingly idle and carelessly enjoying themselves in the nesting season. The locality of the above nest was in rather open woods and near some springy ground. This bird delights in the bushes bordering small streams or moist situations during summer. In winter, too, they frequent such places for shelter.

May 31. Lanius ludovicianus excubitorides. Several nests on Dry Creek, where they are to be found quite numerous; at this date rather late. Fresh eggs, eggs in various stages of incuba-

tion, also young birds, some pretty well fledged. Nest with fresh eggs taken at later date, June 10.

May 31. Harpornychus rufus (Toxostoma rufum--J.H.)

Several nests from 2 to 5 eggs each taken on Dry Creek, eggs fresh and variously advanced in incubation, also new empty nests, invariably in thick, dense bushes, seldom beyond easy reach, generally low down.

May 31. Zenaidura carolinensis (Z. macroura--J.H.) Fresh

eggs, incubated and young, in trees and on the ground. Eremophila alpestris (Otocoris alpestris leucolaema--J.H.), young able to fly about alone. Oxyechus vociferus, young well grown. Eggs this season early in April.

May 31. Mimus polyglottos. Several nests, a few just con-

structed, eggs fresh, 2 to 4 in number, slightly and somewhat incubated with ~~xx~~ 3 to 4 eggs, others, a few only, badly incubated and in one case young birds. Location generally in reach in bushes near by and sometimes overhanging the creeks of the valley. Saw several and enjoyed their beautiful songs in the foothills surrounding the lower St. Vrain canyon, among the scrub pines, location dry and stony somewhat distant from water or moist places, at the end of June, saw no nests. Structure of nest outside <sup>of</sup> dry twigs of greese weed fixed upon or between the laterals or twigs of horizontal bough of willow bush or tree. No earth used in holding these twigs together, therefore no means of securing the nest intact, the outside falling to pieces when removed from its place. Middle structure of roots interlaced, having the soft, green sprays of the greese plant mixed with them. Inner lining of fine roots and horsehair. This describes a new nest. Mostly the nests met

with were old ones, having the insides only new, the handling of which both outside and middle structure from their decayed character would crumble to pieces, the new part only remaining intact. The nests have not a dense appearance when seen in their places in or on the willow boughs. Size of new nest, extreme outside 7.50 x 2.75 inches, inside 3.75 x 1.60 deep. Old nest repaired having a less outside diameter and looks more dense.

May 31. Buteo swainsoni. A nest. Large hawk with deep chestnut neck and throat, with breast and under parts an ochreous white, with flecks of brownish more or less marked, bright yellow nostrils, eyelids and legs and black claws. Nest of 3 eggs much advanced in incubation, about 30 feet from the ground in cottonwood tree. Female arose from the nest as I approached 100 yards distant and circled about a half mile away, made no cry of any kind, did not see its mate. New nest little if at all inferior in size to that of Buteo borealis calurus.

May 31. Buteo swainsoni? B. nest. Large hawk, somewhat smaller than the one above noted, upper parts of grayish slate, with patch of white upon or at sides of rump. Nest in cottonwood tree in a fork or junction of two or more laterals from the stem of large limb about 20 feet from ground. It contained two eggs much incubated, more so than the two eggs of the same bird taken from the same nest last season three or four days later--nest D, 1885. This and the above nest taken on Dry Creek.

June 1. Buteo swainsoni. C nest. Large hawk somewhat larger than the last, but seemingly having the upper parts closely resembling it. Size and character of eggs, also their number

and marking, more in accordance with the first above mentioned. Nest was placed in the top of a bushy willow tree and was a new one, having noticed it when partly built, composed of sticks in part, but largely with the stiff stems of plants, with inner bark strips, a little grass and a few green sprigs of the cottonwood, which are present in all the large hawks nests I have found. It is the stain from the juices of these newly developed leaves that the eggs are soiled with so often.

June 1. Captured young of Podasocys montanus on the dry plains. Calamospiza bicolor (C. melanocorys--J.H.), nest of 3 eggs fresh, under tuft of alfalfa. 4 eggs in nest. One unfortunately broke.

June 2. Zamelodia melanocephala, two empty nests, one with 3 eggs fresh. Dendroica aestiva, near Boulder, 3 nests 3 eggs each fresh. Agelaius phoeniceus, 2 nests with 3 eggs each, in one egg of Holothrus ater, also 1 egg in same bird's nest from Dutton, also 1 egg taken in nest of Scolecophagus cyanocephalus, on June 5.

June 4. Tinnunculus (Falco--J.H.) sparverius, nest of 4 eggs somewhat incubated, more so than eggs from same nest taken last season 4 days later--Nest A, 1885. 1 egg fresh taken by Dutton. Nest with 6 young, foothills, near Little Thompson Creek, young ten days old. Melanerpes (Asyndesmus--J.H.) torquatus, nest of 7 eggs, only 4 eggs ~~XXXX~~ saved, being badly incubated, hole 30 feet from ground. Nest of 7 eggs somewhat incubated, June 7. Nest just completed, no eggs, June 8.

June 5. Sturnella neglecta, young full grown and full fledged.

June 7. Troglodytes aedon (T.a.aztecus--J.H.), nests of 7 and 4 eggs respectively, fresh, two nests of 7 eggs each, one

slightly incubated. 1 nest of 7 eggs ditto June 11.

June 8. Sphyrapicus thyroideus. Nest of 5 eggs badly incubated, only 3 saved. June 11, nest of 5 eggs badly incubated. This bird more than a week earlier this season.

June 8. Parus montanus (P.gambeli--J.H.) Nest of 5 eggs nearly uniform white, badly incubated, all lost, in ~~the~~ woodpecker's old nesting hole about 4 feet from ground.

June 10. Sphyrapicus varius nuchalis. Nest A, 4 eggs fresh in aspen 7 feet from ground. Nest B, 5 young just hatched (Heller's). Nest C, just completing nest. On June 23 took 4 fresh eggs from this nest.

June 10. Small hawk nest of 3 eggs, one fresh the other two somewhat incubated. Nest of willow twigs simply laid together upon horizontal bough of spruce tree close to its trunk. The bough at its junction with the main stem as laterals had some sprays closely matted, upon which the willow twigs formed a flat nest or platform upon which the eggs rested--no feathers or grasses, nothing but the bare twigs. Female escaped from the nest so quickly I could not identify her. Deem it to be a rare hawk. Very thick undergrowth surrounded the nest, the tops of which were as a general thing 4 to 5 feet higher than that of the nest, which was about 12 feet from the ground. From the dense surroundings it was impossible to get a sight of the bird. The slight glimpse I obtained as she flushed off the nest into the surrounding bushes was such as to lead me to think it was a robin. Diameter of nest 10 to 12 inches, with little or no impression. Size of eggs respectively nearly pure white ground with a few large splotches of sepia brown in

two shades, medium and dark, two with confluent belt near small end, the third strangely marked, having a splashed line from ~~mark~~ large end diagonally across to small end on one side, the side opposite being almost without markings.

June 10, nest of 4 eggs, ground color slight dull greenish white, with fine speckles covering the entire egg evenly, with olive gray markings. The egg in general appearance seemed to be gray in color. Somewhat incubated. So far as I could ascertain the description of the bird resembled the grass finch. The nest was taken from or near a tuft of greese weed and was represented as being made entirely of grass like that bird--only two eggs.

June 10. Speotyto cunicularia hypogaea. Nest A, obtained only 1 sterile egg, the other 7 being hatched or on the point of hatching. Site of nest two feet deep in the ground, with a curved gallery of about 5 feet leading to it. The eggs rested on a bed of dry horse or cow droppings broken up fine. Nest B, contained 7 or 8 ~~ow~~lets 10 days hatched, perhaps only a week.

June 12. Empidonax difficilis. Nest of 4 eggs quite fresh taken from nest of three year's service. Two previous years it sheltered to maturity each year a young family of birds, this ~~not~~ my own knowledge. How long it had a pre-existence I cannot say. Little beyond some repairing of inside did the nest require, as it was placed in a rock cranny, on the side of a steep slope overhanging a creek of running water, well supported on three sides and partly so on the fourth with a small projecting rock almost covering it.

June 17. Galeoscoptes carolinensis, Nest A, 3 eggs fresh in low bush four feet from ground.

June 18. Hirundo erythrogaster. Nest A, 4 eggs fresh, form of nest half cup in bracket form composed of pellets of clay stuck together, lined with soft feathers, fastened to horizontal beam. Nest B, 2 eggs somewhat incubated, taken June 26.

June 18. Tyrannus carolinensis (T. tyrannus--J.H.) Nest A, 4 eggs slightly incubated.

June 18. Tyrannus verticalis. Nests with fresh eggs, slightly and badly incubated, also with young. Make-up of nest, coarse, wiry plant stems, rags, twine and pieces of paper woven together firmly with hemp-like fibre, middle structure of same character somewhat, but finer, lined with feathers and wool felted in, the whole making a compact structure firmly fixed and secured in a crotch or fork or upon a horizontal bough well supported by lateral sprays or twigs. This precaution is necessary, as the nests are located in isolated trees and exposed at times to very distressing winds. 5 x 1.80 outside, 2.50 x 1.35 inside. N. B.--The nests of verticalis offer as much variety in their construction as those of carolinensis, making use of whatever local material is to be had.

June 18. Icterus bullocki. Secured one egg (sterile) with four young birds, hanging nest.

June 22. Nest with 3 fresh eggs, second laying, supposed to be Chondestes grammacus strigatus. Nest outside of old grass stems and straw stubble, fine wire grass and horsehairs inside. Dimensions 4 x 1.80 outside measurement, 2.50 x 1.35 inside measure, slightly sunk in the ground close by plant stems, securely hid.

June 26 Cypselus saxitilis (Aeronautes melanoleucus--J.H.)



Captured 3 males and 2 females 13 speed of wind. 6.25 m. long, (an error, surely--J.H.) 5.60 wing, 270 tail. Nesting with eggs about 10th June.

June 28. Melanerpes erythrocephalus. Nest of 5 eggs badly incubated, saved only three shells. Nest excavated by the bird in willow tree 15 feet from ground. This is the latest woodpecker to lay in Boulder County.

July 5. Lagopus leucurus. Visited Bald Mountain in search of the nest of this bird. Hunted very thoroughly without success. Discovered two males a mile or so apart in similar situations, very rocky, with sparse vegetation between them. Both birds exhibited the same behaviour. At a distance of 7 or 8 feet they began to move off about 3 steps at a time in a kind of running walk, jerking the head and tail, keeping a zigzag course, quartering and tacking. The first one I shot but the second one I spared and watched it in its peculiar way of retreat until it was lost to view among the stones. Neither bird seemed the least inclined to flush. Both these birds were near the highest points on the mountain. July 15, while climbing Mount Audubon and approaching the summit I flushed 4 or 5 birds at a point that I was not looking for them. Casting my eyes over the ground from whence they had flushed I perceived a bird remaining, performing the same peculiarities of movement as I have already described. I secured this bird which proved also to be a male. The testes of this bird seemed to be more waning than the earlier secured bird, whose testes suggested the least decline in vigor, being soft and a little grayish. The 4 or 5 birds that I flushed I presume were young birds of last year and still remained together. I think the female secrets her-



concealed under a weed. Captured the female. This was second nesting.

July 17. Merula migratoria propinqua. Nest with one egg sterile at timber line. Nest with three eggs slightly to somewhat incubated, July 25, Left Hand.

July 25. Dendroica auduboni. Secured empty nest, young just flown, left Hand, near mill, constructed of fine bark fibre, wild hemo fibre, with a lining of hair, cotton and feathers, materials well felted together, strong, light and warm, well secured to sprays of horizontal branch of spruce tree, upon which it was placed about 30 feet from ground, amid tree and one-third length of branch from trunk, quite secure from being seen from below. Took also a nest at Ward District, quite similarly constructed but differing in location, being near extremity of branch at about the same height from ground. This nest I believe to be of last year's construction, securely withstanding the fierce winter winds. Nearer the range this bird nests a little later.

July 17. Thrushes, saw several, mostly along the creek borders or at the edges of moist places in the larger timber with mossy undergrowth. Discovered several of their nests, some largely composed of moss, from two to four feet from ground in small evergreen bushes. From the locations where I met with these birds I supposed they were Wilson's. In some cases they appeared to be mated. They were all very shy, difficult of approach. Captured a male 6.75 x 4.30 x 3.40 with testes very much developed, fully so, I should say.

White capped Canada Jay. Saw several families in the green timber, 11,000 feet.

Clark's nutcracker. Saw several families of these in same locality.

July 19. Saw one of the golden eye ducks with 3 young ones on upper lake of North St. Vrain, about ten days old.

July 21. Brown creeper--~~Certhia~~ familiaris montana. Saw this bird and like Parus montanus (P.gambeli--J.H.) in this locality with young.

1887. Note Book No. 3.

March 18. Bubo virginianus subarcticus (B.v.pallescens--J.H.)

Nest in crotch of cottonwood tree 20 feet from the ground, an old magpie's nest, the top having settled down. But little manipulation on the part of the owl in arranging some of the twigs to suit made it a solid and fitting structure, with a slight depression. Upon the bare twigs lay the eggs with a few soft feathers of the parent about them clinging to the twigs. One egg contained embryo advanced by incubation three or four days. The second egg merely had the large covering membrane discolored. I have no doubt that a third egg would have been added in a couple of days. Three eggs would seem to be the complement for the owl. The same pair raised three young the year before. Two other nests with young in 1885 met with also showed this number, occupying old nests of magpie and Buteo swainsoni respectively. My observations strongly suggest that the female covers the nest from the first egg laid continuously, and that the full complement are not laid consecutively but at intervals of two, three or four days apart. The differences in the stages of feathering in the young referred to as well as the stages of incubation in the eggs, in my mind clearly show this to be so. The nest site is changed each year where trees and open nests are the choice. When different locations are made, such as rocky ledges and tree cavities, for nest sites, some departure may be made from this rule, which future observations may more correctly determine. Once paired, these owls seem to keep in company and do not wander far from their old nesting sites. At any time of the year they may be found at no great distance from each other

in near proximity to their last nest. They favor the cottonwoods having undergrowth along the creeks near the foothills. Sometimes in such localities far out on the plains they are frequently met with. Seldom are they found in the mountains or among the piniferous timber, but choose rather the rocky ledges which are plentiful among the bare foothills on entrance to canyons. The male is always within call of the female on the nest and keeps her well supplied with food. Disturbed, the female flies from the nest and utters a kind of moaning hoot, circles a few times round the nest, enlarging the circles until out of view, taking a position where from some distant tree she doubtless correctly takes in the situation. This owl when disturbed from her nest is not so demonstrative or so plucky as the eastern Bubo virginianus. Little Thompson Creek, About March 15 started two pairs of this owl on the Cache a la Poudre Creek. They seemed paired and their nests were hunted for with much patience without avail. March 29, again visited the locality of each pair, again started them in company or nearly so. I felt certain that they had no nest cares, or one of them would be attending to them. Reluctantly I secured one of the females by shooting it. Upon examination I found it very fat, indeed the flesh looked tempting for food. The ovary was quite normal, and the conclusion I came to was that both of these pairs were young of last year paired from their cradle, maturing for the duties that this second year of their existence would crowd upon them, and perhaps also upon me the correctness of my surmise.

Scops (Megascops--J.H.) asio maxwelliae.

April 18. Little Thompson Creek. Nest A, 3 eggs badly incubat-

ed, nest in old flicker's hole 18 feet from ground, no 2nd laying. Nest B, 3 eggs fresh, 21st 3 eggs fresh, 1 more to lay, no doubt, natural hole in box elder 12 feet from the ground, west of Beaver's workings. Nest C, 3 eggs <sup>3 days</sup> incubated, natural hole in box elder same as year previous, 8 feet from ground, no 2nd laying in either B or C nests. April 20, Nest D, 3 fresh eggs, large knot hole in cottonwood 8 feet from ground, no 2nd laying. Nest E, 4 eggs 5 or 6 days incubated, 1 egg broken, large knot hole in cottonwood tree near Dave Lykins, 2nd laying had the eggs destroyed. April 22, Nest F, with young 4 or 5 days old, Boulder Creek, 25 feet from ground, old flicker's nest in rotten cottonwood top, took two ~~xxxx~~ sets out of same site last year, earlier this year. May 16, Nest G, Little Thompson Creek, in box elder 10 feet from ground in natural hole, 4 eggs fresh, most likely a second laying of one of the nests previously taken. This owl will occupy the same site year after year, even tho' loosing both sets each year, this as a general thing if the sites are not too much injured. The female covers her eggs very closely and is with difficulty dislodged from it, in most cases has to be pulled off her eggs. The male supplies her with food while covering her eggs. During the day he is close by, in most cases hid in some hole. In defense of her eggs the female will snap her bill in a threatening manner and do some serious scratching, but once off the nest she flies away to a neighboring tree and looks on undemonstratively. If handled the strike is made with almost lightning rapidity. The claws are exceedingly sharp.

Asio americanus (A. wilsonianus--J.H.)

April 21, Nest A, Little Thompson, 5 eggs incubated 4  
 May 16, " A Do. 2nd set 4 " " 2

April 23,	Nest B,	Rock Creek,	4 eggs incubated	4,	2 saved
	" C,	Do.	4 "	"	fresh
April 26,	" D,	R.CreekDavis	4 "	"	"
May 6,	" E,	Rock Creek	5 "	"	incubated 2
20,	" F,	Do.	5 "	"	2
"	" G,	Do.Davis	3 "	"	3 1/2 2nd set D
"	" H,	Do.	5 "	"	young
21	" K	Do.upcreek	4 eggs	"	fresh
"	" L	Do.	5 "	"	incubated 3 1/2 1 damaged
21	" M	Do.	4 "	"	3 1/2
"	" N	Do.	" "	"	2 1/2

All these nests were in black willow or thorn trees from 8 to 18 feet from ground, and were either magpie's or crow's nests of one or more years old. The male occupies the nest to relieve the female at times, when necessary to hunt her food, for instance, there being no evidence of such about or near the nest. While covering her eggs the male is always nearby, and takes part in the somewhat angry demonstration when their treasures are threatened with danger, flying round about, then settling near hand, snapping their beaks and uttering a low moaning cry of distress. When incubation is advanced a few days the parent will not readily leave the nest, although you may strike the tree sharply in which it is placed. If the nest is large a few straggling downy feathers are all you have to guide you to a certainty of its occupation; otherwise you will by careful looking discover the ear feathers bent over the crouching head, which is maneuvered like a cat, sometimes the tail feathers or wing tips and tail feathers combined above the uneven sprayed edge of nest to tell the tale. 4 eggs is the usual complement, 3 eggs are as often found as 5. I have taken a nest of 5 fresh eggs and met with another having 3 young owlets of perceptible difference in their escape from the shell, with 2 eggs yet to break, one chipped and the other showing no signs of chipping.



In my experience emptying many sets the majority showed by the advanced state of some embryos over others of the same set that they were not laid consecutive days. Between the 3rd and 4th egg there was a greater difference than in the first 3 eggs laid, and a 5th egg in a set of 5 eggs would be fresh or nearly so in comparison with the others. This was particularly so in the early sets, among which 5 eggs were seldom met with. Nests with eggs of this owl may be ~~xxxxxxx~~ found from 10th April until May 20. I should judge that sets up to the first of May are covered from the first egg laid, lest from the low temperature their vitality might be impaired. This is not to be feared towards the middle or latter part of the month, when they are found to be more evenly matched. I think this solves the matter rightly. When the first set of eggs are taken, in 14 to 22 days after a second set is laid. If this is also taken no further attempt is made for that season to rear a family. All three of the owls noted so far have, it would seem, the capacity to furnish a second set of eggs, and does so when necessary in about the period set forth. In the early part of April last I captured a female Asio americanus (A. wilsonianus--J.H.) Upon examination I found it to be in extra fine condition, very fat and within a very short time of laying. The ovary showed some 8 or 10 more or less advanced egg germs, sufficient for two sets, with a marked difference in size between them. The reserve or second set could be well defined from the normal germs of more distant cares. My impression is that the cares of the first set disrupted, her mate's assiduous attentions develop the second set, which would, in the event of the first set being incubated and the young cared for, so engross the attention of both parents that

the incipient second set would subside in vigor, no doubt aided by the bird's will power, which would act inversely if her first set of eggs had been destroyed. My notes upon this subject seem to support this view, not only in regard to the owls, but many other birds. Captured a nest of 4 eggs of A. americanus (A. wilsonianus--J.H.) 15th April, on the 2nd May a second set was found so located that no doubt could arise as to its being by the same bird, no other pair being within miles. At another point far distant I captured a set of 5 eggs 30th April which had been covered probably for a week, judging from the embryos. On the 20th May in the same nest was captured a 2nd set of 3 fresh eggs, no doubt as to identity of parents. In the first instance less effort or time was required to mature the second set were so far no positive check had interfered with its slower development (lack of punctuation makes the meaning here somewhat obscure--J.H.) and which readily responded to the desire and will power of the bird to meet the emergency. In the second instance the week's incubation not only arrested but doubtless retrograded the further maturing of the 2nd set. Adding to this the grief and discouragement at her loss of her first set, to overcome these drawbacks a week longer seems to be demanded by nature to place the last case upon a par with the first. Pairs of the bird will keep to the same locality, seldom wandering far, will nest close by former nest sites but seldom use the same nest a second time the same season, or indeed upon any subsequent occasion, and seldom will a bird of this species select an old nest previously used by one of themselves. My notes furnish instances of sets of 4 eggs in more than one in-

stance where two appeared fresh and the two others had discolored membranes. In two instances only in 25 sets I found the same nest used twice, and only one instance where an old nest of the year previous was used by the same or some other bird of same species. Crows' nests preferred to magpies'. In some cases the cavities in trees are selected by this owl.

Speotyto cunicularia hypogaea (Burrowing owl)

May 10, South of Valmont near Boulder, nest A, 9 eggs fresh, about 20 inches deep and about 4 feet from entrance to nest. Nest B, 4 eggs fresh, about 30 inches deep and about 6 feet from entrance to nest. Nest C, 4 eggs fresh, about 30 inches deep and about 7 feet from entrance to nest. Two of these nests had their burrow nearly straight, the 3rd was somewhat curved. In each just off the nest was a small cavity, I suppose to accommodate the male bird. In this in each case upon excavating I found the female off her nest. In each case the presence of a nest was indicated by broken pieces of cattle chips, which material is used upon which the eggs are deposited. The presence of these chips at the entrance of burrow is a sure indication of a nest. The different depths is regulated by the depth from the surface of a hard layer of alkaline earth or clay upper surface to the thickness of 3,4 or more inches seems to be very tough and hard, seemingly impervious to damp. Just under this the nest is placed. This protection is sought for no doubt at whatever depth it may be found through the earth or looser gravel of the surface. In one of these burrows was found the wing of Eremophila alpestris (Otocoris alpestris leucolaema --J.H.), a whole mouse and part of another. A second one had several shells of a kind of large locust. The male is generally to

be seen on the lookout standing upon the small mound, the outcome of the excavation.

Zenaidura Carolinensis (Z. macroura--J.H.)

April 19, Little Thompson 2 eggs fresh  
 May 12, Rock Creek 1 " "  
 May 16, Big Thompson 6 " "  
 May 17, Little Thompson 9 " "

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These doves have several nests during their stay with us like the pigeon every month. Have taken their nests late in August. Most of them leave for a more southern home by September. Only those detained with their helpless young are seen later. Two eggs are generally the complement. Nests with one egg only are frequently met with. The ground is frequently selected for the nest site, but most often a very fragile, hasty, loose nest in trees and bushes, fences or walls, is chosen.

Pica rustica hudsonica P. pica hudsonica--J.H.)

April 19, Little Thompson, nests with 3 and 6 eggs fresh.  
 23, Rock Creek, nests with 1,6,7,5 and 8 " "  
 26, nests 4,6,7,1,8,7,8,9,8,7 fresh and incubated.  
 May 6, Rock Creek, second laying in same nests, sets of  
 4,3,1,1,1 and 2 eggs each fresh.  
 16, East of Erie, nests of 3 and 9 eggs.

Cinclus mexicanus.

April 28, North Boulder Creek.  
 Nest A 2 eggs, 1st bridge, incubated 3, 1 egg lost.  
 May 13, A 2 " " 3  
 B 3 " fresh, 2nd laying  
 C 5 " Do.  
 F 1 " Do. and 1 young bird.  
 May 28, G 3 " chipped, Jim Creek, 2 eggs lost  
 H 5 " fresh Do. 1 " "  
 June 3, I 2 " " F nest 2nd laying.

This bird's complement of eggs are 5. If lost to her a 2nd laying will result. A lesser number than 5 will be covered in a very early nest. I do not think two broods are undertaken. About the same number of days after one set of eggs are taken

before a second set is laid. Guided by like circumstances is this bird as Asio americanus (A. wilsonianus--J.H.), occupying the same nest if not destroyed. Sites for nest, upon a rocky ledge over deep and lively water, behind a waterfall, under a bridge supported by crossbeams. Upon these the nest is built in shape of a low flat dome. Sometimes a rock in midstream is selected as a site.

Corvus frugivorus (C. americanus--J.H.)

April 23, First nest Rock Creek, 1 egg fresh  
 May 6, nest with 5 eggs Do. incubated 3  
       nests of 5 and 2 eggs each quite fresh.  
 May 21, Nest of 5 eggs fresh same locality

Sites in thorn trees from 8 to 12 feet from the ground, made new each year, compactly built.

Tinnunculus (Falco--J.H.) Sparverius.

May 18,	nest A,	Little Thompson,	5 eggs	incubated	2
22	"	B Foothills Boulder	5 "	"	2
June 3	"	C North Boulder	5 "	"	1
18,	"	D Anderson's Lake	3 "	"	2 1/2

This last set I feel some doubt about. Will probably be able to clear up matters next season. In all cases the nest sites were tree cavities natural and had been nest sites previously. B nest has yielded a set of eggs for three successive seasons. No second laying is attempted by this or any other hawk with us, that I know of.

Eremophilax alpestris (Otocoris alpestris leucolaema--J.H.)

May 5, nest A 1 egg, nest B 2 eggs both fresh  
 7, nest C 3 eggs fresh. Same date saw young full fledged and able to fly.

Colaptes auratus mexicanus (C. cafer collaris--J.H.)

May 14,	nest A	Little Thompson	8 eggs	fresh
16,	"	B Do.	2 "	"
16,	"	C Do.		with young.

	17,	nest D	Do.	7 eggs incubated	2
	20,	" E	Rock Creek	7 " fresh	
	28,	" F	Hoag's	8 " "	
June	2,	" G	Dutton's	excavating	
	5,	" H		3 eggs incubated	2
	7,	" I		8 " "	2
	8,	" J		6 " "	2
	14,	" K		8 " "	2 1/2

Merula migratoria propinqua

May	7,	nest B	Valley	3 eggs fresh	
	16	" A		young birds	
	26	" C		4 eggs fresh	
	30	" D		4 " incubated	2
June	1	" E		3 " fresh.	

Second laying in mountains beginning of July.

Sturnella neglecta.

May	9,	A nest	just completed		
	12,	B "	South Boulder	4 eggs fresh	
	16,	C "	Little Thompson	5 " "	
	17,	D "	Do.	2 " "	
		E "	Do.	1 " "	
		F&G "			nest just completed
		H "	Do.	5 " "	
		I "	Do.	2 " "	
May	20,	J "	Rock Creek	5 " incubated	1/2
	22,	K "	Bear Canyon	5 " "	1
	23,	L "	Valmont	3 " "	1 damaged

Lanius l. excubitorides

May	20,	nest A	Rock Creek	4 eggs fresh	
		" B	Do.	6 " "	
		" C	Do.	6 " incubated	2
		" D	Do.	6 " Do.	

Sialia arctica.

May	17	nest	with 5 eggs	Little Thompson	badly incubated all lost.
	25	nest B	5 eggs	Gold Hill etc.	incubated 3
	"	" C	5 "	Do.	" "
	"	" D	6 "	Do.	" "
	29	" E	6 "	Do.	" "
	"	" F	6 "	Do.	fresh
	29	" G	5 "	Do.	incubated 2
	30	" H	5 "	Do.	fresh
	"	" I	5 "	Do.	"
	31	" J	5 "	Do.	incubated 1 1/2
June	1	" K		nest with	young birds
	5	" L	4 "	Gold Hill	incubated 1/2
	"	" M	5 "	Do.	fresh

6	"	N	4	"	Do.	"
7	"	O	nest	just completed		
"	"	P	5	eggs	Gold Hill	fresh
22	"	Q	3	"	Do.	incubated 2
30	"	R	5	"	Do.	incubated 1

Sites for nests old woodpecker's and flicker's nests, old decayed tree trunks, and stumps have excavations made by the birds themselves when practicable.

Sialia mexicana (S. m. bairdi--J.H.) (*Chestnut backed bluebird*)  
J.H.

June 8 nest A 4 eggs badly incubated 1 egg saved  
B young birds 4 or 5 days old

This bird seemingly nests a little later than arctica, chooses a more wooded locality, nest sites quite similar, material for nests in character alike, but finer and more compactly made. The material has the appearance of being beatled, the better fitting it for the purpose.

Sialia sialis.

June 18, nest A 4 eggs fresh at Walstead's ranch. Captured a week previous with only 3 eggs. No birds seen near it. Having only one additional egg added in a week and then to find all of them fresh suggests a very irregular laying. This doubtless is an exceptional case. Watching the nest awhile, I soon had a good opportunity of viewing the birds and plainly determined the species by the male. Their behavior suggested that they had not completed their complement of eggs. The site and character of nest differed nothing from arctica. This individual nest seemed to be later than either the foregoing species.

Scolecophagus cyanocephalus.

May 29	nest	A	6	eggs	incubated 1	Heller's ranch
June 1		B	5	"	"	1 1/2 Gold Lake
5		C	2	"	fresh	Do.
"		D	5	"	"	Do.

All the above sets taken from nests in tree cavities. This bird objects to having the nests meddled with or their eggs handled, persistently forsaking them in such cases and destroying or taking away the eggs if not previously covered. It might be that, the eggs forsaken, their destruction is the result of some other agent.

Picus villosus harrissi (Dryobates villosus monticola--J.H.)

May 25	nest A	4 eggs incubated	3 1/2	Wastead's Gulch	1 lost
	" B	4 " fresh	6 set	2 lost	Ward District
June 5	" C	1 " Do.	King's Gulch,	a late nest	
	"D&E	14 nests with young,	Dutton's and	Giles'	
	"F&G	Do.	Brainard's and	Phillips'	
14	"H&I	Do.	Red Cloud Gulch	and Ward	
	"J&K	Do.	Spring Gulch	and Jintown	
	"L&M	Do.	Both at Heller's	Ranch	
	"N&O	Do.	Duck Lake	and Comos'	

This bird with us seldom excavates for itself in a tough tree. Often appropriates an old site of S. v. nuchalis and occupies the same site for successive seasons. Seemingly has no choice in the kind of timber to operate upon, so that it is easily worked, resembling S. thyroideus in this respect. He seems not to have the power of his eastern cousin in boring into tough trees. He is the earliest of our woodpeckers to nest, is an all year resident and nests as early in some instances as the first week in May. When raising their young they are very demonstrative, frequently greeting you quite a distance from their nests with peculiar loud plaintive crys. He is our sapsucker.!

Sphyrapicus thyroideus.

May 25	A nest	6 eggs fresh	Mountain Chief
28	B "	6 " "	Houg's Do.
"	C "	4 " "	Reedy's Do.
29	D "	5 " "	Bismark's
June 1	E "	6 " incubated	1 Jim Creek
5	F "	6 " "	1 Mountain Chief



June 6	G	nest	2	young	4 or 5 days	Stacey's	
"	H	"	4	eggs	2 fresh 2 incubated	Do.	1 lost
7	I	"	5	"	incubated 5	Walstead's	5 lost
8	J	"	5	"	"	1 1/2	Fritz'
8	K	"	3	"	fresh	Jim Creek	
11	L	"	4	"	"	Spring Gulch	
22	M	"	5	"	incubated 1/2	Stacey's 2nd G	

Two nests with young Sunnyside and Duncan

Do.	Do.	west of Walstead's and opposite lake
Do.	Do.	Brainard's and Peck's
Do.	Do.	Ward District and Jim Creek

This bird is no respecter of timber in choice of nest sites, pine spruce or aspen, it makes no difference if suitable and easy to work by reason of decay. Sometimes, but seldom, the same site used the year before is made to do service a second time. A new excavation is generally made each season. If the old tree or stump offers the chance it is patronized in preference, if their former nesting has not been interfered with; if otherwise, the neighborhood is as a rule still patronized. Quite the latter part of May would seem to be the proper time to look for the nests. Ofttimes when a hundred yards or more <sup>distant</sup> from the nest an alarm is sounded by the male, who is on the watch. This warning is to the female on the nest of the approach of possible danger. It is a peculiar reverberating sound produced by hammering repeatedly upon a dry naked bough well up in the treetops. It may be repeated twice or even three times, by which time the intruder has passed on and requires looking after. Closely inspecting the likely trees for nest sites you may see the female slip away from her nest hole silently as you approach, making but a short flight; a half minute and she again takes a short flight, and at intervals after escaping from her nest she utters a low, suppressed groan, guttural something like the moaning purr of a favorite cat. The nest once discovered the male seems to come to the front, will be the first

to brave an entrance to the nest hole after it has been robbed. My observations have been that until the full set of eggs have been laid he is in constant charge of the nest at night and alternates with the female in daytime when necessary during incubation period. These duties are performed in great silence and quiet by both this bird and also S. nuchalis. They slightly move away and about so quietly that if not for their anxiety for their treasures that shortly betrays their whereabouts by their return to their vicinity, it were much more difficult to locate them.

Sphyrapicus varius nuchalis.

June 1	A	nest	3	eggs	fresh,	Jim	Creek
8	B	"	4	"	incubated	1 1/2	Do.
11	C	"	4	"	fresh	Hays'	
"	D	"	4	"	incubated	1	Giles'
12	E	"	4	"	"	1 1/2	Duck Lake
13	F	"	4	"	"	4	Brainard's
14	G	"	1	"	fresh	lost	Sunnyside
17	H	"	2	"	fresh	lost	Mountain Chief
25	I	"	4	"	"	"	Celestial Mine
"	J	"	3	"	incubated	1	2nd laying Hays' C
"	K	"	4	"	"	1/2	Do. Giles' D
July 2	L	"	5	"	"	3 1/2	Do. Duck Lake E
"	M	"	2	"	fresh	"	Do. Brainard's F
June 11	nest at Giles' with young 4 or 5 days old						
14	Two nests at Sunnyside on time						
17	several nests in gulches on Middle St. Wrain from King's mill to Banta's, also in gulches leading to Mountain Chief from Jintown.						

Never discovered this bird nesting in any but aspen trees, chiefly in gulches and bottoms. Excavates a new nest each season. Patronized the same tree two, three and four years in succession if undisturbed and lives to do so. This bird, as well as S. thyroideus, having their first set of eggs taken, will prepare a second nest and have a second set of eggs in 12 to 16 days after. This may fail in a few cases but may be gen-

\*Evidently means July - J. H.

erally counted upon if the first nest is an early one. The same tree will be avoided but the same neighborhood will in most cases be retained if accommodation is found. Equally with this bird as the two preceding it is the height from the ground at which the excavations are made for their nests, separate and together they show the same, from 5 feet to 50 feet. The excavations in depth and size have no arbitrary rule or distinction one from the other. That they do differ one from the other collectively or individually is purely the result of circumstance. A common feature with these three species is that the eggs rest upon a few minute chips at bottom of nest, nothing more. This bird is very quiet and sly in getting away from her nest, but when satisfied it has been discovered utters at intervals a distressing cry peculiar to itself, something like the flicker's.

Melanerpes (Asyndesmus--J.H.) torquatus.

June 3	A nest	2 eggs fresh	Jones'
"	B "	not examined	Do.
"	C "	7 eggs incubated 2	Dunton's, last year site
"	D "	6 " fresh	Do.
"	E "	2 " "	Do.

June 20, noticed several pairs of this bird feeding their young. Their manner of nesting is much like Colaptes auratus mexicanus (C. cafer collaris--J.H.). Old flicker sites, natural tree cavities and such as they excavate themselves in soft rotten trees like the flicker they deposit their eggs. The chosen site is easily discovered by the birds' short flights around its vicinity. The same site is occupied consecutively in many cases, even when partially injured. Height of nest site from ground, from 8 to 40 feet, or 60 feet.

Parus montanus (P. gambeli--J.H.)

May 28	A nest	8 eggs	incubated 1	Spring Gulch
29	B nest	4 "	fresh, all destroyed	Walstead's
"	C "	7 "	incubated 4, mostly lost	Heller's
31	D "	7 "	fresh	Ward District
June 5	E "	6 "	"	Mountain Chief
	8 young	4 or 5 days old	in nest	Brainard's field
11	Two nests	feeding young,	Brainard's and Columbia Mine	
13	Two nests	Do.	Brainard's and Stacey's	
"	Do.	Do.	Brainard's and Ward	
14	Do.	Do.	Ward Gulch and Duncan's	
"	Do.	Do.	Sunnyside	
17	Several nests	with young on St. Vrain	and in Gulches	
		leading thereto	in old <u>S. nuchalis</u> nests	in aspens.

By far the greater majority of all the above nests for this season were in aspen trees. In 20 nests only 4 or 5 were in piniferous trees, much decayed, in which the excavations were made by the bird itself. The spotted variety of this bird's eggs are about equal to those pure white, or nearly so. Nothing to distinguish the material used in the nest of this bird from that of Sitta carolinensis aculeata, except the presence in most cases of a few sprays of moss used as a foundation. This bird is very devoted to her treasures. While covering her eggs she will suffer herself to be covered up with chips in opening the cavity and taken off her nest with the hand. She displays great courage in defending her home against the intrusion of little house wrens or nuthatches.

Sitta carolinensis aculeata.

May 30, A. nest, 5 eggs, fresh, Jim Creek, aspen grove. Materials of nest, rabbit fur and feathers felted, similar to that of Parus montanus (P. gambeli--J.H.), without moss at base. The above nest taken from cavity in aspen tree 5 feet from the ground, old nest site of S. v. nuchalis. Such nest sites are sometimes chosen. More often they are found in piniferous trees

in which accidental knotholes or crevices in the trunk or branches are manipulated by the bird to suit her wants. A site thus adopted will be used consecutively if uninjured. Excavations are sometimes made by the bird itself in old rotten stumps or trees.

Sitta pygmaea.

May 26	Three pairs of this bird excavating their nests.	
30	A nest 7 eggs fresh	Fritzs'
"	B " 3 " "	Do.
June 5	C " 7 " "	Mt. Chief.
6	D " 5 " incubated 2	Fritzs'
"	E " 6 " fresh	Do.
8	F " 7 " incubated 3	1 lostWalstead's
18	G " 8 " " 5	6 lost Do.

The last nest a late one. Like the house wren this little fellow will fight off a bluebird or woodpecker with great spirit, should they approach too near her nest site, and losing her first nest even with a full set of 7 eggs, will in 10 or 12 days begin laying a new nest full, so far as my experience goes. She excavates in an old rotten tree or stump, piniferous, a site for her nest 4 or 5 inches deep and 2 to 3 wide at the base, frequently the bark alone for the outer wall. Sometimes a hard section in the excavation is met. This is persistently overcome by the little worker, who can be distinctly heard at work in an old tree top 50 or 60 feet from the ground, where the bird itself can scarcely be seen. Lower sites are as frequently met with. A change of site is made each year, but frequently the same tree is selected. A smart tap with the back of a hatchet will always start the bird off her nest, even though her covering is close. This is not the case by any means of Sitta c. aculeata or Parus montanus (P. gambeli--J.H.) and unlike them the nest is almost always composed of vegetable material. The soft, tough leaves of the white sage growth of the

previous largely enters into its composition, a few cobwebs and fine sprays of moss, with sometimes a feather or two, is all that is used. Little or much of these materials are used to fill the base of cavity. In most cases the volume is sparse and in some markedly so. Unlike the previous described species, this one is as bold and heedless of a close inspection while excavating and building her nest as the little house wren. Its graceful little symbols, with Parus, the two other Sittas and Certhia, all through winter, makes him a favorite with me.

Troglodytes aedon parkmanni (T. a. aztecus--J.H.)

May 30	A nest	3 eggs	fresh	B nest	5 eggs	fresh
June 3	C "	2 "	"	D "	7 "	"
13	E "	3 "	incubated 1/2	F "	3 "	"
17	G "	6 "	fresh	H "	5 "	incubated 2
	I "	7 "	"			

These little fellows choose for nest sites every conceivable place, a hole or cavity in a tree, wall, building or earth bank, comes like to them. Using little or much of twigs or sprays and fill it full to its entrance so that no enemy shall outflank it. From the entrance to the back of this filling is a small passage to the nest, from 3 or 4 to 5 inches. The nest proper is of feathers. Mixed with them are a few horsehairs and bark strips, both or neither. Despoiled of its first nest a second is made and likewise filled with eggs. This also robbed I believe a 3rd would be persisted in.

Tachycineta bicolor (Iridoprocne bicolor--J.H.)

June 12	A nest	5 eggs	fresh	Duck Lake
14	B "	1 "	"	Sunnyside
"	C "	4 "	"	Phillips' Meadow
17	D "	6 "	incubated 2 1/2	Monte's Gulch

All the above nests were old Sphyrapicus nest sites in aspens.

Foundation of grass stems, some finer grasses, and inside of soft feathers. A nest was excavated by woodpecker and two eggs laid, when the swallows appropriated it and built the nest over the two eggs and drove the woodpeckers to a neighboring tree, who hastily prepared an old site there and had a nest of 4 eggs fresh when taken on the 31st May Picus villosus harrissi (Dryobates villosus monticola--J.H.). The complement of eggs for this bird seems to be 6 in number pure white.

Junco caniceps.

- May 29 A nest 3 eggs fresh, taken June 2, 4 eggs incubated 1
- 31 B " 4 " " " Ward district
- June 7 C " 4 young 3 or 4 days old, Walstead's
- 15 D " 4 eggs badly incubated, Duck Lake
- 16 E " 3 " incubated 2 Do.

About middle of May for 1st nesting, beginning of July for 2nd nesting, always in the ground, made of grasses, fine rootlets, horsehair and fine wiry grass stems for lining. Size of nest B outside 4 1/4 by 2 1/4, inside 2 1/2 by 2 inches. Chosen sites for nests, sheltered hillsides in gulches. A stump, root or fallen log often favored. When the surrounding ground is damp a hillock or grassy mound is selected. So often hid away the bird is difficult to flush.

Tringoides macularius (Actitis macularia--J.H.)

- June 8 A nest 4 eggs incubated 2 1/2 <sup>Duck</sup> Brainard's Lake
- July 1 B nest 4 " fresh Brainard's Lake

The latter place 1,000 feet higher altitude. No difference in the peculiarity of this bird or in its nesting from its eastern relatives except the least thing more of a nest and the site as a rule here not so dry.

Pipilo (Oreospiza--J.H.) chlorura.

June 15. A nest, 4 eggs, incubated 1. Ward District.  
 Rather bulky nest in small pine bush 7 inches from  
 ground. Extreme breadth  $5 \frac{1}{2}$  inches, depth or properly  
 height  $3 \frac{1}{2}$  inches, inside opening  $2 \frac{3}{4}$  inches, depth  
 $2 \frac{1}{2}$  inches. Outside coarse, wiry plant stems, middle  
 structure same material of finer character, with lining  
 of fine rootlets. Bird very sly, exceedingly swift  
 of foot.

Melospiza lincolni

June 12 A nest 3 eggs fresh deserted when first found  
           3rd June had 2 eggs placed in tissue of grass  
 " B nest 4 eggs fresh, captured female, 1 egg more to  
 16 C " 5 " " tuft of high grass lay  
 " D " 5 " " hillock of grass and twigs  
 " E " 5 " " tuft of grass near tree trunk  
 27 F " 5 " incubated  $2 \frac{1}{2}$ , dry hillock in  
 swampy place. This last nest is a second  
 laying I think. All the above taken at  
 Duck Lake, Ward District.

## Dimensions of nests.

Nest A outside  $4 \frac{1}{2}$  in. by 3 in., inside  $2 \frac{1}{8}$  in by 2 in deep  
 F "  $3 \frac{1}{2}$  "  $2 \frac{1}{8}$ " "  $2 \frac{1}{8}$  " 2 "

Nest sites in low, damp, grassy situations as surround-  
 ings. Nests well in the ground in dry elevations, tufts  
 of high grass, near twig, tree or post, out of danger of being  
 trampled upon, at the edge of bush clumps, in openings among  
 low bush clumps, by sides of small streams in long grass in  
 damp places and upon elevations in marshy places. Grasses com-  
 pose the nests throughout. Five eggs seem to be the full com-  
 plement. Bird not easily flushed.



Myio. diocetus pusillus (Wilsonia pusilla--J.H.)

June 12	A	nest	4	eggs	fresh	close	under	at	foot	of	twig
"	B	"	6	"	incubated	1/2	at	foot	of	willow	twig
16	C	"	5	"	"	1 1/2	similar	situation			
27	D	"	4	"	fresh,	second	laying	I	think		
"	"	"	3	young	about	3	days	old			
28	F	"	4	"	"	5	"	"			
July 1	G	"	5	"	"	6	"	"			

All with the last exception at Duke Lake.

## Dimensions of nests.

Nest A	outside	3 1/2 in.	by	3 1/4 in.	, inside	1 1/4 in.	by	1 5/8 deep
C	Do.	3	"	"	2 5/8	"	1 3/4	" 1 1/2 "
D	Do.	3	"	"	2	"	1 3/4	" 1 5/8 "

Nest locations similar to Melospiza lincolni, invariably at root of bare stems of willow or willow twigs, not hid in grass, in open places, rather, among low bush clumps, always in damp situations. Bird not easily flushed. Nest sunk in ground and made of grasses, differing nothing one from another. Upper inside rim contracted, confining the young birds in such a way that they seem wedged in, quite impossible to move, until able to leave the nest for good. This crowding after a certain point must be something akin to suffering. In one instance I rather forcibly removed one of 4 young birds and from appearance judged a day or two would complete their feathering sufficiently to leave the nest for good. Replacing the little fellow he would not remain with the others in the nest. He seemingly felt the release a relief and exercised his little immature wings at fluttering about quite creditably. The contraction of the inner rim of the nest doubtless is constructed for the purpose of holding the young birds prisoners until sufficiently well fledged and strong enough to leave the nest for good. Wedged warm and snugly thus, doubtless the feathering process is expedited. From the force I had to use I feel certain when the

period to free them from the nest arrives the united efforts of both parents are required. In this constrained position their little heads and necks are quite free. This peculiarity in the nests of some birds is observed for a purpose. With the nest of Audubon's warbler I noticed the same provision. In this case I deemed it a protection against a strong wind blowing them out of their nest, but in the case of *M. pusillus*, sheltered on the ground, this view is untenable.

Regulus calendula.

June 15, A nest 8 eggs badly incubated. Saved only the shells. Nest observed newly completed about 1st of the month, 12 feet from the ground, pensive from end or nearly so of a spruce tree at Duck Lake, on isolated tree. Composition of nest fine moss sprays and soft fibre beautifully felted, of equal fineness throughout, fastened underneath to branch sprays by lip of nest. As a binder seemed to have very fine fibres of wild hemp. Dimensions, outside 3 1/2 inches wide, 4 inches high, by\* inside 1 3/4 inches wide and 2 inches deep, very warm and snug, proof against any wind to detach it. Eggs of a creamy white ground with lightish sepia brown at larger end. This is so slight in some of the eggs that it simply appears as an indistinct discoloration.

Carpodacus cassinii.

June 15. A nest, 4 eggs, incubated 2 1/2, Duck Lake, placed in Douglas pine on small twig, branches within a few inches of main trunk, rather full to view, about 25 feet from the ground, a little more than half the height of the tree, secured prin-

cipally by the sides of the nest, which is a light but strong structure, a few fine, harsh twigs for outside, grasses well incorporated with outside, and strands of cowhair used for lining inside is taken into the middle of structure. Dimensions, outside 3 1/2 inches wide by 2 7/8 inches high, inside 2 1/2 inches wide by 1 3/4 inches deep. Note--outside of nest, wiry plant stems, middle structure wiry grasses, rootlets, plant fibre and hair, well woven, inside lined with cowhair, etc.

Zonotrichia leucophrys.

June	27	A	nest	4	eggs	incubated	1,	on	the	ground					
		B	"	4	"	"	5,	all	lost						
		C	"			new	and	empty,	never	occupied					
	28	D	"			young	birds	3	or	4	days	old,	ground.		
		E	"			empty,	same	as		in	hillock				
July	6	F	"	3	young	and	1	egg,	in	bush	3	feet	high	from	ground
	8	G	"	4	eggs	fresh	in	bush	2	feet	high.				
	9	H	"			nest	with	young	nearly	fledged					

Nest dimensions, etc.

Nest A, outside 5 inches wide, 3 1/2 inches deep, inside 2 3/4 inches across by 2 3/8 deep, on the ground near cabin. Nest B, 6 inches broad, 4 1/2 inches high, 2 1/2 inches across, 2 3/8 inches deep, in small evergreen tree 3 1/2 feet from ground. Coarse stems for outside, extending at least 10 inches across. Nest C, in matted grass and small bush combined 12 inches from ground. With us this bird seems to favor bushes rather than the ground, at least the majority of nests found were in bushes. As a rule the nest is completed some time before it is used, and if meddled with or the site much frequented a new site and nest will be selected. The composite material used is very varied, differing very much in size and bulk. Fresh eggs may be taken from 15th June to 15th July. Location of nest always in the vicinity of damp or wet ground.

Character of the egg markings vary very much.

Anthus ludovicianus (Anthus pensilvanicus--J.H.)

June 29, two nests with young birds 3 or 4 and 4 or 5 days old. One nest 5 eggs incubated 4. June 30, Several nests with young birds. August 3. Saw young birds on Gold Hill, They nest on the plateau there. Also on side hill above Somerville. Nesting much earlier this and last year than three years ago.

Leucosticte australis.

June 29, saw a few birds chiefly males. July 8, captured a male and female out of a flock of 20, feeding upon the fresh grass seeds. Male 6 1/2 in. 4 5/8 in. 3 3/8 in. highly developed. Female 6 in. 4 in. 3 in. Would not lay for two weeks. July 12, saw a single male busy gathering grass seeds. No females seen.

Lagopus leucurus.

July 9, captured a male 12 1/4, 7 1/2, 4. Organ much developed. No female seen. July 12, Several males seen but no females.

Dendroica auduboni.

July 1. Nest with 5 young birds about 5 days old, perhaps older. They were tightly wedged in the nest. Inner rim of nest drawn in like nest of Myiodiactes pusillus (Wilsonia pusilla--J.H.). Upon removing them I noticed their abdomens greatly distended, and while handling them each in turn ejected a quantity of excrement, suggesting the first event of that nature, if it were possible. Nest was well put together, compact and warm. Had some ptarmigan feathers as lining. The nest saddled a horizontal branch of a spruce tree close to the main stem about 12 feet from the ground. Altitude 10,500 feet at about 10,000 Ward.

July 15. Took a nest after the young had flown, upon horizontal branch of spruce tree 30 feet from the ground 4 feet from trunk and 1 foot from extremity of bough, attached to and fixed into a cluster of lateral twigs. Very secure foundation of hemp fibre and rootlets, middle structure hemp and feathers, hemp or other plant fibre and feathers, lined also with feathers, wool and hair, the whole structure well knit together, light and warm. 4 1/2 in. wide by 2 in. high, and 2 1/4 in. across by 1 1/2 in. deep.

Hylocichla unalascae auduboni (H. guttata auduboni--J.H.)

July 12. Nest with 4 young birds within 3 days of leaving nest. Female cry "click,click," male cry "we-ee." Nest in spruce tree 9 1/2 feet from ground, very similar in site to what Merula would choose. Nest mostly composed of rotten wood, with a little moss. Upon trying to remove it, it all crumpled to pieces. This I think was an exceptional case, the site favoring such poor material, having found old nests in small evergreen trees better constructed, composed mostly of mosses. Near these nests I have seen the birds doubtless with new nests, but I could not find them. Trees or bushes are mostly chosen for sites, sometimes well up on the mountains on the margin of timber line, high and dry, distant from water, as was the case with nest and young. July 11. This day I secured a male, as I did about this date last year, and upon examination found the testes highly developed, which induced me to think nesting had only begun, whereas, the experience of the day after showed plainly my conjectures were misplaced, that they nest much earlier. Size of male captured, 7.38 entire length, wing 4.40 and tail 3.50. This specimen identified at Washington.

Note Book No. 4.

(Systematic list of birds with unexplained figures set opposite each species, omitted. Also measurements of eggs of the following species ~~?~~)

Aquila chrysaetus canadensis  
 Naccifraga columbianus  
 Bubo virginianus subarcticus  
 Buteo swainsoni  
 Falcon  
 Accipiter cooperi  
 Asio americanus  
 Nyctale acadica  
 Megascops asio maxwelliae  
 Falco sparverius  
 Plover  
 Coot  
 Western grebe  
 Great blue heron  
 Numenius longirostris (in two places  
 Speotyto cunicularia hypogaea J.H.)

## Memo Colorado Birds and Nesting.

(Numbers omitted)

Swainson thrush	Ar.	April 24	Eggs June 20 to July 1
Audubon Do.	"	May 15/92	Nesting from June 1 to 30th Eggs from June 10 to July 10
Robin Resident			Nesting from May 5 to 25. Eggs from May 15 to July 5. 2nd laying July.
Mockingbird	Ar.	--	Eggs beginning of June
Catbird	"	"	from June 1 to July 5
Brown thrasher	"	"	beginning of June
Water ouzel	Rd.		Nest with young May 5/89. Eggs April 25 to June 15, June 30, 10,000 ft!
Bluebird	Ar. Feby. & Mar.		Eggs June 18, 1887.
California Do.	Do.	"	June 1, 1887
Rocky Mt. Do.	Do.		Nesting from May 15 to June 15. Eggs from May 25 to June 25.
T. Solitaire	Rd.		Nesting May 5 to 25. Eggs May 20 to June 25
Ruby kinglet	Ar.		Eggs June 1 to June 30
Mt. Chickadee	Rd.		Eggs May 20 to June 15
Longtailed	Do.	"	
Slenderbilled nuthatch	Rd.		Eggs from May 10 to 30, latter date mostly.

*# Resident*

- Redbellied nuthatch Rd. Eggs June 6, 1889.  
 Pygmy nuthatch " Ex. in foothills Apl. 25; eggs May 30 to June 30.  
 Brown creeper " Eggs June 10 to 25, 9000 ft.; June 30 to July 10, 11,000 ft.  
 Rock wren Ar. Nesting in foothills Apl. 27/89; Eggs May 25 to June 10  
 W. house wren " May 5/91; nesting beginning of June; eggs about 8 June  
 Tit lark " about April 20; making for range May 20; eggs June 25 to July 10  
 Virginia warbler "  
 Orange crowned warbler  
 Yellow warbler Eggs about June 10 to 20  
 Audubon's warbler Ar. April 15 about; eggs June 10 to 25, 9,500 ft.; July 1 to 20, 11,000 ft.  
 Macgillivray Warbler Ar. May 5; nesting June 5 to 15; Eggs June 10 to 20; June 25 to 30 11,000 ft.  
 W. Yellowthroat Ar. May 5; nesting June 5 to 15; eggs June 10 to 20.  
 Wilson warbler Do. ; Duck Lake, 9,000; eggs June 12 to 25, earlier below, later above.  
 Red start  
 Warbling vireo  
 Plumbeous vireo Nesting June 5 to 10; eggs June 10 to 25  
 Shrike Ar. April 15 89; nesting May 1 to 15; eggs May 15 to 30  
 Cliff swallow  
 Barn swallow Ar. April 20; eggs June 15 to July 15; 2nd laying  
 White bellied swallow; eggs from 1st to 15th June  
 Violet-green swallow Eggs June 20 to July 10  
 Bank swallow Ar. April 20/89  
 Roughwinged swallow  
 Western tanager Ar. about May 15; nesting about June 1; eggs about June 20  
 Pine grosbeak Resident.  
 Cassin's finch eggs June 15 to July 20  
 House finch nesting May 20 to June 10; eggs June 5 to 25  
 Am. crossbill Rd. eggs about April 1 to 10 (probably *L. c. hendricki* J.N.)  
 Rosy finch (gray crowned) Rd. Nesting June 15 to 25; eggs June 25 to July 10  
 Am. goldfinch Rd. eggs July 1 to 30  
 Pine goldfinch (*Siskin* -- J.H.) Rd. eggs May 15 to June 1, 5,500 ft. June 15 to July 5, 10,000 ft.  
 W. Savannah sparrow  
 Vesper sparrow eggs May 30 to June 10  
 W. lark finch Ar. May 5/89; eggs May 25 to June 10  
 White crowned sparrow Ar. April 20/89; eggs June 10 to July 10  
 W. chipping sparrow Ar. April 30/89; nesting June 20; eggs July 4  
 W. field sparrow Ar. April 30; eggs June 10  
 Junco caniceps eggs May 20 to June 20; July 5 10,000 ft.  
 Mt. song sparrow Ar. April 1 to 10; eggs May 30  
 Lincoln's sparrow eggs June 10 to 25  
 Northern towhee Ar. about April 15; eggs May 25 to June 10.  
 Spurred towhee Ar. about April 15 Do.  
 Greentailed towhee eggs from June 15 to 25, 7,500 ft.; June 30 to July 10, 10,000 ft.

- 30.
- Black headed grosbeak eggs May 25 to June 15  
 Lazuli bunting nesting June 25 to 30; eggs June 25 to July 5  
 Lark bunting Ar. May 15/89; eggs May 25 to June 10  
 Yellow-head (blackbird, probably--J.H.) nesting from May 10 to  
 June 15; eggs May 20 to 30  
 Red & Buff winged (blackbird--J.H.) Rd. nesting from May 15 to  
 30; eggs May 30 to June 15  
 W. meadowlark Rd. nesting from May 5 to June 1; eggs May 30 to  
 June 10  
 Bullock's oriole nesting from May 30 to June 15; eggs June 10  
 to 25  
 Brewer's blackbird nesting about May 20; eggs May 25 to June 5  
 Bronzed grackle eggs May 25  
 White necked raven  
 Common crow eggs April 20 to May 10  
 Clarke's crow eggs March 10 to April 10  
 Pinon jay  
 Magpie nesting from April 1 to 15; eggs April 10 to 30  
 Long crested jay nesting from April 25 to 10; eggs May 10 to  
 20, 9,500 ft.; April 23, 5,500 ft.  
 Woodhouse jay  
 Moose jay (Rocky Mt. jay--J.H.)  
 Shore lark eggs April 15 to June 15  
 Bee martin (Kingbird--J.H.) Ar. May 5/89; nesting June 5 to 20;  
 eggs June 15 to 30  
 T. verticalis Ar. May 5/89; nesting May 15 to 30; eggs June 1 to 15  
 Say's pewee Ar. April 16; eggs May \_\_\_ to June 25  
 C. borealis eggs June 15 to July 5  
 Richardson's pewee W. wood pewee--J.H.) eggs about June 20, 5,500  
 ft.; about July 5, 10,000 ft.  
 W. yellowbellied flycatcher nesting June 10 to 20; eggs from  
 June 15 to July 5  
 Little Do. nesting June 15 to 20; eggs June 25 to July 5; in  
 1885 nearly 3 weeks earlier  
 Hammond Do. nesting June 10 to 20; eggs June 15 to 30  
 Wright's Do. eggs June 15 to July 10; 2nd laying 1 month earlier  
 Broad tailed hummer Ar. about May 1; eggs May 25 to July 15; and  
 laying 1 month earlier  
 White throated swift Ar. April 1 to 10; nesting May 15; eggs  
 May 25 to June 10  
 Poor will Ar. May 15/82; eggs June 15 to July 5  
 W. night hawk eggs June 20 to July 10  
 Cabanis woodpecker Rd. nesting May 1 to 30; eggs May 5 to June 10  
 Batchelder's Do. eggs June 5 to 25  
 Red naped Do. Ar. foothills April 25; nesting May 15 to 30; eggs  
 June 5 to 25  
 Williamson's Do. Ar. April 10/91; nesting May 10 to 20; eggs  
 close about May 30  
 Red headed do. Ar. beginning of April 29; eggs June 10 to July 1  
 Lewis' Do. Ar. May 1/89; eggs May 25 to June 15  
 Red shafted Do. Rd. eggs May 5 to June 5, 5,500 ft.; June 5, 9,000 ft.  
 Kingfisher Rd. eggs May 5 to June 5



Long eared owl Rd. Eggs April 15 to 30; 2nd laying  
 Saw whet owl " " April 15 to June 5  
 R.Mt. Screech owl " " April 15 to 30; 2nd laying  
 Flammulated owl " " "  
 W. horned owl " " March 10 to 25; 2nd & 3rd layings  
 Burrowing " " May 10 to 20  
 California pygmy " " beginning of June  
 Prairie falcon  
 Duck hawk " close about April 30  
 Richardson's merlin  
 Sparrow hawk nesting May 15/90; eggs May 30 to June 10  
 Marsh hawk " May 15/90; " May 25 to June 5  
 Cooper's Do. " May 10 to 20; " close about May 30  
 Sharp shinned Do. " eggs June 10 to July 10, latter date 11,000 ft.  
 W. Red tailed Ar. in Mts. March 5; nesting April 10 to 20; eggs  
 early in May  
 Swainson's hawk nesting May 5 to 20; eggs May 15 to 30  
 F. rough leg  
 Golden eagle Rd. nesting from end of Feby.; eggs March 20 to Apl. 10  
 Turkey buzzard Rd.  
 Mourning dove Ar. April 10 few winter; nesting on ground and  
 trees; eggs May to Sept, most about June 1  
 Dusky grouse eggs about May 10 in foothills and June 10 to 25 at  
 10,500 ft.  
 White tailed ptarmigan  
 Bob white eggs May 20 June 10  
 Great blue heron nesting April 15 to May 15; eggs April 20 to May 15  
 Kill deer eggs April 20 to May 20  
 Mountain plover eggs beginning of May  
 Wilson's snipe  
 Spotted sandpiper eggs June 10 to 30; July 10, 10500 ft.  
 Longbilled curlew eggs May 1 to 15  
 Wilson's phalarope eggs May 20 to June 10; 2nd laying month later  
 Am. avocet eggs May 5 to June 10  
 Sora rail eggs May 15, 5,500 ft; July 5, 10,000 ft.  
 Coot eggs June 5 to 20  
 Cinnamon teal  
 Ruddy duck  
 Am. eared grebe eggs June 20 to ~~XX~~ 25  
 Thick billed Do. eggs about June 1

Clarke Crow.

1888. Feby. 16. Saw pair with sticks carrying in their beaks for nest building, foundation sticks, on side hill near Mt. Chief Mine, 9,000 ft. March 5. Discovered nest on same side hill of another pair in low black pine. Nest with two eggs; on the 7th another egg was added. Left them until 10th, then gathered them

1889. March 7. Discovered a pair in process of beginning to build. Quite 3 weeks or a little over in completing the structure. On the 25th it was seemingly complete. On the 5th of April took 3 eggs perfectly fresh.

1890. May 28. Saw several families on the St. Vrain by then. I should judge eggs were takable about end of March.

Rocky Mt. Canada Jay.

1889. April 13. Saw 3 birds gathering insects on sunny bank in Left Hand Park. I was inclined to believe the ♀ was so employing the interval between nest-building and egg-laying. Near by the scrub spruce suggested the nest site. 11,000 ft. alt.

1886. July 7. Remembered at this date seeing several families. The young indicated at these points, 11,000 ft. alt., that nests with eggs might be found about end of April or beginning of May.

1890. May 28. Saw a family of young just able to fly, lately from nest. Takable eggs about April 25.

White-tailed Ptarmigan.

1887. July 9. Captured ♂, testes highly developed still. Saw gathering of other ♂, which led to the supposition that the ♀ were hatching their eggs, which duty is performed by them alone.

1889. April 13. Saw two of these birds at this date perfectly white, at upper end of Left Hand Park. July 27. Saw hen with young. Should say she had eggs fit to take about end of June.

1891. June 14. Nest with 5 fresh eggs taken near Georgetown.

Brown-capped rosy finch (Leucosticte--J.H.)

1887. June 29. Chiefly males seen at this time. July 8, single males gathering food, no females seen.

1885. July 3. Testes of males size of small beans, female eggs same size. 25th, males still gathering food, numerous on Mt. Audubon.

1882. July 12. As seen by Percy Dutton upon his ascent, 19 males gathering food.

Note. Should opine eggs 20 to 25 June, nesting 15 to 20 June, these for the early pairs, the later pairs 10 days later.

Pine grosbeak.

1886. July 15. Both males and females collecting the soft, milky seeds of coniferous trees, etc., mouth and throat full, testes of male still large.

American crossbill <sup>(probably *budini*)</sup>, nesting end of March to beginning of April.

Ducks on lake near Brainard's Camp. About 15 to 25 June for eggs.

Band tailed pigeons at Fritz' Ranch, seen for several seasons from 2 to 8 June, in pairs and small flocks.

House finch (western). June 8. Nest with 5 eggs fresh, Gold Hill.

(Broad-tailed hummer--J.H.) 8500 ft. nests about June 10; at 10,000 ft., July 10.

Pine siskin May 8, 1892, H.C. Smith, Denver, 3 eggs, May 5.

Townsend's Solitaire.

1888.	May 25	Eggs	1 set
	June 12	"	"
	" 15	"	"
1889.	June 6	"	"
1890.	June 15	"	2
1891.	June 13	"	2

Ruby crowned kinglet, usually 12 days to construct nest, upon second laying the work is accomplished in 7 days.

1887.	June 10	1 set	
	July 5	1 "	2nd laying
1888.	June 20,	1 "	
	July 12		empty nest 11,000 ft.
1889.	June 24	1 "	
1890.	June 1	1 "	
1892.	" 15	1 "	
	" 16	1 "	
	" 19	1 "	
	" 21	1 "	
	July 3	1 "	2nd laying 15 days

Audubon's thrush.

1892. Nest began on 6th June, completed June 13, full set of eggs June 18, second clutch taken June 27, 4 eggs fresh and slightly incubated, showing constant covering.

Audubon's warbler. Care of young in nest 14 days, care of young by parents after leaving nest 7 days.

1886.	June 16	1 set	
1887.	" 20	1 "	
1888.	" 16	1 "	
	July 1	1 "	2nd clutch full 15 days after
	" 5	1 "	11,000 ft. alt.
	" 9	1 "	2nd clutch full 19 days after
1889.	June 26	1 "	
1890.	" 18	1 "	
	" 22	1 "	
1892.	" 18	1 "	
	" 19	1 "	
	" 20	1 "	
	" 25	1 "	

Wilson's warbler Duke Lake. (Pileolated Warbler, probably--J.H.)

1887.	June 12	2 sets	11,000 feet alt.
"	15	4 "	nest commenced June 18/92 (evidently a mistake--J.H.)
"	25	3 "	2nd laying
1888.	June 13	2 "	
"	18	4 "	
"	30	1 "	2nd laying
1889.	" 20	4 "	
"	25	6 "	
"	27	1 "	
July 4	2 "		2nd laying
1890.	June 18	1 " }	Celestial Gulch, taken on 11th.
"	21	1 " }	2nd laying 10 days after
"	14	4 "	
"	16	2 "	
"	24	2 "	
1892.	June 17	7 "	
"	19	4 "	
"	26	1 "	2nd laying 8 days after

Lincoln's finch, Duck Lake. (Lincoln Song sparrow--J.H.)

1887.	June 10	1 set	
"	13	1 "	
"	16	4 "	
"	27	2 "	2nd laying about 10 days
1888.	June 22	3 "	
July 7	1 "		2nd laying about 10 days
"	19	1 "	taken 11,000 ft.
1889.	June 20	2 "	
July 27	4 "		2nd laying about 10 days
"	14	1 "	Do.
1890.	June 16	1 "	
"	18	1 "	
"	21	4 "	
"	24	1 "	

Cassin's finch, Ward and Duck Lake.

1887.	June 16	1 set	
1888.	" 22	1 "	
1889.	July 3	1 "	
"	25	1 "	2nd laying
1892.	June 20	1 "	nest 7 days in construction, nested a 2nd time.
"	26	1 "	
July 18	1 "		2nd nesting, I presume.

Hammond's flycatcher.

1888.	June 28	1 set
1890.	" 24	1 "

H.)

S-

Olive sided flycatcher.

1887.	June	23	1	set	
1888.	"	20	1	"	
1889.	July	3	1	"	
1890.	June	29	1	"	
1892.	June	20	1	"	
	"	27	1	"	
	July	8	1	"	2nd laying 12 days about
	"	20	1	"	

Wright's flycatcher.

1888.	June	22	1	set
	"	27	1	"
1889.	July	20	1	"
	"	23	1	"
1890.	June	15	1	"
	"	29	1	"
1892.	June	30	1	"

Batchelder's woodpecker.

1889.	June	12	1	"
1890.	June	5	2	"
	"	27	1	"

Note Book No. 5.

(The following appears to be a copy of a letter, but there is nothing showing to whom addressed, <sup>Probably Bendire.</sup> --J.H.)

In answer to your enquiries about the nesting habits of Audubon's thrush, I would say that another season's acquaintance would render me better able to handle the subject. So far as my experience goes, they nest in trees and bushes, conifers exclusively, from 3 to 18 feet from the ground, seldom higher than 10 feet. Nest with eggs July 11 was about 8 feet from the ground and that from which I took the young bird July 18 about 3 1/2 feet. In the choice of nest sites to my mind they seem to be singularly discriminating, selecting the most eligible for the beauty of its surroundings, in most instances within ~~xxx~~ a softened distance of the splashing murmur of a mountain stream or nearer to the soft trickling escape of a wet spring, felt but not seen, securely sheltered from the rough winds, yet sufficiently open to enjoy to the fullest the spring softness of summer's break, vitalized by the cool water close by now dancing over the mossy rocks, but lately part of the many patches of white seen at intervals upon the slopes of the not very distant peaks of the snowy range. , the ground covered with moss of loveliest green, relieved here and there with grasses and flowers, some of which are brilliant scarlet, crimsoned by the . . . . . \* and gilded by its vesper kiss. With scarcely a feathered neighbor to share its sylvan, poetic solitude; and

\* Part of this badly involved sentence is indecipherable. J. H.



then this silent hermit's song, not as others of his tribe, but in silent, appreciative devotion. I have listened long and often for the wave sound of his melody, but have not heard them. Not as others of his family sings this devotional hermit, but in grateful meditation upon the sermons his surroundings teach. This suits his humor and to some extent the safety of his cause, whereas an outspoken devotion would but advertise its whereabouts to the ruthless robber jay, his copartner in solitude. From his recent nest within easy wing of previous summer's call up past thoughts of endearing duties. In their fading identity enough can be seen in the make-up to be called alike, of several pairs each in his own locality gathering the materials most handy, once selected, again rejected. . . Rotten wood, several kinds of mosses, grasses and other plant stems, with twigs--these may all enter into the composition of a nest, or any one may predominate, with the presence of one or more of the others in smaller or larger quantities. The chief feature in one nest may be wholly wanting in another. Eggs bluish green in color, unmarked. Nesting in many respects like the robin, no more concealment than they observe. As migrants late to arrive and among the last to return, Swainson's preceding them each way from two to three weeks. Eggs 4 in number . . . . bluish green somewhat more intense than the wood thrush. Swainson's favor the main gulches into the mountains and affect willow bushes near the habitations of man, whereas the hermit chooses the wilder solitude of the mountains, from 9,000 to near timber line.

(25 pages of this book are missing, but the fact that the foregoing letter was pasted in next to the cover and the first entries in the book proper (here omitted) appear to be an inventory, it is doubtful whether the missing matter was ornithological. Probably Mr. Gale used an old book and removed the pages which had been previously used for matter of different kind.--J.H.)

Gold Hill Mountains, Colorado.      Boulder Valley, Colorado  
Birds wintering.                      Birds wintering.

-o-

\*Also in valley.

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\*Also in Mountains.

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|---|--|
| *Golden eagle & owls & some<br>hawks; of the latter<br>Aesalon richardsoni<br>Canace obscurus<br>Lagopus leucurus   | Circus hudsonicus<br>*Accipiter fuscus<br>Buteo borealis calurus<br>Pediocetes phasianellus columbianus<br>*Ortyx virginianus (Colinus v.--J.H.)<br>*Colaptes auratus mexicanus<br>*Agelaius phoeniceus<br>*Junco oregonus (J. o. shufeldti J.H.)<br>*Junco caniceps<br>Zonotrichia leucophrys ✓                   |
| *Picus villosus harrissii<br>*Picus pubescens gairdneri<br>*Pica rustica hudsonica<br>*Picicorvus columbianus<br>*Cyanocitta S. macrolopha<br>Perisoreus canadensis capitalis<br>Junco<br>Junco<br>Aegiothus (Acanthis--J.H.)<br>linaria<br>Leucosticte tephrocotis<br>Leucosticte littoralis<br>Leucosticte australis<br>Loxia curvirostra americana<br>Hesperiphona vespertina<br>Pipocola enucleator<br>Ampelis garrulus | Astragalinus tristis ✓<br>*Carpodacus cassinii ✓<br>Lanius borealis<br>Spizella montana<br>Ceryle alcyon<br>Callinago media wilsonia<br>*Eremophila alpestris ✓<br>*Asio americanus<br>*Scops asio maxwelliae<br>*Bubo v. subarcticus<br>*Merula migratoria propinqua<br>Scops flammeola<br>Archibuteo ferrugineus |
| *Sitta carolinensis aculeata<br>Sitta canadensis<br>*Sitta pygmaea<br>Certhia montana<br>*Parus montanus<br>*Myiadestes townsendi   |  |

Summer visitants

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- Hylocichla fuscescens  
\* " ustulata swainsoni  
\* " unalasche auduboni  
\*Merula migratoria propinqua

Summer visitants

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- \*Galeoscoptes carolinensis  
\*Harporhynchus rufus  
\*Dendroica aestiva  
\*Geothlypis macgillivray

G.P.A. of carpenter J.H.

- \*Mimus polyglottos  
 \*Cinclus mexicanus  
 \*Sialia sialis  
 \* " mexicana (Bairdi-J.H.)  
 \* " arctica  
 \*Regulus calendula  
 \*Salpinctes obsoletus  
 \*Troglodytes aedon parkmanni  
 \*Anthus ludovicianus  
 \*Dendroica auduboni  
 \*Myiodioides pusillus  
 Tachycineta thalassina  
 Piranga ludoviciana  
 Chrysomitris pinus  
 \*Zonotrichia leucophrys  
 \*Melospiza icolnii  
 \*Pipilo Chlorurus  
 \*Eremophila alpestris  
 Contopus borealis  
 \*Trochilus alexandrae (Osburn-J.H.)  
 Cypselus saxatilis  
 Cypseloides niger borealis ✓  
 Phalaenoptilus nuttallii  
 \*Chordeiles popetue henryi  
 \*Sphyrapicus varius nuchalis  
 \*Sphyrapicus thyroideus  
 \*Melanerpes erythrocephalus  
 \*Melanerpes torquatus  
 \*Colaptes auratus mexicanus  
 \*Tinnunculus sparverius  
 \*Buteo swainsoni  
 Columbia fasciata  
 \*Zenaidura carolinensis  
 \*Tringoides macularius  
 Clangula islandica ✓  
 Clangula albeola ✓  
 Empidonax hammondi  
 \*Empidonax obscura  
 Gymnocitta cyanocephala  
 Geothlypis trichas  
 Setophaga ruticilla  
 \*Lanius ludovicianus excubitorides  
 Petrochelidon lunifrons  
 Hirundo erythrogastra  
 Cotyle (Riparia-J.H.) riparia  
 \*Tachycineta bicolor  
 Carpodacus frontalis  
 Poocetes gramineus confinis  
 \*Chondestes grammacus strigata  
 \*Pipilo chlorurus  
 \*Zamelodia melanocephala  
 Passerina amoena  
 \*Calamospiza bicolor  
 \*Molothrus ater  
 \*Xanthocephalus xanthocephalus  
 \*Sturnella neglecta  
 \*Icterus bullocki  
 \*Scolecophagus cyanocephalus  
 \*Quiscalus purpureus aeneus  
 Corvus cryptoleucus  
 \*Corvus frugivorus  
 \*Tyrannus carolinensis  
 \*Tyrannus verticalis  
 \*Sayornis sayi  
 \*Contopus richardsoni  
 \*Empidonax difficilis  
 \*Empidonax pusillus  
 \*Speotyto cunicularia hypogaea  
 Glaucidium gnoma  
 Cathartes aura  
 \*Ardea herodias ✓  
 Botaurus lentiginosus ✓  
 \*Oxyechus vociferus ✓  
 Podiceps montanus ✓  
 \*Numenius longirostris ✓  
 Lobipes hyperboreus ✓  
 Steganopus wilsoni ✓  
 \*Recurvirostra americana ✓  
 Gallus virginianus ✓  
 \*Porzana carolina ✓  
 \*Fulica americana ✓  
 Bernicla canadensis ✓  
 Anas boschas ✓  
 Dafila acuta ✓  
 Querquedula discors ✓  
 Frismatura rubida ✓  
 Larus delawarensis ✓  
 Dytes nigricollis californicus ✓

(A comparison of A.O.U. and Smithsonian checklist numbers is omitted--J.H.)

1888.

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Feb. 8 Arrived at Gold Hill District, Colorado.

14. Captured three out of four Leucosticte tephrocotis, two males and one female, Gold Hill proper.

16. Saw pair of Picicorvus (Nucifraga--J.H.) columbianus with small twigs in the mouth of both with intent to begin their nests. After watching me for 10 or 15 minutes within gunshot, they dropped their twigs and flew off. Waited more than an hour but they did not return to locality. Judging from the coarse twigs it must have been for the foundation of the nest. Upon perceiving me the male bird made a noise like a blue jay.

17. Captured male and female Merula in flock of some 6 or 8, the van of spring migrants. They came no great distance, probably not further than the valley (warm, sunshiny days but cold nights). A few of Merula winter with us, both in the mountains as well as in the valley, mostly single birds. Captured male Loxia curvirostra americana and Tyriades <sup>(probably leucirei J.H.)</sup> townsendi. On the 18th I learned of a general invasion of the mountains 8 to 10 miles towards the range from the foothills, about 9,000 feet altitude above sea, by Merula m. propinqua, all exceedingly fat, with peculiar berry in crops.

Feb. 20. Andy Johnson gulch saw a flock of about 30 Aegiothus (Acanthis--J.H.) linaria. Captured two females and one male. West of Gold Hill saw flock of about 100 Ampelis garrulus. Captured three fine specimens.

23. Saw a pair of Sialia arctica upon Mt. Chief, near Fisher's ranch. Quite warm weather.

25. Saw a pair of Merula at Thompson's stable in gulch. They had nothing to do with the first wave of 17th inst. They\* went on their route, probably Northern Wyoming, crossing the range about Long's Peak via Estes and North Park, choosing the mountain tops having a south front free from snow, from 8,000 to 9,500 feet. This condition afforded a tolerable supply of small red berries of the kinnikinnic. The two seen today probably wintered here or in the foothills and are local birds.

March 3. From last entry to date weather windy, snowy and unpleasant. Did not go out much.

March 5. Found nest of Picicorvus (Nucifraga--J.H.) columbianus on mountain side 500 feet above Mill Creek, in pine tree about 20 feet high, greatest width of tree 10 feet, branched to the ground. Nest about 8 feet from ground. Nest built in in and about which the pine needles are imprisoned as they fall from the upper part of the tree when shedding. Two fresh eggs in the nest. Bird would not move from the nest. Had to tip her under the tail before she would fly off. Male not seen or heard near the nest, but while looking diligently for it 200 or 300 yards away he showed himself several times in a manner that satisfied me that a nest was near hand, and careful scouting in every tree took me a long time to find it. I quartered the whole side hill, determined it should escape me. Saw also a flock of about 50 Juncoes, and by the numerous black heads among them concluded they were oregonus--the first Junco wave I have noted to date. One, two or three of the same species are to be found with Junco aikenii about our gulches in the mountains any time through the winter, but the families are small,

\* Evidently refers to the first wave - J.H.

seldom numbering over a half dozen all told. The flock referred to certainly came from the valley, if not further south. They were flighty and unsettled, therefore judge them of quite recent arrival.

March 6. Windy and cold, with slight snow flurries. Captured 4 Ampelis garrulus in flock of about 50. They were feeding on the juniper berries and were quite fat. Another installment of Merula seen today, about 40 in a flock en passant. They were not our Merula--I mean ours to stay. (*How does he know?--J.H.*)

March 7. In searching for nest of Picicorvus columbianus (Nucifraga col.--J.H.) that I first (saw--J.H.) with twigs in their bills I made it very exhaustive, and altho' I saw the ~~same~~ several times to indicate the vicinity of the nest, I failed to discover it, but during the search I found 3 or 4 remnants of old nests either of this bird or the Cyanocitta S. macrolopha (C.S. diademata--J.H.). They were but skeletons, the outside twigs in character that both birds favor. These twigs were very securely fixed in the laterals of the sites in defiance of our high winds which have decimated the more solid parts of the structure. If they were constructed by Picicorvus c. then they differed from the one found with eggs, inasmuch as they were more open and exposed to winds and unconnected with any of the bunch scrub peculiar to the pine tree. Three out of four of these remnants of nests were in spruce trees, none more than 20 feet from ground. Visited my nest 5th inst. and found 3 eggs in all, only one added in two days. I propose to leave the nest for two or three days more.

1888.

March 8. Visited Ward District. Saw several flocks of Ampe-  
lis garrulus. Started three dusky grouse on most southern plateau  
above Brainard's. On side hill of most southern gulch saw male  
Picicorvus (Nucifraga--J.H.) columbianus maneuvering as if in vicin-  
ity of nest. Failed to find it. Very few of these birds at Ward  
this winter. Pericoreus c. capitalis about as usual.

March 9. Snow flurries most of the day at Ward. Cold  
fog towards evening at Left Hand.

March 10. Took the nest of Picicorvus (Nucifraga--J.H.)  
columbianus found on the fifth inst. 3 eggs. 4 days since third  
was laid. Very little change by incubation of 4 days. Had the  
misfortune to burst the first egg laid, the shell of this particu-  
lar egg being very fragile. The contents was thick and ropy, with  
a little tinge of red in the trend. Will secure the nest in a few  
days with branch and surrounding twigs and nest in position, very  
interesting. The female on the nest saw me as I approached the  
tree from the upper side of the hill, but could not see me when  
immediately under the nest. Her tail over the side of the nest was  
plainly visible and I could perceive the bird was trembling with  
fear. She probably had a presentiment I intended mischief. Upon  
stepping up to overlook the nest she opened and snapped her bill at  
me and if possible screwed herself more closely over her eggs, fit-  
ting herself most completely to the nest, suggesting a snugness and  
protection to the eggs not to be imagined. Nearing my hands toward  
her, she just half opened her wings, which raised her over the edge  
of the nest, then closed them to her side and dipped down on a noise-  
less dive, as it were, as she had done on a previous occasion when

driven off her nest, then with the use of her wings took a course up the hill to a tree about 60 yards off and watched. Directly I touched the eggs to take them away she gave the peculiar screech of alarm, just the same as when I surprised this or another pair of birds with twigs in their bills. Having taken the eggs I moved off some 30 yards to note proceedings. I saw the male about 300 yards off at intervals to and from different points. The female's screech had probably summoned him. He did not realize the worst, I imagine, for after awhile he flew to a greater distance, and the female, with a single stop for a couple of moments, alighted at the foot of the tree, from which, making one half more or less than half a minute, she regained the nest and covered it as if her eggs were still there. I waited for three minutes and again approached the nest. When within 8 or 10 feet of it she flew off and in the direction with continuous flight to where the male was last seen by me to head, no sound from her whatever upon seeing her treasures gone. I did not longer stay to watch proceedings, as the weather was quite cold and exceedingly rough and windy.

On the same side hill but in a much more sheltered situation, quite warm in the sun, I flushed from a branch of a stunted tree overhead a pigmy owl, (Glucidium gnoma). Altho' I could have taken it as a specimen, I refrained doing so in the hope of chancing to find a nest later on. No mistake. I saw and examined it very closely. Its flight was only about 300 yards and it allowed me to approach to within less than half that distance before taking flight again in distance about as in the first instance. It seemed to be quite at home in the



bright sunlight.

March 12. Still unsuccessful in finding second nest of Picicorvus (Nucifraga--J.H.) columbianus on the Mountain Chief. Saw old hawk's nest east of King's Gulch at head of draw. Saw a Picicorvus on the mountain side. Do not know if it had a nest.

March 13. Visited Ward. Saw a Picicorvus c. near Kunder's Mine. In spring gulch saw flock of about a dozen same as a specimen taken last year and identified in Washington as As-tragalinus tristis. What are they doing here at this season? Seemed to be moving up the gulch. Saw flock of 50 Amphispiza garrulus. Saw several Sialia arctica, heard their plaintive note of call several times during the day. Saw flock of Junco oregonus (shufeldti--J.H.) in gulch over 9,000 feet, about 40 in number, and another flock about the same number also going up gulch at about 8,000 feet, seemed to be all of this one species. Captured three of them, one very black head and neck seemed to have the white on wing coverts not quite so pronounced as aikeni but similar.

March 14. Picicorvus scarce at Ward. Found they had been slaughtered, some dozen of them, skins for Eastern market. Saw flock of 40 or 50 Aegiothus (Acanthis--J.H.) linaria in Spring Gulch at Stacey's just where I first saw them in November last.

March 16. Noted song sparrow in gulch Corning mill. Saw several flocks of Junco oregonus (shufeldti--J.H.) in gulch, seemingly all of this species. Saw several redwings, chiefly males, near Bader's.

March 17. Noted on the plains along the lanes several Sialia arctica, mostly males. Saw old jay's nest on Left Hand near Rockville. Saw several pairs of this bird along creek.

March 18. Saw the first mourning dove on Little Thompson Creek. There were many Junco oregonus (shufeldti--J.H.) also along this creek. Saw Flickers at work excavating. A slight fall of snow last night. Captured nest of Bubo v. subarcticus (pallens?--J.H.), 3 eggs, in old hawk's nest 30 feet from ground. Same site by same birds occupied two years ago for second laying. Not in the least demonstrative, altho the eggs were almost as far developed as in 1886 when I captured the first nest. On 26th March last year at this time the full complement of eggs had not been laid, only found two eggs nearly fresh. In the present find one egg was at least 4 or 5 days behind the other two. Noted robins, redwings, meadowlarks (singing), Juncoes, Cassin's purple finch, bluebirds, American gold finches, Killdeer, song sparrows, flickers, mallard ducks along the creek. The Canada goose was quite plentiful on the lakes. Erremophila alpestris (Otocoris a. leucolaema--J.H.) were paired on the valley. Saw but few, none in flocks.

March 20. Visited the woodland of R. Blore and passed over to Chimney Hollow. Saw several eagles, their nests also. It was reported that the burrowing owl had been seen 10 days previously.

March 21. It snowed again last night and made walking unpleasant.

March 22. Hunted on the St. Vrain below Lyons. Saw several Scops (Megascops--J.H.) maxwelliae. Two were in a hole for the purpose seemingly to melt the snow at bottom of hole and otherwise prepare it for nesting site. Returned home to Left Hand

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the next evening, where I have been kept in because of the snow until 29th.

Note. Picicorvus (Nucifraga--J.H.) columbianus, taken from pine tree on side hill, one-half the mountain's altitude, scrub tree 20 feet high, branches reaching ground, lower part 12 feet diameter of branch spread, location of nest about 7 feet from ground, well secured, saddling a branch or the laterals of a branch 3 inch diameter, each principal lateral about 1 inch diameter, with lateral twigs supporting the sides. Joining the nest was a bunch of scrub in which dead pine needles were gathered. Nest very cunningly hid from view. Outside and foundation of naked twigs, well interlaced with live twigs of the tree's branch, walls thick and warm, composed of a few grass stems with a great deal of juniper bark, lined with the same finely beetled and felted, making a very soft and warm nest. Size of eggs 132X88, 135X89.

March 28. Flushed several snipe on the valley and was shown where the pygmy owls were seen last summer. From 18th to 22nd March while on the valley saw several maggies nests completed ~~completed~~ in outside appearance, but the clay lining was still wet. In February, also in this month, saw several long-tailed chickadees in the different canyons.

March 27. In a flock of juncoes seen today caniceps <sup>largely</sup> prevailed. Now and again up to this date one or two only have been seen. Cold wind with snow flurries. Bluebirds hid or gone back to the valley. Saw none.

The following, which may possibly be a copy of a letter is inserted in some blank pages left in the diary for 1888, though it will be noted that the date is 1890. It does not however, fill the blank pages.

Lagopus leucurus, white tailed ptarmigan.

Boulder County, Colorado, Jany. 10 '90.

This species has its habitat on the snowy range, in summer always above the timber from about 11,000 feet and upwards. During the winter months the most exposed situations in this summer range are abandoned for lower points near the timber edge, where the brush tops they feed upon from their superior growth are found above the snow. I have met with a few at this season in open places in the heavy timber at a little over 10,000 feet, and I have been informed from the most reliable source, that an occasional bird has been seen in mid winter as low as 8,500 feet and quite seven miles from the range.

Early in July some of the many flowering plants of this high region have bloomed and the seed pods formed. The heads and sprays of such plants (the seeds forming a very small portion of their bulk), are cropped as food. Up to this time, after their long winter fare, I have had no opportunity of judging. From the earliest disappearance of the snow over great areas of their habitat until its return there is an abundance of insect life, but cannot say if the birds feed upon it. In winter their food is of the coarsest, being the meager buds and spray ends of the small dwarf brush, which form their exclusive food while in the white, quite, if not more than half

the year. Under conditions with few restrictions the shrubs are found almost everywhere, from 3 inches to 6 or 9 feet high, in the habitat of this species. Upon the first fall of snow their feeding upon this food is apparent, and, weather permitting, their chief winter employment seems to be gathering into their capacious crops this food in quantity so that when the wild storms prevail to which this region is subject, so provisioned, they burrow into the snow and there remain sometimes for several days, until the storm is over. These burrows are discovered upon the melting of the snow by the great gathering of heaps of droppings that mark their sites. They seem to like the snow, and so long as it and their white dress lasts they don't leave it. They travel well over it and burrow into and through it when needed.

About the middle of August sees them in their darkest summer garb. The females are the darkest. The wing and tail feathers are always white. The under parts show considerable white while flying, but when sitting among the stones no positive white is displayed. The well arranged speckled coverts hide it. In summer the white portions always present become a cream color, the legs are abdomen almost ochraceous. As this dark phase is gradual from the white, so it is back to the white again. At both seasons while bordering on the white, a selection of locality with surroundings to match is chosen. The rich brownish tints of summer are lightened then to light grays with larger areas of white. When needed the change to white is very rapid. Not only does the heavy feathering to meet the approaching winter show pure white, but the late summer feathers undergo a perfect bleach from root to tip. (3-J.H.)

Throughout the summer the birds are very tame and their feathers more easily shaken out. In the white of early winter they are at their very best, more shy, and being densely feathered, offer great resistance to shot. At any season a single bird will seldom flush, but in summer you cannot easily get them to do so unless with an illmannerly dog to run after them. They spend much of their time squat down among the stones, and will only move out of your way when within a few feet of them, by short tacks right and left, sitting off from you, at each tack changing sides, moving quickest just before slowing up for the turn. Two or more together will flush, and if alarmed while flying will utter the quick-repeated "kack-kack" very similar to Pediocetes o. Columbianus.

As near as I can decide they nest about the middle of June and hatch out their young about the middle of July. It is rarely that a female is seen from the beginning of June until in company with her brood. I have met with the male singly and sometimes as many as five together and do not think they take any part in the affairs of incubation. In two instances when I have met with a brood, one numbered I think seven, not more than a couple of days out, and the other numbered five chicks about twelve days old, in both instances they were gray, no decided white to be seen, in neither case did I see the male, altho he might have been near by. The first lot were in the down, very interesting. The lot of five were about the size of young meadowlarks before they begin to make short flights. These were

able to make use of their wings, and when started with the wind they reached 100 yards down the gentle mountain slope before dropping to the ground. Upon both occasions the female was very tame and would not flush. She walked around me so close that I could almost touch her with my hand. She was a good deal exercised and clucked somewhat like a domestic hen. There was a disposition on the part of both broods to hide when the hen signaled danger and they acted very promptly. This species is diminishing in number every year and in that way the chances of finding nests is becoming every year more and more difficult.

I have been very chary of taking specimens of *Lagopus leucurus* unless males, not wishing to reduce my chances of some day finding their eggs in their range commanded by me. I cannot say if the young or adults fed at any time during summer upon insects. I can ascertain the fact next season if not too late. Upon my return can send you a sprig of the small bush they feed upon in winter, that you may discover its name. I can also send you a crop well filled with the spray ends gathered for food.

(The last three sentences seem to clearly indicate that this is a copy of a letter, perhaps to Bendire, with whom he was often in correspondence, as shown by the latter's (Bendire's) comments in his Life Histories of North American Birds.--J.H.)

1888

April 25. Took one egg upon this date badly incubated from nest A, Scops (Megascops--J.H.) maxwelliae, already having taken 3 fresh eggs from same nest on the \_\_\_th (date undecipherable--J.H.) inst. This one completed the complement of 4 eggs, on Boulder Creek, near Boulder. North Boulder Creek nest of dipper nearly completed and another only half built, no eggs. A continuation of bad wet weather.

May 6. Snowing. Captured 8 Leucosticte australis. Sized below of 6 specimens.

6.50 x 4.30 x 3  
 6.35 x 4.10 x 3  
 6.50 x 4.30 x 3.5  
 6.50 x 4.30 x 3.10  
 6.35 x 4.15 x 3

They were feeding together and somewhat mixed, tree sparrows and J. caniceps in some number with them.

May 8. Saw several Say's chipmunks for first time, also Audubon's warbler for first time in the mountains. Captured nest A, Harris' woodpecker (Rocky Mt. hairy woodpecker--J.H.), 4 eggs incubated (3) at Heller's. Nest B nearly finished excavating at Oscar Johnson's. Saw and heard several blackbreasted woodpeckers (Williamson sapsucker--A. thyroideus--J.H.), one nest A excavating near Heller's. Parus montanus (gambeli--J.H.) excavating the soft part of a discarded woodpecker excavation and fitting it for moving its old nest bed from a hole lower down in the same aspen. No red-naped woodpecker (sapsucker, S. nuchalis--J.H.) seen yet.

May 9. Took nest of dipper at upper bridge on North Boulder Creek, 2 fresh eggs, nest shallow-like, open top. Several nests despoiled by Boulder boys all along the creek.

May 10. Spoke with Percy Dutton, travelled to Longmont, visited lake to the south, saw there three large curlews and two



avocets, not yet breeding or egg-laying that I could discover. There were a number of ducks on the lake. Took one egg of the red-winged blackbird. Nest Scops (Megascops--J.H.) maxwelliae 3 eggs fresh, 2nd laying. Nest Do 3 eggs 2nd laying, damaged. Another nest should have had eggs, for the fresh laying about 5th May was in possession of a flicker who ejected its feather lining and made a deeper excavation and had in it two eggs. There is many a battle fought between these birds for the possession of an excavation originally made by and belonging to a flicker the previous season. Scops houses in it for the winter and holds the fort. If despoiled of her eggs and the nest site is temporarily vacated the flicker takes rightful possession just in time to begin egg-laying, this between 15th and 30th April. More than one instance of this changing has come under my notice. Noted numbers of tree sparrows and Audubon's warblers on their way to the mountains. On this same Creek, St. Vrain, I saw Swainson thrushes in pairs, lark finch, lark hunting, Maryland (western--J.H.) yellow-throat, both tyrant flycatchers, Say's pewee (phoebe--J.H.) and other birds I could not identify. On the St. Vrain and Little Thompson I captured five flicker's nests, counting 2, 5, 6, 7, and 9 eggs, all fresh. On Little Thompson captured nest of Scops (Megascops--J.H.) maxwelliae, 3 eggs badly incubated, in same nest site, box elder, as last year, when three fresh eggs were taken about 20th April. Long eared owl two eggs taken from a nest on 18th April abandoned, 2, 3 or 4 eggs yet to lay. Two sets of 5 and 4 eggs each were taken from this same nest last year. Losing her two eggs filled the parent with alarm and some other nest site was chosen to deposit the remainder of her clutch, whereas if the complete clutch has been lost to her a matter of three weeks would

have removed her fears connected with the old nest site, when she most likely would have patronized it again. I have no recorded instance of any of our owls here (with one exception) in a Scops (Megascops--J.H.) maxwelliae, when any part of an incomplete clutch being removed, that the balance is laid in the same nest. (Probably he intended to include the words "in a Scops maxwelliae in the parentheses as the exception--J.H.).

May 11. Bubo v. subarcticus (pallescens--J.H.), nest C, third laying, two eggs nearly fresh, upon the twigs of an old maggie's nest, not more than 50 yards away from the sites of the nests out of which the two previous clutches of 3 each were taken this season. This third nest may have been a widow of the neighborhood who chipped in after the powers of her friend were exhausted. I think in a day or two a third egg would have been added. A peculiarity that I noted, that the top of the 2nd clutch of fresh eggs exercised the parents more than the first, this concern was altogether wanting in regard to this third clutch of two.

May 12. Sparrow hawks, nests A and B, on Little Thompson, 5 and 4 eggs respectively, A being slightly incubated, B proved to be quite fresh. Merula nest A, 4 fresh eggs and several dove's eggs quite fresh. Saw 3 nests of Swainson hawk on the creek. In two instances female arose from the nests. Saw both towns and Lewis woodpecker, was informed this bird had reached us more than a week ago. House wrens very active building nests. Summer yellowbird (warbler--J.H.) and brown thrasher seen today. Saw the white-throated swift nesting in cliff near Lyons. Bank swallow nest but no eggs. Several buzzards on cliff near Lyons, Cache a la Poudre after doing this large creek am of opinion that the

summer migrants are earlier by nearly a week than they were last year. (The foregoing unpunctuated sentence is unintelligible.

Probably Lyons was intended to end the sentence, then turning to the Cañon la Poudre, as the latter stream is not near Lyons--J.H.).  
Long tailed tit <sup>(Chickadee-J.H.)</sup> I met with in many places along the several canyons and creeks, sometimes far up in the mountain canyons to 8,000 feet but oftener in the foothills and plains, especially so as the season advances. In April they were paired and nest building, but so shy in these operations and so securely do they cover all their movements at this season, that the common belief is that they leave for parts unknown in the mountains. The red-bellied nuthatch works a similar fetish. Indeed the slender bill white bellied is nearly as difficult to trace their nests. I had hoped to have met with Gardner's (Batchelder's--J.H.) woodpecker upon some of these creeks, but have not seen the bird, neither Harris (Rocky Mt. hairy--J.H.) woodpecker since the nesting season commenced. At Bellevue Anthony captured some great blue heron's eggs, 4 of which he gave me. They were taken about the first of May. Some were fresh and others slightly incubated, altho on the St. Vrain and Little Thompson there were individual birds building on 12th May.

May 13. Meadowlarks, nest A, 6 fresh eggs, also 5 eggs 1/4 incubated. Took nest of 3 eggs of red-winged (blackbird--J.H.) quite fresh. saw Orioles, etc., also western tanager in the mountains at Red Stone Canyon looked for nests of Rusky grouse. Saw several males but no females. These birds nest from early in April to early part of June. This is a good locality.

May 16. On little Thompson took nest A, two eggs, of Swainson's hawk in cottonwood 45 feet from ground. Nest simply

of cottonwood twigs and lined with pine bark. Eggs quite fresh. One more egg would have been added.

Nest A, Bob white, 1 egg.

Nest C, meadowlark, 5 eggs, 1/2 inch. Meadowlark, D. nest, ~~2~~ 3 eggs, also E nest of 6 eggs all fresh.

May 17. On St. Vrain 13 eggs of <sup>B</sup>bob white, 6 eggs <sup>F</sup>meadowlark and 2 <sup>A</sup>butcherbird.

May 21. Saw red-naped woodpecker (sapsucker--J.H.) first time in Spring Gulch Hayes', another excavating further up gulch. Blackbreasted woodpecker <sup>Williamson sapsucker - J. H. (sapsucker - J.H.)</sup> excavating, a second one finished excavating and a third about laying or about to do so, a fourth whose nest I did not locate also laying possibly. Pygmy nuthatch nest ready to lay, a second one with eggs not done laying. Three bluebirds nest sites located, building and completed nests, all <sup>hill and</sup> three on <sup>hill and</sup> hillside of gulch between Johnson's and Fritz'. Blackbreasted woodpecker with eggs. I think last year 8th June had young ones. Took Merula's nest B, 4 eggs fresh, above Hayes', Spring Gulch.

May 23. Spring Gulch nuchalis (Spyrapius--J.H.) excavating in same aspens as last year

- b. Harris woodpecker (Rocky Mt. hairy--J.H.), 4 eggs fresh, Fritz'.
- c. Do. just laying Do.
- d. Do. Do. Giles'.
- S. nuchalis finished excavating Do.

Saw Yellow-bellied flycatcher ( ) at Fritz'. It rained most of the day. The woodpeckers seem to be much more numerous than usual so far this season. Is it the moisture that brings them?

May 23. Gold Hill, Bismark's, up from Left Hand. Black-breasted woodpecker, 4 eggs fresh, fixed nest up.  
 Do. eggs did not open nest  
 Do. Do. John Anderson's.  
 Do. Do. Do.

Pygmy nuthatch, located 3 sites at Heller's and one at Oscar Johnson's. Chickadee's nest in gulch at Johnson's. Harriss (Rocky Mt. hairy--J.H.) woodpecker, 2nd laying, nest completed, Heller's. Red-naped woodpecker (sapsucker--J.H.) nest nearly complete, Heller's. Noted several nest sites of Sialia arctica. Brewer blackbird, took 3 nests 1-5, 1-3, 1-2. Noted several nests without eggs, most of them completed. After yesterday's cold rain our summer visitants were numerous, thrushes, flycatchers, blackheaded grosbeaks, etc., in Left Hand gulch. It snowstormed again this afternoon on the range and was quite cool here. This weather checks the laying of woodpeckers, bluebirds, etc. They are all later this than last season.

May 24. Jimcreek, sought the dipper that had in the last two years furnished 5 fresh eggs on the 26th May 1887 and 1886. Was not successful. On the 19th inst, sought nest below Springdale which each year about the 26th May had eggs badly incubated. My visit this year found 4 plump young ones fully a week old. The nesting of these birds is irregular. Black-breasted woodpecker (Sphyrapicus thyroideus--J.H.), Outcauld's Gulch, nest with 5 fresh eggs. Fixed nest up again. There was also another woodpecker below the old sawmill site but saw no bird. Chickadee's nest close by, high up. Pygmy nuthatch also close by the spot, another up King's gulch and on road. Several bluebird nest sites.

May 25. Spring gulch near Hayes' nest b 1-2 Harris Woodpecker (Rocky Mt. hairy--J.H.), young 4 or 5 days old, another nest site located, think it is the pair of nest B taken May 22 inst; same nest B C, 4 eggs quite fresh, left undisturbed;

same nest D, 4 eggs incubated 2, Giles' Ranch; same nest E, 4 eggs, incubated 1, Ward District, Celestial. Red-naped woodpecker (sapsucker--J.H.) not seen; same three in Celestial Gulch not seen; same at Peck's Ranch, bird seen. Blackbreasted woodpecker (Sphyrapicus thyroideus--J.H.) at Peck's ranch. Merula near Hayes, 'Spring Gulch, 4 eggs, incubated 1, nest C. Opened a nest at Giles', ~~no~~ no eggs yet, of Red-naped woodpecker. Last year this bird had young 3 or more days old located in same tree.

May 26. Hawk Rock, near Brainard's, Left Hand Gulch. Blackbreasted woodpecker, only 1 egg, fixed up nest; same 6 eggs taken, fresh, A; same at Heller's, 6 eggs taken, fresh, B. Blackbreasted woodpecker at Bismarck's, nest fixed up; opened on 23rd, covered by ♂ but only 4 eggs, fresh, C. Chickadees Heller's Gulch, 8 eggs fresh, only saved 6 eggs, A. When hunting on side hills near Hawk Rock was frequently buzzed by hummingbirds, nests near. Saw this day red-tailed hawk nest in cliff close by. Boys found huge hawk's nest close by in pine tree, 3 eggs badly incubated on 15th probably covered over a week. Sialia arctica near Hawk Rock, nest with 2 eggs. Late laying this year, sites plenty.

May 28. Gold Hill ridge reaching west. Blackbreasted woodpecker nest D, 6 eggs fresh Alamakee; <sup>(Miss - J.H.)</sup> same nest E, 6 eggs fresh Walstead's Gulch; same 3 eggs and previously taken for Harris' (Rocky Mt. hairy--J.H.) at Walstead's Gulch; same 4 <sup>(east - J.H.)</sup> eggs, each of John Anderson's Lake; same 4 eggs, east of John Anderson's Lake; same, nest in high tree, Walstead's Woods.

Parus montanus <sup>(Gambeli's P.)</sup> in Walstead's Gulch. Could not identify the hole where the nest was. These birds while nesting are very sly, nothing seen of either parents about the nest site while covering the eggs. A few days after hatching out the parents followed ~~xxxxxxx~~ with so numerous young reveals the nest site without difficulty. It keeps the old birds constantly foraging and carrying grubs, etc., to and from the nest site, when they are easily seen. Flicker's nest, 4 eggs fresh, Gold Hill road.

May 29. Blackbreasted woodpecker (Sphyrapicus thyroideus--J.H.), 2 nests F and G, 6 eggs each, quite fresh, top of hill over Fritz'. The male has more to do with the nest than the female. Noted nest site of pygmy nuthatch same locality, also a second nest at Reed's timber swamp. Took two nests of Merula in same swamp and another in Andy Johnson's gulch. Brewer blackbird nest of 3 eggs same locality. This species not yet eggs at Gold Lake. Took nest of red-naped woodpecker (sapsucker--J.H.) Reed's timber swamp. This species beginning to lay, 2 to 3 more eggs would have been laid in this ~~next~~ set. Having awkwardly broken the nest it was too difficult to fix up again. Blackbreasted woodpecker, noted a nest site in this locality, perhaps there are two.

May 30. Hunted on the Mountain Chief. Blackbreasted woodpecker, nest H, 6 eggs fresh, near shanty; same, nest I, 6 eggs fresh, at Hoag's; same, nest J, 3 eggs, only 1 fresh, the two others have been sat upon say 4 or 5 days. Outcult's mill site, same nest noted as found on 24th with 5 eggs. The bird destroyed two eggs and I one through carelessness. This was a fixed-up nest and proved a failure and loss of 3 eggs, as the

bird laid in all 6 eggs, a complete set. This matter was bungled! Same species nest with 4 eggs at lower lake, Johnson's.

May 31. Blackbreasted woodpecker, nest K, 5 eggs fresh, Mountain Chief Hill, beyond fence west. Fisher's Ranch Arctic bluebird nest, 3 and 4 eggs respectively, fresh. Located Chickadee's nest, Reed's, aspen grove, Jim creek. White bellied (tree--J.H.) swallow nest same place. Nest A, slender billed nuthatch, 5 eggs fresh, Mountain Chief hill a little W. of Andy's road. Flushed a nighthawk from the ground, same locality. Two nests of Harris' (Rocky Mt. hairy--J.H.) woodpecker with young, both on Jim creek opposite Reed's lower ranch. 369a (red-naped sapsucker--J.H.) 5 nests along Jim Creek in aspen trees; same, 7 or 8 nests in Spring Gulch, Celestial Gulch, etc. Located 2 nests of pygmy nuthatch, Fisher's.

June 1. Blackbreasted woodpecker, 5 eggs, fresh, in aspen stubble meadow at Celestial Mine, near house.

Same, hill about Grand's	6 eggs fresh,	L
" Peck's gulch, aspen	6 "	M
" near Peck's	6 "	N
" below hill brow	5 "	O
" Hawk Rock	5 "	P
" John Anderson's	6 "	Q
" "	6 "	R
" Walstead's Gulch	6 "	S

Parus montanus, <sup>(Gambeli J.H.)</sup> Peck's Gulch, 8 eggs, old nest, B.  
" Walstead's 8 " new nest, C.

Found nothing to work upon at present up gulch of tributary of Jim Creek up from Holverston's, but later on think it a good point for hawks, kinglets, black-crowned yellow warblers (pillolated?--J.H.) etc.

June 2. Blackbreasted woodpecker, Andy's gulch, only 4 eggs. Fastened up nest for more; same, gulch west of Out-



cult's, tree too difficult; same, gulch east of Outcult's, nest not finished; same, Fisher's lower pond, nest T, 6 eggs fresh, same as noted with 4 eggs May 30. Harris (Rocky Mt. hairy--J.H.) woodpecker east of Outcult's, young birds. Parus montanus <sup>(P. gambeli--J.H.)</sup> nest of 4 eggs on hill above Andy's ranch, same state as last year 5th June; at that time with 6 eggs. Fixed up nest and the bird was satisfied with it seemingly, for she set to work carrying of the out some chips I had made in cutting an opening. In the same manner as when excavating all the chips are taken to a distance and dropped. The male did not come to help. Same, nest D, 9 eggs fresh, with coarse hair in the nest, west gulch from Outcult's in aspen stub~~by~~. Same, nest E, head of east gulch from Outcult's above Ives Mine, 8 eggs fresh. Pygmy nuthatch nest-site noted head of Andy's road, up gulch, pine stub. Same, nest site on road top of hill. In this case as with some others upon striking the stub with my hatchet both birds flew out of excavation.

June 4. Monday on the way to Monte's' St. Vrain. XX 376 (Sphyrapicus thyroideus--J.H.) nest V, Reed's lower field, 5 eggs. 40 (Parus gambeli--J.H.) nest I, Reed's below field, 6 eggs and same tree as used last year emptied by S. nuchalis. 369a (red-naped sapsucker--J.H.) nest B, hill top S.E. gulch, Monte's, 4 eggs fresh; same, nest C, middle hill Monte's, 4 eggs, incubated 2. Mountain bluebirds 1-2, 1-3, 1-4, 1-5, 1-2, latter badly incubated. Merula north of Monte's near Middle St. Vrain, 1-3, 1-2, 1-4 nests, badly incubated.

June 5. Saw peculiar sparrow same locality, head and part of neck gray, also on rump gray. Slender bill nuthatch 6

eggs, incubated 3; same, 5 eggs, incubated 4, all lost. 360b (Rocky Mt. hairy woodpecker--J.H.) noted 2 nests with young, one in southeast gulch north and one north of Monte's. 369a (red-naped sapsucker, nest D, same locality, 6 eggs. Saw the pair coupling, not yet all laid. I noted nest sites of 4 other pairs. Parus montanus (P.gambeli--J.H.) north of Monte's, only 3 eggs, nest A, seemingly abandoned, broken eggs outside. Same, nest B, lower west gulch, only 2 eggs, nest mixed up with twigs of house wren, not fixed. Could not locate other nests, saw birds. 54 (pygmy nuthatch--J.H.) Reed's pond, nest A, 8 eggs, incubated 3 1/2. 370 (Sphyrapicus thyroideus--J.H.) same place, nest W, 5 eggs, incubated 1. North of Monte's saw little downy woodpecker (Dryobates pubescens homorus--J.H.). Was surprised at this point, breezy and cold, that the birds in nesting were more advanced than where sheltered and warmer.

June 6. 370 (Sphyrapicus thyroideus--J.H.) nest U, 5 eggs fresh, found 2nd June 4 eggs, and 1 more egg to lay I think. Female waiting to set. Same, nest X, 5 eggs incubated in aspen up east of Ives mine, well up on mountain Hastings found a nest of 5 eggs, chopped the excavation open and only temporarily covered the aperture, eggs thrown out. 369a (S. w. nuchalis--J.H.) nest E, 4 eggs, fresh, taken near Hayes S. gulch, one more egg to lay I think. 40a (Parus gambeli--J.H.) nest H, 4 eggs fresh, nest fixed, not satisfactory seemingly abandoned, on hill above Andy's ranch, found June 2nd in same tree occupied by the bird last year. Same, nest J, 6 eggs

fresh a little west of nest H. Pygmy nuthatch, nest B, of 8 eggs fresh, 2 broken, head of north draw of Andy's gulch road.

June 7. Mountain Chief, King's gulch, black breasted S. thyroideus (sapsucker?--J.H.) nest with young 4 or 5 days old, complement of eggs laid must have been prior to 25th May. Same sp. Fisher's lower lake, nest just completed, believe it to be for second laying. 369a (Sphyrapicus varius nuchalis--J.H.) Ward gulch from Providence, nest site located, just about laying. 40a (Parus gambeli--J.H.) took I and J nests chickadee; D nest as well as H. nest taken yesterday was abandoned; J nest found yesterday and was not abandoned, but no addition to the number of eggs was made notwithstanding the eggs of H and I when found were fresh. It would seem that incubation was going on without the bird. The heated nest sufficed. This little bird easily abandons her nest if meddled with in any way. I noticed a peculiarity when the excavation was opened, the female came along in two cases in great haste with her mouth full of some material that composes the nest, probably from an old nest and her object was to mend the damage done the nest just laid bare, all fussy, jumping about to see where the mending was needed. 54 (pygmy nuthatch--J.H.) nest C, 4 eggs fresh, King's gulch, from the date at which the site was noted a full complement of eggs was expected, the lateness of the season also suggested a full set, although the manner of the bird scarcely made the guess good. Same, nest D, 5 eggs fresh, at Fisher's ranch; the same remarks apply to this nest also, with decided indications by the bird that a full set was called for. Sialia arctica three nests 1-1, 1-3, 1-4.

June 8. Blackbreasted (sapsucker, S.thyroideus--J. H.) at Giles, nest Y, 5 eggs, incubated 3. I am very much mistaken if this bird did not steal the site from 369a (red naped sapsucker--J.H.). Saw broken egg shells at foot of tree. Passed some of the rifled nests of this species and saw evidence of their excavating for a second nest in same tree or stub. Harris (Rocky Mt. hairy--J.H.) woodpecker nest F, 4 eggs, incubated 2; second laying of nest B not far from former site taken on 22nd May. Nest A taken 10th May has young ones 3 or 4 days old, so that in about 12 days the second nest had eggs which I believe were hatched in about 10 days. A pair of this species had a nest in the Ward and Left Hand gulch above Baxter (?); another pair with young, Sunnyside aspens. 369a (red naped sapsucker--J.H.) F nest, 4 eggs fresh, Celestial aspen gulch; same, G. nest, 4 eggs fresh, same place; same, nest at Giles, 3 eggs, fixed up the nest; same, nest at shingle mill, Sunnyside, on Four Mile Creek, took 2 eggs, cutting into tree; Sunnyside and Duncan's 1 egg each and others no eggs yet; on the whole 5 or 6 days later this season. This species more plentiful this than last year, which was very dry. Saw 6 or 7 band tailed pigeons at Fritz' ranch; could have shot some. Parus montanus (P.gambeli--J.H.), took nest of this species in Peck's gulch, 7 eggs fresh.

June 9. (The following record probably refers to P.gambeli, the species mentioned in the preceding record--J.H.) Looked for last year's nest site of nest, Sunnyside Gulch. Found the tree at last year's cutting broken off and after some searching found the nest site with 7 eggs, incubated 5, in an old

aspens tree in an almost horizontal position, nest site 3 1(2 feet from the ground, nest material bulky, horizontal position. This is the first instance in which I have found this species so building. A plucky, fearless creature when sitting on her eggs or when the young are hatched out. At the foot of Celestial ~~gmk~~ aspen gulch cut down a large decayed aspen in which I noted a nest site last year, but again occupied, the same excavation. When practicable these little birds do so unless the tree is cut or blown down and the nest site untampered with. This nest had unfortunately young 4 or 5 days old. Not touching them, I am in hopes the parent birds will rear them safely; nothing to prevent it if care is bestowed.

June 8. (This date following 9th, may mean 10th instead of 8th--J.H.) On side hill at Stacey's took junco 220 (grayheaded--J.H.) nest A, 4 eggs fresh, which is generally the spring complement.

June 11. On brow of hill ~~xx~~ N. W. of Andy's gulch road 370 (S.thyroideus--J.H.) nest with young just hatched, male in charge. Nest of #54 pygmy (nuthatch--J.H.) noted in tree high up; same, nest E with 6 fresh eggs, already noted near road west of Andy's gulch road meeting main road. Townsend's solitaire, 4 eggs fresh. Left them for more; at bottom of 9 foot shaft, screened by overhanging rock, nest old looking, base, base of sticks, middle structure coarse grass, with harsh lining of grass, shape of eggs a full oval, of rusty look about them. Neither parents present. A good deal of littering at bottom of shaft to mislead. 360b Harris (Rocky Mt. hairy woodpecker--J.H.) nest with young in Andy's gulch, east of his gulch

with road, in aspens. 369a (red naped sapsucker--J.H.) first gulch west from Providence, nest I, 5 eggs fresh, full complement. 40a(Parus gambeli--J.H.) on Jim creek on south side west of Raster, with young nearly one week old. (Gale has continually referred to the mountain chickadee as No. 40a, sometimes adding Parus montanus, yet in the check list used by him--Bull. No. 21 U. S. Nat. Mus.--P. montanus is numbered 40 and there is no 40a. Consequently these records all doubtless refer to the mountain chickadee--Parus gambeli--J.H.)

June 12. Blackbreasted woodpecker (S.thyroideus--J.H.) nesting again in same tree taken on June 8, near Giles nest G; the same with nest L taken June 1. Bluebird arctica first Celestial aspens, 6 eggs fresh. 40, chickadee, nesting again; young destroyed June 8. 369a nuchalis (red naped sapsucker--J.H.) nest J, Giles, 3 eggs, incubated 1; same, nest K, 4 eggs, incubated 2 ~~hrs~~, 1st Celestial aspens; same, nest L, 5 eggs, incubated 2, Peck's aspens; same, nest M, 4 eggs, incubated 2 1/2, Duck Lake; ~~same, nest N, 4 eggs, incubated 2, Reed's lower gulch; same, nest O, 5 eggs, fresh, Reed's lower gulch; same, nest P, 5 eggs, incubated 1, North Jim Creek; same, nest Q, 5 eggs, fresh, 3 runts, Reed's lower gulch.~~

June 13. Same species (S.nuchalis--J.H.) nest N, 4 eggs, incubated 2, Reed's lower gulch; same, nest O, 5 eggs, fresh, Reed's lower gulch; same, nest P, 5 eggs, incubated 1, North Jim Creek; same, nest Q, 5 eggs, fresh, 3 runts, Reed's lower gulch. Nest A, Ruby crowned kinglet, <sup>(but see p. 139-J.H.)</sup> no eggs yet, in a small fir tree, nest from ground 8 feet, shallow, saddling some twigs, Duck lake. Black-capped yellow warbler (piliolated probably, as that is the common form, instead of Wilson's --J.H.) Duck Lake, nests A and B, five fresh eggs each, nests taken also. Found nest of flycatcher 328 (Wright's--J.H.) Duck lake, nest fine structure, no eggs yet. Audubon warbler

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June 12. Blackbreasted woodpecker (S.thyroideus--J.H.) nesting again in same tree taken on June 8, near Giles nest G; the same with nest L taken June 1. Bluebird arctica first Celestial aspens, 6 eggs fresh. 40, chickadee, nesting again; young destroyed June 8. 369a nuchalis (red naped sapsucker--J.H.) nest J, Giles, 3 eggs, incubated 1; same, nest K, 4 eggs, incubated 2 ~~hrs~~, 1st Celestial aspens; same, nest L, 5 eggs, incubated 2, Peck's aspens; same, nest M, 4 eggs, incubated 2 1/2, Duck Lake; ~~same, nest N, 4 eggs, incubated 2, Reed's lower gulch; same, nest O, 5 eggs, fresh, Reed's lower gulch; same, nest P, 5 eggs, incubated 1, North Jim Creek; same, nest Q, 5 eggs, fresh, 3 runts, Reed's lower gulch.~~

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unique structure near the end of a spruce bough, pendant, 3 eggs fresh. Tree swallow (I. bicolor--J.H.) nest A, 6 eggs fresh, north of Jim creek. Also 2 sets of 5 eggs fresh each of the western house wren.

June 14. Western yellow bellied flycatcher (E. affinis--J.H.) Pickle's mill, nest A, 4 eggs fresh, same site on which this bird has nested 4 years consecutively. 369a muchalis (red naped sapsucker--J.H.) nest R, Zieman's gulch, 5 eggs, incubated 3. Nest of chickadee in same tree. Junco caniceps in Zieman's gulch, nest B, 4 eggs, incubated 4. Spent over half an hour to get the parent to betray the nest, which she did after much strategy to deceive. Green-tailed towhee in Brainard's meadow, nest in bunch of grass and twigs, nest A in center of tuft, easily discovered, only 2 eggs. Could not see the parent around anywhere. White bellied swallow at Heller's in aspen, nest B, 6 eggs fresh, very fragile, only 2 saved. Brewer's blackbird at Heller's, nest of 4 eggs, incubated 2, a ~~1st~~ 2nd laying, I think. Harris (Rocky Mt. hairy--J.H.) woodpecker near Zieman's house feeding young quite a week old. Pygmy nuthatch at Heller's, 6 eggs incubated, F nest. This species is at least 10 days later than last or the year before.

June 16. Took nest of Townsend solitaire, Mt. Chief, of the 11th inst. Nest seems to be deserted and eggs stone cold. Neither parents present nor seen at any time. The choice of site being near in the past an unfrequented road lately fairly travelled, or my handling the eggs, may explain this desertion. Coloration of eggs a graying white base with faint lilac markings mixed with a far greater preponderance of rusty markings, not anywhere obtrusive but even in tone and generally



diffused less, however, toward smaller end. Pygmy nuthatch nest G, 4 eggs fresh, Mt. Chief; same, nest H, 5 eggs fresh, Reed's grove; same, nest only just completed, no eggs. Black breasted woodpecker (S. Thyroideus--J.H.) with young, quite near nest site of 1887, A nest, 25th May.; same, nest with 3 eggs, Fisher's lower lake, 2nd laying of nest T taken June 2 6 eggs; same, nest Z, 5 eggs fresh, evening, female occupying nest; one more egg to lay, 2nd laying, Celestial meadow, L nest taken June 1, 5 eggs. 360b (Rocky Mt. hairy woodpecker --J.H.) nest with young, old site, Reed's grove swamp; ~~XXXXX~~ 369a (red naped sapsucker--J.H.) nest S, only 2 eggs, same number when looked into and fixed on 12th June. 360b (Rocky Mt. hairy woodpecker--J.H.) nests of one or more of this species at Duck lake. Saw the adults collecting insects. Took nest and 5 eggs of Audubon warbler, nest near extremity of spruce bough 20 feet from the ground, composed of wild hemp stalks and fibre with feathers, etc., lined with fibre, hair and soft feathers, very compactly knit together. Altho light and loose in appearance, a fine specimen of bird architecture. Found the nest on 12th with only 3 eggs, took it today with 5 eggs, in ground color, shape and markings, but larger than, the summer yellow bird (Dendroica aestiva--J.H.), markings more interesting. Saw in two places, Reed's grove and Berwin's, a large flycatcher, different from any before seen. 24 (Sialia arctica--J.H.) nest of 5 eggs somewhat incubated.

June 18. On Gold Hill, in prospect holes on leads found 3 or 4 old nests of 25 (Townsend solitaire--J.H.), one on a base of stacks like a miniature eagle's nest, one with

young about a week old, dark down and darkish quill feathers and yellow commissure; also nest B, 4 eggs, 3 incubated 3, 1 fresh, all in shaft holes at bottom or on sides where a suitable site could be found. Relieved from anxiety, the bird does not watch her eggs, knowing them to be secure against rodents of every kind, the parents are absent nearly all the time except laying their eggs or covering them; in nest B, I almost secured her with my hands. Nests and date of laying unequal, character and markings upon eggs also differing.

June 19. Mountain Chief took B nest <sup>(C. vociferans-J.H.)</sup> Pipilo chlorurus, 4 eggs, incubated 1, side of mountain in small bush about a foot from ground, not particularly hid, easy to find when you see the bird and know of its nesting peculiarities; nests also on ground. Blackbreasted woodpecker (S. thyroideus--J.H.) took nest of 3 eggs, incubated 1 1/2, second laying of nest T, no addition since last looked at. Pygmy nuthatch, I nest, only 3 eggs, fresh; from first noticing bird feared that they would be incubated too badly. 369a nuchalis (red naped sapsucker--J.H.) nest T, only 3 eggs, fresh. Discovered this nest a long time ago prepared for laying, opened it fearing to find incubated eggs, instead of which the bird was only half through laying. Near Hayes trail discovered a nest of Clark's crow occupied this season, in spruce tree about 18 feet from ground, very securely placed among the stems of the branches and main stem of tree, large, 2/3 in size of the Colorado crows nest, well hid from view on the trail side but easily seen from the opposite side, the stem shielding it from the cold N.W. wind, etc. Discovered an old nest of this species similarly built and placed in scrub of black pine 7 feet from ground, as nest A, taken in March last. 25 (Townsend solitaire--J.H.) saw old nest in pros-

pect holes on side of Mountain Chief similarly placed as those on Cold Hill, one near Hayes' trail near to Clark's crow nest.

June 21. Visited Ward. Took greentailed towhee's nest in Brainard's lower field, 4 eggs, incubated 2, same as mentioned as A nest 14th inst. incubated 1 1/2. 245 (Zamelodia melanocephala--J.H.) nest at Partley's, young 4 or 5 days old. 369a (Sphyrapicus varius nuchalis--J.H.) three nests at Sunnyside and Duncan's, notes 9th inst., did not disturb them, too far incubated, fixed nests up. 370 (Sphyrapicus thyroideus--J.H.), nest with young, Fernan's hawk gulch. 370 (= Dryobates villosus monticola--J.H.), nest with young mountain road, Ward, just across creek west of meadow.

June 22. Zonotrichia leucophrys lower meadow, Ward, nest with 4 eggs, nest A on ground, incubated 1; nest B on ground, same place, no eggs yet; nest C, nest in evergreen bush 30 inches from ground, with 1 egg only at this date, Duck Lake. Melospiza lincolni, Duck Lake, Ward, found June 13 with two eggs, nest A taken this day, 4 eggs, incubated 1, nest set in ground; nest B, lower Meadow, Ward, nest 4 eggs, set in ground, fresh, ground of eggs white; nest C 4 eggs, incubated 1/2, same place, raised from ground 7 or 8 inches. The eggs of all these nests differ in ground color and markings, nest make-up the same. Eggs differ in color, number and markings from those taken last year, less numerous also. 1026, nest supposed on the 13th to be ruby-crowned kinglet a mistake, some other bird. At this date nest rifled and eggs broke, shells picked up. 1027-328 1/4, Flycatcher, yellow belly and inside shoulders, captured parent ♀ I think, 4 eggs,

incubated 1/2, all white, nest of light gray material fastened to a kind of crotch 4 1/2 feet from ground, Duck Lake.

1027-328 2/4, small flycatcher, lower meadow, Ward, with only two eggs, perfectly white, smaller than those of 1027, nest similarly placed 3 feet from ground, but make-up and lining different, eggs the same. Myiodioctes pisullus (Wilson's pisullus or more likely W.p. pileolata--J.H.) black-capped yellow

warbler, nest C, 5 eggs incubated 1/2, lower meadow, Ward.

" D 5 " " 3 " " lost.

" E " " " 4 Duck Lake, lost.

At Bald Mountain swamp this species are only beginning to nest so far as I saw. Junco caniceps, Bald Mt. swamp, nest C, 4 eggs, incubated 2, another beginning to nest. Audubon's warbler, nest B, 4 eggs, incubated 1/2, on west side of tree 2/3 up, nest well secured near extremity of branch of heavy-leaved spruce tree. Cassin's finch, beginning of timber, Ward District, 3/4 up, nest easy seen in lightly-leaved spruce tree, nest A, 5 eggs fresh, saddled about middle of bough 40 feet from ground, bird quite demonstrative, plainly identified.

Ruby-crowned kinglet, nest A, 8 eggs, incubated 3, nest about \_\_\_ feet from ground, pendant on twig of spruce tree, opening turned to stem of tree, east side of the tree, its position cunningly devised. Visited Bald Mt., saw a pair of white-throated shore larks preparing to nest, the tittlark not yet nesting--to appearance in force (meaning obscure--J.H.)

1027--328 2/4, 27 (Polioptila caerulea, blue-gray gnatcatcher --J.H.), captured this flycatcher lower meadow, same complement of eggs as 1027, pure white, unspotted, size of parent 1027 length ~~xxx~~ 5.35, wing 2.60, tail 2.55.

24 (Sialia arctica--J.H.) nest A, 2 eggs fresh at Brynard's, Ward, not time to fix up the cavity for more and these would have been lost if left with the opening. Once the cavity opened and left so the parents destroy the eggs themselves, I think, feeling unable to guard them securely. So long as the entrance is left intact and the cavity dark--that is, the opening cut and patched up--it would seem to be all right. No disfigurement outside troubles them. I have often been amazed after patching up the opening and waiting the return of the bird to inspect matters. They just pop in their heads into the aperture made by themselves to see if their eggs are still there. If under complement of course they are left to secure the full clutch. Having ascertained this they evince their satisfaction, if not by an audible chuckle of delight, certainly by a tacit one, when they fly off to a short distance till the intruder leaves. 'Tis surprising how they see that matters are right and the eggs there in the dark cavity. By their actions they certainly do see and number their eggs and know that they are all there, their actions seem to say so. ~~Audubon's warbler~~

June 25. Audubon's warbler in spruce tree 40 feet from ground placed among the lateral twigs of bough within a third part of its extremity, containing 4 young birds just hatched. 1026--185, a second nest of this species taken with 2 fresh eggs. It was unfortunate that this nest and eggs were not left to identify the bird and also to have secured the full complement of eggs. I hoped to have captured a third nest but did not do so, consequently this nest and eggs are

Unidentified.

June 25. Ruby-crowned kinglet building her nest in the top of a spruce tree 25 feet from the ground. 1029, nest and 4 eggs of thrush taken by Percy, eggs incubated 2 1/2. This species unidentified. The nest was placed in a small evergreen about 3 feet from the ground, on Jim Creek just below Duck Lake. Composition of nest outside a few twigs foundation on the decayed moss, middle structure plant stems semi-fibrous half decayed, lining of same homogeneous character, smaller than 5a (the latter is Audubon hermit thrush--J.H.) White crowned sparrow's nest, deserted. This species will, if their nest is looked into even before laying is commenced and in some cases when there is one egg occupying it, forsake the nest and build another. They sometimes construct their nests several days before they lay their eggs and watch in <sup>its</sup> ~~xxx~~ vicinity to note if it has been discovered. If so another one is constructed on a new site. They build as often in low evergreens as on the ground, and follow no set rule as to the size of it or the materials used in its make-up. There is also great variety in the shape, markings and character of their eggs. They nest late and therefore have but one brood. They will lay a second set of eggs if the first is ~~xxxx~~ lost to them. Their dates of nesting are very irregular, any time from 10th June ~~xx~~ <sup>until</sup> 20th July. They choose from 10,000 to 11,000 feet, just above timber line, in and near the small scrub extending beyond the timber belt.

June 29. Nest A, nest of hermit thrush with two eggs, under the downtending branches of old \_\_\_\_\_ tree 9 feet from

the ground, composed of twigs, rotten wood and moss, lined with grasses. Did not see the birds, who forsook the nest for some **cause** of other. Nest secured intact, nest A. A couple of pairs of ducks breed in the lakes near Brainard's summer camp. Visited Bald Mt., saw a few rosy finches, shore larks and one ♂ ptarmigan. Nest A, titlark, 4 eggs, incubated 3 1/2. Discovered a female hermit thrush on her nest about to lay. Being disturbed and not having begun to lay, she deserted the nest. Captured another nest of the hermit, a new nest having much rotten wood in its composition, no eggs, similar in its site and construction to nest A. Junco caniceps nest of 3 eggs, incubated 1, by the side of a rock on a hill side in the timber, eggs of a milk white color with very few markings, nest of the usual grass, nest D.

June 30. Captured a porcupine and made a skin specimen.

July 1. Audubon's warbler nest with 4 eggs, incubated 2, in small evergreen 5 feet from ground, nest C, found June 27, one egg embedded in bottom of nest. Nest with 4 eggs fresh of white crown sparrow in small evergreen 30 in. from ground, B. Lincoln's sparrow, nest D, 4 eggs fresh. Merula m. propinqua nest E, 3 eggs fresh. Black-capped yellow warbler, nest F, 4 eggs, incubated 1 1/2. White-crowned sparrow, 4 eggs fresh, on the ground, C nest, also another nest with young 4 or 5 days. 1030--321 1/0, flycatcher nest on horizontal branch dead naked tree, only one egg, white ground beautifully marked with rich reddish brown. Four days later discovered the nest on the ground and eggs broken by jay (blue

jay, Steller's).

July 2. S.v.muchalis nest 3 eggs, second laying, Duck Lake, incubation, all lost. P. v. harrissi (Dryobates villosus monticola--J.H.) with young also at Duck Lake. <sup>July 3.</sup> Lincoln finch, 2 eggs chipped and 3 young, lower meadow. Titlark nest B, 5 eggs fresh, Bald Mt. Junco caniceps nest E, 4 eggs fresh, sparsely marked with light reddish brown, chiefly at larger end, peculiar marking, each differing from the other, on hill side in rather moist place, nest as usual in make-up, well concealed.

Merula m. propinqua nest, 4 eggs fresh, outside of nest twigs and moss, mud wall, inside fine grasses, altitude 10,000, close up to snowy range. 557, sandpiper (Actitis macularia--J.H.), nest A with 4 eggs fresh, at upper lake, Brainard's camp, a slight nest. White crowned sparrow nest D, on ground, Bald Mt., markings as usual, 4 eggs quite fresh.

July 5. Captured a ♂ ptarmigan, bald Mt. Titlark, nest C, 5 eggs, incubated 1, Bald Mt. Audubon's warbler nest E, 4 eggs incubated 1 1/2, nest close to tree trunk fixed upon a small bunch of twig branches about 10 feet from the ground. Bird flushed as I neared the tree. Nest of general make-up. Bird very shy as is the case with all the birds seemingly where they are away from any settlement, seldom or never intruded upon in their nesting grounds, the same care is observed in the selection of sites for nesting with a view to concealment. This is to protect them from their many enemies besides man, both the Canada capitalis and Steller's jay being much dreaded by all small birds. I have witnessed



many a skirmish in the endeavor to drive them away from the treasures. If these small birds do not inflict any punishment they succeed in worrying them until they desist from the search of the nests. Usually two or more jays go in company so that while one is receiving the attention of the small birds the others keep up the search and upon discovering the nest and eggs will suck the eggs and very often tear the nest to pieces, chuckling the while.

July 9. Started for the mill July 7 and returned to Ward Monday, 9th. On my way near Gold Lake found nest of rock wren with young, 6 in number, 4 or 5 days hatched, in old rotten tree trunk lying on the ground. The nest site was a crack or crevice in this tree trunk well concealed. Broad tailed hummingbird captured, nest A, with one young hummer and egg chipped with the second. I liberated it and found it dry and lively. Secured both in alcohol. The nest is a beauty, saddling ~~xxx~~<sup>a</sup> bough of a spruce tree about 6 feet from the ground. ~~xxxxx~~ Nearing the site the bird flew about my head when 20 feet away. This attracted my attention and watching her while at the same time peering among the boughs I saw her quietly settle ~~xxxx~~ upon the nest, otherwise it would have escaped me, so adroitly was the nest concealed, being covered with small lichens and minute scales of bark so as to appear like a knot. Indeed, so well is this done that looking ever so keenly you fail to see where the nest ends and the bough begins. 'Tis all of a piece seemingly. While cutting the branch to secure a portion of it with the nest, about 3/4 of an inch in diameter, the ♀ flew about me ~~xxxxxxx~~ fearlessly, making feints to strike itself in my face. These courageous little birds

know no danger in defense of their nests and young. In the mountains here, 10,000 feet, certainly no 2nd brood is raised and I doubt very much if a second brood is raised on the valley where they nest two weeks earlier. 96 5/4, Audubon's warbler nest F, 4 eggs, incubated 2. This nest found 1st July just finished, no eggs, near Niwot Mine, Ward District, placed among the twigs of a bough at an angle of 45° from the stem, pinon pine, about 16 feet from the ground. 234, Lincoln's finch, nest G, 4 eggs, incubated 2, second laying near the first nest's site in lower meadow, nest B.

July 10. Visited Bald Mountain, captured a small adult chipmunk, 11,000 feet. 300, secured also ~~another~~ ♂ shore lark, testes size of small white beans. 206 5/4, White crowned sparrow, 4 eggs, incubated 4, only saved one egg having a rough hole. 71, American titlark, nest D, 6 eggs, incubated 2 1/2, nest made of grasses sunk in the ground, most generally under a rock.

July 11. 5a, 2 1/2/0, hermit thrush, took nest, drooping seemingly abandoned. Nest secured in under the branches of a small balsam about 8 feet from the ground, composed chiefly of rotten wood, nest new but seemingly abandoned, attention drawn to it by the conspicuous bright ocher yellow of the rotten wood, nest B. 5a, <sup>3/3</sup> ~~XX~~ (hermit thrush--J.H.) nest C, 3 eggs, one yet to lay, secured the ♀, nest in small evergreen 3 1/2 feet from ground. These birds build their nests in a very short time. Only a few days before I passed by this nest in course of construction. From the waste material about it and upon the branches about the rude half-built nest I judged it to have been an old nest that was broken up by some jay, so

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untidy was the whole matter, rotten wood, mosses, a few twigs and a lining of grasses. 5a, 4/4, (hermit thrush--J.H.) nest D, 4 eggs, incubated 1/2, three feet from ground, composition of nest same as previous one. In both cases the nests were bulky in appearance, no effort at concealment at all, eggs of a beautiful greenish blue with clean live quality about them.

July 12. 5a 5/3 (hermit thrush--J.H.), nest E, 3 eggs, badly incubated, all lost. Composition, no wood in it and not a great deal of moss, chiefly twigs, plant stems, etc., in small evergreen 30 inches from the ground in a small swamp, bush isolated somewhat. Merula m. propinqua, nest 4 eggs fresh in in small evergreen, nothing differing in appearance from the thrush except greater concealment is observed. Percy reports the rosy finches in numbers at or near the summit of Mount Audubon, nesting there no doubt. Silas informed me that in a prospect hole east at Peck's buildings he saw a nest of Townsend's solitaire with young birds a few days previous. Nest B. Ruby crowned kinglet, nest lined with a great number of soft, warm feathers, placed in small balsam about 6 feet from the ground, no eggs. Flushed dusky grouse with young just hatched about two days out. Took one up in my hand, a beautiful bright-eyed little chick, speckled gray in the down. It seemed to have no fear. The ♀ made a great to do.

July 13. Grouse with young north side of Bald Mt. Nested probably in neighborhood of shaft house on the mountain.

July 17. White crowned sparrow, lower meadow, on the ground, nest E taken 10th inst., willow bark outside, inside

fine grasses and hair. Merula m. propinqua 4 eggs, nest, incubated 2.

July 7. 1030 321 2/3, omitted nest B. of flycatcher, small naked crotch about 8 feet from ground, 3 eggs incubated 3.

July 17. 1030 321 3/10 2yg Nest C, on horizontal branch of dry naked pine about 10 feet from ground, 1 adled egg and 2 young just hatched, preserved in alcohol. 1030 321 4/3yg, nest D, with 3 young within a week of leaving the nest, captured ♂ 1.25x3.50x3.10 nests all alike. 1031 327 ♀ 5.40, 2.60, 2.40, small flycatcher having the peculiarity of flirting its tail, both parents alike, 3 young in nest within a week of leaving nest. Secured one after leaving the nest. Saddled upon the naked part of a bough near the top of a small spruce tree about 25 feet from ground, close to stem. Lincoln's sparrow, nest with 4 young week old. 1032, nest of unidentified bird among the dead timber in crotch of a dead tree 12 feet from ground. Flushed the bird from the nest, which was dense and well made, forsaken by the bird for some reason. (How could he know it was forsaken, when he flushed the bird from it?--J.H.). Broad tailed hummingbird, 2 eggs, incubated 2 1/2, secured only one. Saddled on small stem of alder bush 3 feet from ground, Duck Lake.

July 18. Took long gulch down to the south St. Vrain, just the place for the nesting of the hermit thrush 5a. Found several old nests before finding nest F with 4 fresh eggs. Nest of twigs and mosses lined with a few grass blades. None of these nests were over 9 feet from the ground and not less than 7 feet, all in evergreens, chiefly small trees. 5a 7/18 yg., (hermit thrush--see also note under July 25--J.H.) nest G, one

young just about to leave the nest. Secured it in alcohol. At this date about half grown. Nest of grass stems lined with fine grasses, no moss or rotten wood in its make-up, in low evergreen 3 feet from ground, deep but not bulky, unlike the other nests of this species. On St. Vrain Creek saw several thrushes, some with young and others just nesting if I am correct in my conjectures. Black bear, saw him as he scampered away.

July 19. Captured a ♀ ptarmigan much darker than ♂s. Seemingly had lost her clutch of eggs. Saw a male in her company, also 3 other males together waiting for their mates to make their appearance with young broods. They nest in the rocks. Captured a male leucosticte 177 (L. australis--J.H.) gathering grass seeds, mouth and throat fall, in company with 3 other males securing food for their sitting mates. Captured male and female shore larks, no nests or young. Lincoln's sparrow nest F, 3 eggs, incubated 1 1/2, in meadow at Brainard's camp. This nest was found by Percy on the 13th with 2 eggs.

July 20. White crowned sparrow nest F, <sup>206 6/4</sup> 4 eggs fresh, in shape and markings different from the others taken. Nest bulky in evergreen 4 feet from ground, composition of nest outside of willow bark and coarse plant stems and lined with fine grasses and horse hair. Size outside 7 by 8 inches, <sup>wide by 4 inches high</sup> inside 2 3/4 inches across, 2 1/4 inches deep, secured the ♀.

July 21. Dusky grouse flushed with young well able to fly near Brainard's Camp, St. Vrain. On the 18th, two days previous, flushed a hen grouse with a young brood 4 or 5 days out, handled two of them as they were squat in my path, on the

south side east end of Bald Mountain. These young were quite passive and allowed me to handle them. Saw several adults and young of Merula 7a (M.m.propinqua--J.H.), the young in peculiar feather, dark and light. Captured strange looking mouse at camp in Ward, dark in color, fur very fine. Captured also in a damp, boggy place, a meadow mouse of strange appearance. I was led to this spot to set my spring traps in this way: As I started out I captured a young flycatcher 1031 and tied it by a small thread about the leg to a small twig for the parent to feed it during the day, intending to take it to camp with me when I returned. Judge my surprise therefore upon my return in the afternoon to find hanging to the thread the leg and foot only. Being close to an old stump I concluded a mouse or shrew had devoured it and I determined to be even with the varmint. I set 3 traps and next morning one had secured the specimen. I do not think my bird was eaten by this mouse, as I caught it fully 40 feet away from the stump referred to.

July 24. 1030, 321, I expected to find this flycatcher that lost its eggs by the blue jay try a 2nd nesting, but it did not. The sexes of this species are alike, possibly the male a little the larger and darker. The male secured measured 6.25, 3.50, 3.12. Hard to kill. 1033, see note opposite (this note is under July 25--J.H.), nest with 3 young about to leave the nest. Secured one in alcohol and captured the ♂. This is a very fine bird nest fixed in some small lateral twigs on horizontal bough half way between trunk and extremity. Nest like ~~wix~~ Contopus borealis, very light and slight but well secured in its site. Outside a few twigs interlaced with roots and a little moss, very small for the size of bird. The 3 young

were much crowded in it, more than half their bulk rising above and out of the nest, which was in spruce tree about 30 feet from ground, difficult to see, well hid.

July 25. Captured a male Merula m. propinqua near Brainard's summer camp, 10x5.25x4.50. Met with no young of this season. Note in connection with nest G hermit thrush 5a, captured the young bird this day. Doubtless it would have quit the nest tomorrow. As I took it from the nest it cried for help. Both parents came to the rescue, showed much pluck and daring. Each in turn flew at me with great force, several times had to strike at them with my hat to keep them off. Nest of coarse grasses, etc., with only a little moss in middle structure.

(The following note is the one referred to in the margin under July 24--J.H.)

1033, size of ♂ captured 7x4.30x3.15. Nest of a few twigs outside to fasten it to the furze (as the nest was in a spruce his use of the word furze--a leguminous plant--is new to me--J.H.), a little string bark and roots for middle structure, finer roots and a little green light moss inside, light and open to be seen through, but firmly got together and fixed to surroundings, that being a spruce bough 40 feet from the ground (gone up 10 feet since yesterday--J.H.). Upon the small laterals thickly springing from the bough stem itself the structure is placed. The nest does not saddle or touch the bough stem. The young had their eyes open and would have quitted the nest in a day or two. Secured one young in alcohol.

August 20. Four Mile gulch, captured small green warbler. Saw also several small flycatchers busy flycatching--

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a warm day.

Felger has a Golden-crowned Kinglet taken by Gar  
on August 21, 1888 in "Four-mile Gulch"  
Henderson - p 241.  
w3

August 21. Captured young ♂ sparrow hawk near mill.  
Took two grayheaded ~~xxxx~~ greenish yellow warblers on Left  
Hand Creek, one very much the worse for moulting. Shot two  
chipmunks, male and female. Captured also a white footed mouse.

August 23. Started for Ward, some of the migrants  
already out of the mountains, western tanager, Sphyrapicus nu-  
chalis and thyroideus (met with a few young only). Met with  
quite a flock at Brainard's meadow above Giles', of a small  
gray bird leaving the mountains. At Stayres saw some greenish  
yellow warblers feeding among the deciduous bushes. Noted  
about Ward a number of Audubon's warblers, young and old, catch-  
ing flies. Black crowned yellow warbler, ruby crowned kinglet,  
small flycatchers, Junco caniceps, white Crowned sparrow, blue  
birds, robins, hermit thrushes, nighthawks, poorwills, Lin-  
coln's sparrow and doves seem to have disappeared, and on Bald  
Mountain the American titlark and Leucosticte were also absent.  
The white crowned sparrow seemingly were preparing to leave  
also. Saw about a dozen shore larks all told. Thought I had  
captured a young bird but believe I was mistaken, the specimen  
being a female in heavy moult. I fear this species did not  
raise a y young this season, saw several pairs adults up to  
date but no young birds that I could see. Saw a pair of ptar-  
migan, upper feathers quite dark, the white of tails and wings  
showing only in flight. At 11,000 feet and above timber line  
saw several, 8 to 10 in number, of Clark's crow but could not  
get near enough to see what they were doing. They were mostly  
on the wing but lit occasionally. Saw a family of sparrow  
hawks, the two adults with their 4 young also at this altitude



hunting grasshoppers, etc. The two adults displayed some marvelous flight maneuvers, in the act of hunting, with an 8 or 10 mile breeze blowing, on which they headed at about 20 to 25 yards high, they sustained themselves in one position with just the least quiver of wings and tail, just as a trout heading a ~~xxx~~ rapid current will hold its place with motionless body with just a slight quivering of fins and tail, a half minute or so, sufficient to mark their game, when they dropped straight down within 8 or 10 feet of the ground and swooped off right or left a few feet to secure it. I noticed the game was to one side or other of their position above and never exactly under them. <sup>(Reason eyes on outside of N.)</sup> Failing to espy any game, slightly quartering on the wind with a rapid swoop down and up, describing a graceful curve to the same place previously held, at which the focused eye was well set to its work, a more careful systematic and thorough hunting over the ground by these two birds could not be improved upon, and the grace that characterized their rapid movements and pauses, as one behind the other about 100 ~~xxxxx~~ yards, invariably swooping to the right each time, was a sight not easily forgotten. After considerable trouble I managed to secure a young male. It was in excellent condition with stomach full of grasshoppers and other insects. At this altitude, 11,000 feet, I captured a chipmunk and two coneys (pikas--J.H.), both ps. I think they had commenced laying in their winter stores consisting of a great variety of plants and grasses. They seem to be very fond of a bulky-headed thistle that grows in the vicinity of their stony retreats. I think they are largely nocturnal in their habits. I do not remember seeing one out of their

rocky retreats before afternoon; towards evening they are seen upon a favorite place of prominence among the pile of stones they call home and upon being approached will utter a cry of alarm and vanish for a few seconds, to appear again upon some prominent stone and satisfy their curiosity respecting the intruder, having carefully chosen a site closer to a secure retreat in case mischief is intended. Hence to secure with shot one of these little animals is no easy matter. They disappear like a flash and though mortally shot, like a prairie dog will manage to get into the rocks beyond reach to die. Their hinder parts are the least protected and consequently more vulnerable to the shot. The head and fore parts are protected by a strong sublining to the pelt. They have powerful jaws and formidable teeth, with the daintiest little feet furred on the soles, with little harmless toenails. No burrowing can be done with such little soft feet that are so well suited to climb up and over the rocks. (The foregoing all evidently relates to the pika, not to the chipmunk mentioned in the same connection. I do not understand his assertion that he has not seen them until afternoon, as I have frequently seen them on the rocks early in the forenoon and all day long between Silver Lake and Arapahoe peak --J.H.) Gaining the green timber I discovered a Canada jay (capitalis) devouring a large mouse or young wood rat in a tree. I was not near enough to see exactly what it was. After perceiving she was being watched she pretended to be picking a pine tassel and in a moment after while my eyes were off her she seized hold of the remnant of her supper in her beak and flew off with it. Coming upon the flat, marshy meadow overgrown in places with the short bush peculiar to such places at the

heads of the mountain streams; this was the source of Left Hand Creek, I saw what I thought was a gog at first, but upon closer inspection it proved to be a red fox hunting a rabbit. With a kind of a yelp he was jumping about clear of the brush to see his quarry did not escape him. The rabbit's only chance was to keep in the brush and Master Reynold was trying to get him to leave cover, playing a system of worry or poor puss.

August 24. Last night trapped two small brown shrews and two light-gray white footed mice, the former preserved in alcohol.

August 30. Captured small brown shrew on Left Hand Gulch, 7500 feet.

August 31. Another of the same species same place.

September 6. Captured a charming shrew on Left Hand Creek, Pickle's mill, put in alcohol. Saw at same time and place flycatchers 1031, active flycatching. Weather warm in daytime. Thunder shower yesterday, sultry.

Sept. 8. Captured a small brown shrew on Left Hand Creek, put in alcohol.

Sept. 12. Took a trip to Ward, saw what I ~~was~~ deemed a straggling flock of Sassin's <sup>purple</sup> finches at 9,000 feet altitude.

Sept. 13. Saw at Ward 5 to 8 titlarks in a flock journeying from a higher altitude. Also several Audubon's warblers in a flock preparatory to journeying down. Saw a flock the day before 1,000 feet further down. Saw none higher up than Ward. Captured a young ♂ sharp-shinned hawk in meadow near Giles'. Saw a Swainson's thrush at same point in

gulch on its way down. Trapped a small brown shrew, Duck Lake.

Sept. 15. Climbed to Bald Mt. Captured a ♂ ptarmigan in fine plumage but not in full feather, light gray losing the darkish brown at its deepest shade 23rd August. Captured a pair of conies and a ♀ bay winged bunting, 11,000 feet. Saw no horned larks on Bald Mt., but a few titlarks.

Sept. 16. Saw a flock of grass finches, 8,500 feet. Bluebirds still amusing themselves at 10,000 feet. Hermit thrushes still in the woods on their nesting grounds, a late migrant. Saw a mourning dove on Left Hand.

Sept. 17. Captured a late young bird of Clark's nutcracker near the mill. Was searching among the weeds for insects, was in very poor condition and very tame, permitted me to approach it within a few feet. Watching my opportunity when a lively bug of some kind was dodging it and its whole attention was turned upon its capture, I caught it with my hand.

Sept. 28. Saw a pair of Wright's flycatchers in gulch from Mt. Chief to Jintown.

Oct. 14. Saw a few Audubon warblers going to Andy Johnson's ranch. Saw several Junco annectens (hybrid--J.H.) and oregonus (J.o.shufeldti--J.H.) in flocks, seemingly just arrived from the north. Junco caniceps seem to have given them place. Saw some of them.

Oct. 16. Captured a woodrat, baited with a bird.

Oct. 27. Captured wood rat without bait.

Oct. 30. Captured wood rat without bait. Shot American goldfinch ♂ Hayes'. Saw large chipmunk, Says, and also the small kind.

Nov. 15. Saw small flock of common red poll in Hayes' gulch; small chipmunk also.

Nov. 17. Captured several Leucosticte tephrocotis, among them two littoralis. Prepared the two latter with three of the former.

Nov. 19. Travelled to Ward and next day,

Nov. 20. Climbed Bald Mountain. Saw a flock of shore larks, also L. australis. Both were wild and unsettled. Captured three ptarmigan perfectly white, not so white as in latter part of September, all feeding or sunning themselves on the snow.

Nov. 21. Captured large wood rat at Peck's stable. Shot a snowshoe rabbit yesterday on timber line, Bald Mountain. Captured several Leucosticte tephrocotis at Brainard's meadow. Prepared four of them, two ♂s 5.75x4.50x3.

Nov. 23. Walked to Boulder. Shot 9 magpies and 2 I think northern shrike.

Nov. 26. Walked to Ward. Climbed Bald

Nov. 27. Mountain next day. Very foggy and mild; could see no distance ahead. Ground covered with falling rime (hoar frost--J.H.) to the depth of two or three inches. Shot one ptarmigan ♂. Saw two flocks of them east end of the mountain at edge of brush. Saw no finches <sup>(roxy)</sup> or larks which I went in search of. On the 20th saw both species.

Nov. 27. Five year old wood rat at Peck's stable. Took a trip to Little Thompson.

Dec. 6. Captured on the St. Vrain near Baker's 6 evening grosbeaks and 3 quails out of a covey of about 20. Saw a number of jack rabbits on the St. Vrain and a great many

cottontails in the foothills. Saw a number of flickers and several downy woodpeckers. Lykins, a sick man,

Dec. 8. Saw three covies of quail on the Little Thompson, 15 to 20 in each covey. Captured a jack rabbit.

Dec. 10. Captured a wild cat near Culver's. Secured a single quail only.

Dec. 13. Returning from the St. Vrain to Left Hand, experienced it very warm. Beetles, locusts and blue bottle flies flying about. Saw several meadowlarks on the 6th., heard them singing. Blue jays (long-crested, probably--J.H.) very numerous on the creeks. Flickers also often met with. Juncoes, tree sparrows and white crowns numerous.

#### Descriptions of nests.

239, a and b. Greentailed towhee. On the ground and in bushes from 12th inches to 24 inches from the ground. Outside of coarse, wiry plant stems and twigs, middle structure of finer material of same character, inside lining of fine grasses or plant fiber, fine wiry plant stems or rootlets and in some cases a little hair.

206, a,b,c,d,e,f. White crowned sparrow. Nests on ground and in bushes from 12 to 30 inches. Stems of grass and other plants, old leaves, strips of willow bark and sometimes twigs and also coarse swamp grasses, mosses and swamp muck for outside, middle structure of finer grasses and leaves, inside lining of fine grasses and plant fiber and more or less horse or cattle tail hair where it is to be had.

71, a,b,c,d,e,f. American titlark. All the nests taken above timber line, but the bird nests sparsely as low down

as 9,000 feet. In most cases the nest is well concealed and in the majority of cases partly or wholly under a rock. Composition of nest entirely of soft grass leaves, the finest used for lining. Sometimes a little moss is used in its foundation.

220, a,b,c,d,e. Junco caniceps. Always on ground. Swamp and other grasses and old decayed plant leaves for outside, finer grasses, etc., for middle structure, with finer grass with sometimes horse and cattle tail hair (probably latter meant for lining--J.H.).

234, a,b,c,d,e. Melospiza lincolni. Ground nest, sometimes raised out of wet a few inches. Composition of nest entirely of grasses and a rule. In some cases swamp sedge leaves and willow bark is used, always with soft grass lining.

5a, a,b,c,d,e,f,g. Audubon hermit thrush.

a. In evergreen 40 inches from ground, open place. Twigs with decayed moss for outside, grass stems, plant fiber and moss for middle structure, lined with a little fine grass and moss.

b. Close to stem of tree 4 inches in diameter (Lakin) 8 feet from the ground, made mostly of rotten wood, a little moss, lined with a few strands of grass--sent to Washington.

c. Very similar as to site and makeup, composed almost entirely of rotten wood, very little moss employed.

d. In small spruce tree 10 feet from ground close to stem of tree. Outside of twigs and tree moss, middle structure of grasses half decayed with fluffy tops, with ground mosses, lined with the same of finer character, much moss entering

into its composition.

e. Nest in small evergreen 3 feet from ground. Composition much like the nest d, having less moss in its composition but in addition a little rotten wood.

f. Nest in low sapin bush 45 inches from the ground. Composition of nest twigs and coarse plant stems for outside, middle structure of grasses, mosses and rotten wood, lined with a few finer grass strands.

g. Outside a few twigs with grass stems, middle structure of grasses and very little moss, lined with grasses only.

25, Townsend's solitaire. Outside structure twigs, mostly fine twigs, these with coarse grasses for middle structure, together with a few pine needles, lined with rather coarse, stiff grasses. Site in prospect hole 10 feet deep at its bottom, under overhanging rock. Nest bulky but loosely made.

125, Myiodioctes pusillus (probably Wilsonia pusilla pileolata---J.H.), a,b,c,d,e.

a. 3-3.25x2-1.35. Composition a little willow bark, grasses and plant fiber, lined with the same of finer character.

b. Same as a, having a little horsehair in the lining.

c. Same as a, with a few willow leaves in the outside make-up.

d. 3.50-2x1.90-1.40, decayed leaves outside, no lining.

e. 3.50-2 x 1.75-1.50, outside same as a, lined with fine grasses and grass fiber, no hair.

96, Audubon's warbler, St. Vrain. Nest saddled on small spruce branch 5/8 inch diameter and fastened into its small lateral twigs about 10 feet from the ground, lowest branches of the tree 12 inches through, nest quite close to tree trunk.



Outside of twigs with cotton, mixed with spider and other nests, middle structure of same mixed with grasses, quite dense, having small black roots and coarse feathers mixed in, with a lining of feathers and other soft material.

1032, unknown nest. In burnt district on naked tree 14 feet from ground. Nest built on some birds old nest. 3.50-2.50 x 2-1.25. Composed of grayish plant fiber pretty much of one character, with small black rootlets mixed through the middle structure, lined with cattle tail hair profusely with a few feathers.

318, <sup>(Hastell's - J.A.)</sup> Contopus borealis. This species seems to choose a spruce tree for its nest site at from one-half to two-thirds the height of tree upon horizontal bough 1/2 to 2/3 distant from trunk of tree, nest slight in make-up but securely fastened to small lateral sprays, very small for size of bird. The young, three in number, when full grown in bulk far exceed that of the nest. It is also very shallow, and from its open construction can be seen through easily. Outside a few twigs and strips of old willow bark and rootlets, lined with rootlets and a little tree moss.

321, a,b,c,d. Contopus richardsoni. All four nests alike in make-up, all saddled on horizontal boughs of old dry naked pine trees, from 6 to 12 feet from the ground, in shape resembling the cup of an acorn, in color closely resembling the surroundings. 2.75-1.50 x 2-1.25. Outside of fine plant fiber silver gray with cobwebs, middle structure of grasses and willow cotton, with a lining of fine grass stems and occasionally a feather or xxw so, the whole very closely and firmly put together.

323. Empidonax difficilis. In Colorado fond of choosing for a nest site a rocky cliff or ledge offering a suitable nook in which to place its nest, returning to it each year, repairing, or replacing it if removed. A pair that I know of has occupied the same nest site four years in succession, rebuilding once.

325. Empidonax pusillus (E. traillii--J.H.) Nests on the borders of small streams and in shady willow thickets, from two to six feet from the ground, supported in the forks or semi-pensile like the red-wing's nest when supported by its sides to small twigs of willow or rose bush. Outside of plant fiber, wild hemp, and lined with fine grasses.

327. Empidonax hammondi. Nest saddled a bough of spruce tree 30 feet from ground at less than 1/4 from top, close to stem. Outside of grayish plant fiber and decayed grass stems of fluffy character, very soft, and seemingly lined with willow cotton. Taken after the young had left the inside, therefore more or less used up and soiled.

W. 328. Empidonax obscurus (E. wrightii--J.H.)

No. 1. 3.12-2.12 x 2-1.50. Outside gray silvery material, decayed bleached grasses or inner bark of trees, middle structure of fine plant fiber, fine grasses, spider nests and webs felted together, dense and warm, lined with a few fluffy feathers, spider nests and hair.

No. 2. Outside similar but slicker so to speak, as if manipulated in a wet state. This gray material seems to be the inner bark of the aspen, bleached. Outside entirely of this material. Middle structure fine wiry grasses are mingled in. The lining is of extra fine parts of grass stems, short cattle

hair and a few fluffy feathers, saddled upon the fork of willow bush 4 1/2 feet from ground. Outside 3 1/4 wide, 2 3/4 high, inside 2 wide, 1 5/8 deep. Eggs 4 in number, all white.

169, Carpodacus cassini. Outside a few twigs, roots, and fine stems of a creeper, middle structure the same commingled with plant fiber, lined with fine plant fiber and a few horse hairs. Appearance slight and flimsy, but well knit together and fixed to the rusky native ("rusky" is likely intended for ruskie, a basket <sup>composed of</sup> of twigs, but I do not understand his use of the word "native"--J.H.) of the spruce twigs, laterals to the branch upon which it rests, about 5/8 of an inch thick, so firmly held by the surrounding twigs that any amount of shaking the bough would fail to disarrange a single strand composing the nest. Taken from spruce tree 30 feet from the ground, 3 1/2 feet from trunk. Outside 4 in width, 2 1/2 in height, inside 2 1/2 in. wide, 1 1/2 in. deep.

96 2/4, Dendroica auduboni. Bark fiber bleached with a few grass stems and plant fiber, spiders' nests, a few rootlets with tail and wing feathers of small birds skewered, the outer and middle structure between which there is no separation, material of both of same character. The lining is of soft, fluffy feathers, horse and cattle hair. Outside 3 1/2 in. wide, 2 in. high, inside 2 in. wide, 1 3/4 in. deep, similarly secured in a spruce bough. site 30 feet from ground, 4 feet from tree stem. Warm and light, but securely put together.

96 1/5. Site same as the one above, 23 feet from the ground in spruce tree. Construction and material the same, more grass and plant stems in its construction, with quite a variety of small bird quills skewered throughout in every

direction. They are quite a feature, several reaching above rim and from the sides, giving it a very rugged appearance. There is more cattle hair in the lining than in the foregoing nest of same species. Outside 4 in. broad, 3 in. high, inside 2 1/4 wide, 1 3/4 in. deep.

1026 2/2, 25/6.88. Outside a few twigs mixed with the shreds of the inner bark of the willow, spider's nests and webs and fine grass stems felted in the middle structure, lined with a few fluffy feathers, fine plant fiber, seeming no hair of any kind, a few soft plant leaves and on the outside. Size on the outside 3 in. by 2 1/4, inside 1 3/4 by 1 3/8. About 25 feet from ground in spruce tree, site same as 3 foregoing specimens.

30 , 1/2, 22/6/88. Regulus calendula. Plant fiber, moss, spider nests and webs, small bird quills skewered through in places, a few shreds of bark, the whole carded and as it were felted together, lined with soft feathers, very snug and warm. Outside 3 broad, 3 high, inside 1 3/4 deep, 1 3/8 wide. The spray attached was its only stay, the mouth turned to the trunk of the tree, about 12 feet from the ground.

40. Parus montanus, <sup>(Gambeli-J.H.)</sup> Generally at the bottom of the cavity is a little moss, then the material called rabbit's fur mixed sometimes with short cattle hair and fluffy feathers, foreign and domestic. When the bird has ~~excavated~~ excavated for itself, a few wood chips left at the bottom. There is scarcely any variation in the character of this species' nest. It differs in volume according to the size of the cavity. As a general thing when once the nest is disarranged it is abandoned by the bird. In excavating in part or whole the chips are carried a short distance away from the site, a peculiarity I have no-

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ted more than once while cutting open the cavity. The ♀ after showing great bravery in defense of her treasures will fly away and return with a bunch of nest material as if to patch up any break, as it were. I suppose she had it from some other old nest. It is seldom the case that the bird will flush by knocking upon the tree trunk. If the site is within reach wiggling your finger or a twig at the opening will more readily ascertain if the tenant is at home, for she at once attacks the intrusion with great spirit. If the nest site is unimpaired it is used more than one season. If damaged, from whatever cause it may be, or if a newer or better site offers in the same tree or near by, it gets the preference, and when the site is destroyed a new site is selected hard by the old one. Last season the wind having broken off the upper portion of an old aspen tree in which a site had been used the year before, I found a site in an old windfall lying horizontally at the point where the site was (in an old woodpecker's excavation) about 30 inches from the ground. This was the first and only instance of the kind I ever met with. Sometimes the site selected is high up, 40 to 50 feet, but most generally they are low down. The old woodpecker sites seem to be preferred. In a few instances the excavation is made by the bird itself. In such cases the site is seldom above 10 feet.

(List of species and aggregate eggs for 1887 is omitted--J.H.)

5a,	4	eggs,	D,	11/7/88	( <u>Hylocichla g. auduboni</u> --J.H.)
25,	4	"	B,	13/6/88	( <u>Mya aestes townsendii</u> --J.H.)
19,	"	"	D,	13/5/87	( <u>Cinclus mexicanus</u> --J.H.)
51a,	5	"	A,	31/5/88	( <u>Sitta c. aculeata</u> --J.H.)
71,	5	"	D,	6/7/88	( <u>Anthus pensylvanicus</u> --J.H.)
93a,	4	"	D,	3/6/87	(? perhaps 93, <u>D. aestiva</u> --J.H.)
96	4	"	E,	9/7/88	( <u>Dendroica auduboni</u> --J.H.)

125,	5	eggs,	B,	13/6/88	( <i>Wilsonia pusilla pileolata?</i> --J.H.)
206,	4	"	B,	1/7/88	( <i>Zonotrichia leucophrys</i> --J.H.)
220,	4	"	A,	8/6/88	( <i>Junco caniceps</i> --J.H.)
234,	5	"	F,	27/6/87	( <i>Melospiza lincolni</i> --J.H.)
325,	4	"	D,	7/6/87	( <i>Empidonax traillii</i> --J.H.)
328,	4	"	A,	21/6/88	( <i>Empidonax wrightii</i> --J.H.)
360b,	4	eggs,	B,	22/5/88	( <i>Dryobates v. monticola</i> --J.H.)
369a,	4	"	D,	11/6/88	( <i>Sphyrapicus v. nuchalis</i> --J.H.)
370,	6	"	E,	1/6/87	( <i>Sphyrapicus thyroideus</i> --J.H.)
40,	6	"			( <i>Parus montanus</i> --J.H.)
402c,	4	"			( <i>Megascops a. maxwelliae</i> --J.H.)
300,	4	"	E,	7/5/87	( <i>Otocoris a. leucolaema</i> --J.H.)
370,	6	"			( <i>Sphyrapicus thyroideus</i> --J.H.)
54,	7	"			( <i>Sitta pygmaea</i> --J.H.)
323,	4	"	A,	14/6/88	( <i>Empidonax difficilis</i> --J.H.)
405a,	3	"	A,	19/3/88	( <i>Bubo v. subarcticus</i> , but number blurred, and may be <i>Speotyto c. hypogaea</i> --J.H.)
5a,	4	"	B,	26/6/88	( <i>Hylocichla g. auduboni</i> --J.H.)
30,	8	"	A,	22/6/88	( <i>Regulus calendula</i> --J.H.)
290c,	4	"	A,	24/5/88	( <i>Cyanocitta s. diademata</i> --J.H.)
369a,	4	"	E,	11/6/87	( <i>Sphyrapicus v. nuchalis</i> --J.H.)
558,	4	"	A,		( <i>Numenius longirostris</i> --J.H.)
449,	2	"	A,		( <i>Aquila chrysaetus</i> --J.H.)
449,	1	"	B,		" "
71,	4	"	A,	7/7/88	( <i>Anthus pensylvanicus</i> --J.H.)
71,	6	"	E,	10/7/88	" "
96,	5	"	A,	16/6/88	( <i>Dendroica auduboni</i> --J.H.)
96,	4	"	E,	22/6/88	" "
125,	4	"	C,	16/6/88	( <i>Wilsonia p. pileolata</i> --J.H.)
125,	5	"	F,	20/6/87	" "
206,	4	"	C,	2/7/88	( <i>Zonotrichia leucophrys</i> --J.H.)
206,	4	"	D,	4/7/88	" "
220,	4	"	C,	22/6/88	( <i>Junco caniceps</i> --J.H.)
220,	3	"	D,	16/6/88	" "
234,	4	"	A,	22/6/88	( <i>Melospiza lincolni</i> --J.H.)
234,	4	"	E,	9/7/88	" "
234,	5	"	F,	15/6/87	" "
19,	5	"	C-C-B,	31/5/87	( <i>Cinclus mexicanus</i> --J.H.)
40,	8	"	E,	2/6/88	( <i>Parus montanus</i> --J.H.)
40,	6	"	A,	26/5/88	" "
63a,	5	"	C,	13/6/88	( <i>Troglodytes a. aztecus</i> --J.H.)
220,	4	"	B,	29/5/87	( <i>Junco caniceps</i> --J.H.)
369a,	4	"	I,	26/6/88	( <i>Sphyrapicus v. nuchalis</i> --J.H.)
71,	5	"	C,	5/7/88	( <i>Anthus pensylvanicus</i> --J.H.)
71,	5	"	E,	1/7/88	" "
71,	6	"	F,	13/7/88	" "
234,	4	"	B,	12/6/87	( <i>Melospiza lincolni</i> --J.H.)
234,	5	"	D,	15/6/87	" "
234,	3	"	F,	18/7/88	" "
125,	5	"	A,	13/6/88	( <i>Wilsonia p. pileolata</i> --J.H.)
125,	5	"	D,	15/6/87	" "
19,	4	"	C,	13/5/88	( <i>Cinclus mexicanus</i> --J.H.)
19,	4	"	B,	30/5/87	" "
360,	4	"	D,	25/5/88	( <i>Picus v. monticola?</i> --J.H.)
396a,	4	"		26/6/88	(short-eared owl?--J.H.)

Saml. Ladd.

54, pygmy nuthatch, D, 6 eggs, 30/5/87; E, 6 eggs, 6/6/87

370 blk. breasted, I, 6 eggs, 5/6/87 (*Sphyrapicus thyroideus*--J.H.)

Possibly a list of stuff sent to Switzerman - J.H.

Note Book No. 6.

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1889.

March 1, 1889. Arrived here from the east. Spent every day upon the mountain sides in search of Clark's crow. (This presumably refers to every day from 1st to 5th, the date of the next entry--J.H.)

March 5. Saw my first bird today upon hillside S.E. of Fisher's old ranch. Saw Junco oregonus (schufeldti--JH.) aikenii and caniceps all together.

March 7. Saw a pair of Clark's crows on hillside far up above Fritz'. They were seemingly building their nest. Found an old nest in this locality. Saw a flock of Bohemian waxwings, about 30 all told. Saw a couple of bluebirds--arcticus--bright blue not yet noticeable, above Johnson's ranch, 9,000 feet.

March 8. Found nest of the crow (Clark crow, doubtless--J.H.) occupied last year, placed upon the upper branches of a small abnormal pine tree, well seated. The situation was at the edge of a small second growth patch of pine trees, nest about 12 feet from the ground. There were rejected twigs still lying upon the ground under the nest. This choice of situation is rather a new feature and experience. Remember to have seen the bird, who came to interview me a quarter of a mile distant on 20th Feby., '88, when looking for it and

its nest. This date I am now satisfied from the manner of the bird was too early. West of Cold Lake near Reed's house, a little to the northwest of it. Saw no birds this season at this point. While searching for this season's nests on Mt. Chief hillside found two old nests about 70 feet apart, each about 18 feet from the ground in spruce trees in warm sheltered locations, two-thirds up the mountain, one of which was certainly used last year, near which I remember to have seen the bird and only a short distance from where my search upwards ended. Singular to say that this season a whole week's search upon this eligible hillside failed to discover a single bird, although nests of many previous years suggest consecutive occupation.

March 9. Found old nest of western red tailed hawk from which the Hartley boys took 3 eggs last season about 25th May somewhat incubated. Site near top of pine tree about 40 feet from the ground on side hill west of Hartley's house one-third the hillside up.

March 11. Travelled to Ward District. In draw over the ridge from Peck's stable found old nest of 284 (Clark crow--J.H.) at edge of timber, southeastern aspect, sheltered and well concealed, placed near the top of small pine tree 15 feet from ground, abnormal growth of top such as this bird is fond of selecting. Observed the bird last year in this vicinity, but think I was a little early. Later on the bird's actions, altho at best wanting in demonstration, would have been more pronounced. The nest taken 10th March, 1888, no doubt was a very early nest and led me very greatly astray as to the proper time to look for others. A little later with additional



perseverance would have secured to me at least two other nests, as I found the nests this season occupied last with very little difficulty, in trying to find the birds I saw at the different localities last season, but was entirely unsuccessful for some reason or other. In comparing things at Ward I came to the opinion that it was too early for that point. The beginning of April was time enough, so made no extensive search there. On the 13th of March last year I gave up the search, a date at which from what I now know would have been the most successful except at Ward, where a couple of weeks later would have been time enough.

March 13. Saw four bluebirds a little south of Gold Lake. They seemed to be new arrivals. 284 (Clark Crow--J.H.) saw the male upon the second visit to the locality where I ~~had~~ discovered the pair of the 7th. He gave a screech of alarm and flew away. Hunted about for the nest unsuccessfully. Saw no more of the bird.

March 16. 284 (Clark Crow--J.H.) Hunted again for the nest of this pair. Found it commenced just where their actions seemed to indicate upon first meeting with them. Did not see either bird upon this occasion. I fear they may have forsaken the locality in disgust, perceiving themselves watched.

March 18. 405a (Bubo v. subarcticus--J.H.) Took nest of this pair at entrance to lower canyon, entrance of Left Hand Canyon, in ledge of rock 20 feet from ground. Only two eggs, incubated. Supposing there was yet one to lay, visited the place again on the 21st, but saw nothing of either male or female. (This sentence, with others occasionally, show clearly that his notes were not always made on the date they

bear, and the size of this book precludes the idea that it could have been carried with him into the field--J.H.) Nest upon the bare ground, a few twigs at the front edge, a kind of screen or fender to hide the bird, seemingly. The sticks were the property of the wood rats in the ledge. The female flew off the nest upon having a stick thrown at her and did not return while I was taking the eggs. Crossed over the ridge to the St. Vrain. Saw a small rock lizard and several spring butterflies of two or three species, several beetles and flies. Saw also in a stone quarry a gray rock squirrel. Located several eagles nests.

March 19. Old and new. Slept at Day's. In the morning saw a flock of about 30 or 40 evening grosbeaks. They had frequented this locality each morning for over a month. The inducement seemed to be the wild cherry stones thrown out about the house by the farmer's wife in making a preparation from them for table purposes. With their strong mandibles they cracked these stones quite readily, and the small wild plum stones also, I was assured by Mr. Day. He also informed me that upon the 4th he saw in his neighborhood a scattered flock of 400 or 500 bluebirds arcticus, doubtless the first important spring wave. I saw in the foothills several each day. The meadowlarks were singing just as I heard them upon the 15th of last December in the same locality. They wintered this year in large numbers with us. The flickers 378b (red-shafted--J.H.) were very noisy and numerous along the gulches and creeks. The crested blue jays were also numerous, still haunting the creeks where they passed the winter. Noticed several peculiar notes by this species, never heard before,

quite musical. Heard the Killdeer plover twice this day. Saw several juncoes and finches.

March 20. Captured nest of 405a (Bubo v. subarcticus--J.H.) on the Little Thompson below \_\_\_\_\_, the same pair I had for four years previously found nesting in this locality, in each case with eggs or young never exceeding three in number. This season to my surprise I found their clutch to be four, incubated. In cottonwood tree about 20 feet from the ground upon top of an old magpie's nest which had the appearance of being fixed by the owls themselves with new twigs. I scared the female off the nest and while robbing it I heard the owls crying somewhat mournfully. They made no other demonstration. The site was about 50 yards from one of those last season. For four years they have been ringing the changes upon two old hawks' and three old magpies' nests, several times using the same nest, but not in the same season. In 4 years the greatest distance apart for their sites was not over half a mile. This was three seasons ago.

March 21. Returned from Lykins to Kimber's on Left Hand last night. Snow threatening.

March 22. Walked up to mill this morning. Very bad walking through the snow 6 or 7 inches deep. Saw some finches and several juncoes, mostly the species annectens. Yesterday while crossing the ridge saw 7 or 8 shorelarks, the mountain variety, at an elevation of 1,000 to 1,500 feet above the plains. Magpies were actively building their nests in the gulches. Saw for the first time this spring 5 or 6 robins, seemingly just arrived yesterday. I saw the prairie dogs scampering about their settlements each day.

March 25. 284 (Clark crow--J.H.) Again visited nesting site of this pair discovered on the 7th. Nest seemingly just completed. No birds to be seen near the site. Quite 3 weeks from selecting site before any eggs were laid and at least two weeks building in earnest. March 26. Visited Boulder. Sent draft for \$75. home. Searched for nest of barred owl 397 (Syrnium varium--J.H.) Could not find the locality where I met with them three years ago on valley.

March 27. Went to Magnolia by Gregory Canyon. White's son unreliable. Saw site of eagle's nest on Bear Canyon, none in Gregory. Good place for jay's nests north of White's saw mill, and a fairly good place on the Magnolia hills for Lewis and blackbreasted woodpeckers and pygmy nuthatches. A resident told me the mountain mockingbird 10 (sage thrasher--J.H.) was to be found there in the spring.

March 28. Went to Ft. Collins. Shore larks paired. Many flocks of backelor red wings, a few song sparrows and a flock or two of small birds I could not identify. They seemed to be migrants just arrived and were flying round.

March 29. Antoine had left Bellview, is now at Colorado City in the employ of Mr. Greenly \_\_\_\_\_ whose son runs the quarry at Colorado City. Saw a great blue heron at Miller's in his grove. Saw a number of herons nests broken away from the trees on the ground.

March 30. Travelled to West's sawmill on Redstone. West's son gave me the sites of three eagle nests, two of them old, the one at Bardolf's deserted, nested last year. I believe that a pair of eagles nest northeast side of \_\_\_\_\_ ~~xxxx~~ canyon, half way up the canyon, high up on the Mts. N.E. of

old nest site. Old man West thinks the grouse 471 (dusky grouse--J.H.) hatch out by first of May. Son of West's shot two pairs of ear tufted squirrels. In each case one was black and the other gray. Nests like the small pine squirrel. The tufted squirrel being about two-thirds larger, its track in the early snowfalls is much larger and can easily be distinguished after a slight fall of snow.

March 31. 449 (Golden eagle--J.H.) Took eagle's nest A, two eggs, incubated, rocky ledge 60 feet high within 10 feet of top. Nest 9 feet high and quite 6 feet diameter, built of sticks, having some green sprays of spruce or balsam upon which the eggs were laid. A slight depression only in center of nest with a few small skeleton sprays of old evergreens embedded in the fine small leaves of the same detached, formed the solid base of center. On the edge of nest was a rabbit with head eaten off. Within half a mile of site the male showed signs of uneasiness by flying round. The female, however, did not leave the nest until she heard the approach from above. The locality was near Crystal cave in glade running up from Gow Bout's west of road entrance from road above the Gow fence. Eggs in size little differing, in general color one <sup>with</sup> purplish blush originating in the ground influencing the lavender shell markings covering quite 40 per cent of entire surface, and also the sepia darker markings of a surface character for an egg of this species above the medium; the other egg from its colder ground color with under shell markings of lavender, purple more distinct but much smaller occupying less than 20% of entire surface, the outside sepia markings of two shades well fathing into the purple lavender

also in two shades making a very agreeable combination of color and very fine specimen. The first described specimen has an unfinished, ragged, undefined character in the sepia markings, wanting in crisp completeness that the 2nd described egg supplies, the lavender shell markings in both favoring the smaller end. (The foregoing description, literally transcribed, seems to me unintelligible--J.H.)

April 1. Started from Belleview with team along Rus Canyon (this may be intended for Rist Canyon, west of Belleview --J.H.). Saw old eagle's nest 3 miles below West's saw mill on Redstone. Half way between these points saw old jay's nest high up in crotch of cottonwood tree. Visited eagle's nest at Horse Tooth, behind Bardolph's, Patterson's Gulch. Found it deserted. It was robbed last year. Another old nest mile and half below Bardolph's. From Redstone followed in to the Buckhorn. Found two old nests there but no eagles. Slept at Galusha's on the Big Thompson.

April 2. Followed up Chadworth's glade to the dam. Found two old eagle's nests across from Davis'. One raised a pair of young last year. Eagles breeding in the vicinity. Discovered site of duck hawk's nest near by. Deemed it too early for eggs. Have written to Washington about it. Female exceeding male in size at least one-third. Appearance of female through glass dark sooty ~~xxxx~~ crown, stale dusky brown upper parts, whitish breast and throat, appeared to extend to sides of head in region of ear coverts, grayish white under wings, belly and tail. The female ruffled like a duck as she flew over the nest site, followed the rock wall from Flatiron nearly to A.B. Bartlett's, where I saw a second male hawk fly

out of hole in cliff. Parted with Garland and Charlie and slept with Bartlett.

April 3. Next morning in company with him visited the eagles' nest of last year and secured a pair of eggs remarkably dissimilar from each other in size, color and markings, and also widely differing from the pair taken last year. The nest was upon a rocky ledge 40 feet from the ground, built of sticks, 8 feet high and over  $5\frac{1}{2}$  feet across, in the center of which was a slight depression in which the eggs rested upon some fresh green spruce sprays and old skeleton twigs, those used the previous year. There was also upon the platform no less than three bunches of the grease-weed or Spanish bayonet plant. The female flew from the nest when approached within 25 feet. The larger egg in general color bluish white, the under shell markings very faint, pervading the entire surface. Possibly 40% surface markings exceedingly minute and sparse, of a light sepia tint. The smaller egg in general appearance much warmer, the lavender undertint pervading perhaps 60% of the entire surface for two-thirds its length culminating at the larger end, a mottled reddish brown over the lavender as a middle tint, with fine reddish brown markings like small freckles chiefly gathered about the larger end. Travelled across the mountains to the St. Vrain and slept at Mrs. Barker's.

April 4. From this point I made Kimber's at Left Hand and reached home the same evening.

April 5. Secured the nest of Clark's Crow in which <sup>great</sup> to my surprise I found 3 fresh eggs. Had feared all along the nest site deserted. The nest was as usual, sticks and

twigs outside, with juniper bark for middle structure, the same beetled soft for lining. Placed in a small scrub black pine 6 inches diameter of stem and about 13 feet high. Nest 8 feet from ground resting on bough with many laterals, about a foot from the stem. The whole secured intact. Touched the tail of the female covering the nest without effect in climbing to the nest. She flew off a short distance sounding once or twice an alarm note, but I did not see or hear of her mate coming to the rescue. It took me a little while to secure the nest, etc. Saw neither male nor female afterwards. Saw for the first time today Williamson's blackbreasted woodpecker. Very early in the season for them. It was a fine male. Last year at a much later date I saw two or three males. It must be that they precede the females some days.

April 6. Hunting over the Mountain Chief saw another male blackbreasted (Sphyrapicus thyroideus--J.H.)

April 11. Several days bad weather intervening. Went to Ward this day. Hunted for Clark's crow all along tair favorite places without seeing one. At Ward in the town could not find out that either 284 (Clark crow--J.H.) or 297a (Perisoreus c. capitalis--J.H.) had been seen lately. Woodchoppers for some distance round have no doubt forced these birds to go further back to nest.

April 12. Started out to the scene of woodchopping last year, a few green trees in a wilderness of dry timber burnt over several years since. Discovered a nest of last year 286 I think (magpie--J.H.) in a live pinon tree about 14 feet high, east side of main stem supported by three branches. Could not extend my search in the green timber below the high



plateau for snow.

April 13. With snowshoes in wretched condition went up and returned by Brainard's road, going the round of Left Hand Park as far as sawmill. At this point saw two ptarmigan. They were very wild and perfectly white in plumage. Half way back along the park on the south side at the end of the large timber and commencement of spruce scrub saw three 297a (Perisoreus c. capitalis--J.H.) gathering with much industry on grassy bank. Their manner led to the conclusion that they had not nested yet but intended to do so shortly, and that their sites would not be distant from this point, the scrubby spruce referred to being very favorable, the snowdrifts hereabouts in the timber making it almost impossible to institute a search until too late in the season of this species. These were all the birds I saw.

April 14. Did not meet with a single 286 (magpie --J.H.) although I searched on side hill west of Niwot (Niwot mine--J.H.) and also to the southeast in plateau between the hills, a favorable looking place at both points. Broke my snowshoes and felt quite disheartened.

April 15. Upon my return at Brainard's meadow a little west of Giles' saw a Say's chipmunk.

April 16. Walked to Boulder this afternoon. Left Boulder and walked to Mrs. Baker's.

April 18. On the St. Vrain. Saw white rumped shrike two Say's newees, saw a striped gopher, a numerous wave of robins, scared downy woodpecker out of winter hole in small cottonwood stub 6 feet from the ground.

April 19. Nest A, 402c (Megascops a. maxwelliae--J.H.)

4 eggs, nearly fresh, cottonwood tree, natural hole 14 feet from ground; nest B same, 4 eggs incubated 3 1/2, cottonwood tree flicker's hole 10 feet from ground; nest C, same, 5 eggs incubated 3, cottonwood tree, natural hole 12 feet from ground, small eggs. Blue Herons nesting at McCaslin's (near Hygiene--J.H.); crows with nests built, flickers busy excavating. ~~Saw~~ and heard several mourning doves. Krawa told me 5 or 6 of the species wintered on the Little Thompson.

April 20. Swainson's hawk's nest nearly completed building upper woods at Baker's. Several pairs of steller's jays about Duncan's. Quail partridge paired.

402c (Megascops a. maxwelliae--J.H.) nest D, 4 eggs, incubated 4, cottonwood tree, in natural hole 20 feet from ground, Duncan's; nest E, 4 eggs incubated 4, cottonwood tree in natural hole 16 feet from ground, Baker's; nest F, 1 egg nearly fresh, another chipped and three young owlets, at Frenchman's, in cottonwood tree, old flicker's nest, 11 feet from ground. Saw several grass finches, bay winged huntings.


April 21. Easter Sunday. Stayed at Dave Lykins, at Little Thompson. 402c (Megascops a. maxwelliae--J.H.) nest G, incub. 1, 4 eggs, cottonwood tree, old flicker nest site 4 feet from ground, ~~XXXXXXXXXX~~; Nest H, incub. 2, 4 eggs, cottonwood tree, natural hole 7 feet from ground, <sup>Calvert's</sup> ~~XXXXXXXXXX~~; nest I, incub. 3, 5 eggs, cottonwood tree, natural hole 10 feet from ground, Zeweck's; nest K, incub. 3, 3 eggs, box elder tree, natural hold 11 feet from ground.

395 (Asio wilsonianus--J.H.) nest A, incub. 3, 4 eggs, old maggie's nest, cottonwood tree 12 feet from ground; nest B, fresh, 5 eggs, old maggie's nest, box elder tree 13 feet from

ground; nest C, young owlets, of two one much younger than other, both younger than the other ~~xxx~~ three, in all 6 in same nest from which I took 6 eggs last year, old maggie's nest in box elder about 14 feet from the ground. In the last day or two have noted the pine finch 185 (Spinus pinus--J.H.) at different points in small families, seemingly busy feeding about the cottonwood tassels just developing. Saw several chewinks 238 (Pipilo m. arcticus--J.H.)

April 23. Steller's jay, nest A, 4 eggs, fresh, in black willow top 8 feet from ground. There was a good showing of mud in the construction of the nest, sticks outside, roots lining. Shore lark nest A, 4 eggs, fresh (one egg broken).

April 24. Saw several Audubon warblers for first time, feeding like the pine finches. Saw several titlarks as I walked to Boulder on the 16th, just arrived. Prairie falcon nest with two dark eggs in old eagle's nest site in cliff on the Thompson near the dam, 50 feet from bottom of cliff and about 50 feet from top. The male was most active, flying round and cackling in manner partaking of a duck, hen and flicker, something like one and all of them. Male nearly one-third less in size than female, very dark brown and ear coverts dark, upper parts not brown, white chin and throat extending under the ear coverts, tail feathers dark, under tail coverts ochreish white, feet yellow, other under parts banded or streaked across, giving the ensemble a grayish wash--very white, extreme end of tail lightish, bill black, flight <sup>z</sup> rapid or otherwise, as desired. Bank swallows and white crown-ed sparrows seen today. Travelled to Bardolph's, Redstone and climbed Horsetooth Mountain April 25 in search of grouse.

(This mountain is west of F. Collins--J.H.) Was misinformed as to the time of nesting in this and joining locality. Should judge the 15th May the proper time to look for nests. Saw several males and females, the former strutting about and grunting, tails fanned, red eyebrows lifted to the crown of the head, with frills opened each side of the neck, showing a red center from which the under white of feathers tipped with dark radiate from it thus . While stationary upon a tree or rock they utter their peculiar grunt. This is done by inflating the neck with air, holding the head a little down, frills and tail shut. At Horsetooth and Stratton Park saw the males behaving in this manner. When only a few feet from you grunting it has a peculiar distant effect and seems to change direction also. The black and gray squirrels (ear tufted) found in this locality. While watching the maneuvers of a female grouse my attention was drawn to a pygmy nuthatch excavating in an old spruce stub. Saw several small flocks of Cassin's finch.

April 26. Slept at West's, Rist Canyon. Next day followed up the gulch to Duke's. Searched for jays nests 290c (long crested--J.H.). It was evidently too early. Saw several pairs seemingly intending to nest but had not yet begun. The leafing of the trees is a couple of weeks later here than in the foothills. Saw Sphyrapicus nuchalis at Stratton Park, where there are many aspen groves.

April 27. Walked back to Chimney Hollow over 30 miles. From behind stone prairie saw a pair of rock wrens a carrying material to construct their nests in some rocks

April 28. Sunday, at Bartlett's. Monday, snowed all

day. Nest of Magpie, 6 eggs fresh. Also Arctic bluebird, 5 eggs fresh.

April 30. Again on the Little Thompson. Took nests A and B, of flicker, 8 and 9 eggs each fresh. The jays and woodpeckers seemingly had disappeared. Bartlett took 4 eggs of the falcon, <sup>(prairie falcon)</sup> visited on the 24th, two eggs laid in 6 days. All were perfectly fresh. Have no doubt but a fifth egg would have been added in a day or two. The female occupied the nest, perhaps was in the act of depositing the 5th egg. Both birds were very demonstrative and flew around much excited when the nest was robbed. Killdeer not generally nesting yet. A great number of robins seen on the creek. Saw tree, white crowned, song and chipping sparrows, also grass finches numerous. House and rock wrens looking for nest sites in the holes made by the bank swallows in clay banks. A flicker seemed at work also in a clay bank arranging nest quarters. Saw a few Audubon's warblers and some other summer birds, but did not recognize them.

May 4. Till now from last date unsettled weather, snow and rain. On the St. Vrain saw a Steller's jay, <sup>(woodhouse or pinon? - J.H.)</sup> without crest, belly light dove or dirty grayish white. Old jays nest in thicket of willows, entrance to Left Hand, 5 feet from ground, and a second one in a plum bush on the St. Vrain about 4 feet from ground. Probably the bluebirds which were numerous in the foothills was the last wave.

May 5. Sunday.

May 6. Visited nest site of 360 (Dryobates v. Monticola---J.H.) at Heller's, not there!

May 7. Walked to Boulder. On the way visited North

Boulder. Too late for first nesting of ouzels. Did not go to upper bridge. Saw Lewis' woodpecker and lark finch. Walked to Altona, crossed to St. Vrain by \_\_\_\_\_. Found another falcon's nest on St. Vrain. Bird sitting, male perched on a dead tree over the nest site. Had a glimpse of a white throated swift in the same cliff. Ouzel's nest with young. Saw also a western tyrant flycatcher. Also Say's pewee.

May 13. Walked back home from Bartlett's via Little Thompson, St. Vrain, Altona, Jimtown to home. On the 9th, 10th and 11th was snowbound at Bartlett's. The high water, Bartlett's need at home and the bad weather lost me the 2nd falcon's nest.

May 14. 360 (Dryobates v. monticola--J.H.) not at home in Providence gulch. Took ouzel's nest 5 eggs, incubated 2, at the old millsite on Jim Creek below Springdale. Could find no nests between it and Providence. Found 370 (Sphyrapicus thyroideus--J.H.) excavating nest in aspen tree.

May 19. Sunday at home. Snow and unsettled weather from last date until yesterday. The snowfalls were heavy and wet. One fall measured 4 feet at Estes Park. These snowfalls seem to wipe out the nests of 300 (shore lark--J.H.) every time. Visited red tailed hawk's nest at Hartley's. The hawks were flying about but do not think they had their complement of eggs yet, if any. Saw both birds flying round when 500 yards distant from nest. Took nest of 360b (Dryobates v. monticola--J.H.), only 3 eggs, one of the number very small, almost a runt, had a yolk, in aspen old stub about 5 feet from the ground, south of Jim Creek from Reed's, nest A; nest B, 4 eggs, 1 broken, in withered top of aspen tree over 30 feet from the

ground, (a chickadee's nest 7 or 8 feet above too dangerous to get at), incubated 1/4, very small eggs, south of Jim Creek, Tumbleson's mill site. Saw hummingbird 339 (broad-tailed--J.H.) 8,500 feet this date. Saw this species first in the foothills on the 6th of May. Saw also at this altitude titlarks and Audubon's warblers, and also a pair of small birds such as I have seen at Ward.

May 20. Visited North Boulder Creek. Saw western tanager and tyrant flycatcher.

May 21. Travelled to Little Thompson. 402c (Megascops a. maxwelliae--J.H.) nest 3 eggs almost fresh, 2nd laying nest K, one more egg to lay, I think. Doves nests plenty. Took one with two long pointed eggs. White rumped shrike set of 6 eggs fresh. Flicker 5 eggs, 2nd laying of nest B, out of which I took 8 eggs on the 7th inst. Saw catbird, long tailed chat, summer yellowbird, brown thrasher, lark finch and eave swallow, mud nests at Lykins', no lining yet. Meadowlarks two nests 3 and 5 eggs.

May 22. 405a (Bubo v. subarcticus--J.H.) nest D, Little Thompson in old cottonwood tree, old hawk's nest 30 feet from the ground, a third laying, incubated unequal 2, nest site changed each set laid. 402c (Megascops a. maxwelliae--J.H.) nest M, new nest at Calvert's, 3 eggs, incubated 3, in box elder 12 feet from ground. Looked at nest 402c, in which were 5 eggs first laying, found the nesthole full of water, the site deserted. Stopped at Wm. Baker's on the St. Vrain.

May 23. Visited the several nest sites of 402c (M.a. maxwelliae--J.H.) which were despoiled a month since; nest D tree cut down by Duncan for wood; E, was prevented examining this site, too many persons near; A, found 3 eggs fresh, this

site also deserted, the eggs had been lying in water; B, no second laying in this case that I could make out. Searched for but could not find any quails' nests, too early for this year. Walked to Niwot and from that point to Boulder by railroad. Saw small flocks of lark bunting just arrived from south, oriole also. Reached Gold Hill this afternoon.

May 24. Searched Spring Gulch. Found several woodpecker nest sites 360b, 369a and 370 (Dryobates v. monticola, Sphyrapicus v. nuchalis and S. thyroideus--J.H.). Took nest C, 360b, with 5 eggs fresh, in aspen tree 20 feet from the ground near Celestial Mine. Saw at 8,500 feet Audubon's warbler. Red tailed hawk did not nest in same site as last year at Hartley's. Blackheaded grosbeak 8,000 feet, birds late in nesting this season.

May 25. 40 (Parus montanus<sup>gambeli</sup>--J.H.) nest A, 7 fresh eggs, perhaps another to Day, Ziemann Gulch upper part, in aspen 10 feet from ground, in old 369a unfinished site only 4 inches deep. Saw ruby crowned kinglet 9,000 feet, also Hammond's or Wright's flycatcher same altitude. Black crowned yellow warbler 8,000 feet.

May 26. Sunday. Walked to Boulder. 360b (Dryobates v. monticola--J.H.)<sup>nest</sup> with young 4 or 5 days old, upper end Ziemann's Gulch.

May 27. Returned to Gold Hill. 360b (D. v. monticola--J.H.) nest with young 6 or 7 days old, slaughter house.

May 28. 360b nest D, 3 eggs nearly fresh in aspen 20 feet from ground, Fritz's meadow, Left Hand. 7a (robin--J.H.) nest A, 4 eggs fresh, 7 feet from ground.

May 29. Mountain Chief, Ziemann's Gulch. Took nest



B, 40 (<sup>Gambeli</sup>~~Parus montanus~~--J.H.) 9 eggs, incubated 3, 12 feet from ground in aspen, old site of 369a. Nest A, 370 (Dryobates v. monticola--J.H.), Outcault's Gulch, 6 eggs fresh, in aspen tree 20 feet from ground. Nest A, 220 (Junco caniceps--J.H.), only 3 eggs to date, taken June 3<sup>rd</sup>, 4 eggs (These notes evidently not made at time of occurrence--J.H.). 7a (robin--J.H.) 3 eggs fresh. 274 (Scolecophagus cyanocephalus--J.H.) 5 eggs fresh, on side wall of mining shaft 15 feet deep, nest half way down, old nest fitted up.

May 30. 40 (Parus montanus--J.H.) nest C, lower end of Celestial Gulch, 9 eggs, incubated 4, in aspen tree, old 369a nest (Sphyrapicus v. nuchalis--J.H.) 8 feet from ground; nest D, gate near Brainard's meadow, 5 eggs to date, taken on June 5, contained 9 eggs fresh.

May 31. 40 (<sup>Gambeli J.H.</sup>Parus montanus--J.H.) nest E, at Duncan's Mine, 4 eggs fresh, one broken, in aspen, old 369a site 6 feet from ground.

June 1. 40, (<sup>Gambeli J.H.</sup>Parus montanus--J.H.) nest f, young birds 3 days old or so, in aspen tree north of Providence Gulch; nest Fa, Ridge Gulch, 7 eggs fresh, in aspen tree 8 feet from the ground.

June 2. 40 (<sup>Gambeli J.H.</sup>P. montanus--J.H.) nest G, in Long Gulch north of St. Vrain, in aspen tree 8 feet from ground, 5 eggs fresh. 369b (Dryobates v. monticola--J.H.) nest F, same place in aspen tree 24 feet from ground. 369a (Sphyrapicus v. nuchalis--J.H.) nest A, same place, aspen tree 20 feet from ground. opened several other nests and reclosed them, some with two eggs, others with none. Nest A, hummingbirds 339 (broad-tailed--J.H.), nest on spruce bough 2 feet from ground, eggs incub. 1.

June 3. June 3. Nest B, dapper, 5 eggs fresh, on the South St. Vrain near Monte's & Comas. Nest A, 1034, sawwhet owl in old flicker's ~~xxx~~ excavation in large aspen 20 feet from ground, 3 eggs fresh; nest B, same kind of site 22 feet from ground, 3 eggs fresh. Met with this last species for the first time. They readily respond to a knock upon tree, make no complaint at having their nest taken, are less timid than 402a. 274 (Scolecophagus cyanocephalus--J.H.) nest B, 6 eggs of Brewer blackbird, incubated 1, Gold Lake.

June 4. Saw Audubon's thrush on the 2nd for first time and again today, 1 solitary. 40 (Parus<sup>(Gambel's J.H.)</sup> montanus--J.H.) nest H, Zieman's Gulch in old pine tree, 7 eggs fresh, 20 feet from ground; nest I, same place, aspen tree, 3 eggs, closed it up, 11 feet from ground. 52 (Sitta canadensis--J.H.) nest A, in old aspen tree, 4 eggs, fitting into nest of vegetable material suited to that complement, very slight, made of wood fiber and a little inner aspen bark. Nest unlike 51a (Sitta aculeata--J.H.) is easily discovered by knocking on the tree. About 15 feet from ground. Eggs beautiful rose-tinted when unblown, bright reddish brown markings at the larger end. Had the misfortune to break two of the eggs carelessly. Sheltered gulch, Zieman's. 370 (Sphyrapicus thyroideus--J.H.) nest B, 6 eggs fresh, in pine stub 10 feet from ground, Zieman's Gulch. 274 (Scolecophagus cyanocephalus--J.H.) nest B 6 eggs, C 5 eggs and again D 5 eggs, fresh and nearly fresh. 7a (robin--J.H.) nest D 3 eggs, nest E 3 eggs. 370 (see above--J.H.) nest C 5 eggs fresh, ridge north of Kaughman's mine in pine stub 2 feet from ground; nest D 5 eggs fresh same place and kind of site 10 feet from ground; nest E 5 eggs incubated 1/2, south below

this point, pine stub 8 feet from ground. 57a (No such number in check list used by him; 57 is St. Lucas cactus wren; I suspect this record may be canon wren--J.H.) nest A 7 eggs, incubated 2 1/2, ridge above same tree as 370 nest C (see preceding page--J.H.) 7 feet from ground. 54 (Sitta pygmaea--J.H.) nest A, 8 eggs fresh, same place 20 feet from ground. 24 (Sialia arctica--J.H.) nest A, 6 eggs fresh, in aspen 10 feet from ground, two eggs broken. <sup>June 6.</sup> 25 (Myadestes townsendi--J.H.) nest A, 5 eggs incubated 3, Osage lode, old nest and site two years ago, bird on the nest, not easily scared off, made no demonstration whatever. Did not see the male. Except to lay, ~~xxxxxx~~ the bird is not seen about occupying it. Nest placed in shelter and not exposed to the sun. This was an early nest.

June 7. 370 (Sphyrapicus thyroideus--J.H.) nest F 5 eggs fresh, point above Fritz' in pine, old site 18 feet from ground; nest G, 6 eggs fresh, same place and kind of site, 16 feet from ground; nest H 6 eggs incubated 1, Andy Johnson's ranch 12 feet from ground.

June 8. Snowed and rained all day, damp and cold.

June 9. Snow and rain storms all day, 4 inches of snow upon the plateau of Gold Hill. Hunted for some woodpecker nests upon old ground, found none. Remarkable paucity of birds, everywhere deadlike, the few hardy warblers and sparrows. Low down in the sheltered gulches saw a pair of bandtailed pigeons pluming themselves in the snowfall. About this date for three years have seen the pigeons.

June 10. Clear weather. Saw in Left Hand Gulch Swainson's thrush, the pine finch, Wright's flycatcher, Audu-

bon's warbler, black capped yellow warbler, etc., headed up the gulch. There was ice upon still water last night. Think the weather will hold fair from date.

June 11. Nest A of 40 (Parus montanus <sup>as gambeli</sup> --J.H.) ~~NEE~~ <sup>with</sup> 3 eggs, opened and examined and afterwards secured; was forsaken and a house wren had taken possession, built its nest and had one egg over the chickadee's nest and eggs, which had the appearance of slight incubation. 369a (Sphyrapicus v. nuchalis --J.H.) nest B/5 at the Celestial Mine, in live aspen 17 feet from ground; nest C/5 near Hayes' in live aspen 8 feet from ground, quite chilly; June 12, nest D/5 north of Jim Creek in live aspen 2 feet from ground; nest E/5 same place in live aspen 6 feet from ground; nest F/4, Tumbleson's, in live aspen 7 feet from ground. 370 (Sphyrapicus thyroideus --J.H.) visited old nest sites of this species, found they were too heavily incubated. The majority were <sup>5</sup> eggs. Same birds gave me 6 eggs last year. They were at Hoag's and other points on Mountain Chief. Have seen each day I have hunted in the thick timber one to three Audubon's thrushes, in each case alone or single. Saw wood pewee at Hoag's, also yellow breasted flycatcher in prospect holes intending there to nest. Saw western night-hawk in the mountains for the first time this season. 370 (S. thyroideus --J.H.) nest with young just hatched, in old aspen stub 3 feet from the ground in West gulch to Providence. At Bailey's Gulch nest of 369a S. nuchalis, A, 5 eggs, incubated 3, in live aspen 14 feet from the ground, two of the eggs were quite fresh. Junco 220 (J. caniceps --J.H.) nest B, 4 eggs, incubated 2, under a small bush of broom. Western Colorado Downy woodpecker (No such number in list; probably Dryobates p.

homorus--J.H.) nest A, in half living aspen 25 feet from the ground, 3 fresh eggs, incomplete in set.

June 13. Monte's Gulch. 360b Harris woodpecker (Rocky Mt. hairy--J.H.), nest A, 3 eggs fresh, in live aspen 26 feet from ground. 401 Nyctale (N. acadica--J.H.) left its first nest site for another. Saw it in an old flicker's nest site lower down the gulch. Failed to find it there later on. Saw McGillivray's warbler making nest in Mack's gulch. Saw also there a 360b (Dryobates v. monticola--J.H.) nest site at upper end of bog. I afterwards located too late for eggs nest sites of two mountain chickadees also near hand in this gulch.

369a (Sphyrapicus v. nuchalis--J.H.)

Nest H,	6	eggs,	incubated 2,	in	dead	aspen,	9	feet	from	ground
" I,	4	"	fresh,	"	live.	"	18	"	"	"
" J,	5	"	"	"	"	"	18	"	"	"
" K,	4	"	"	"	"	"	20	"	"	"
" L,	5	"	incub. 2 1/2	"	"	"	4	"	"	"
" M,	5	"	"	"	"	"	8	"	"	"
" A,	3	"	"	"	"	"	20	"	"	"

Two eggs of A taken June 2, a sixth egg was broken, so that a set of 6 eggs was laid by this bird same as last year. K and L were west of Long Gulch. 360b (Dryobates v. monticola--J.H.) nest H, 4 eggs fresh, in half living aspen 8 feet from ground.

June 14. 369a (Sphyrapicus v. nuchalis--J.H.)

Nest N,	5	eggs	fresh	in	live	aspen	18	ft.	from	ground,	Long	Gulch
" O,	4	"	"	"	"	"	30	"	"	"	"	"
" P,	5	"	incub. 1	"	"	"	12	"	"	"	"	"

360b (Dryobates v. monticola--J.H.) nest sites 12 and 21 feet from ground in aspen trees, Long Gulch, with young; same, 3 feet from ground in old aspen stub, Smith's Gulch, with young. 290c (Cyanocitta s. diademata--J.H.) nest site with young jays a week old in same gulch, well concealed in some evergreens.

Parents not very demonstrative. 370 (Sphyrapius thyroideus--J.H.) nest J, 5 eggs, incubated 2, in old aspen stub, Celestial Mine, Meadow Spring Gulch, 6 feet from the ground. Same pair patronized this meadow last year. 369a (S.nuchalis--J.H.)

Nest Q, 4 eggs, incub. 1, in live aspen 18 ft. from ground, Spring Gulch.  
 " R, 3 " Do. Do. 20 Do. Do.  
 " S, 5 " Do. Do. 3 Do. near gate  
 at Brainard's.

40 (Parus <sup>gambeli</sup>montanus--J.H.) nest I, 7 eggs fresh, in live aspen 12 feet from ground, 2nd laying 30 feet distant 1st nest.

June 16. 370 (S.thyroideus--J.H.) nest with young a week old in pine tree west of Oscar Johnson's mine. 290c (Cyanocitta s.diademata--J.H.) nest with young able to fly in evergreen tree below Oscar's house in gulch. 360b (D.v.monticola--J.H.) nest with young nearly full fledged in aspen, California Gulch. 370 (S.thyroideus--J.H.) nest with young in gulch west of Puzzler Mine. 40 (Parus <sup>gambeli</sup>montanus--J.H.) nest with young in aspen tree northwest of Oscar Johnson's house. 369a (S.v.nuchalis--J.H.) nest T, 5 eggs ~~fresh~~ incubated 2, in old aspen stub 5 feet from ground at Sunnyside. 40 (P.~~montanus~~ <sup>gambeli</sup>--J.H.) nest J, 7 eggs fresh in aspen 4 feet from ground at Phillips meadow; nest K, 10 eggs fresh, in aspen 7 feet from ground at Puzzler Mine, believed to be the 2nd laying of pair belonging to nest E 31st May within a few feet of former site. <sup>June 18.</sup> 369a (S.v.nuchalis--J.H.)

Nest U, 5 eggs fresh in live aspen 9 ft. from ground, half way up hill to Ward.  
 " V, 5 Do. Do. 18 Do. King's Gulch  
 " W, 5 Do. Do. 20 Do. lower road.  
 Reed's lower Gulch.

239. Nest of greentailed towhee with one egg, on the ground under a bush, aspens, end of King's Gulch. 125 (Wilsonia pil-

colata--J.H.) nest A, Blackcapped warbler, 3 eggs fresh, set in the ground at foot of willow.

June 19. Nest A, yellow bellied flycatcher 323 (Empidonax difficilis,<sup>--J.H.)</sup> 4 eggs, incubated 2, in rock ledge over creek.

June 20. nest A, western summer yellowbird, 4 eggs incubated 1, with <sup>1</sup>cowbird's egg, near Boulder.; nest B, only 1 cow bird's egg, near Boulder. Nest A, little flycatcher 325 (Empidonax trailli--J.H.), 4 eggs fresh, 1 cowbird's egg, near Boulder; nest B, 2 eggs fresh, 1 cowbird's egg, near Boulder; five other nests of this species without eggs just completed.

June 21. 369a (Sphyrapicus v.nuchalis--J.H.)

Nest X, 4 eggs incub. 2, in aspen 9 ft. from ground at Giles' house  
" Y, 5 " " Do. 12 Do. at Celestial Mine.

Both these nest sites were in live aspens, eggs of both fresh and incubated. 125 (Wilsonia p. pileolata--J.H.)

nest B, 4 eggs fresh, set in ground at side of hummock.  
" C, 4 " incub. 1 Do. near willow twigs.  
" D, 5 " " 2 Do. Do.

234 Lincoln's finch (Melospiza lincolni--J.H.)

Nest A, 5 eggs fresh, set in ground in grass knolls etc.  
" B, 5 " Do. Do. Do.  
" C, 5 " " Do. Do. Do.  
" D, 5 " " Do. Do. Do.

June 22. Nest A, spotted sandpiper 557, 5 eggs

incubated 1/2, at Duck Lake. Nest A, whitecrowned sparrow 206, 5 eggs fresh, on the ground, Duck Lake; nest B, 3 eggs fresh, on the ground, Duck Lake, forsaken. 7a (robin--J.H.)

Three nests of 4 eggs each fresh. Junco with 4 young nearly fledged. 125 (Wilsonia p.pileolata--J.H.)

Nest E, 5 eggs fresh, set in ground, Duck Lake.  
" F, 5 eggs incub. 2 Do. Do.  
"

June 23. 125 (Wilsonia p. pileolata--J.H.)  
 Nest G, 5 eggs fresh, set in ground, Duck Lake.  
 " H, 6 " incub. 1 Do. lower meadow.  
 " I, 5 " " 2 Do. Do.

234 (Melospiza lincolni--J.H.)

Nest E, 5 eggs fresh, nest set in ground, Duck Lake.  
 " F, 5 " " Do. Do.  
<sup>July 4</sup> " G, 4 " " Do. Do.  
 " H, 5 " " Do. Do.  
 " I, 5 " " Do. Do.  
 " J, 4 " " Do. Do.  
 " K, 5 " " Do. Lower Meadow.  
 " L, 5 " " Do. Do.

125 (Wilsonia p. pileolata--J.H.) nest J, 4 eggs, incubated 1,  
 nest set in ground, lower meadow. 206 (Zonotrichia leuco-  
phrys--J.H.) nest C, 4 eggs, incubated 1, in small evergreen,  
 lower meadow.

June 25. 5a (Audubon's thrush--J.H.)

Nest A, 4 eggs fresh in small balsam 4 feet from ground.  
 " B, 5 " " Do. 9 Do.  
 " C, 4 " " Do. 5 Do.  
 " D, 4 " " Do. 6 Do.

June 26. 323 (Empidonax difficilis--J.H.), nest B,  
 4 eggs, incubated 1, taken in prospect hole near Bondholder  
 (Mine--J.H.); nest C, 3 eggs fresh, in prospect hole, Silvo mine,  
 near Ward. This bird makes its nest and occupies a site of  
 very varied character. Captured the bird of nest C, 5.25 x  
 2.63 x 2.50 tail.

June 27. 323 (Empidonax difficilis--J.H.), nest  
 D, 4 eggs fresh, near Puzzler Mine, on rock ledge, open cut;  
 nest E, 4 eggs, incubated 1 1/2 same place Do. Do.  
 206 (Zonotrichia leucophrys--J.H.) nest D, 4 eggs fresh, on  
 the ground, lower meadow. 234 (Melospiza ~~lincolni~~ lincolni  
 --J.H.) nest M, 5 eggs fresh, set in ground near tuft of grass,  
 lower meadow. 125 (Wilsonia p. pileolata--J.H.) nest K, 5  
 eggs fresh, set in ground near willow twigs, lower meadow.



5a (Audobon thrush--J.H.) This bird builds its nest of varied material. They show much difference in the volume of material used. They differ much in size, outside and in. I find many nests with one or more eggs deserted and eggs spoiled. No doubt they are mostly sterile eggs, but think if the nest and eggs, when only one or two, is meddled with the bird forsakes that nest and constructs another, with eggs in a very short time. The jays sometimes destroy the eggs. Found nest with 1 egg and 1 young a day or two old.

June 28. Nest A, Cooper's hawk 431, 4 eggs, heavily incubated. Left them. High up on south fork of Left Hand Gulch. Nest sited upon a bunch of scrub in spruce tree 20 feet from the ground. Nest made of a few sticks, upon which the scales of the tree bark in shields as it were covered the sticks, no grasses, roots or feathers. The eggs lay upon the bark scales. The female was very demonstrative and noisy, cackling in a way something like the prairie falcon. 234 (Melospiza licolnii--J.H.) at Sunnyside and Phillips' meadow. I could not determine if this species had nests with young or had not yet begun housekeeping. One nest found with young more than half grown induced me to lean to the first supposition, but I could not verify it by another visit to these localities. (Here is another indication that these notes were perhaps transcribed from some smaller pocket memorandum book--J.H.) A pair of sora rails I disturbed in the bushes and grasses. Think they must have had their nests, but I failed to find it. Altitude 9,500 feet.

June 29. 5a (Audubon thrush--J.H.) nest E, 4 eggs,

incubated 1, near Puzzler; nest F, 4 eggs fresh, north fork Left Hand; nest G, 4 eggs, incubated 2 1/2, Gold Hill; all in small evergreens within easy reach.

June 30. 25 (Myadestes townsendii--J.H.) two of this species has nests in the bank of Gold Run road to Salina. One was One was empty and the other had 3 young birds able to fly. They were quite interesting in their appearance. They closely resembled our toads in their color and markings. The parent birds were not at hand to respond to their cries. Indeed, no bird seems to take so little care of their nests, whether containing eggs or young. They are never seen about the nest except the female when she is covering her eggs in incubation. After raising the brood and later in the season they seem more to haunt the vicinity of the old nest than when it contained their young, leaving their nests for long periods exposed. Care is well taken that the eggs are not exposed to the sun's rays. I have carefully noted this. The nest is invariably so placed that the sun never shines upon it. Rock ledges and steep hillsides are their favorite places for nest sites, but as makeshifts no doubt any site affording the protection necessary from the sun and rain will be availed of. The male indulges in some very musical notes, but as I have heard them, always late in the fall, not in the spring or through the summer.

July 1. Travelled to Boulder. Found that the Boulder hoodlums have been destroying the nests found of the little flycatcher 325 (Empidonax traillii--J.H.) on the 19th and 20th June last. Secured only two nests. Nest C, 4 eggs, incubated 1, nest D, 4 eggs, incubated 3, each with one egg of

cowbird, these with other empty nests. Nest of Maryland yellowthroat (western yellowthroat--J.H.) with young more than half fledged. Nest a little raised from the ground, which was wet when first constructed.


July 2. 125 (Wilsonia p.pileolata--J.H.) nest with one young just hatched and two fresh eggs, near King's road going to St. Vrain. 30 (Regulus calendula--J.H.) nest with young near site of last year's at Duck Lake, and similarly placed. Seemingly young just hatched. Spruce tree diameter 6 inches.

July 3. Nest A, Cassin's finch, 4 eggs, incubated 1 1/2, nest on horizontal branch of wiry spruce tree, well secured in the laterals, 30 inches from trunk and equidistant from trunk to end of branch. Female very quiet and devoted to her charge. Had almost to lift her from the nest. Nest A, <sup>(Nuttall's--J.H.) ~~had~~</sup> Contopus borealis, 3 eggs, incubated 1. Nest close to stem of small spruce 24 feet from the ground. A small piece of the usual green tree moss in nest, which is of twigs outside and rootlets for middle and inside. The finch's nest 169 (Cassin's--J.H.) of same character of make-up. Very slight but well and securely knit together, very small for the birds, quite light and open to be seen through. The male borealis very plucky, had to strike at it with my cap to keep it away from me. Discovered a second nest of this species with 3 young below or near the Humboldt Mine, high up in a large spruce tree, about midway from the stem on a horizontal branch 50 feet from the ground. Was in shape to take it 23rd June. Nest of Cooper's hawk had 4 cute white downy little young in it at this date. 5a (Audubon thrush--J.H.) nest H, 4 eggs fresh, in low evergreen, California Gulch; nest I, 4 eggs,

incubated 1 1/2, in low evergreen, California Gulch. 220 (Junco caniceps--J.H.), nest C, 5 eggs, incubated 1, nest well set in ground at foot of small tree, Left Hand. Nest B, hummingbird 339 (broad-tailed--J.H.), 2 eggs, incubated 2, on horizontal spruce bough, California Gulch; also incomplete nest.

July 4. Followed down the south branch of St. Vrain from above Ward to Monte's. 5a (Audubon thrush--J.H.) nest J, 4 eggs fresh, west of dam, the whole distance below rough and useless, that is nearly so; nest K, 4 eggs, incubated 1 1/2, this nest just east of dam. 323 (Empidonax difficilis--J.H.) nest F, 3 eggs fresh, nest close to the trunk of an aspen lodged in the bark, interesting. The eggs of 5a K and 323 F all broken in my collecting box from the knocks and jerks and jumps and falls had in going over such rough ground, fallen timber, etc. The violet green swallow seems only now to be pairing and carrying material, grasses, in the holes of snags, old woodpecker and flicker nest sites.

July 5. Nest A, western nighthawk, 2 eggs, incubated 1, very heavily marked and larger seemingly than the eastern species, an olive yellow tinge over the whole egg, which suffers very much by fading, they lose the rich dark tone referred to. The nest site and peculiarities of the bird identical with that of the eastern bird, 9,000 feet. Nest C, Nyctale arcadica, 2 sterile eggs and 3 young owlets in old flicker's nest site in old aspen stub, nest 10 feet from the ground. The female flew off the nest upon striking the stub with a stick, and kept quite near. The location was much like that of the other two found in a grove of aspens with some running water through it, rather dense shade when the trees were in

full leaf. About the same altitude, 8,500 feet. The two eggs were much covered with dirt but made good specimens when cleaned. One of the three owlets appeared a week older than the other two, who in size and ~~mixing~~ feathering seemed not to differ anything, the quills and wing coverts and ridges showing the incipient back covering, showed somewhat plumbeous through the white down with which they were covered. This, however, was not dense as with the young for instance of Cooper's hawk. The elder young had some of the darker first feathers of back and wing coverts, also the pin feathers well developed. They showed darker and richer than in the parent, mottled of a brown less reddish. It had, however, bright chestnut feathers on the breast. While handling the young the female close by evinced some uneasiness, snapping her bill and looking behind and upon all sides of her and making a noise somewhat like a startled robin moderately alarmed (this differs in energy and jerk when much frightened). She showed much light brown in the heavy streaks upon breast and under parts, legs and feet of a soiled tawny color by no means white, the white gray eyebrows thus in shape going straight up from the upper mandible, Y shaped, thus:  not so conspicuous as in the other female of previous nest which showed upon the dusky disc a pearly white. Without doubt the early part of June is the nesting time of these owls, since if the first nest had been left to hatch they would have almost ~~exactly~~ <sup>nest</sup> have had young to correspond with No. 2, with one young a week older than the other two. This shows the uneven laying of the eggs in periods and the covering of them from the first. The nest sites in both cases were roomy and in the latter in-

stance not in the least offensive although there were several mice, whole and in parts, mixed up with the young, no feathers as with our little screech. This little owl to me seems very interesting, has none of the wicked treacherous looks and bearing of the Rocky Mountain screech. In neither case did I see the male owl about. The female did not seem to be affected by the sunlight.

July 6. 339 (Belasphorus platycercus--J.H.) nest D, of 2nd laying, only one egg incubated 2, with very slight shell which lost it to me. Similarly placed upon horizontal spruce bough as the previous nest, also near by. 5a(Hylocichla g. Auduboni--J.H.) nest L, incubated 1, in low evergreen at commencement of Long Gulch.

July 7. Same species 5a, nest M, 4 eggs fresh, in low evergreen at Beaver Meadow. In old aspen tree near dam, in which were several holes made by some woodpecker, with other birds, were two velvet green 156 (violet-green--J.H.) swallows as I supposed about to nest there. Fearing to disturb them then I put off the examination until my next visit. The white bellied swallow 155 (Iridoprocne bicolor--J.H.) in same tree had well-grown young at this date.

July 8. 5a(Hylocichla g. auduboni--J.H.) nest with young a week old in Chris Holverson's gulch, a warm and sheltered place.

July 12. 234 (Melospiza <sup>n</sup>licolnii--J.H.) nest with 6 eggs, fine markings, but all chipped, with lively, dry, kicking birdlets inside; nest with 4 eggs, fine markings, exactly in same condition, left them undisturbed. 125 (Wilsonia p. pileolata--J.H.) nest with 3 eggs, badly incubated, uncertain

if of 2nd laying, Duck Lake; nest with 1 egg fresh and one young bird 4 or 5 days old, on creek below the lake. I feel that neither 234 <sup>(*M. lincolni* J.H.)</sup> nor 125 <sup>(*M. pilolata* J.H.)</sup> has 2nd nests as in previous years. The latter were especially unsatisfactory in having so few eggs at a clutch. In no instance was a clutch of 6 eggs obtained from this species this season and as few as 3 were covered. Saw a family of white bellied nuthatch <sup>(*S. aculeata* J.H.)</sup> young as large as adults, fed by them still. The pine finch 185 flying round I believe with young one of the year, located no nests, think they nest early in June at Duck Lake and should be looked for earlier than hitherto. Discovered no less than 3 nests of Audubon's warbler about this time, all with young 4 or 5 days old, perhaps a week. Should have been looked for about 20th June. In two instances my attention was drawn to the nests by one of the birds, female in one case and in the other the male, fluttering about me with outspread tail and open quivering wings, fluttering and crawling about me on the ground, over fallen trees and upon the boughs near by to attract my attention and lead me away from the nests, to discover which I had no great difficulty upon looking about me. They were near by, <sup>one</sup> in a small balsam close to stem 8 feet from ground upon side hill, the other saddled a branch of same kind of evergreen 18 inches from stem and about 22 (inches?--J.H.) from end of branch, close by a bush road. The birds led to the discovery in both instances, but I was not looking for the nests of this species, knowing it to be too late in the season. These birds with their nests were certainly on time, altho the weather was so cruelly bad, but I was not on time!

July 14. Nest of 234 (*Melospiza lincolni*--J.H.)

4 eggs fresh, possibly a 2nd laying, which in the case of this as well as in species 125 is not this year clearly determined.

96 (Dendroica auduboni--J.H.) two nests with young within 4 or 5 days of leaving nest. In one case the female and in the other the male betrayed the nest in their strange behavior. In both cases the nests would have escaped careful observation, but being low down in balsam trees, one within reach and the other not above 8 feet from the ground, and being close by them, the parents to lead me away came fluttering round at my very feet, then going off a little and not succeeding, would return, flying from the ground to the lower branches of a tree to the height of 7 or 8 feet and then down again so as to insure observation, then training along the ground again over weeds, stones and fallen timber, wings and tails outspread to the uttermost, tail bowed in and wings fluttering in a manner the most beseeching to come away. This species as near as I could calculate were on time with their nesting but no doubt many perished with their nests and eggs. 30 (Regulus calendula--J.H.) nest with young within reach almost, attached to a few small stray twigs near stem of a small balsam, suspended or pensile. The young all flew out when I put up my hand to the nest. By this and a former nest recorded with young this hardy, brave little bird seems also to have nested on time this year. 5a (Hylocichla g. auduboni--J.H.) nest with three fractured eggs deserted. Not unfrequently meeting with these desertions I have hunted round for a cause with no satisfactory result. I think it probable, however, from what I have seen of this species, their lonely habits lead to a somewhat want of sociability of the sexes. The female arriving first upon the breed-



ing ground has her nest and eggs before the male comes to hand, when the chase and worrit begins and continues until a second nest is thought of and finally is a result, which may also be assigned as a reason for some of the late nests. As late as 15th July I have found a nest with fresh eggs. They begin nesting in favored places as early as 15th June.. Same species, nest with 4 young within 3 or 4 days of leaving nest, nest of good solid structure; two nests taken 4 eggs each, incubated 3, on west branch of California Gulch, above Raster, which has proved good hunting ground. I believe both these nests last taken were second layings this seasons.

July 16. The song of this thrush 5a is so far as I can make out a blending of the wood and Swainson's thrushes, "Oh wee, ohee wee, chee wee," combined at intervals with a flute-like thrill, some males executing their songs with greater brilliancy than others and mostly heard after the departure and before the approach of sunlight, or I should say sunset and sunrise. Again, I note that the song is not delivered near the nest and his sitting mate, and in the dense woods high up near timber line I have often listened for its song with disappointment. At this point the Canada jay (P. <sup>lower down the</sup> capitalis--J.H.) and bluejay (longerested--J.H.) they know by experience are to be outwitted by this silence. The awful stillness of these solitudes relieved by so few of his tribe, his note would seem remarkable. 40 (Parus montanus <sup>gambeli</sup>--J.H.) nest in aspen grove, feeding young, at Duck Lake. McGillivray's warbler also nesting in this locality.

July 17. Hunted Left Hand from Ward up to Park. At either end thrushes 5a (Audubon's--J.H.) were or had been

nesting in several places. Found nest with 4 eggs abandoned, eggs broken, dry and discolored; nest with 3 young 4 or 5 days old, parents did not show up. Two or three Audubon's warblers had just vacated their nests with young ones.

July 19. Did northeastern gulch from old man Duncan's house from base of Bald Mt. 5a (Hylocichla g. auduboni--J.H.) nest with one young bird 4 or 5 days old and one sterile egg. Found several old nests. Being a rainy afternoon could not do the gulch properly. Think it a fairly good location, as also the west gulch joining above Duncanson's. Started for Monte's on Jim Creek just below Duck Lake. Found 5a (H.g. auduboni--J.H.) with 4 young in crotch of aspen tree 3 feet from the ground. Will secure the nest for Washington as the first nest found other than in a coniferous tree. Their backs and heads as seen packed in the nest resembled young robins, but their white bellies and long buffy colored legs proclaimed their parentage. Captured a young 361b (probably Dryobates p. homorus--J.H.) in Connor's gulch. It was being fed still by the old birds. 156 (Tachycineta p. lepida--J.H.) saw several of this species on Monte's barn seemingly not yet having nests or eggs in the old snags around--could not definitely locate a nest. There seemed to be continual strife between them and 155 (Iridoprocne bicolor--J.H.), the latter driving the former away from the locality they were breeding in.

July 20. Visited Beaver Park. 13 days ago I had seen some velvet green (violet green--J.H.) swallow 156 attempting as I supposed a lodgment in an old aspen tree in which were several holes made by woodpeckers. 155 (I. bicolor--J.H.) had a nest with young in one of these sites and kept himself busy

driving 156 away. I found upon examination today that two pairs of 156 <sup>(*Tachycineta p. lapida J.H.*)</sup> had nests, one with 4 young two or three days old and the other with 5 eggs heavily incubated 4. The nests in each case were made of grasses, some sprays quite green, feathers. This species breeds the last of our birds, so I judge from appearances. There are some pairs without nests yet. Nyctale arcadica, young seen in nest 13 days ago had vacated and were nowhere to be seen. Mice whole and in parts, dried up, in nest site.

July 24. Again went to Ward and visited Brainard's summer camp. Found 96 (*Dendroica auduboni*--J.H.) and 30 (*Regulus calendula*--J.H.) nested west of lake. A rainy afternoon. Took a forsaken nest of 5a (*Hylocichla g. auduboni*--J.H.) made of twigs, mosses, grasses and rotten wood. At this point two nests were taken last year. This season 5a does not seem to have gone as high up as usual.

July 25. Discovered Cassin's finch had nested a second time at the top of a small slender balsam at least 40 feet high and only 5 inches diameter at base, nest within a foot of top. Could not drive her off the nest by throwing sticks at it until a heavier club that was hastily handled struck just at the nest, when the female flew off for just a minute and returned to it. Next day (Notice that this note could not have been written on the 25th--J.H.) I prepared a contrivance for getting at the nest, and wishing to determine if the bird was on the nest, after throwing several sticks at the nest one unfortunately as before struck the slender top of the tree too rudely. Concluding the nest forsaken I sat me down to lament over the unlucky club delivered at the nest

the day before, when I saw two birds light upon a large bushy tree close by and one immediately after reconnoitering flew directly to the nest and covered it. Comfortably settled, the male, who so far has escorted his mate, flew away and I proceeded to lash and tie things together securely to aid me in climbing to the nest, which after much difficulty I reached, to find the nest empty. Now came the question, did I empty the nest each time I clubbed it, of whatever eggs were in it, or notwithstanding the bird's close sitting and persistent covering it the day before, did it only ~~xxxxxxx~~presage a second clutch? I fear the former misfortune, however, we will see in the next few days. 328 (Empidonax wrightii--J.H.) took nest near the cabin at Duck Lake in crotch of small aspen 18 inches from ground, with 3 eggs, incubated 2, more than a month later than last year. Learned from Mr. Doyle that the young of 25 (Myadestes townsendi--J.H.) left their nest yesterday, situated outside the tunnel above Duncanson's house, tunnel where road is made at base of dump to get at the ore. This is two weeks later than nests on Gold Hill road. Saw several old birds of this species around Ward, but was baffled as to where they had their nests. Time will demonstrate that this bird, like 323 (Empidonax difficilis--J.H.) will elect for their nest sites anywhere in the shade, eggs secure from direct rays of the sun.

July 26. 328 (Empidonax wrightii--J.H.) took second nest of this bird, 3 eggs, incubated 3 1/2, in crotch of aspen tree 5 feet from ground. Saw a pair of Hammond's flycatchers but whether they had a nest or not I could not determine, altho I watched them nearly half a day.

July 27. Ascended Bald Mountain. Saw neither finches nor shore larks. Met with one female ptarmigan with three young that I saw, about the size of larks as they flew aimlessly but were carried by the wind quite a distance. There were doubtless other birds when the others flushed, as the mother did not leave the ~~nest~~ spot, was very tame and kept up from time to time a pitiful, imploring moan, "eah, eah." Young of the titlark full grown and able to fly. Clark's chads were somewhat numerous about Ward on side hills feeding on insects.

July 28. Captured a young dusky grouse of a covey of 6 or 8, in Spring Gulch. Mother grouse very lame, would not flush. The young about the size of pigeons, flushed but were very stupid. The whole party, mother and young, could have been easily murdered without the aid of a shotgun, if needed. Found an old nest of the western chipping sparrow in small evergreen at Ward, in make-up, site, etc., nothing differing from the eastern species.

August 7. In Spring Gulch, resting by side of creek watching a couple of trout 5 and 6 inches long respectively, I observed two dull looking snakes similarly employed as myself, both about 20 inches long. One was partly in the water. Watching their maneuvers I discovered that they were as much at home seemingly in the water as out of it. They kept their heads or noses out of the water, I perceived. I did not readily connect their presence in this particular place with the fish until one of these little reptiles struck at and ~~wounded~~ wounded the larger fish, snagged it, so to speak, so that fish in terror or in breaking loose sprang

18 inches above the water in a flinging dash. I at once killed the snake and have the skin, but while musing over the incident sitting on a stone with my feet almost in the water I perceived number two just by me creeping in the most stealthy manner over stones and sticks drawing upon the smaller fish within 5 or 6 inches of it, there being about 3 inches of water above the fish. It struck at the fish but missed it. I went for the snake and altho I did not secure it it must shortly have died from the injuries I gave it.

August 8. Looking at my proteges as I passed back the next day I discovered a much larger snake of the same species over 3 feet long, stout and muscular, of a dull brownish gray color favoring the stones, sticks and rubbish in and about the creek. It was most interesting to note the maneuvers gone through with, the wonderful graceful creeping, alternating with the most rigid statue-like quiet, anon one portion of it in motion, the rest quiescent, then again the whole in motion, but so slow as to be undescried until its head was discovered coming through a crack or through the brush pile. It struck twice at the fish but with less address than the smaller ones. Having missed its mark each time it changed its position and I noticed tried to hide its head from the fish. Captured a male weasel in Spring Gulch.

Sept. 10. Travelled to Ward. Saw in Spring Gulch McGillivray's, black-crowned and Audubon's warblers, ruby crowned kinglet, yellow bellied flycatcher, Swainson's thrush, downy woodpecker, song sparrow, chipping sparrow and Junco caniceps. Saw poorwill on Gold Hill road.

Oct. 17. Went to Ward District. Saw a northern shrike above Fritz'. Evidently has crossed the range in the

wake of the Juncos and was making for the valley.

Oct. 18! Could not reach Bald Mt. for ptarmigan. Snow deep and drifting at Timber line. Secured two grouse, one a fine male and the other a young female.

Oct. 19. Saw a Swainson's thrush a little below Fritz', quite late for this species.

4020. Notes in connection with the Rocky Mt. screech owl  
Scops (Megascops--J.H.) asio maxwelliae, 4020,  
 Reg. from 1881.

Sent to the National Museum, Washington, with two sets of 4 eggs each, ejected pellets, etc., also measurements of ten sets of eggs 38 in all averaging 1.44x1.18. This interesting little owl formerly was quite common about Denver, but gradually they have changed their favorite haunts among the cottonwoods, black willows and box elders of the creek bottoms, to show cases and musty cabinets, so that now the specimen hunters complain of their scarcity. Rarely does this species follow the creeks far into the foothills. I have not observed them at 6,000 feet altitude. Like others of their genus they seem to delight in a sheltered, shady location close to a pond of creek, where they elect domiciles either in a natural tree hole or a flicker's old nest site. If for any reason the flicker wishes to retain his previous year's nest site and scops in possession strife between them is carried on with great address, ending in favor of as often one as the other judging from the broken eggs on the ground ejected by the victor. The flicker does not enter to turn Scops out, but if the premises are vacated for never so short a time the flicker

enters and holds it against all comers. His formidable bill pointing out at the door is sufficient apology for leaving him in quiet possession. About the middle of April is the usual period for Scops to have her eggs, from 3 to 5 in number, plain white, 38 eggs in 10 sets averaging 1.44 x 1.18. The nest is usually a sparse gathering of wing and tail feathers of small birds. In some instances no litter of any kind is present. As a rule the first 2 or 3 eggs are laid consecutive days, with intervals of 2, 3 or more days between the 3rd and last one or two, as the case may be. The female is always in charge and at no time leaves the nest. She is waited upon and fed by the male, who, being a skillfull hunter, provides liberally for her wants. Searching for nests I have sometimes discovered the male bird in a tolerably well-stocked larder in close proximity to the nest site. In one cache were portions of a bluebird, a mouse and a frog. In another a junco, a tree sparrow and a minnow ~~XXXXXX~~ 3 1/3 inches long, claws and legs of a crayfish were also present. In a few cases I have discovered the male sitting upon a bough close to the stem of a cottonwood tree perfectly motionless with eyes almost closed as if asleep, the pupil of the eye closed to the narrowest slit, but with ears erect, all alive to the danger threatening his sitting mate close by. In this chosen position, being in color and markings so nearly resembling the rough corrugated bark of the tree, he seemed to have the fullest assurance of security against observation. While sitting or while her brood is very young the female is a close sitter. To drive her off her nest is a difficult matter unless she has frequently been disturbed



and understands what is meant, when she hears the tree grasped in climbing it she will then fly out; otherwise you ~~xixx~~ have to take her off her eggs. In some instances she will feign death and lie on her back in your open palm with her eyes shut. Immediately you throw her off, however, she rights herself on wing, and gaining a bough upon a neighboring tree throws her ears back, stoops forward and looks very spiteful and wicked. At other times when removed from her nest she will snap her bill, moan slightly and show fight. Both male and female indulge in the screech, which differs but little from that of their eastern cousins. Its ~~shrr~~<sup>shrr</sup>, distressing notes can be heard of a still night a mile distant. Lately hatched, the young are clothed in beautiful white down. In the latter part of June before they are well able to fly they may be seen sitting side by side on a limb outside the nest site perfectly motionless. They with their parents seem to live an outside tree life for the balance of the summer, but against the cold winds that strip the leaves off the trees in the fall suitable holes are selected for their winter quarters.

284, notes on Chark's crow. (This is probably a copy of a letter to Bendire--J.H.)

Nest and 2 eggs taken soon after my letter in reply to yours of the 20th March informing you I had not secured any nests this season. It was on the 16 April fully a month previous half a mile away from the site I noticed a bird of this species high up in the air flying over my head. I thought I understood the meaning of it and retraced my steps on the

side hill I was pursuing but could find no trace of birds or nest. I ascended the top of the mountain and there on a small plateau were the birds. Directly I was seen by the birds one of them gave out an alarm note and flew away. I made a very exhaustive search without success when I observed one of the birds on a dead tree behaving as if it was trying to break off a twig. Observing this, I walked some distance away and selected a point of observation. In the space of an hour I saw both birds fly to and from a certain point 5 or 6 times and after a careful search I found a few twigs laid upon a bough on the dense top of a small scrubby black pine tree 12 feet high, stem 6 inches diameter. Noting this state of affairs I pursued my journey and returned to the place a week later, when one of the birds started from a neighboring tree with the usual alarm note. As no addition was made to the twigs I concluded therefrom a new site had been selected. My conclusion was more firmly set upon visiting the site still a week later when the few twigs I first saw carelessly thrown together still remained uncreed for. An exhaustive search for nearly a mile around discovered nothing, no birds to be seen or heard. Two weeks later, 16th April, passing in the same direction I stopped to look at the few twigs as they were all I had found of the nesting of Clark's crow for 1889. Judge my surprise, therefore, upon discovering a bulky nest with the female on it covering 3 eggs. In the meantime I had written you of my non-success. The nest in place has much the appearance of the one I sent you last year, perhaps a little more bulky. It was 9 feet from the ground. Eggs were fresh, a little more decided in their markings than last year's set, perhaps a little more

numerous but of the same peppery character. Size.90 x 1.34,  
.91 x 1.37, .92 x 1.39.

5a (Hylocichla g. auduboni--J.H.)

(This account, like that of the Clark crow, is a general account interpolated in some blank pages in notebook No. 6, which had been left between the records for 1889 and those for 1890. <sup>evidently a copy of a letter to Bendire.</sup> --J.H.) June 2. Saw the first of this species today, again on the 4th also, a single bird. 12th. Saw each day I was out two to three birds, in every case singly. 20th. First nest with full complement fresh eggs at 9,500 feet, at 10,000 to 11,000 feet two to three weeks later as a rule. Eggs vary in color, in size and shape. They also differ often in the same set, from a beautiful bright, tender, greenish blue of a clear, semi-transparent character to the dull shades of faint greenish indigo. Four eggs are generally the full set, laid consecutively, though three are sometimes the complement, and in a single instance I have found five eggs in a set. The nest sites vary from 30 inches to 15 feet from the ground, in the majority of cases within easy reach. With one exception deciduous trees are chosen, mostly small ones. (This is evidently a mistake. On page 202 of this copy, page 87 of Gale's book, he speaks of a nest in an aspen as the first found in anything but a coniferous tree--J.H.) The nest is placed close to the stem with rare exceptions. As a rule very little attempt is made at concealment. In the immediate vicinity of some creek, small stream, spring or inwash is the chosen location. The nests vary in bulk and density. They are quickly

constructed. The materials used are those found near by the site and therefore from force of circumstances consist of mosses, rotten wood, grass and other plant stems, coarse plant stems or twigs for the outside and fine grasses, moss, horse hair and fine roots for the lining. The middle structure is manipulated in a damp state. One or two of the designated materials noted above may enter into the nest's construction to the almost entire exclusion of the others. There is a seeming carelessness in this species with reference to its nest and eggs. A careful watch and guard as with other birds is not theirs, even when the young are hatched out they are not prompt in the defense of them. I have stood by ~~xxxxx~~ a nest of the callow birds for half an hour before the female seemed to know it, but realizing danger, a proper alarm and daring was by no means wanting. From this want of vigilance no doubt the jays destroy many eggs and young. ~~None~~ if not both of the deserted nests with the shells sent you as I have no doubt the work of those pests, but whether before or after desertion have no way of knowing. (This indicates copy of letter to Bendire-- J.H.) What would appear caprice in these birds after building their nests forsake them, and not the nest alone, but nest and eggs, even when the full complement has been laid and not discovered by the jays, might I am inclined to think have some other good reason to account for their so doing. It stays in the vicinity of home haunt until October, when it retraces its short flight as silently and unobtrusively as it came. He is not seen coming and going as is swainsoni, to go slightly up and down our gulches from and to the valley. So far as I have been able to ascertain auduboni is not met with in the valley

but the Pacific Coast unalascae in its migrations is quite common there (I fear this is a mistake--J.H.). H.u.anduboni is a very shy bird and always seen alone excepting the brief love making period or when danger is threatening their well fledged young and for a time after the young leave the nest. (How does he know about the "brief love making period." Under date July 14, 1889, which see on pages 200-201 of this copy, he says the female arrives first upon the breeding grounds and has her nest and eggs before the male comes, from which one must infer that mating takes place in the winter home-- J.H.) In the former instance they are very demonstrative and plucky. In the latter upon your approach to where a young bird is concealed the parents keep up a simple monotonous chirp. I <sup>2</sup>h<sub>λ</sub>ve also seen them jointly chase a family of Perisoreus c.capitalis from the neighborhood of their nest site. At all other times single birds only are seen, at most times with difficulty, for if they do not want to be seen they have the address to avoid the unpleasantness. If an interview of more than a mere glimpse is permitted it is in his interest and not yours. Having demurely interviewed you, in two or three short flights he is lost to you. He has learned your secret and kept his own, this is perfectly clear and plain but not the less vexatious. The typical characteristic nesting habits of this species as I have discovered them are:: At an elevation of a little over 10,000 feet, in a sylvan park-like shelter just where the conditions permit of a liberal growth of timber verging upon the vertical line of dwarfishness, restricted perhaps to a few acres (ofttimes so many yards embrace these attractions in miniature). Where the

angular rocks, the decayed stumps with their prostrate trunks~~sand~~ and the pigmy mounds and ridges of yet more aged monuments of decay, all covered with mosses of liveliest green, mingled with dwarfed ferns, wild flowers and grasses of kindred tint, give to the whole groundwork a softness of effect and expression that is foiled by the angular trunks and limbs of the trees, at once restful to the eye and peaceful to the mind, altogether a scene of surpassing beauty--here dwells the hermit. To note his glidings over this rich carpet of green, making his full stops and his half stops in length and duration, suggests his punctuating a sermon upon the harmony of the surroundings~~x~~ loveliness. He acts no folly, thinks no evil, speaks no mischief. Wherefore should he be distrustful of ~~kiss~~ harm to his home and brood? At present his mate performs her quiet functions in a charming nest of moss and grasses secured by a few twigs in a small balsam hard by which the genial warmth of July is forcing to infant maturity its young shoots and the parent stem to a prodigality of perfume. Here sits our female hermit in patient devotion, sheltered from the rough winds but open to enjoy to the fullest the cool, soft, sighing breath of summer. Here her cheek is crimsoned by the matin ray; with languishing pleasure she marks its midday travel and receives the gilding of its vesper kiss. Within easy wing of her present charge are relics of previous summers which call up past thoughts of endearing labors. Within softening distance bubbles the mountain stream, the avenue by which the snows of yesterday upon the neighboring peaks in liquid haste reach here to temper meridian fervor. Everything is music, therefore her mate is silent. Birds of poetic tastes and habits, fast

friends to solitude, fit ministers to share in sweet solitudes silent adoration! This very interesting species reaches<sup>x</sup> our mountains in the first week in June. By the 20th some have paired and have nests with eggs. (Note again the conflicting statement that the male does not arrive until after the female has her eggs. See preceding page.--J.H.) They range from 8,000 to 11,000 feet. The higher points are reached later as a rule and their nesting delayed from two to three weeks. A cold backward season is likely to disarrange these duties. They seem to arrive quietly and singly and so depart sometime in October, date of departure also governed by climatic influences. They come and go by way of the mountains and not like swainsoni by way of the valley. Auduboni has not been taken on the valley at any time that I know of. On the contrary unalascae of the Pacific Coast is often captured there. The complement of eggs is generally 4 in number. A single clutch of 5 I found in a deserted nest. Nests containing one, two and three young are noted by me, but doubtless the deficiency was owing to sterile eggs, which according to my experience with the thrushes are quite frequent. The eggs unmarked vary in color from a clear, bright, tender greenish blue to the duller shades of light greenish indigo. They are laid in consecutive days. Two sets taken in 1888 measure: 87x66, 88x67, 89x67, 91x65--92x66, 93x66, 94x67, 91x66. Four sets taken in 1889: 87x66, 89x65, 90x65, 89x64--95x70, 93x70, 90x69, 92x70--86x66, 87x65, 85x66, 83x66--91x66, 90x67, 88x66, 89x66. The nest sites vary from 30 inches to 15 feet from the ground, in the majority of cases within easy reach. With one exception I found deciduous trees chosen (he

has confused his terms in this account, and means conifers, as shown by his notes--(J.H.) and mostly small isolated trees of the undergrowth. To my mind auduboni discovers a singularly discriminating taste in the selection of a nest site, always in the vicinity of water, sheltered and sunny without being too much so, and always with pleasurable if not beautiful surroundings. The nest is placed close to the stem with rare exceptions, very little attempt at concealment, they vary much in bulk and density, their construction is rapid and the materials used such as come to hand<sup>most</sup> readily, consisting of mosses, flakes of rotten wood, grass and other plant stems for the middle structure manipulated damp, coarse plant stems and twigs for the outside, and fine grasses, mosses, horsehair and fine roots for a lining. The chief feature in the makeup of one nest may be wholly wanting in another. I have noted a seeming want of care and watchfulness, sometimes actual desertion, in this species, with regard to their nests and eggs; even when the young are hatched watchfulness is not conspicuous with them. I have stood by the nest of a callow brood for quite 20 minutes before the female seemed to know it. From this want of vigilance I have no doubt both nest and young are often destroyed by the jays. One if not both the broken sets found in deserted nests was no doubt the work of these pests, but whether before or after desertion I have no way of knowing. I have examined deserted nests with eggs untouched by the jays not infrequently and cannot account for it unless the female knew them to be sterile, which circumstance is owing perhaps to their lonely habits leading to somewhat a want of sociability of the sexes. Except when pairing or paired they are never



seen together, or it may be that the female precedes the male to the nesting ground, chooses the site, constructs her nest, and lays her sterile eggs, superinduced by climatic influences, before her loitering mate reaches the locality. When he turns up, this being the case, the chase and worrit begins and a  $\frac{2}{\wedge}$ lte, though productive consequence, the result. This kind of chasing I have witnessed, surprised at seeing birds so shy and demure quite oblivious to such details for the time being. Realizing any danger threatening the young they are very demonstrative and plucky, the female uttering a plaintive "click, click," and the male "we-ee"e-ee" repeatedly. The song of auduboni is so far as I am able to judge a combination of swainsoni and mustelina, beginning with "Oh-wee, chee-wee, chee-wee, chee-wee," the former somewhat slow and low and the latter three combinations short and quick, followed by something like the flute-like notes of mustelina. The song in a few cases was given with great power and melody, whereas others performed with less ability. Generally the song was delivered after sunset and before sunrise, in very few instances at any other time of the day. Higher up in the mountain solitudes the melody is not indulged in, at least I never heard it. To account for this it would perhaps not be uncharitable to assign the fear of betraying his home to the gipsy families of Perisoreus c.capitalis that at this season are teaching their young to pry into and devour everything.

Notes on Birds and nests, 1890.

March 29. Left Philadelphia yesterday, travelled through Ohio. Saw red-headed woodpeckers, flickers, doves and meadowlarks, flocks of blackbirds and sparrows.

March 30. Travelled by Rock Island R. R. and arrived in Denver Sunday evening.

March 31. Arrived at Gold Hill Monday evening.

April 1. Climbed Mt. Chief hill. Saw chipmunk and red shafted flicker and saw one Clark's crow. Could not discover nest. Fear it is too late. <sup>April 4.</sup> Searched for nest of last year's pair south of Gold Lake. Did not see the birds. Also searched to the north of Reed's ~~xxx~~ ranch. Disappointed there also.

April 8. Several days very heavy winds. Could not hunt.

April 9. Travelled to Ward. 284 (Clark Crow--J.H.) saw one bird a little to the east of King's sawmill. Saw blue-birds and also a few Junco caniceps.

April 10. 284 (Clark crow--J.H.) at Ward searched for the birds. Saw one only, north of the Niwot property. Saw several robins, bluebirds and Junco caniceps 10,000 feet. 284 (Clark crow--J.H.) returning to Spring Gulch saw 3 birds on side hill behind Fritz' house and to the west of it. One seemed to gather up something at Fritz' stable and carry it away. It is too late to think of finding eggs and I feel the best way is to hunt for their nest localities when building.

April 14. Snowed 13, 14, 15 and 16 at Gold Hill. Travelled on 14th to St. Vrain. Slept at Mrs. Baker's. Saw several flocks of robins each day 14, 15, 16. Also redwings

same period, only males. Only two pairs bluebirds, a few crows, one Swainson's thrush on 16th. Took nest of Maxwelliae owl, 4 eggs fresh, in stub 10 feet from ground, on St. Vrain.

April 15. Took nest of Maxwelliae owl, 4 eggs incubated, 15 feet from ground, near Baker's.)

April 16. Nest of same above Lykins, only one egg. Left it to Davis' care. Took nest of longeared owl, 5 eggs incubated, old nest site 18 feet from ground. Took nest of maxwelliae owl, 4 eggs fresh, in stub 7 feet from ground. Great blue herons nesting in force, 30 pairs at Blore's, Little Thompson. On the 15th at McCaslin's saw buzzard's nesting with herons and nests on same tree. The buzzards remained while the herons flew away upon my approach at about 120 yards distant. Pair of great horned owls no doubt killed that nested near Blore's. The high winds destroyed many old nests and also blew down many old nest sites of Maxwelliae. Saw no jays upon any of the creeks. Found the burrow of a little downy woodpecker with proprietor hid in it. Many flickers were excavating. Saw and heard 5 or 6 pairs of doves 460 (mourning--J.H.) paired and making their mourning love notes. Had a letter from A. B. Bartlett. He captured his two eagle's eggs 449 (golden eagle--J.H.) on March 21.

April 27. Continuous bad weather, rain, snow and wind from 20th to 26th, and for three days before bad weather detained at the mill arranging pond and water.

May 10. Railroad to Loveland, \$1.30. Made the acquaintance of Mr. Smith there.

May 11. Sunday. Travelled to Chimney Hollow to Bartlett's. He procured for me March 26, 449 (golden eagle--

J.H.), 2 eggs incubated. He also secured another nest of 2 eggs for his wife. He did not secure the duck falcon's nest belonging to the pair furnishing the set of 4 eggs of last year. To the north of Buckingham's lake saw a pair of Marsh hawks building their nest in a marsh. Spring birds pretty general.

May 13. Secured a small gopher mouse in long eared owl's nest having young, Day's.

May 14. 360b (Dryobates v. monticola--J.H.) Captured in Crow's Gulch a set of 3 eggs, A, slightly incubated. A fourth seemed to have been broken by the bird. Pygmy nuthatch excavating close by. House wren in same stub as 360b, a live aspen stub, the one 12 and the other 10 feet from ground.

May 15. Captured nest with 5 eggs of dipper, old site, Jim Creek, incubation nearly perfect, ~~xx~~ <sup>too</sup> much so to empty the eggs, which were lost.

May 16. Visited Zieman's Gulch. Ruby crowned kinglet building its nest. Heller's east of house, nest of 360b (Dryobates v. monticola--J.H.) C, 3 eggs, did not take them. Same place 369a (Sphyrapicus v. nuchalis--J.H.) 3 nests excavating just begun. Bismark's ranch nest of 360b (D. v. monticola--J.H.) excavating not quite finished. Oscar Johnson's ~~xxxx~~ ~~xxxxx~~ 370 (Sphyrapicus thyroideus--J.H.) close by house in old aspen stump, excavating.

May 17. Andy Johnson's, near house, 4 eggs fresh in aspens 12 feet from ground 360b (D. v. monticola--J.H.) nest B. Same place between gulches, 51a (Sitta c. aculeata--J.H.) 5 eggs fresh, in pine 10 feet from ground, nest A; same species Reed's house, 5 eggs fresh, in aspen stub 4 feet from ground

nest B.

May 18. Sunday.

May 19. 360b (Dryobates v. monticola--J.H.) took nest C at Heller's, no additions, incubated 2, live aspen 7 feet from ground; captured nest D, gulch leading to Sunset, 4 eggs incubated 3, live aspen 11 feet from ground. It would seem that all the woodpeckers are a little late this season.

May 20. Harris' (D.v.monticola--J.H.) in particular favors the gulches, nesting in aspens. 51 a (Sitta c. aculeata--J.H.) nest C, 5 eggs fresh, in aspen 8 feet high. Left the eggs to see if more would be added, and to see if after closing the opening made the birds would continue to care for them, Fisher's Lake. Taken 22nd, no additions, fresh (This last sentence added later--J.H.)

May 21. 51a (S.c.aculeata--J.H.) nest D, 4 eggs fresh, in pine tree 12 feet high, left the eggs to see if more would be added, located point of hill above Fritz'. (May 24, forsaken, secured the 4 eggs.) On side hill above Fritz' saw a family of crossbills 172 (<sup>Probably Burdick</sup>~~American~~--J.H.), young full grown nearly.

May 22. Saw McGillivray warbler male singing in Fritz' lower field. 360b (D.v.monticola--J.H.) captured E nest, 5 eggs, incubated 4, North's meadow, in aspen 12 feet from ground.

May 23. 220(Junco caniceps--J.H.) nest A, 4 eggs fresh, Democrat Hill. Flushed bird, secured nest also, lined with cattle hair. 25 (Myadestes townsendi--J.H.) nest A, inside yet to line, near Pete Jackson's shaft house.

May 24. Hunted over Reed's north ranch and north

of Jim Creek. Found seven sites, and captured them, as follows

360b (Dryobates v. monticola--J.H.)

F	nest	4	eggs	fresh	in	live	aspen	9	feet	from	ground	below	Prov-	idence	on	creek.	
G	"	4	"	"	"	Do.	"	22	"	Do.	Long	gulch	N.	of	St.	Vrain.	
H	"	3	"	incub.	3dy.	Do.	"	18	"	Do.	Do.						
I	"	3	"	Do.		Do.	"	20	"	Do.	Near	Fritz;				Left	Hand.

370 (Spyrapicus thyroideus--J.H.)

A	nest	5	eggs	fresh	dead	aspen	3	feet	from	ground	Smith's	Gulch						
B	"	6	"	"	"	Do.	"	4	"	Do.	N.	of	St.	Vrain.				
C	"	5	"	incub.	3	Do.	"	8	"	Do.	Gulch	back	of	Pro-	vidence.			
											Beach's	Gulch,					Pro-	vidence.

While at Monte's, South St. Vrain, I noted not less than three families of Clark's crows. They were making much noise, squawking much in manner as the young of the common crow. The tit larks were making their way to the range at this date. Saw several Wright's flycatchers at Long Gulch and elsewhere. Came upon a young brood of the Canada jay, C. capitalis, only just able to fly, in Como's Gulch, St. Vrain. They, like Clark's crow, must have nested near by. Captured one egg of the saw whet owl in old flicker's ~~xxxx~~ burrow in decayed aspen at the commencement of Long Gulch south. There were three young of about equal size about 2 weeks old. The parent showed good fight, was very spunky.

May 29. While hunting in gulch north of Bondholder Mine my attention was directed to the cackle of Cooper's hawk. I instituted a careful search in every direction among the thick timber and after some trouble found the nest situated in a moderately dense spruce tree and tolerably well concealed about 40 feet from the ground. It was rather bulky, composed of small sticks and twigs, the green sprays of balsam were

well mixed into the middle structure and lining. In addition there were to be seen the scales of spruce bark, upon which the eggs, at this date four in number, rested. They were of a uniform tint, white with a tinge of light blue. The nest was deep for a hawk's nest, measuring 3 inches inside and about 20 inches across and 10 inches high. 51a (Sitta c. aculeata--J.H.) nest in old pine stub on road or trail to Mountain Chief Mine. It contained 5 plump young ones a week old, also one sterile egg. 16 feet from the ground. 54 (Sitta pygmaea--J.H.) nest A, 9 eggs fresh, in old pine 18 feet from ground, north of Providence; nest B, 8 eggs fresh, in old pine 40 feet from ground, near Bondholder Mine. 370 (Sphyrapicus thyroideus--J.H.) nest D, 5 eggs fresh, aspen 2 1/2 feet from ground at Hoag's (old site); nest E, 6 eggs fresh, spruce 9 feet from ground, lower part of Hoag's Gulch; nest <sup>F</sup> ~~A~~, 6 eggs fresh, live aspen 6 inches from ground, Outcalt Gulch; nest G, 6 eggs fresh, live aspen 30 feet from ground, Outcalt Gulch.

May 30. 360b (Dryobates v. monticola--J.H.) nest J, 4 eggs, incubated 4, in old aspen stub 25 feet from ground, Hayes', Left Hand; nest K, 3 eggs fresh, in aspen tree 22 feet from ground, Stacey's, Left Hand.

May 31. 431 (Cooper's hawk--See 29th--J.H.) Took the eggs this day. No addition in number. 54 (S. pygmaea--J.H.)  
 Nest C 8 eggs fresh in old pine nearly 18 ft. from ground, Peck's, Ward.  
 " D 6 " " Do. 16 Do. Reed's, Gold Lake.  
 " E, 5 " incub. 2 dys. Do. 12 Do. Hill above Andy's  
 " F 7 " Do. 1 in old aspen 14 Do. Close to Sawmill Do.

In hunting 54 at this date one nest with young, on nest badly incubated, one nest with nest proper unfinished and one nest excavation only complete. 40 (Parus montanus<sup>gambeli</sup>--J.H.) nest A, 7 eggs fresh, in dead aspen stub 4 feet from ground, Fisher's Lake, Mountain Chief. 370 (Sphyrapicus thyroideus--J.H.) nest H, 6 eggs fresh, in aspen stub 8 feet from ground, near Hayes', Left Hand; nest J, 6 eggs fresh, in old pine tree 15 feet from ground, Tumbleson's meadow; nest K, 6 eggs fresh, in old pine tree 30 feet from ground, east Andy's main gulch;

June 3.

~~XXXXX~~. nest I, 6 eggs incubated, old aspen stub 3 1/2 feet from ground, Oscar Johnson's Gulch. 54 (Sitta pygmaea--J.H.) nest G, 6 eggs incubated 2 days, old pine tree 12 feet from ground, Walstead's ranch. Three other nests found in this locality, all too badly incubated. 220 (Junco caniceps--J.H.) nest B, 4 eggs incubated 4 days, on ground, Frank Johnson's ~~XXXXX~~ gulch near his house. 40 (Parus montanus<sup>gambeli</sup>--J.H.) nest B, 6 eggs incubated 2 days, in live aspen stub 360b burrow near Heller's. 360b (Dryobates v. monticola--J.H.) nest L, 4 eggs incubated, in live aspen tree 11 feet from ground, near Bismark's ranch.

June 3. Took nest of kinglet discovered in course of building on May 16, nest A, with 8 eggs fresh, all in good shape, in balsam spruce 22 feet from the ground, near the extremity of a limb 3 feet from the main stem, well concealed by the laterals. 40 (P. montanus<sup>gambeli</sup>--J.H.) nest B, 7 eggs incubated, in 369a (S.v. nuchalis--J.H.) burrow in aspen 8 feet from ground, Zieman's gulch; nest C, 4 eggs fresh, same locality and kind of site, 20 feet from ground.



54 (Sitta pygmaea--J.H.)

Nest H 4 eggs fresh in old pine stub 15 feet from ground Ziemann Gulch

"	I	5	"	incub. 2 1/2	Do.	12	Do.	Do.
<i>June 4</i>	J	6	"	Do. 4	Do.	13	Do.	Mt. Chief
"	K	6	"	Do. 2	Do.	10	Do.	Do.

40 (Parus ~~montanus~~<sup>gambeli</sup>--J.H.) nest D, 8 eggs incubated 1, old pine tree 14 feet from ground, Mt. Chief.

June 5. 40 (P. ~~montanus~~<sup>gambeli</sup>--J.H.) nest F, 8 eggs ~~xxx~~ incubated 2, aspen tree 369 (Sphyrapicus ~~v. nuchalis~~<sup>nuchalis</sup>--J.H.) burrow 15 feet from ground, Monte's meadow grove; nest F, 6 eggs incubated 4, same kind of site 7 feet from ground, Coma's gulch.

361 (Dryobates p. monticola--J.H.)

Nest A 3 eggs incub. 1 da. old aspen stub 5 ft. from ground Bailey Gulch

"	B	5	eggs fresh semi decayed	Do.	12	Do.	Meadow Gulch
							Monte's

369a (Sphyrapicus v. nuchalis--J.H.)

Nest A 5 eggs fresh, live aspen 9 ft. from ground, Monte's.

"	B	6	"	"	Do.	13	Do.	Do.
---	---	---	---	---	-----	----	-----	-----

June 6.

Nest	C	5	"	"	Do.	4 1/2	Do.	Do.
Nest	D	5	"	"	Do.	17	Do.	Do.
"	E	6	"	"	Do.	12	Do.	Do.
"	F	5	"	"	Do.	14	Do.	Bailey's Gulch.
"	G	5	"	"	Do.	8	Do.	Spring Gulch, Hayes
"	H	6	"	"	Do.	10	Do.	Gold Lake, Reed's.
"	I	5	"	"	Do.	4	Do.	Reed's lower Ranch
"	J	5	"	"	Do.	15	Do.	At Giles, Spring Gulch.


June 7. 370 (Sphyrapicus thyroideus--J.H.)

Nest L 5 eggs fresh in old pine tree 20 ft. from ground Mt. Chief

"	M	4	"	incub. 2 da. decayed aspen	3	Do.	Do.
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"	N	6	"	fresh old pine tree	17	Do.	North of Reed's, Jim Creek.
---	---	---	---	---------------------	----	-----	-----------------------------

Captured alive three young sawwhets and carried them home.

Very interesting. Well feathered, seemed to be of separate ages two or three days between each.  mark in ~~xxx~~ white leading from root of upper mandible over each eye, a white place under the chin, head and back plumbeous or light slate

tinged with fawn, breast and belly with legs tawny or fawn, outer edge of tail white, also white spots on wing feathers. The markings under the chin are rather spots right and left and with the tawny markings above define a kind of maltese cross.

June 9. 25 (Myadestes townsendi--J.H.) nest B with one egg; another nest not quite completed; both on side of road in the south bank on the main road from Gold Hill to Boulder. Nest A, found on May 23, remained untouched, altho an undoubted new one, built this year. 370 (Sphyrapicus thyroideus--J.H.) nest O, 4 eggs incubated 3 days, in old decayed aspen 12 feet from ground, Heller's.

June 10. 370 (S. thyroideus--J.H.) nest P, 5 eggs fresh in old decayed aspen 11 feet from ground, Spring Gulch, Left Hand; nest with young at Peck's and at Fritz' above the road, Spring Gulch, Left Hand. 5a (Hylocichla g. auduboni--J.H.) nest A, 4 eggs fresh, in small balsam 4 feet from ground, Peck's Gulch, Spring Gulch. 40 (Parus <sup>gambeli</sup> montanus--J.H.) nest G, 7 eggs fresh, in aspen 2 1/2 feet from ground, same place.

369a (Sphyrapicus v. nuchalis--J.H.)

Nest K	6	eggs fresh,	in aspen	44 1/2	ft. from ground,	Do.
"	L	5	"	Do.	Do.	20
"	M	5	"	Do.	Do.	12
"	N	4	"	Do.	Do.	10

Do. Central Gulch  
Do. Do.  
Do. Do.

June 11.

"	Q	5	eggs incub. 2 da.	Do.	12	Do.	Do.
"	P	6	" fresh	Do.	11	Do.	Do.

40 (Parus <sup>gambeli</sup> montanus--J.H.) Young almost everywhere, at Ward, Duck Lake, etc. 63a (Troglodytes aedon aztecus--J.H. five nests 1/3, 1/4, 1/7, 1/6, 1/7. 431 (Accipiter cooperi--J.H.) nest B, 4 eggs incubated. Large nest, new, in thick pine tree in Peck's aspens. Bird very demonstrative. Nest lined with

balsam sprays and bark scales. 30 feet from ground.

55 (Certhia f. montanus--J.H.) nest A, 5 eggs incubated 2, between bark and trunk of large balsam stub tree 8 feet from the ground, at the head of King's Gulch, very retired and sheltered. 125 (Wilsonia p.pileolata--J.H.) nest A, 5 eggs, incubated 3, among small sparse willows, Celestial Gulch. Only nesting at Duck Lake; located a nest there in process of construction. Also 239 (Oreospiza chlorura--J.H.) with 2 eggs.

June 12. Located the nest of Hammond's flycatcher, I think, out of Ward west. 220 (Junco caniceps--J.H.) nest C, incubated, 5 eggs, swamp at Duck Lake; another nest with young; nest D, incubated, 4 eggs, swamp at Celestial; hatching very early this season. 360b (Dryobates v. monticola--J.H.) nest M, incubated, 4 eggs, in aspen 12 feet from ground, east of Fritz', Spring Gulch, the foregoing was a 2nd clutch; hatched out nearly everywhere. The summer birds, kinglets and warblers, xxx very sparse at Ward to date. 557 (Actitis macularia--J.H.) nest A, 4 eggs, incubated, nest of a few stubble on grassy knoll, wet meadow, Duck Lake. 25 (Myadestes townsendi--J.H.) searched for the two nests on the Gold Hill road side, found them destroyed.

June 16. 25 (M.townsendi--J.H.) nest C, 4 eggs, incubated 1, side hill below Sommerville.

June 17. 25 (M.townsendi--J.H.) nest D, 5 eggs, incubated 2, obtained from Dan, under a rock, side hill. 323 (Empidonax difficilis--J.H.) nest A, 2 eggs fresh, in tunnel, Gold Hill stage road below Sommerville. 327 (Empidonax hammondi--J.H.) nest A, 4 eggs, incubated 2 days, slaughter

house gulch, obtained from Dan, nest 7 feet high, saddled on limb close to stem of small, half dead spruce tree. 290c (Cyanocitta s. diademata--J.H.) one long crested jay nest taken by Dan 20/5/90 obtained, one egg, the only survivor of 4.

162 (Piranga ludoviciana--J.H.) nest A, 4 eggs, incubated 4 days, western tanager, spruce tree, 20 feet from ground, 8,500 feet, from Dan. 122, nest A, 4 eggs, incubated 2 1/2, Maryland (western--J.H.) yellowthroat, nest side of creek in long grass raised from the ground 4 or 5 inches.)

June 18. 122, nest B, similarly located, only 1 cow bunting egg in nest, later on found only 1 egg with bunting's, two others destroyed and on the ground, the yellowthroats had not forsaken the nest. 304 (Tyrannus tyrannus--J.H.) nest A, 3 eggs, incubated 1, on valley near Boulder. 12 (Galeoscoptes carolinensis--J.H.) nest A, 2 eggs fresh, nest B, 4 eggs, incubated 2, on valley near Boulder.

June 19. 93a (Dendroica aestiva--J.H.) nest A, 4 eggs, incubated 2, on valley near Baker's, St. Vrain. 300 (shore lark--J.H.) nest A, 3 eggs fresh, taken near Loveland, by road side. With Mr. Wm. G. Smith I visited several lakes in the vicinity of Loveland, where I collected the eggs of the avocet 566 (R. americana--J.H.) and Wilson's phalarope 565, it being their second laying. Mr. Smith had secured two nests of each species for me previously, which in addition to those I took myself are as follows, viz.:

565, nest A, 4 eggs, incubated 4, May 19.

B, 4 "

C, 4 "

D, 4 "

E, 4 "

31.

June 19.) These three nests  
" ) were all similarly  
" ) situated, all in

damp places with short grass about, a few grasses in a slight depression is the nest complete.

566, nest A, 4 eggs, May 19. Nests A and B were secured by  
 B, 4 " " " " Mr. Smith about the dates of  
 C, 4 " June 19. Phalaropes. C nest, found by

myself, was placed close by the bare alkali on the border of a small lake at the edge of the struggling grasses and plants. A site selected, a few ~~xxxx~~ grass or plant stems are brought together, generally in some little depression. Altho late in the season, the coot's nests and eggs I often stumbled over. I secured several sets. One I saw in which I counted 12 eggs. At this date the eared grebe was nesting plentifully, from 2 to 4 eggs in a floating nest. A few sets numbered 5 eggs. Secured several sets.

June 21. Noted that the lazuli buntins were building their nests on the St. Vrain. Here I also noted the nests of 325 (Empidonax traillii--J.H.) completed. No towhees met with. Goldfinches not yet nesting. I was informed that in the September hop gathering their nests are found.

June 25. 323 (Empidonax difficilis--J.H.) nest B, 4 eggs fresh, in Silas' prospect hole near Peck's barn (yellow-belly). 4a (Hylocichla u. swainsonii--J.H.) nest A, 4 eggs, incubated 4 days, in small evergreen near pathway at Peck's, 3 feet from ground. 369b (A Pacific Coast species, Sphyrapicus ruber. It ~~xxx~~ <sup>must</sup> mean 369 a, S. nuchalis, as his last preceding letter for this species was P.--J.H.) nest Q, 4 eggs, incubated 3 days, at gate near Brainard's meadow, 2nd laying, same site as K taken on the 10th 6 eggs, showing the 2nd laying to have commenced in about 8 days; nest R, 4 eggs, incubated 4 dys, in Celestial Mine gulch, same site as L taken on the 10th 5 eggs, being 2nd laying, showing 2nd laying to have commenced in about 8 days. 125 (Wilsonia p. pileolata--J.H.)

nest B, 4 eggs, incubated 4 days, in Celestial Gulch, same locality as A taken on 10th 5 eggs incubated 3, being 2nd laying, showing the 2nd laying to have commenced in about 8 days.

June 16. 234 (Melospiza lincolni--J.H.) nest A, 6 eggs fresh; Duck Lake, taken in my absence by Charlie Kundner.

June 26. 206 (Zonotrichia leucophrys--J.H.) nest A, 5 eggs, incubated 3 days, in evergreen 2 foot from ground, Duck Lake. 125 (Wilsonia p.pileolata--J.H.) nest C, 4 eggs, incubated 2 days, began to build nest 11th, Duck Lake; nest D, 4 eggs, incubated 2 days, nest east of fence on Duck Lake; 3 or 4 nests with young of 125, 2, 3 and 4 days old, about a week to hatch out. 234 (Melospiza lincolni--J.H.) nest B, 5 eggs, badly incubated, all lost; other nests with young at Duck Lake, Peck's, etc. 326 (Empidonax minimus, identity doubtful--<sup>likely trailii</sup> J.H.) nest A, 4 eggs, badly incubated, saved only 2 and they but indifferent specimens. 327 (Empidonax hammondi--J.H.) nest A, 4 eggs, incubated 3 days, nest being built 13th inst., saddled on bough of spruce tree about 14 feet from the ground, eggs yellow ground powdered with dark specks, shell marks lavender. 5a (Hylocichla g.auduboni--J.H.) nest B, 4 eggs, badly incubated, nest found with 1 egg on 13th inst., in evergreen 5 ft. from ground; June 27. nest C, 4 eggs, incubated 3 days, in evergreen 4 feet from ground; nest with young; all Left Hand. 96 (Dendroica auduboni--J.H.) nest A, 4 eggs, incubated badly, 2 only saved, nest saddling bough 5 feet from ground, Left Hand.

June 28. 5a (H.g.auduboni--J.H.) nest D, 4 eggs, incubated 4 days, in Thrushes' gulch, S.W. of King's sawmill, evergreen, 9 feet.

June 30. 5a (Hylocichla g. auduboni--J.H.) nest E, 3 eggs, incubated badly, saddled on spruce bough 8 feet from ground, Upper Left Hand. 329 (Oreospiza chlorura--J.H.) nest A, 3 eggs, incubated 3 days, in evergreen bush 9 inches from ground, Ward District, 10,000 feet. 220 (Junco caniceps--J.H.) nest E, 5 eggs, incubated 2 days, at foot of small evergreen on side hill, same locality; nest F, 3 eggs, incubated 4 days, obtained from Ben, Gold Hill, 2nd laying.

323 (Empidonax difficilis--J.H.)

Nest D, 4 eggs fresh, obtained from Ben, Gold Hill.

"	E, 4	"	"	Do.	Do.
"	F, 4	"	"	Do.	Do.

July 1. 323 (E. difficilis--J.H.) nest G, 4 eggs fresh, taken from Paul Miller's prospect above Peck's barn. 5 (Hylocichla unalascae, likely intended for <sup>or swainsonii</sup> auduboni, 5a--J.H.) nest A, 4 eggs, incubated 3 days, obtained from Ben, Gold Hill, in small evergreen 3 feet. 318 (Nuttallornis borealis--J.H.) nest A, 3 eggs, incubated 2 days, in spruce saddled on bough 40 feet, at Humboldt Mine. 96 (Dendroica auduboni--J.H.) nest B, with young, in spruce built close to stem, Humboldt Mine. 4a (Hylocichla u. swainsoni--J.H.) nest B, 3 eggs, incubated 3 days, close by mill in Left Hand, in bunch of soft maple.

July 3. 12 (Galeoscoptes carolinensis--J.H.) nest A, 3 eggs fresh, in low bush on the St. Vrain Creek; nest B, 3 " " Do. Do.

249 (Cyanospiza amoena--J.H.) nest A, 1 egg fresh, shell of another on ground. Nest in bush well hid by weeds, foot from ground. A first nest of this pair I saw building on 21st June was abandoned, nearly finished in low ~~xxxx~~ shrub 17 inches

from ground, quite conspicuous. Small bunches of wild cotton entered into the construction of this nest. Both sites were similar to those chosen by 325 (Empidonax pusillus--J.H.) nests, however, are less compact in their make-up. Grasses and inner bark strips were used in middle structure and lining had horse and cattle hair. This species nests late, from beginning to 10th or 12th July, probably. 325 (Empidonax traillii--J.H.) secured several nests of this species. Nest sites none above 4 feet from ground. Nests differed somewhat. Some had large quantities <sup>of cotton</sup> showing on the outside while others showed none, but instead the usual wild hemp. In their lining sometimes horse or cattle hair was used, alternating with fine grasses. Various kinds of bushes were chosen, rose, willow and other shrub bushes. Found two empty nests just completed, 2 with two eggs in each, 2 with three eggs in each, six with 4 eggs in each fresh and slightly incubated, two badly incubated and two with young. Nest A, 4 eggs fresh; B, 4 eggs fresh; C, 4 eggs fresh; D, 4 eggs incubated 2 days; E, 4 eggs incubated 3 days; F, 4 eggs, incubated 2 days. A completed nest of this species found on the 21st June had at this date 3rd July only two eggs of the cow bunting in it. Possibly the bunting destroyed the eggs of the flycatcher.

July 6. 5a (Hyalocichla g. auduboni--J.H.) nest B, 2 eggs damaged and badly incubated, nest on stump, made of dry, wiry plant stems, wild hemp, etc. Location on the dry, almost tree-and-shrubless side of hill west of Gold Hill, far from any moist places or water. Reported birds of much song.

July 8. 211a (Spizella s. arizonae--J.H.) nest A, 3 eggs, incubated 4 days, in pine shrub 3 feet, Ward District,



10,000 feet, nest empty 30th June.

July 9. 206 (Zonotrichia leucophrys--J.H.) nest B, 4 eggs, incubated 3 days, in small evergreen 20 inches from ground, at Niwot (Niwot Mine--J.H.). 239 (Oreospiza chlorura--J.H.) nest B, 3 eggs fresh, in low pine bush 6 inches from ground, Ward District.

July 10. 4a (Hyllocichla u.swainsoni--J.H.) nest C, 4 eggs, badly incubated, all lost, in small evergreen 3 1/2 feet, at Beaver Meadow. 156 (Tachycineta t.lepida--J.H.) nest A, 4 eggs, badly incubated, 2 only saved, in aspen, old 369a (Sphyrapicus v.nuchalis--J.H.) burrow, 12 feet. There were other pairs breeding in Como's & Mac's field, but earlier nesting than the one I took.

July 12. 206 (Zonotrichia leucophrys--J.H.) nest C, 3 eggs, fresh, in low evergreen 8 inches from ground, Duck Lake. 321, (Contopus richardsoni--J.H.) nest A, 3 eggs, badly incubated, saddling pine bough with bark on it, 12 feet from ground.

July 30. Walked to Little Thompson in search of nesting data of 181 (Astragalinus tristis--J.H.).

July 31. 181 (A.tristis--J.H.) nest A, 5 young partially fledged, within 4 or 5 days of leaving nest, located in box elder 11 feet high, saddled on outer branch, composition of nest wool on outside, grasses for middle structure, lined with cotton and thistle down; nest B, just finished, no eggs, in box elder toward outer part of tree, more of a hanging nest than A specimen, beautifully felted, using wool, cotton, inner bark, etc., dense, lined with cotton. Great irregularity in the nesting of this species, at least three

weeks shown by these nests A and B. Birds very shy and seemingly indifferent about their nests. Nests must be looked for with little reference to the bird. In the dense foliage the nests are difficult to find. The same tree chosen each year, it would seem.

July 30. 1040 flycatcher unidentified, 2 eggs, incubated 4 days, in center of box elder clump 8 feet high. Nest in make-up similar to 328 (Empidonax wrightii--J.H.) but larger and more dense, with coarser grasses for middle structure, inner bark also used, cotton on outside, lined with fine grasses and horse hair. Alarm note of bird much like the bee martin but not so loud or screamy. Bird looked much like wood pewee, about size, etc. 154 (Hirunda erythrogaster--J.H.) a pair nested in the mill, hatched out a single young one. It left the nest 25th July. On the 28th the old nest was repaired and on 4th August 3 eggs of a second clutch were laid.

December 6. Saw large flock of northern waxwings Chief Mt. side. Captured two. Near Gold Lake saw several robins feeding on berries of the wintergreen.

Dec. 8. Visited Ward. Captured 10 northern waxwings (A. garrulus--J.H.) Celestial side hill. They were feeding on the berries of the wintergreen. They were very fat. Climbed Bald Mt. Snow too hard. Could not track either grouse or ptarmigan and therefore did not see any of either species.

Dec. 13. A.O.U. 379 (this is the first A.O.U. number he has used--J.H.) Glaucidium gnoma, a specimen taken in Walstead's gulch (below) female, shot through the eyes with rifle shot B.B. Stomach contained remains of mouse or shrew, in good condition, fat. Bill and toes yellow, the latter with

bristly hairs upon them, nostrils prominent, orifice round, sulphur greenish at base, Claws black at points, greenish at base, tarsus feathered, grayish; upper parts head, back, wing coverts and tail light umber, primaries and secondaries of wings brighter, reddish or ferruginous tint rusting them, with markings appearing as spots from head to tail and of various shapes and dimensions, white and whitish, thickest and most distant on forehead, disposed on wings and tails <sup>as</sup> somewhat interrupted bars, under tail and wing markings the white more decided. A formidable array of bristles entirely surround the mandibles, at the side anterior to the eye longest and shortest, black pointed with white bases, the chin extending nearly to anterior corner of eyes whitish ocher. Immediately between this patch and the eye, a space of half an inch speckled over ear coverts merging into the tint of back part of neck. Below this is a cravat, dark brown, grayish in front, hoary on the sides and back, with black markings very decided each side the center of back. Below this is a whitish region descending to the chest. Flanked on either side is a mottled or speckled patch of an intermediate wash tint of back and wings, joining underneath and above the general upper tints. From thence downward to under tail coverts silvery white with longitudinal dark almost black streaks. Edge of wing shoulder showing in front conspicuously silver white. White under wing coverts have a pale ochreous wash. Entire length 7.10, wing 4, tail 3.25. A female specimen brought to me by a boy living near the American Star Lode No. 2, Jan 20. Said he killed it with a rock. His attention was drawn to it by witnessing her endeavor to get through the window to his

cage bird. This specimen like the other measured in the flesh 7.50 in length, 4.25 length of wing and 3.40 length of tail. Primaries and secondaries of wing, especially the latter, with tail feathers, somewhat frayed, no doubt from hunting in thickets and bushes. It was in fine condition, quite fat, and had in its stomach a full grown mouse two-thirds digested. It was warmly feathered. It has been winter weather with snow covering the hillsides a foot deep for over two weeks, which I think proves this species to be hardy and withall a rustler for food. The yellowish portions of bill and feet not so bright or decided as in the male specimen. In all other peculiarities of their markings they seem to be identical, the collar in both reaching entirely around the neck, hoary light gray mixed with black cutting through the dark upper tint, white in front, below the dark cravat mottled of somewhat lighter tint than that pervading the upper parts, and reaching up nearly to the chin. In front the collar at the base of throat widens in the center and runs down into the white of center chest and belly. In both specimens the upper surface of primaries and secondaries (the latter most decided) have a warm wash of ochery or rusty tint in marked contrast to the general upper tint. The white tail bands are interrupted in each feather showing a spot varying in size upon outer edge of both webs only.

March 15, 1891. Saw the first bluebird above Fritz'.

April 5. Saw a flock of Bohemian waxwings on mountain side above mill.

April 10. First appearance noted of black breasted woodpecker (S. thyroideus--J.H.) near Reedy's mine. Mountain Chief later on two or three days saw several, all males, busy

tapping their alarms upon some dead limbs or tree tops, thus:  
 . . . . . , the middle taps running one into the other,  
 a continuous rattle of short or long duration. While some  
 were long stationary, tapping and rattling at intervals, others  
 were restless, flying about and alternating the above tapping  
 and rattling with the call note "pe.ouch," which becomes very  
 fervent and amorous at the love-making stage. These males  
 were impatient (at least their actions seemed to suggest it)  
 for the arrival of the females, or they feared they might be  
 undiscovered to them if less demonstrative. The male is a  
 most devoted mate and therefore very jealous. In excavating  
 burrow and all other household duties he does the greater  
 part. They favor the same locality for nesting consecutive  
 years. As a rule they make a fresh burrow each year, occupy-  
 ing sometimes the same old stub, generally conifers. 284  
 (Clarke crow--J.H.) saw one bird Mt. Chief, a male acting  
 strangely. Hunted for nest but could not find it. Could not  
 tell if he was building or if his mate was sitting. In con-  
 nection with their nesting they exercise great address by not  
 showing themselves. I am of opinion their nesting this season  
 is much later. So much storm and snow has rendered it almost  
 impossible to hunt for their nests.

May 5. Just arrived at Gold Hill. 63a (Troglodytes  
a.asteucus--J.H.) saw a male singing in Lickskillet Gulch. Saw  
 also on this date Audubon's warbler, seemingly just arrived,  
 rather late this season.

May 18. Hunted on Gold Hill ridge. Brewer's black  
birds arrived a week ago. 57, saw a pair mated but not yet  
 housekeeping (as No. 57 of Gale's checklist is the St. Lucas

cactus wren, this record is impossible. As he has mentioned this number before and I recollect no mention anywhere of the canyon wren, which is found in this region, I am inclined to assign all these records to the last named species--(J.H.) Found robin's nest 4 eggs fresh. No eggs laid yet by the black breasted woodpecker (S.thyroideus--J.H.). Did not locate a single Harris'. Saw a ~~xxxxxx~~ few Audubon's warblers, but they were not nesting. Arctic bluebirds were nesting. Saw several pairs so engaged. Saw a few white crowned sparrows and some western house wrens. Saw no 369a anywhere (Sphyrapi-cus v.nuchalis--J.H.). Their nesting seems delayed. Discov-ered ~~xxx~~ a very light variety of the great horned owl fastened to the barbs of a wire fence some time last winter while hunt- ing for rabbits, locality, Heller's gulch, a sheltered and un- frequented place. (May 30. Saw its mate in same locality near by.)

May 19. 25 (Myadestes townsendi--J.H.) nest with 4 eggs, A, side of road from Left Hand to Gold Hill, fresh; <sup>May 25, same,</sup> ex- cavation in earth only, side of road below Black Cloud mill; May 26, same, excavation in earth only, side of road going to Sunshine.

May 15. 290c (Cyanocitta s.diademata--J.H.) A, nest found by Cy Strock near Carl Gardner mine, eggs destroyed; B, found May 27 by Bronty, 5 eggs, two of these eggs saved by Dan.

May 29. 54 (Sitta pygmaea--J.H.) opened a nest site. The excavation was finished but no nest yet. Saw others ex- cavating in different places of hill of Mountain Chief.

May 27. 170 (Carpodacus m.frontalis--J.H.) nest just beginning, Whitcomb's gulch, in spruce tree. Took nest,

5 eggs fresh, June 8. 370 (Sphyrapicus thyroideus--J.H.) several sites discovered, excavations not finished yet (Young on 30th).

May 29. 369a (S.v.nuchalis--J.H.) nest, no eggs yet, Andy Johnson's lake, in aspen 10 feet from ground. 96 (Dendroica auduboni--J.H.) not yet commenced to build, on Gold Hill ridge.

May 30. 96 (D.auduboni--J.H.) could not discover at any point that this species had commenced to build yet. 40 (Parus <sup>gambeli</sup>montanus--J.H.) A, nest with 9 eggs, incubated 3, in small aspen 30 inches from ground, Oscar Johnson's.

June 2. 25 (Myadestes townsendi--J.H.) nest B, from Dan, 4 eggs fresh, Whitcomb's gulch. 220 (Junco caniceps--J.H.) nest A, 4 eggs fresh, from Dan.

June 5. 54 (Sitta pygmaea--J.H.) nest A, 7 eggs fresh, from Dan, 5 eggs were broken, only two saved.

June 6. 370 (Sphyrapicus thyroideus--J.H.) nest A, 5 eggs fresh, in Petsite Gulch; nest B, 3 eggs fresh, same place; same date nest incubated at Hoag's; nest C, 3 eggs, incubated 3, hill above Fritz'.

June 8. 40 (Parus <sup>gambeli</sup>montanus--J.H.) nest B, 8 eggs, incubated 3, Spring Gulch, near Peck's trail; nest C, 9 eggs, fresh, Celestial Gulch; nest D, 8 eggs, fresh, Duck Lake. 125 (Wilsonia p.pileolata--J.H.) this species only just arrived with other summer birds at Duck Lake. 30 (Regulus calendula--J.H.) west of ward, indeed everywhere I went yesterday and today I noticed an unusual paucity of birds, notably ruby kinglet 30 and Audubon's warbler 96.

June 10. 370 (Sphyrapicus thyroideus--J.H.) nest

of 4 young at Bismark's ranch. 40 (Parus <sup>gambeli</sup> montanus--J.H.) nest with young, Fred Heller's Gulch. 30 (Regulus calendula--J.H.) saw a male bird of this species in Zieman's gulch, mate perhaps sitting.

May 19, 1892. Mountain Chief from mill along the log road and down by King's gulch. 24-768 (Sialia arctica--J.H.) 54-730 (Sitta pygmaea; here he is using both Smithsonian and A. O. U. checklist numbers--J.H.) guarding their nesting sites and chasing each other away, both interested in same tree. 355-418 (Phalaenoptilus nuttallii--J.H.) flushed this species twice on side hill south of road up King's gulch. 25-754 (Myadestes townsendii--J.H.) saw a pair up from Altona mine yesterday, seeming to have nest thereabouts. 96-656 (Dendroica auduboni--J.H.) saw a male of this species near slaughter house on road to Gold Hill. 51a-727a (Sitta carolinensis<sup>aculeata</sup>--J.H.) heard the nesting notes of this species at Mountain Chief tunnel, did not see it. Very windy and unpleasant. Great paucity of birds. Bad weather for last two weeks.

May 20. 30-749 (Regulus calendula--J.H.) saw pair at Zieman's, not nesting yet, a difficult matter to procure food. 5a-759a (Hylocichla g. auduboni--J.H.) saw this species on side hill near ditch between Zieman's and Eheler's. 40-738 (Parus gambeli--I have frequently in these notes designated this as P. montanus, a name now abandoned--J.H.) pair of this species excavating in rotten aspen, dividing the labor between them, carrying away the chips 15 to 30 feet in their mouths before dropping them. 370-404 (Sphyrapicus r. thyroideus--J.H.)



male of this species excavating in old aspen stump. Peter families appears to do all the hard work and most of the incubating and feeding the young. 30-749 (Regulus calendula--J.H.) saw pair at Eheler's in spruce tree such as would afford good nesting sites. The female seemed to be feeding upon some minute insects or their larva and at the same time was looking to make the best choice of a nest site. If so, the examination was most minute. This accounts for its being so securely fastened and hid from her enemies. I watched her untiring movements confined to a few feet on the same few branches. Now and again her mate would join her, his brilliant ruby crest flashing luminously in the sun.

May 26. 30-749 (R. calendula--J.H.) discovered female at Zieman's building her nest. Visited Eheler's gulch but could not see anything of the birds observed there a week ago. They were probably feeding in this sheltered place before moving further up. Weather cold and windy with snowbanks in places below 10,000 feet. 51a-727a (Sitta carolinensis<sup>occultate</sup>--J.H.) saw a pair of this species at John Anderson's having vigorous and lively \_\_\_\_\_ (cannot decipher the word--J.H.) Visited many localities old haunts of this species without seeing or hearing any. All nesting very backward. Clearly nothing will be found difficult of detection until less windy and warmer weather prevails.

May 28. 30-749 (R. calendula--J.H.) saw a pair near Peck's stable. Wind blowing too strong to note any indication of nesting. Am rather inclined to think they were not.

May 30. 25-754 (Myadestes townsendii--J.H.) saw 754

lower part of Gold Hill road searching for nest site, more than probable. Carefully viewed the whole hill side road to Salina without discovering either nest, bird or prepared site. Upon entrance to foothills from Boulder saw several 162-607 (Piranga ludoviciana--J.H.) near old railroad track.

May 31. A mile east of Boulder captured nest and 4 eggs, incubated, of 565-225 (Steganopus tricolor is Smiths. #565 but A.O.U. #224, while Recurvirostra americana is Smiths. #566 but A.O.U. #225, so that 565 and 225 cannot be the same. From the locality I should consider that it must be <sup>Phalaropus</sup> S. tricolor ~~xxxxxx~~ a conclusion borne out by the fact that the male was covering the eggs--J.H.). Male flushed from it 30 feet ~~xxxx~~ in front of me. Observed its mate flying widely about nearly half a mile from north to south. Did not observe any distress at seeing their nest robbed, and did not hear their peculiar honk. Visited Weisenhorn's Lake. From birds that were paired ~~xxxxxxx~~ at different points round the lake none of them indicated having nests, they seemed to be too busy feeding, perhaps 10 or a dozen pairs. The females honked occasionally and moved on a short space and went on feeding. The female is a beautiful bird and seems to be boss. I watched a large flock of these birds swimming about in the lake away out from shore. To these the paired couples did not seem to pay the least attention or join in their gambols. Before I left the lake this flock of fully 150 birds took flight and for half an hour performed some wonderful evolutions. Headed by a honking leader the drill was wonderful round the lake, crossing it, taking the entire sheet of water zigzag, when at full flight suddenly reversing the order of flight, when for an instant

the whole would seem an inextricable mass, and while the eye is filled with this seeming disorder each bird seems to drop into its former place and observe the straight flight again. These maneuvers were evidently to call attention and afford the opportunity for all those so inclined to join in a further flight. Those paired to breed at this point took no part with the restless crowd. Presumably they were conveyed to this point, when they dropped out of the ranks, to join the merry crowd next fall upon their return south. (The foregoing all apparently refers to the phalarope. 122-681 (A.O.U.681a Geothlypis t.occidentalis--J.H.) saw a male on old railroad track. Saw and heard 93a-652a (A.O.U.652 Dendroica aestiva--J.H.). Also several 321-462 and 304-444 (Contopus richardsoni and Tyrannus tyrannus--J.H.). Flushed a dove 400-316 (Z.macroura--J.H.) from nest on the ground with two young doves 4 or 5 days old. 261-498 (probably Agelaius p.fortis, as this seems to be the common species of red-winged blackbird here. See The Auk, Vol. XXIV, p. 332.--J.H.) nest with several nests near Boulder. Took from one nest 2 eggs cow bunting and left 4 eggs of the species 498. (Cow bunting or cowbird he gives as No.258-491. It is 258 of Smiths.list but 495 of A.O.U. list--J.H.) 304-444 (Tyrannus tyrannus--J.H.) saw several of this species. Also 321-462 (Contopus richardsonii--J.H.)

June 2. 456-312 (Columbo fasciata--J.H.) saw several pairs of band-tailed pigeons at Fritz'. 30-749 (Regulus calendula--J.H.) this species building nest in pine tree at Peck's nest B. 370-404 (Sphyrapicus ruber thyroideus--J.H.) took nest A, 5 eggs, fresh, above Utica Mine, Ward District, nest A.

June 3. 125-685 (A.O.U.685a, Wilsonia p.pileolata--

J.H.) this species building nest, began the day previous, behind Niwot (Niwot Mine--J.H.) nest A; at Duck Lake, nest B (finished 5th). 30-749 (Regulus calendula--J.H.) This species building two nests in spruce trees in snow bank, nest C (finished 8th), nest D (finished 7th).

June 4. Mist, rain and snow, cold and windy.

656 (A.O.U.656, Dendroica auduboni--J.H.) very shy in building nests.

June 6. 370-404 (Sphyrapicus r.thyroideus--J.H.) took nest B, 5 eggs, at Oscar Johnson's. Two eggs seemed incubated 2 1/2, the balance were fresh. 40-738 (Parus gambeli--J.H.) took set of 6 eggs, fresh, from old patched up burrow at Oscar Johnson's, set incomplete, no parents to be seen, 4th year breeding in same burrow, 10 days later than last year. 30-749 (Regulus calendula--J.H.) Climbed to nest A, at Zieman's. It contained one egg. Saw no birds about. Nest well concealed in spruce tree 50 feet from the ground. It must have taken the female, who alone works, 15 days to build it.

June 10. 96-656 (Dendroica auduboni--J.H.) A, nest finished building the 8th. Discovered B nest building, saw no nest I think it was finished on the 10th. Crossed the lower portion of Bald Mountain from Doyle's, a long climb over much snow. Audubon's warbler in this white wilderness. Saw no kinglets with them nor any in Left Hand park under Bald Mt. Seemingly they had not ventured so far up. Audubon's warblers were fairly numerous about Ward, but could not connect them with nesting yet. Very difficult to secure nests of this species. 125-685 (A.O.U.685a, Wilsonia p.pileolata--J.H.) had a glimpse of a single bird of this species at bridge, Left

Hand Park, very windy and cold. I was mistaken in supposing this species was building on the 3rd inst. They were doubtless arranging holes to sleep in. At that time I believe the males only had arrived. Up to the 10th I have not discovered that any bona fide nest building has begun. 5a-759a (Hylocichla g. auduboni--J.H.) discovered this species constructing her nest, probably began on the 6th, nearly completed today, 10th inst, in willow tree 30 inches from ground, at junction of parent stems, on stump of one of the stems, the building chiefly if not altogether done mornings and evenings. Noticed this and others of the species scampering over the snow banks in the timber. 169-518 (Carpodacus cassini--J.H.) came upon the female of this species building nest, began probably the 7th yesterday (dates mixed--J.H.). Very slow in building. Quantity of material scant. Quite fearless, carried on her labor as I sat within 8 feet of the work, exhibiting dash and pugnacity toward any bird approaching her nest. Placed 10 feet from the ground. I believe I saw with material in her mouth another female, but seeing her only once I could not determine the nest site. Location in the fresh timber spared by the choppers axes west of Niwot (Niwot mine--J.H.) This last note made today (this explains the mixture of dates --J.H.). 51a-727a (Sitta c. aculeata--J.H.) At this same point I saw a pair of slender-billed nuthatches chiveying about seemingly without eggs at this date, 10th June.

40-738 (Parus gambeli--J.H.) pair at Duck Lake on the 8th had no eggs yet. The pair were driven away from last year's site by pair of bluebirds, who held peaceable possession.

339-432 (Selasphorus platycercus xxx --J.H.) saw the first

and only hummingbird on the 8th June. 471-297 (Dendragapus obscurus--J.H.) flushed a ~~female~~ male at my feet almost near Jim Creek and St. Vrain ditch; flushed a male at Peck's and Brainard's fence on June 2nd. At Ward, Left Hand Creek, saw flycatchers 318-459, 320-462, 327-468 and I think 326-467 at Duck Lake (Nuttallornis borealis, Contopus richardsonii, Empidonax hammondi and E. minimus--J.H.). 185-533 (Spinus pinus--J.H.) in the last 3 days saw one or two pairs of this species flying round.

June 14. 125-685 (A.O.U. 685a Wilsonia p.pileolata--J.H.) nest A and B, 4 eggs each, lower sunny side of willows, Duck Lake; nest C, 4 eggs, lower meadow site where I saw the bird preparing nest on ~~the~~ June 3. This species build their nests and keep away from them, even to the 3rd egg, after which the bird covers them constantly. The three nests just noted each bird was flushed on 4 eggs. They were left undisturbed to see if there will be any additions. Other pairs in same locality had nests and probably eggs, but the birds were flying about feeding, seeming to have no nests or other cares. I notice this with most other birds. 5a-759a (Hylocichla g. auduboni--J.H.) nest supposed to have begun construction on the 6th seemed lined and finished on the 13th, one week in building. This date, 14th, there was one egg in the nest. 30-749 (Regulus calendula--J.H.) nest C had 3 eggs in it and nest D had 5 eggs in it, parents absent but near by with an eye upon their treasures in case of danger, their demeanor in no way leading to discover it, occasionally as by accident working to and away from it, making no period in their brisk gambols at fly catching, they are quickly on hand and very demonstrative when the

nest is examined and still more when the nest is taken.

96-656 (Dendroica auduboni--J.H.) climbed to nest A. There were 3 eggs. Commenced building on the 2nd, 8 to 10 days in its construction. Neither parents showed themselves. No doubt they were watching me two or three hundred yards away. After construction until the full complement of eggs are laid there is not a sign of them about the site. The female does all the work at constructing nest, while the male is hid in a neighboring tree and in case of being watched flies off to the female, who desists from her labor till the intruder has moved away. Seated at a distance of 200 yards, one or both birds will fly over and reconnoiter, generally the male, and when satisfied of your bad intentions will significantly fly a long way distant in a manner to suggest a non-return to the locality again. They seem to select as a rule when intrusion is likely, small isolated patches of timber or single trees, from whence they can see in all directions. In most cases the nest is so well hid and from the foregoing the birds afford so little assistance, when they do not positively mislead, that their nests are exceedingly difficult to discover. The female will stop in her labors and flycatch, appearing the same as others so employed, who belong to a higher altitude and are putting in their spare time until their intended locations have their surroundings propitious for their going there. 169-578 (this is 518, not 578, A.O.U., Carpodacus cassini, as shown by the Smiths, #169, and the fact that 578 is a southern species--J.H.) climbed to nest begun 7th inst. It seemed completed, a week's work. Center and bottom of nest more dense than usual; No parent at hand. Saw a male and

two females not nesting. 318-459 (Nuttallornis borealis--J.H.) west of Niwot (mine--J.H.) on Left Hand, near green timber, saw this species building nest upon topmost branch of small, tall, slim spruce tree, stem at point of nest site not over 1 1/4 inch diameter, 35 feet high. Seeing no possible way of climbing to it, I cut the tree down with the chance of a more reasonable selection being made for a second nest site. The nest had 4 or 5 days work done on it. The material used was coarse, wiry rootlets with the usual modicum of tree moss in its composition.

June 15. 30-749 (Regulus calendula--J.H.) took nest A, at Zieman's, in spruce tree 50 feet from the ground, only 6 eggs, on the 6th there was one egg, an insufficiency of food, probably, some part of the 9 days being cold. Extremity of branch 6 feet from stem. In chopping the branch before securing the eggs altho carefully done the jar fractured 2 of the eggs. The eggs were all fresh. I do not think the full complement was attained.

June 17. 30-749 (R. calendula--J.H.) took nest at Peck's in fork tailed pine saddled on horizontal branch 22 feet from ground. Female just beginning to set, fed by male, each time supplying food like the slender-billed nuthatch upon approaching nest site greeting his mate with a peculiar chuckling, this being an aid to discovering the nest by his frequent journeyings to and from the nest. 8 eggs fresh, two broken. 40-738 (Parus gambeli--J.H.) nest B, old site near gate at Brainard's meadow, 6 eggs fresh, 1 egg broken. Very late laying this year, not finished the complement of clutch. 125-685 (685a, Wilsonia p. pileolata--J.H.) nests A, B, and C,



with 4 eggs on 14th, took them this date, A and B four and five eggs respectively, C also 5 eggs, full complement I think. 5a-579a (759a, Hylocichla g. auduboni--J.H.) nest of one egg on the 14th contained 3 eggs this date, not covered late in afternoon.

June 18. Went to Left Hand Park. Saw a few kinglets and Audubon's warblers. Experience unsatisfactory. Could not determine if nest building had commenced with them. They were not numerous. Warm weather with a few mosquitoes, I may say the first warm day at this point. 125-685 (685a Dendroica auduboni--J.H.) discovered several of this species, most of them very recently arrived. B, building nest just commenced, others acting as if selecting sites, in all perhaps 8 pairs.

June 19. 125-685 (D. auduboni--J.H.) at Duck Lake secured nests E, F, G and D, 5 eggs each. No doubt some of them, as they were all fresh, would have had 6 eggs, the full complement. Nest H and J, 4 eggs in, left them alone. Discovered a pair building nest nearly finished, no doubt one whose nest was despoiled on 7th. Think with great reason it was the pair of nest A. 30-749 (Regulus calendula--J.H.) took nest D, with 5 eggs on 14th, in spruce tree, Duck Lake, lowest branch 7 feet from ground, 8 eggs fresh. Unfortunately broke 5 eggs by unsetting of nest, beginning to sit. 5a-579a (same blunder as above, 759a & Hylocichla g. auduboni--J.H.) took nest A, 4 eggs fresh, 3 eggs on 17th. Bird sitting on eggs all day, beautiful eyes, large and wondering. 254-583 (Melospiza lincolni--J.H.) took nest A, 5 eggs fresh, Duck Lake. This species very few this season. Too wet, I presume.

169-578 (same blunder as on June 14, 518, not 578, Carpodacus cassini--J.H.) climbed to nest A, discovered 3 eggs covered by parent through the fierce sunlight. Bird very tame.

96-656 (Dendroica auduboni--J.H.) took nest A, 5 eggs, yesterday evening only 4 eggs were laid. The extreme tameness of female, who hopped upon the nest over my head 12 feet from the ground, led me to suppose another egg was forthcoming. The female kept close by me during the operation of sawing branch off with nest. Did not (see--J.H.) the male at all. Female discovered little or no distress. Climbed to nest B, no eggs to date. 518-459 (Nuttallornis borealis--J.H.) this species nest A, begun in tree cut down on Left Hand Creek seemingly ~~xxxxxx~~ vacated the locality. Saw another bird this morning near Stanton Mine. No doubt nest is or will be located in this neighborhood.

June 21. 125-685 (685a, Wilsonia p.pileolata--J.H.) nests I and K, 4 eggs each, incubated 3 days, Duck Lake. 234-583 (Melospiza lincolni--J.H.) nests B, C, D, and E, fresh and slightly incubated, 4 eggs each, Duck Lake. 30-749 (Regulus calendula--J.H.) took nest C, 8 eggs fresh, Duck Lake, 30 feet from ground, saddled on spruce branch 5 feet from main trunk; nest D again nesting.

June 22. 169-518 (Carpodacus cassini--J.H.) took nest, 5 eggs slightly incubated, believe this to be 170-519, house finch. The following day this bird selected a new nest site. The small, slender tree selected was such that I cut it down, that a more reasonable tree might be selected. (This record could not have been written at time of occurrence, as record for 22nd continues without a break--J.H.) 220-569

(Junco caniceps--J.H.) nest A, 4 eggs, incubated, Duck Lake.  
 5a-579a (same b<sup>h</sup>ander as before; it is 759a, Hylocichla g. auduboni--J.H.) again nesting, same pair. 318-459 (Nuttallornis borealis--J.H.) nest B, above slaughter house, Ward, in spruce tree 35 feet from ground, 3 eggs, incubated 1 1/2, 1 egg slightly injured. No tuft of tree moss in composition of nest. Nest A of 18th of June tree cut down, nest seemingly complete on June 24th.

June 23. 5a-579a (759a, Hylocichla g. auduboni--J.H.) nest B, 4 eggs fresh, Left Hand Park, in small spruce tree 3 feet from ground. 328-469 (Empidonax wrightii--J.H.) nest A, nearly complete, in small fir tree 2 1/2 feet from ground. 206-554 (Zonotrichia leucophrys--J.H.) nest A, 2 eggs, in spruce bush 2 feet from ground. 96-656 (Dendroica auduboni--J.H.) nest C, 2 eggs, in fir tree 3 1/2 feet from ground.

June 24. 96-656 (D. auduboni--J.H.) took nest B, 4 eggs, slightly incubated, one slightly damaged by bird's claw. There were no eggs laid up to 18th inst., nest completed several days since. So sly was the bird in her operations that altho constantly about having an eye to this nest site I saw the bird but once in the nest connection. The female slipped on in the evening and I just caught sight of her, the first indication I had that the nest had not been deserted. Site near the top of spruce tree 22 feet from ground. 220-569 (Junco caniceps--J.H.) nest B, 4 eggs fresh. Saw bird pitch off small tree on to the ground, nest site. 125-685 685a, Wilsonia p. pileolata--J.H.) nests L and M, 4 eggs each, fresh. L 2nd laying of nest A, M first nesting. 185-533

(Spinus pinus--J.H.) several of this species picking seed on snowbanks. One pair I observed nest building very high up in spruce tree, topmost branch probably 60 feet from ground.

June 27. 361b-394b (Dryobates p. homorus--J.H.) nest of this species in half decayed aspen 16 feet from the ground, at Peck's. Saw only the male, who seemed to be covering the eggs. Readily made his exit from the burrow upon tapping the tree. On July 2nd on my return it was the same thing, in my opinion still covering the eggs (another evidence that notes not made at time of occurrence--J.H.) Fearing the eggs too far incubated upon first discovery I did not examine into matter, for I did not like to take the chances for next season. 323-464 (Empidonax difficilis--J.H.) took nest A, 4 eggs, one damaged, at Giles' mine, badly incubated.

June 28. 206-554 (Zonotrichia leucophrys--J.H.) took nest A of 23rd inst., 4 eggs, slightly incubated, at lowest meadow; took nest B, captured this day, 3 eggs, only slightly incubated, Left Hand stream. 96-656 (Dendroica auduboni--J.H.) nest C, with 2 eggs on the 23rd inst., hatched out, by appearance of young 2 days old. Was greatly surprised, inasmuch as upon examination of one of the eggs I did not perceive how advanced it was in incubation. The manner of the bird, however, indicated the correct state of things by tumbling about with a view of drawing off attention to nest. Think incubation covers 8 days only. Took nest D, same species, 5 eggs, in low fir tree 2 1/2 feet from the ground, near Niwot mine. Bird did not flush until I was about to put my hand on the nest, which I thought was an old chippy's nest. Eggs incubated 2 1/2. This was the second nest found in small low trees of

this year. I found also 4 old nests similarly placed, hence a fair percentage so located may be depended upon.

June 29. 5a-579a (759a *Hylocichla g. auduboni*--J.H.) 2nd laying of parents to nest A, 4 eggs taken on 19th inst. These eggs in different stages of incubation from fresh to 2 or 3 days incubation, indicating the eggs being covered from the first laying. Thus it would seem that this 2nd nest was built and 4 eggs laid in 8 days. This period covered the whole matter. 318-459 (*Nuttallornis borealis*--J.H.) located C's nest site, on topmost bough of very tall spruce tree at Duck Lake. 185-583 (~~185-583~~ list is *Melospiza lincolni*, while ~~185-583~~ 185 Smiths. list is *Spinus pinus*, which is 533 A.O.U., doubtless the nest of 533 mentioned June 24, which is also indicated by the nature of the site, I believe--J.H.) located nest site A of this species in top of tallest tree at Duck Lake. Am of opinion that other pairs are breeding in this locality, but so far cannot locate them, the birds are such flyabouts. 125-685(685a, *Wilsonia p. pileolata*--J.H.) nest N, 4 eggs fresh and 3 eggs incubated, the most advanced probably covered 2 1/2 days, this was a second laying of nest B, taken on the 17th inst., about 10 days; nest O, 4 eggs, all fresh, being 2nd laying of parents to nest I taken on 21st inst., 8 days.

June 30. 318-459 (*Nuttallornis borealis*--J.H.) took nest A, up Left Hand Creek, secured only 2 eggs, fir tree 20 feet from ground. ~~xxxxx~~ One egg was damaged by the birds themselves. These were the parents of the incomplete nest ~~xxxxxxx~~ in the tall, slender tree cut down on the 14th inst. Eggs incubated 2 or 3 days. Thus it would seem 2

weeks to build and lay the full complement of eggs is necessary. The birds of C nest I believe to be those to whom nest B belonged taken on the 22nd inst. Their nest I do not think yet completed at Duck Lake to where they lately came. 169-518 (Carpodacus cassini--J.H.) nest B, in spruce tree near top 40 feet from ground, 5 eggs, badly incubated, one lost in descent from tree, up Left Hand Creek, west of Niwot Mine. 30-749 (Regulus calendula--J.H.) nest F, in same locality, in small spruce tree 5 feet from ground, nest within 4 days of completion, discovered by birds building it. 328-469 (Empidonax wrightii--J.H.) took nest A, 4 eggs fresh, eggs laid consecutively, bird difficult to flush from nest, in small fir tree 27 inches from the ground.

July 2. 30-749 (Regulus calendula--J.H.) nest E, 2nd laying of parents to nest D taken on 19th inst., containing 7 eggs fresh. No doubt the full complement of 8 eggs would have been laid, thus in 12 days nest built and 8 eggs laid. Nest as before 9 feet from ground in spruce tree.

July 11. 30-749 (R. calendula--J.H.) nest F discovered on 30th June, the birds being actively employed at the time completing it and required lining only, as near as I could judge wanting about 3 days to perfect completion, I found untouched and altho the birds were about, chasing about as is their habit while laying, I could not discover the new nest which they had time to construct. At this stage of proceeding the actions of the birds are most bewildering, affording no clue to the nest site. I am strongly of opinion that the parents of nest F were the parents of nest D, altho the sites were a mile apart. 169-518 (Carpodacus cassini--J.H.) nest B,

was building a new nest a little over 200 yards from former site, and seemed to require a good deal of urging by the male, who took no active part in the nest building but accompanied the female very often back and forth to the site with building material in her mouth, and thus expressed his amorous delight more than once, while under observation, under pressing circumstances, as is generally the case with this finch. Ten days after taking the first nest a second with a full complement is not at all unusual. In this case I believe this tardy second laying was owing to the eggs of the first laying being heavily incubated. The productive organs of the male had no doubt relaxed and required more time to rekindle the desire again to nest. The desire of the male to perpetuate his species seems to be very strong, much more so than with the female, whom he chases and drives round until she gets to work upon the nest. Its progress in building he watches, fighting off intruders to its neighborhood, encourages his mate in her labors by attention and sometimes his song.

318-459 (Nuttallornis borealis--J.H.) parents to nest A, 1st nest tree cut down on 14th June, 2nd nest taken 30th June with complement of eggs 3, three days incubated about, again nested about 200 yards distant and again supplied a full set of 3 eggs fresh this day, in ~~Maple~~ <sup>Sapin</sup> tree 22 feet from the ground, thus selecting site, building nest and laying full complement of eggs in 10 days. Parent of nest B, same species, building a second nest at Duck Lake--either this or there are two pairs at this place. I think it likely that the high position of the first site selected, with high wind rolled the eggs out of the shallow nest, or the parents feared

this might be the case and made the last selection. Every dispatch was being used in building, in part thieving the material from an abandoned or partly constructed finches nest. 96-656 (Dendroica auduboni--J.H.) nest C, 2 eggs 23rd June, hatched out on the 26th June. At this date the birds had quitted the nest 2 days previous to date, I should judge from appearances, thus requiring two weeks to mature sufficiently to leave the nest. This family as to time was a fair sample of the species about Ward, for I saw other pairs with young just as far advanced as these referred to. They were in the trees and able to fly about and hide themselves in the branches, altho they were still being fed by the old birds.

July 20. 96-656 (Dendroica auduboni--J.H.) saw no birds, young or old. Presumably they had moved higher up or changed their places. 369b-394b (~~Sphyrapicus~~<sup>Oryzopsis</sup> p. homorus--J.H.) saw the male feeding the young. They were able to take the insects from the old bird at the aperture without the parent bird going into the burrow. If at all, the eggs could not have been much incubated when first discovered on June 27. This species is a late breeder and hence escaped me heretofore. 169-518 (Carpodacus cassini--J.H.) took nest with 4 eggs, slightly incubated, 2nd laying of nest B, half built on July 11. 318-459 (Nuttallornis borealis--J.H.) took nest with 3 eggs, fresh, 2nd laying of nest B, Duck Lake. My remarks with reference to these birds on the 11th July I opine to be correct. Nest site in large spruce tree 50 feet from the ground, near the end of horizontal bough 9 feet from the trunk. Having supported the bough with cords, I cut it near the main trunk and pulled it in. It was a very difficult operation. At the



moment of severance the end of the bough dipped slightly and two eggs rolled out of the shallow nest and were lost. If correct in assigning this nest to B nest taken half a mile distant on June 22, nearly a month intervened between, whereas with parents of nest A 1st and 2nd laying was only 10 days. Possibly, and I am rather inclined to think it was the 3rd nest and perhaps the 3rd set of eggs for parents of nest B. (This might be a good reason for doubting his conclusion that it was the same pair, for which he does not give his reasons --J.H.) 339-432 (Selasphorus platycercus--J.H.) this date took 6 nests. A and B 2 eggs each, heavily incubated. The behavior of both females was alike, which led to the discovery of their nests and is deserving of note. When quite 50 feet distant they left their nests to interview me, moving from one perch to another, acting nervously, for a space of 4 to 6 minutes, when they returned to the nest and covered the eggs, from which they were with difficulty removed. In the case of A I severed the branch upon which the nest was saddled and carried the bird on the nest for several yards away, when I lifted the bird off the nest by the mandibles and let her go. Had these birds A and B remained on their nests I had never discovered them, but immediately I saw them knowing their peculiarities the task was an easy one. That they should be so curious, nervous or pugnacious before the nest is discovered, and after discovery they should be so dazed or supine and helpless, evincing such courage and devotedness at the same time, is very remarkable. While the female is building her nest and until she commences to cover the eggs the male watches. He is on guard near by and attacks

anything, man or beast, however large or small, with great courage, screeching and dashing about with utter fearlessness, seemingly a perfect terror to all birds who by accident happen to fly near the guarded point. As I did not see either males of A and B nests I presume they were away gathering food for their sitting mates, to obtain which no doubt they roam to a great distance, which their swift flight renders an easy matter. Nests D, E, F and G had young birds in each of different ages. In one nest they were no larger than house flies, seemingly just hatched, dark little objects, quite motionless and so small that they appeared lost in the roomy nest to appearance, whereas a second nest contained two vigorous young that entirely filled their nest, were partially feathered, dark in appearance, showing no bright colors. The mandibles of all were quite short, nothing to suggest those of the adult birds. I saw nothing of either parents in connection with these four nests. The situation of nest A and B gave me the cue, and by following the creek up I discovered a nest every 200 to 250 yards distant, none over 4 feet from the ground and all close to the creek, none over 10 feet from the water. A and B were within 2 feet of it. The site of nest B was secured to a small branch on the under side of an old tree lying across the creek, the trunk sheltering it from the rain. In all the other sites the trees were evergreens, upon the lower branches on the east or lee side of the prevailing winds and sheltered by the upper branches from rain. I had no difficulty in finding the 4 latter nests, in the absence of the old birds (who were doubtless away foraging for their young) for I knew exactly where to look for them. The situation and appearance of the tree sufficed.

In a manner speaking I walked right up to them. As with some other species, I have discovered their nesting secret. What has bothered me hitherto has been the diverse dates of nesting. On the St. Vrain I took a nest in the latter part of May, and from appearances the bulk nested early in June. This altitude is 8,500 feet, whereas the 6 nests taken today at Ward were at 10,000 feet altitude, and I noted in their vicinity some small vestiges of snow still to be seen. It is quite likely they were later this season at Ward than usual. This was the case with some other birds. I should think 10 or 12 days covered the different extremes of the 6 nests referred to. This species loves to nest close to running water, as the foregoing <sup>note and some other</sup> experiences ~~show~~ prove. The previous experience has been some instances rudely set aside, but it certainly as a rule prevails now.

March 14, 1893. For several days previous I visited the side hill of Mountain Chief and searched very thoroughly. 284 (Nucifraga columbianus--J.H.) saw two pairs but could determine nothing today. I came to the conclusion that they had not begun to nest. I only saw one pair today. The other pair hid or left the locality I thought they would nest at.

March 15. 284 (N. columbianus--J.H.) visited the Buckhorn, north end of old road and above the new road, a pair was evidently nesting, as I perceived one with twig in its mouth, a foundation twig. Just beginning to build, I judged. The bird ~~sch~~reeched but held on to the twig. I went off a distance and watched but they did not show up. Went further away and after an hour saw one of the birds on top of dead tree overlooking the locality where I first saw the birds.

I was not interviewed by the birds as is usual when retiring or watching. 150 saw a flock of Bohemian waxwings, about 40, in this locality.

March 22. 284 (Nucifraga columbiana--J.H.) visited the Buckhorn again, saw nor heard nothing of this species.

March 24. 284 (N.columbiana--J.H.) made exhaustive search on Mountain Chief, I believe that two pairs are here located. Whether nesting or not at this date cannot say.

March 27. 284 (N.columbiana--J.H.) climbed Mt. Chief above Fritz', saw one bird several times. Could determine nothing by its behavior.

March 28. 284 (N.columbiana--J.H.) Again I visited the Buckhorn, examined the location over a large area without seeing or hearing a bird. This is a decided case of desertion. Possibly I was too officious upon the first occasion and caused alarm. 172 (Loxia curvirostra <sup>*hendrixi*</sup> ~~*americana*~~--J.H.) in this locality saw crossbills, to all appearances looking for exact site or already having begun to build, but not in earnest, as I watched them a long time without results. 150 (Ampelis garrulus--J.H.) the same flock as seen on the 15th inst. Believe they have occupied this location all winter. They were flycatching this morning, being warm, in fact, the first fine, warm day this season.

March 31. 150 (Ampelis garrulus--J.H.) these birds seem to have left en route north. None to be seen today. Plenty of wintergreen berries everywhere, independent of the snow melting uncovering them. There was through the winter much uncovered ground, affording large areas of this plant with an unusual supply of berries. 172 (crossbills, see above--J.H.)

the pair of crossbills noted on the 28th instant, were evidently resting from their labors, having completed their nest-building. Now I come to think of it their demeanor said as much. I regret not witnessing the building operation, which I believe was wholly undertaken by the female. Locality a sheltered hillside east of Buckhorn mountain on north side of clump of scattered coniferous trees in pine tree about 18 feet from the ground, saddled on horizontal branch 5 feet from main stem and 4 feet from end of branch, the nest shielded on the weather side by part of another branch from below, and yet immediately underneath the nest could be easily seen, altho the site would be easily overlooked, if indeed the site would be examined at all, it being in a general way the least likely tree to be selected for nesting, a number of others more sheltered and offering better hiding being at hand. Upon approaching the belt of scattered timber I stood several minutes looking to the center of furthest edge to see if I could discover the bird carrying building material, in which direction I had supposed the nest site selected from the manner of the birds I had previously watched, instead of which I was within a few feet of the tree the nest was located in. Simultaneously with my advancing about 50 yards ~~xxx~~ distant the male suddenly lit upon the top of a tree. At a greater distance off no doubt he had seen my intrusion and became alarmed. I saw at once by his anxious manner that he was to be watched, so I stood still, keeping him in view, in two minutes he flew a little quartering toward me to another tree top and in less than half a minute flew toward the nest site and when within two feet of it the female joined him and flew off. The appar-

ition so to speak of the female led me to examine the location of her exit from the tree, when I plainly saw the nest. Intending to watch matters I walked off 20 or 25 yards and sat down. Upon doing so I saw the male on a twig close to the nest. I did not see the female at all, whom he must have conducted back to the nest. His stay there was momentary. I ~~mix~~ only had time as I turned around to get a glimpse of him as he flew away. Still of opinion that they were building or ~~as~~ it now seemed they were completing their nest, I waited and watched for nearly 2 hours and went away intending to return. I was absent perhaps 4 hours. Upon my return as also before I went away I struck the tree trunk and some of its lower decayed branches, but the female did not flush. I climbed the tree and discovered the female sitting close. I reached out and rudely shook a spray with two or three pine tassels on it which were immediately over the nest, to no purpose. She trembled but would not fly off until I poked her with my finger. She was covering two eggs. After leaving the nest I watched. It was fully 10 minutes from one tree top before she crossed the site to another tree and after 2 minutes ~~more~~ she again settled upon the nest. I did not see the male anywhere about, for a moment only after his unnecessary anxiety that gave his mate away. While building nest I believe as with some other birds this species' nest can be located, and in no other way unless given away by the male. Accident brought the male to the nest locality just as I happened to be near the spot, otherwise it was 100 chances to one I had not discovered it.

April 3. 172 (Crossbill, see above--J.H.) took nest and 3 eggs this day. Watched the male feeding female at long

intervals 1 1/2 to 2 hours. He seemed to fly some distance away. Was not present when the nest and eggs were taken. Eggs were covered from the first laying to prevent their being chilled I presume. The male seemed very devoted to his mate and likewise the female to her nest and eggs. Measurements of nest as follows: 5 in. wide, 2 1/2 in. deep outside; 1 3/4 in. deep, 2 5/8 in. wide inside. Dimensions taken on the spot, therefore correct. Composition of nest, foundation a few twigs, with stiff strong plant stems, some of the latter stayed through the body or wall in which is felted a few fine grass stems, with much plant fiber, species of wild hemp, the same somewhat finer with a few feathers felted in for inside lining, which feels a little harsh. The structure is light but well knat together, warm without being very dense. Should think it took at least a week to construct. Saddled upon bough 1 1/2 inch thick, well protected by laterals. Eggs slightly incubated. No additional eggs intended. Measurements of eggs: 69 x 44, 70 x 44, 72 x 45. Tint of ground light bluish green, under markings rusty lavender, very minute to bolder and interser or darker character, the latter prevailing on one egg, the former on the other two, which have to almost exclusion on the one egg darker markings sparsely distributed from 1/100 to 3/100 of an inch dark sepia or warm black. The set in general appearance but little below if not quite the average of eggs of vesper sparrow, the tints in the markings light and heavy being somewhat similar but much altered seeming by the ground color of shell. Shell a long oval pointed



April 8. 150 (Ampelis garrulus--J.H.) last of the Waxwings seen today going north.

April 19. 284 Nucifraga columbianus--J.H.) hunted for the nests of this species whenever opportunity afforded, with no satisfaction. At fault continually. Whether having nests or not to date, 8 pairs so far. Season very backward. Some pairs acted differently to former experience. 297a (Perisoreus c. capitalis--J.H.) returned from S. St. Vrain this day, searched for Rocky Mt. Canada jay's nest east of Beaver Park. Saw none. Weather unfriendly to early nesting. From inquiries do not believe in that locality that nesting has yet begun. 172 (American crossbill--J.H.) on hillside above Fritz' saw a pair of this species searching the pine cones for seeds. Seemed not yet to have their nests, otherwise at this date she would be in care of it. Will investigate further. Weather too windy and cold today.

April 21. 172 (crossbills--J.H.) Visited same locality without seeing my birds. Am pretty certain the pair I saw had their young at least 7 days old or they would not be left alone. In this case they must have had eggs in good shape by end of March, commenced building 20th.

April 22. (Cyanocitta s. diademata--J.H.) discovered nest of this jay about three parts built in old black scrub pine 5 feet from ground near Hartley's, nest A. Saw birds near the tree while distant 400 yards. By their behavior judged they were building, hid, waited and watched. At intervals of 10 to 15 minutes one and quite often both birds returned to the tree. After being quite certain I walked over to the tree and found the nest. Another pair were building, for one of



the birds had a twig in her bill. This was one of several pairs nesting in Zieman's gulch. I was discovered and watched by the birds, who were suspicious and would not work. The best way is to pass on to appearances, seeming uninterested, and when some distance cautiously return, and well concealed at the greatest safe distance possible with field glass locate their nest site. Do not meddle with the nest while in course of construction. The birds are very cunning and are far sighted. 284 (Nucifraga columbianus--J.H.) visited Zieman's gulch, saw no birds of this species. Think I heard one. Good locality for them, but too extensive an area, difficult to work.

April 24. 360c (Intended probably for Dryobates p. homorus--J.H.) nest A, excavating nearly finished, 9 feet high, live aspen.

May 2. Visited side hill above Stacey's, also side hill above Fritz'. At the first point discovered a nest of 284 (Nucifraga columbianus--J.H.) from which the young had left perhaps 4 days previous. Saw them, three in number. They were able to fly short distances very well. The old birds were quite demonstrative in their vicinity at both points. On side hill at Fritz' the young were equally well able to fly and take care of themselves. In each case they seemed to be a month old and therefore had nests and eggs by 15 or 20 of March, which accounts for their strange behavior which I could not understand in the early part of April and later in the month at seeing both birds feeding on the ground and flying round together, their young being old enough to be left alone, while I supposed from the very windy weather so

long prevailing they had not yet nested. This was a mistake. The weather though windy had not been cold and the birds at 9,000 feet nested fully as early if not earlier than in previous seasons. 290c (Cyanocitta s. diademata--J.H.) nest B, Spring Gulch opposite Stacey's lower field, in lower limb of pine tree 20 feet from the ground. From beneath the tree plainly seen saddled on branch 1 1/2 inch diameter. I did not climb to it. If it contained eggs at all the clutch was not in full, as I saw both birds flying about the locality from a distance. 54 (Sitta pygmaea--J.H.) a pair of these birds were busy cleaning out a wren's nest in a woodpecker burrow. The lighter portions were dropped at the aperture but the larger small twigs and such like were carried away quite 100 feet before dropped. . Male and female were at work. The latter, however, appeared the most industrious. Locality, entrance to S. gulch. Two other pairs I observed excavating on hill sides, one at Stacey's upper ranch and the other at Fritz'.

May.4. Started to meet Bartlett. Received from him a pair of eagle eggs 449 (golden eagle--J.H.) taken on 25th March, 2 weeks incubated. Nest site in rock ledge 60 feet high, 20 feet from the ~~xxx~~ top, 40 feet from ground. 413 (Probably Falco mexicanus--J.H.) endeavored to secure a nest of this species in rocky ledge on the St. Vrain 60 feet from the ground and about 15 feet from top of ledge in a deep fissure. Female did not leave the nest until a large stone was hurled down the rock face when she flew off and her mate the male joined her. He must have been close by in the rock ledge. They were not nearly as noisy or aggressive as the duck falcon. They gave out some cries but I could not correctly hear

then as the wind was blowing a hurricane, so much so that we had to hold on to the rocks for security. Altho provided with ample rope and an expert climber I would not allow him to take the risk. On the St. Vrain near the above point secured a set of eggs of the water ouzel, 5 eggs, one fresh or sterile, with 4 others badly incubated, nest A.

May 3. 19 (water ouzel--J.H.) nest B, on Jim Creek below Jintown, nest complete without eggs (13th 1 egg, May 21 robbed). (As this is nest B while that of May 4 is nest A, it is possible he meant this date for the 5th instead of 3rd, though his figure 3 is very plain. The notes of 13th and 21st were evidently added later.--J.H.) Saw several white throated swifts in the several rock ledges. Had arrived some days previous. Snow fall and bad weather from 5th to 7th, both inclusive, birds quiet.

May 8. 360c (probably Dryobates p.homorus--J.H.) nest B, excavating old aspen, 8 feet high, Bismark's, no nest; nest C, excavating live aspen, 14 feet, Zieman's (taken 4 eggs fresh June 3/93); nest A, nest still unfinished, 9 feet high, P. Elers' (May 29 4 eggs incubated, not taken).


172 (<sup>Bendire</sup>~~American~~ crossbill--J.H.) At Fred Eler's and on hill side Zieman's gulch saw young and old birds together feeding on pine seeds, the old birds searching the pine cones. They would seem pretty uniform as to nesting date, 15th March on sunny hill sides in pine trees presumably.

290c (Cyanocitta s. diademata--J.H.) secured nest A, 4 eggs quite fresh. Female flew off when I touched the branch with my stick. As she sat on the nest and slightly trembled when she saw she was discovered off a little distance I heard her

give the alarm, but I saw nothing of either her or her mate while sawing off the bough to secure the nest in situ. Like Clarke's crow the female while incubated is left quietly alone by the male, who, not to betray her whereabouts, keeps at a distance. It is therefore extremely difficult to find this nest when everything near it is so quiet. They must be watched while building, when they are both active and noisy. If approached their actions are very misleading and they are experts in deception. Nest B, same species, discovered May 2. Found upon close examination to be an old nest in good preservation, last season's. The birds fooled me badly in this respect.

May 9. 360c (probably Dryobates ~~xxxxxxxx~~ <sup>v. monticola</sup> --J.H.)

Nest D, excavating,	Monte's Gulch.	June 8 young.
" E	road to Beaver Park	" "
" F	Do.	" "
May 10.		
Nest G	shanty gulch	" "

May 11. \$61b (probably D.p.homorus --J.H.) nest A, old excavation, Monte's Gulch. (June 12, mistaken, no nest). 19, (Cinclus mexicanus --J.H.) nest C, building on old site, S. St. Vrain, near Monte's. Both birds at work on it, probably 5 days work. In shape thus  horseshoe, back by upright rock ledge. Material gathered from the water in wet state. The bird pushes and works this varied material on the inside, as it were interlacing its sprays and fibers which on the outside are allowed to lay loose, plush-like, to lead off the water like a hay-cock from its dome roof. The outside form is oven shaped unless made to suit the shape of the site afforded by the rock ledge, when sides, back or top may interfere with the shape. The front is always oven-fronted. The nest

~~proper~~

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proper is cup shaped, perfectly circular, of wiry, harsh grass stems fitted while wet. The finished lining is of some half dozen willow leaves at bottom of nest. All material being used wet, after they are worked in position and moulded ~~by~~ in shape by the bird's body being twirled around, the nest proper remains a fixture. With the outside covering the whole is very compact and strong, so little damaged as a rule in a season's occupation and wear and tear of the winter's storms that very little repair is needed for a second year's occupancy. Decay of the material after a time causes the dome to sink down, thereby rendering it inconvenient if not entirely useless. Then it is pulled down and a new one built on the same site. I have known of a pair of birds, no doubt the same pair, building in the period of 8 years several nests as occasion required in the same niche.

May 12. Walked to Allen's Park. 41a (Parus a. septentrionalis--J.H.) nest A, in old aspen stub 2 feet from the ground, no eggs yet. Did not open the burrow, evidently made by the bird itself. (June 10 examined burrow, no nest or birds to be seen near it, saw 3 pairs but could not locate nests, only a little later than 10.)

May 13. 40 (Parus ~~XXXXXX~~ gambeli--J.H.) nest A, in old woodpecker's burrow 10 feet from ground, Outcault's Gulch. (Taken June 2, fresh, 8 eggs.)

May 10. Sought the Canada jay (capitalis--J.H.) at Beaver Park. Saw a few birds. Chas. F. Fifer told me they had decreased in numbers about his cabin door very remarkably in the last 15 or 20 days. Searched for nests without success. Snow too soft. I think probably at 10,500 feet nests with

eggs in shape may be taken as late as 15th May, at 10,000 feet probably 10 days earlier.

May 15. 25 (Myadestes townsendii--J.H.) nest A, on side of road on hill side above Prussian Mine, nest complete all but the lining. ((Taken May 31, 4 eggs, incubated 3 or 4 days.

May 16. 370 (Sphyrapicus r.thyroideus--J.H.) nest A, Hayes', 2 feet, old aspen, excavating (not taken, incubated badly, June 12); nest B, Beach's, 13 feet, live aspen, excavating (taken, 4 eggs fresh, May 31); nest C, Kingman's, 9 feet, old pine stub, excavating (taken 6 eggs fresh June 1); (these parenthetical dates of taking are added after, as shown by the method of insertion in the original--J.H.)

54 (Sitta pygmaea--J.H.) nest A, Mt. Chief, 14 feet, old pine stub, excavating (taken 7 eggs fresh June 2); nest B, Fritz', 9 feet, old spruce stub, excavating (taken 8 eggs, incubated 1 day, June 6); nest C, Celestial, 20 feet, old pine tree <sup>excavating</sup> (taken 6 eggs fresh, June 6);

May 17. 54 (Sitta pygmaea--J.H.) nest D, Celestial Gulch, 12 feet, old aspen stub, excavating (taken 7 eggs, incubated, June 6); nest E, Allen's Park, 14 feet, old spruce stub, excavating (taken 6 eggs fresh, taken June 10); nest F, Jim Creek, 20 feet, old pine tree, excavating (taken 7 eggs fresh ~~xxxx~~ June 12). Flushed a dusky grouse and within 100 yards heard another flush, at highest point above Mountain Chief Mine. No doubt they intend nesting at this point if not already commenced.

May 18. 30 (Regulus calendula--J.H.) at Ziemer's about to nest, chasing round in the most lively manner, possi-

bly two pairs. No indications of nesting either at Ziemann's or at Celestial Gulch on June 3.

May 24. 40 (Parus gambeli--J.H.) nest B, Spring Gulch, old aspen stub, old burrow, nesting (taken, 9 eggs, incubated 2, June 3); nest C, Spring Gulch near Peck's, old aspen stump, old site repaired (taken, 7 eggs, fresh, June 6); nest D, Allen's Park, old aspen tree 12 feet from ground (taken, 6 eggs, fresh, June 9); nest E, Allen's Park, old aspen tree 5 feet from ground (taken, 9 eggs, fresh, June 9); nest F, St. Vrain near Gear's, aspen tree 10 feet from ground (taken, 6 eggs, fresh, June 10); nest G, Monte's Long Gulch, aspen tree 5 feet from ground (taken, 8 eggs, fresh, June 10); nest H, Celestial, 15 feet from ground (taken, 7 eggs, fresh, June 13); nest I, Peck's, 2 feet from ground (taken, 8 eggs, fresh, June 15, 2nd laying, 6 eggs, incubated 1 1/2, on June 22).

May 27. 51a (Sitta c. aculeata--J.H.) I saw a pair flying about seemingly hunting for food without any nest. Singularly scarce when they should be nesting. A bad season for the species, I imagine. On the 1st June tested an old nest site at Reed's. To my surprise found the female covering a set of 7 eggs not more than a day or two of being hatched. Saw a pair flying about seemingly without nest at Brainard's & Gales, south side. Went to Allen's Park. Hunted around as far as Allen's Park without any satisfaction, all the species being very late in nesting, some not yet to hand at 8,500 feet. Windy, cold, snow, rain and foggy weather all the past week. Even such species as had begun their nesting labors have suspended operations for warmer weather. 19 (Cinclus mexicanus--J.H.) nest C, noted on the 11th inst, in a period of two

weeks very little done on it, not more than two fair days work as I saw the female working this morning for an hour while the sun was bright and warm. In every minute or two she brought material and incorporated it in the walls of the nest dome in the most ingenious manner, by forcing with much exertion of her bill the fresh wet material into the interstices in the already constructed and partially dry wall from the inside, as a shoemaker uses his awl, picking up any small portions from the bare stone floor that may have been broken or detached and in the manner as described caulking it into any little space offering, working from the bottom up, always below the top rim upon which nothing is laid after the walls are raised upon a level of where the nest proper is to occupy, also on a level with the threshold of opening. The walls are then raised on all sides of this opening by forcing the building material in a way acting like a wedge, raising the upper rim or edge by working in its walls from below (not on top of it). The mouth full of material is pushed awl-like into the wall, raising its upper edge, ~~xxxxxxx~~ until its proper place is attained and released from the mandible, then the ends and the loose parts are tucked in in like manner, not a pellet, but rather <sup>suggesting</sup> ~~xxxxxxx~~ a plug resembling a spider. As this work on the walls dries the insertion of other plugs so to speak with their outrigging knits the whole densely. These insertions necessarily act forcibly on all sides, the limit of the little worker's strength (fully sufficient for the work in hand in making the walls of this dome covering for its nest) seemed to be. I noticed that the part of the wall she was working upon was about 3 1/2 inches high and while she



was wedging in the material about 1 1/2 or 2 inches from the floor, which was on an incline of 1 1/2 inches in 7 inches, the lowest part being in front and to one side upon which side she was working, after delivering home her quota of material she would take a turn at wedging in the bottom caulking in the bottom where the material rested on the rock floor. Her object I understood to be two-fold, to fasten the foundation well to the rock and at the same time render that part below her insertions as compact and dense as possible, in order that its work should raise the upper part which from its less density was more easily affected or sensible to the wedge. The top edge showed the slightest inclination to arch, which form is obtained by the deft manipulation of the builder. Thus by working from below the lips or edges of the walls from all sides they closed up and the key wedges put in at the last complete the outside covering. . I noticed when caulking the nest to the rock so to speak while working on the lower side the bird laid flat on the floor, spread her wings for a purchase and seemed to push with all her strength to insure a well caulked seam. About the same period of time taken to gather the material was taken in its adjustment, and the oft recurring heavy work at the bottom seam caulking and a like period for a rest. About every third journey she scratched her cheek or her crown with her foot, sometimes on one side and then on the other, and as often ruffled her feathers, looked somewhat glumpy, possibly fatigued, and yet while appearing thus the constant courtesying was kept up, as often as not while resting on the nest site, and just before the journey for fresh material she would raise her wings

probably to feel if they were clear of the material composing the upper part of the structure which might be easily disarranged. While observing her once only did her mate put in an appearance, took a position close to the nest, gave two or three chirps and then a trill like an English blackbird, a very agreeable musical performance which his mate scarcely seemed to appreciate, being occupied with her plans of construction. She snubbed an advance he was about to offer her and took a position near the nest on the rock ledge while he fussed round the nest, seemed to do a little caulking and then flew away. It was evident to me he was not wanted. It also occurred to me that this species is not the exception; that when the female takes upon herself the whole labor of construction she prefers doing so, that her plans may not be interfered with.

June 3. 25 (Myadestes townsendii--J.H.) nest B, on road on side hill opposite Brainard's, 3 eggs fresh (taken June 6); nest C, same place.

June 6. 370 (Sphyrapicus r.thyroideus--J.H.) nest D, in old pine stub 5 feet from ground, 4 eggs, took 2 eggs, at Peck's. One more laid. June 22 hatched out about 5 days. July 8 young full fledged still in nest, sexes distinctly feathered peculiar to each. Nest E, same species, in live aspen near South St. Vrain 2 feet from ground, taken June 8, 5 eggs; nest F, in old aspen, Outcault's Gulch, 12 feet from ground, taken June 12, 5 eggs. 369a (Sphyrapicus v.nuchalis--J.H.) nest A, in aspen tree 5 feet from ground, 3 eggs, took them, Celestial Gulch, taken June 13, 3 more, 6 in all.

June 8. 269 (S.v.nuchalis--J.H.) nest B, in aspen tree 7 feet from ground, 6 eggs, took them, Bailey's gulch.

XXX June 9. 369a (Sphyrapicus v. nuchalis--J.H.)

Nest C,	aspen tree	3 ft. from ground,	4 eggs,	Allen's Park,	took them
" D	Do.	4	Do.	6 "	Do. Do.
" E	Do.	8	Do.	5 "	Do. Do.
" F	Do.	12	Do.	6 "	Do. Do.
" G	Do.	14	Do.	5 "	Do. Do. June 10
" H	Do.	7	Do.	4 "	Do. Do.
" I	Do.	9	Do.	4 "	Celestial Do. 13
" J	Do.	4	Do.	5 "	Do. Do. 13
" K	Do.	3	Do.	6 "	

361b (probably Dryobates p. homorus--J.H.) nest A in aspen tree 12 feet from ground, 6 eggs fresh, taken, Allen's Park; nest B, in aspen tree 8 feet from ground, excavating, middle St. Vrain (June 16 4 eggs taken, July 1, 4 eggs, 2nd<sup>laying</sup>); June 13, nest C, in aspen tree, 10 feet from ground, Peck's, 5 eggs fresh (2nd laying June 27, 4 eggs); nest D, in aspen tree 12 feet from ground, Duck Lake, 4 eggs fresh, taken June 30.

June 15. 369b (?--J.H.) 5 eggs 2 days incubated, Duck Lake, hatched out June 21, young full fledged July 12.

July 21. 361b (D.p. homorus--J.H.) saw young bird at Dan Lynch's ranch taking care of itself, very dark in color.

June 15. 40 (Parus gambeli--J.H.) 8 eggs 2 days to hatch, Duck Lake.

June 17. same species building nest at Ziemann's

June 16. 7a (robin--J.H.) eggs 3 days incubated.

June 23, 1 egg and 2 young. June 27, young half grown, eyes not open yet, nest with young undestroyed.

June 13. 234 (Melospiza lincolni--J.H.) nest A, Celestial, 4 eggs fresh; June 19, nest C, Monteau's, 4 eggs fresh; June 20, nest D, Duck Lake, 5 eggs, incubated 1 1/2; nest G, 2nd laying, Duck Lake, 4 eggs, July 3; June 24, nest E, Duck Lake, 4 eggs fresh; nest H, 2nd laying, Duck Lake, 4 eggs, July 3; June 24, nest F, Duck Lake, 5 eggs, fresh; nest I, 2nd laying, Duck Lake, 4 eggs, July 3; July 13, nest J,

lower meadow, 5 eggs fresh.

June 15. 125 (Wilsonia p. pileolata--J.H.) nest A, Duck Lake, 5 eggs fresh; H, 2nd laying 2 eggs fresh, 1 incubated, on July 3; nest B, Duck Lake, 5 eggs fresh; I, 2nd laying, 4 eggs 2 1/2 incubated, incubated, on July 3; nest C, Duck Lake, 5 eggs fresh; J, 2nd laying, 3 eggs, 4 incubated, on July 7; July 16, nest D, Duck Lake, 3 eggs, taken June 25, 1 1/2 incubated; K, 2nd laying, 3 young 4 days old, on July 12 nest empty; June 16, nest E, Duck Lake, 4 eggs, taken June 20; June 20, nest F, Duck Lake, 4 eggs, incubated 1/3; nest G, Duck Lake, 4 eggs.

July 9. Same species, 3 nests in lower meadow, all young nearly ready to leave nest.

96( Dendroica auduboni--J.H.) June 16, nest A, small evergreen 10 feet high, 3 eggs, taken June 25, 5 eggs, 2nd nest completed July 1, forsaken; June 20, nest B, building at Phippe's in small evergreen 5 feet from ground, July 28, 1 egg, forsaken; nest C, June 22, building, June 27 3 eggs, June 29 4 eggs, July 1 taken, incubated 1 day, 12 feet on horizontal branch; nest D, June 23, building on creek in fork tail pine tree 24 feet high, near sawmill, site forsaken and material removed; nest D, July 3, 2nd nest building of C, July 10 3 eggs, July 12 taken, incubated 2 days, in spruce tree 20 feet from ground; July 3, nest G, young 4 or 5 days hatched, 12 feet from ground, horizontal branch of large spruce; July 6, nest H, young, Duck Lake, 30 feet from ground; July 6, nest I, lower meadow, young about to leave nest, horizontal branch 4 feet from ground; July 7, nest J, same condition and location; July 8, nest K, same condition and location.

220 (Junco caniceps--J.H.) July 1, nest A, Monteau's,

5 eggs, incubated, 2 saved only; July 6, nest B, Duck Lake,  
5 eggs, incubated 1.

206 (Zonotrichia leucophrys--J.H.) June 15, nest A,  
4 eggs, incubated 2 1/2, in the ground; June 21, nest B, 4  
eggs, fresh, 3 feet from ground; June 29, nest C, 5 eggs, in-  
cubated 2, Duck Lake, in ground; July 8, nest D, 4 eggs, in-  
cubated 4, lost; July 14, nest E, 4 eggs, incubated 3.

June 17  
25 (Myadestes townsendii--J.H.) nest B, opposite  
Brainard's, forsaken; nest C, opposite Brainard's, before  
noted; nest D, near creek, upper grove, nest building June  
21, 5 eggs taken June 29.

5a (Hylocichla g. auduboni--J.H.) nest A, 4 eggs,  
incubated 1, Ward, upper grove, 4 feet from ground, small  
evergreen, June 21; June 23, nest B, 4 eggs, incubated, Ward,  
Dry Hill, 8 feet from ground in horizontal branch; July 4,  
nest C, 4 eggs, fresh, Ward Ditch, 3 1/2 feet from ground,  
small evergreen.

318 (Nuttallornis borealis--J.H.) June 21, nest A,  
building at upper grove, Duck Lake, feeding young July 10,  
young flying about July 21; June 22, nest B, 3 eggs, fresh,  
Peck's; July 8, nest C, 3 eggs, 1 fresh, 2 incubated, lower  
meadow, 2nd laying July 21, 3 eggs, incubated 1; July 10,  
nest D, slaughter house gulch, young just hatched; July 12,  
nest E, young 4 or 5 days out, below Duck Lake; July 22, nest  
F, young left the nest upon climbing to it, near Dew Drop  
Mine; nest G, young flying about same as old birds, at Dan  
Lynch's ranch.

323 (Empidonax difficilis--J.H.) nest A, 3 eggs on  
24th, 5 eggs on 27th, incubated 1.

June 26. 357 (Chordeillus v. henryi--J.H.) nest A, 2 eggs, fresh, above Celestial, near Nelson Mine, Ward.

June 28. 30 (Regulus calendula--J.H.) nest A, 6 eggs, ~~fresh~~ incubated 1, upper grove, Ward, discovered by male feeding his mate.

June 29. 169 (Carpodacus cassini--J.H.) nests A and B, with young ~~4~~ or 5 days old.

June 30. 557 (Actitis macularia--J.H.) nest A, Beaver Park, 4 eggs, incubated 3.

July 5. 1001 (?--J.H.) nest A, 2 eggs, 30 feet high, nest and eggs obtained with great difficulty, tree too slender to climb.

July 14. 185 (Spinus pinus--J.H.) nest A, 3 eggs, fresh, secured female, only 3 or 4 days to build nest.

Sept. 3. Eagle's nest, rock close by lower junction, height over 100 feet, nest 7 feet from bottom ground, exceedingly difficult to reach, eggs perfectly fresh, golden eagle, 449. One egg perfectly white, the other well and prettily marked with spots, exceedingly interesting and differing in such marked features.

June 24. (Salpinctus obsoletus--J.H.) 58, nest of 6 eggs, under a rock behind mill, nest of few particles of leaves and grass, eggs quite fresh.

(Here I omit a table consisting of unintelligible figures, but probably a table of number of sets taken of various species.--J.H.)

pages  
 (The following are copied from loose sheets  
 found with the note books--J.H.)

No. 1 Hylocichla mustelina--Wood thrush.

(Identity doubtful--J.H.) See p. 30 - Willow Thrush

Nest in low bush, evergreen, shady hollow. Outside of stiff stems of plants, middle structure of finer materials of same, with mosses and grasses, lined with fine roots, etc. Compact and dense, well put together. Eggs light blue, a shade darker than *Sialia arctica*, four in number. Nest 3 feet from ground. Found June 13, 1884, Red Cloud Gulch, Gold Hill, Boulder Co., Colo. Very few grasses, no earth outside, much like 7a (*Merula m. propinqua*--J.H.) inside like catbird's with roots. Size of eggs 1-70x92, 1 69x90, 2-70x88.

No. 4a Hylocichla ustulata swainsoni--Olive backed thrush.

Nest on low alder bough over a running creek three feet from water. Outside of stiff grass and grass stems, middle structure same employed wet, semi-decayed and fibrous grasses inside, with earth or clay at base of nest, seemingly to cement or steady it in its position. Eggs lightish greenish blue ground, speckles of a darkish red at large end, fainter toward small end, where they are almost absent. Eggs 4 in number. Found July 18, 1884, Left Hand Creek, Gold Hill, Boulder Co., Colo. (I omit brief description of bird--J.H.).

Hermit Thrush.

Nest side of running creek, about three feet from ground, compact in build, outside of stiff grass stems, some few having the ends down, the whole giving the idea of an inverted cone supported by side fastenings to the twigs, the bottom hanging. Middle structure soft fibrous character, willow bark, leaves, etc. Inside fine grasses and fine fibrous materials, seemingly obtained from the water and employed in a wet state. A second nest of this bird found empty, having all the above characteristics with the exception of its situation, this latter being in a low fork of a bushy tree about 5 feet from the ground, the pendant stems from its bottom displayed as above. Eggs the smallest of the thrushes in size, a delicate light bluish green ground, with speckles of light brownish red pervading the whole but fewer at small end. In each instance situation in bushes more or less shady and not very distant from a moderately travelled thoroughfare, like No. 4a also close to a road, in this respect differing from the seclusion of the wood thrush, either from choice or disregard to the latter's peculiarity, which could have been accommodated close by their choice. July 14, 1884, nest with one egg and two young birds. June 26, 1884, nest and 4 eggs fresh, about 10 feet from site of 1884. June 27, 1884, nest and 4 eggs fresh in same locality, all in willow bushes. Female secured of both sets, eggs of latter larger and marked different, no moss or earth used in construction of nest, well made, slightly bulky for size of bird, inside measure  $1 \frac{3}{4}$  deep by  $2 \frac{1}{2}$  to  $2 \frac{1}{4}$  wide, size of egg, largest 64 x 100, smallest 66 x 96, one in each nest



No. 15, Harporhynchus rufus--Brown Thrasher

(Toxostoma rufum--J.H.)

Nest about eight feet from ground, very large. Outside of very coarse branches and twigs, middle structure of stiff coarse stems of plants, wild hemp stalks, etc., with dead leaves, inside lining of fine roots, etc., built among thick twigs and close to stem of an aspen tree, eggs 4 in number, closely speckled with small brownish reddish markings, very thickly covered and uniformly, the ground a slightly greenish white, short oval, like the general shape of cow butting eggs, small for size of bird, eggs quite fresh, taken 25th June, 1884.

No. 18, Conclus mexicanus--American Water Ousel.

Nest about 3 feet from rapid running water on Jim Creek, in rock crevice in high overhanging cliff. Nest had the appearance of bunch of old debris placed there by high water, nothing new looking about it and difficult to distinguish from the rock itself. Materials of make-up old decayed leaves, moss, mid bark and bark fibres and other rubbish, taken evidently out of the water, varying in size outwardly to suit the site, the aperture of entrance cleverly hid by the ragged material of outer construction hanging over it, seemingly a diameter of 1 1/2 in. and entered by the bird upwards. This rough outside mass is wet and dark. The nest proper from 2 to 3 inches from entrance is a beautifully rounded cup-like cavity about 1 inch deep, lined with dry grasses of a fine, wiry description, seemingly harsh but not absorbent. The

eggs are pure white, in shape like a sandpiper's, somewhat sharply pointed at one end and blunt at the other, 4 in number. However sly and shy this bird may be, if looking for its nest or in its neighborhood when the bird is satisfied that you have discovered it all shyness and slyness ends, for then a more confiding, fearless little fellow is not to be met with going in and out of the nest when you have your hands upon it and with plaintive appeal both in speech and actions seeks to gain your sympathy. Robbed of her treasures she will rebuild and lay a second clutch in 3 weeks and that taken, a third will engage her cares. This fruitful industry no doubt is often exercised independent of the interference of man, from the fact of the sudden rise of the streams, when from their situations must be swept away. While most exercised hopping or courtesying about the stones in vicinity of nest site, chirping and courtesying every, and at every 3 or 4 such, a sort of convulsive jerk would cause the eyes to glisten by their peculiar motion causing them to sparkle as it were. The nest is seldom betrayed by the bird itself, who will drop from it unperceived, even while looking at the spot, into the water like a stone, and float or swim under water several yards down the current before coming to the surface. It manages its flight to suit circumstances. While interference with its nest is threatened it will fly about with the address and lightness of a hummingbird, noiseless as an owl, upon other occasions darting down the creek with lightning rapidity. Its aquatic feats are remarkable, going into and against the strongest current with perfect ease and like a fish not seeming to touch the water coming out without a seeming wing motion or

flutter, perfectly dry. This little fellow with his aquatic agility and other characteristics offers a subject for your note book of much lengthy interest and instruction.

1885, took nest May 23 on Jim Creek, Colorado, 4 eggs slightly sat upon. 1885, June 18, saw several nests on the South Boulder Creek with young, the old birds being constantly carrying food to their young, the food being no doubt very plentiful. Just at this time the larva of certain flies developing in these creeks constitute it. One of these interesting little birds has its nest annually behind the Boulder Falls in a kind of Cave of the Winds, having to fly through in and out a very wetting dense spray. Same locality is chosen for nesting year after year by these birds unless some physical change renders it unfit.

54, Sitta Pygmaea.

Nest in old stump 4 feet from ground excavated by bird itself in the mellow wood, 4 1/2 inches deep to bottom from entrance. Upon a few chips at bottom is placed the most interesting of nests made of the softest kind of materials, mostly of a soft, velvety plant leaf slightly held together with cobwebs and such-like soft materials, hair, feathers, bark fibre, fur, old chrysalis covers, etc. When removed from the wood cup-shaped bottom, where it resembles a snug little cup-shaped structure, it flattens out like the nest of *Parus montanus*, unlike the latter in bulk, however, the excavation in the wood being made with regard to sufficient room only. All nests of this species met with are excavated by the bird and sometimes through a thin zone of quite tough wood. It

also accommodates itself with a new nest each season, quite often, however, selecting the same old tree or stump (piniferous). Eggs pure white ground with light reddish brown speckles having fine powdering of specks intermingling, aggregating much at larger end. Nest as near as can be ascertained outside measure  $2 \frac{1}{4} \times 1 \frac{1}{16}$ , inside measure  $1 \frac{3}{4} \times \frac{7}{8}$ . Eggs buried in the soft make-up. Locality in open woody places 7,000 to 9,000 feet. The above refers to nest taken June 9, 1885, 3 eggs fresh, A nest. June 13, 1885, B nest, uncovered it and was deserted by birds and a new nest made 3 feet distant in same old tree, about 30 feet from ground. 25th June, carelessly destroyed this nest, 3 or 4 eggs fresh, the first nest furnishing part of material for second. June 12, 1885, found nest C, for the same reason birds made a new nest close by but which I failed to find, 25 feet from ground. June 16, 1885, found nest D, 20 feet from ground, similarly situated to the others, with 6 eggs badly sat upon. Speckled strongly, mostly at larger end, materials of nest scarcely so soft.

57a, Sitta carolinensis aculeata--Slender-bill.

Nest in old spruce tree 18 feet from ground. Excavation by bird. Last and previous nest close by in same stump. ~~xx~~ 7 or 8 inches from entrance to bottom. Nest warm, of similar material to *Parus montanus*. June 7, 1885, nest contained 5 young birds about a week old. July 5, 1885, nest with young full-fledged nearly so far as I could judge, not wishing to cut the nest open, anticipating the occupation of same site next season. The entrance was a natural one in an apparently sound pine tree--a crack near the junction of a branch with the stem

about 8 feet from ground. I opine these natural holes are frequently made use of instead of excavating by these birds.

No. 149a, Lanius ludovicianus excubitorides, white-rumped Skrike.

Nests in low bushy trees of the thick-twigged willow variety. From its second-hand dingy character difficult to distinguish from its surroundings, limbs and twigs being of precisely the same color. At the joining of two limbs or upon a single stout one the nest rests, thickly surrounded with twigs, quite a dense, roomy, solid and deep nest. In reality from its carefully selected situation its cursory appearance is an old depressed nest of the year before. Meeting with the first nest of this species, such was my first impression until my attention was drawn to the parent birds not far off. Nests in the peculiar dwarf willow trees spoken of, 6 or 8 feet from the ground. Complement of eggs 8 in number. Exterior of nest stiff stems of grass and other plants, intermixed with wool, lined with finer grasses, hair, etc., very warm and snug. Eggs whitish, yellow for ground, freckled uniformly with soft lightish yellow brown freckles, not unlike No. 300 but the whole appearance of egg a warmer yellow tone. Took nest May 24, 1884, with 5 eggs. June 7, 1884, 2 nests, 7 and 8 eggs each, some incubated; also 2 nests with young, 2 young birds each, entire absence of down or hair upon bodies, and had a blackish plumbeous look, quite bald. 1885, June 3, nest with 8 eggs slightly sat upon, several nests badly sat upon and with young.

Nest by side of grass tuft much like bay-winged bunting, (He headed this note P.C.confinis, which is the bay-winged bunting of grass finch, but he drew a pen through the heading and wrote instead "Lark Finch."--J.H.) in open place on the plains, ground tufty. Bird flushed close to feet and acted like the bunting aforesaid. Nest slightly but well set in the ground. Outside structure of old dry grasses and plant stems, middle structure of fine, wiry grasses, lined with horse or cow hair.  $3 \frac{1}{2}$  by  $4 \frac{3}{4}$  outside,  $1 \frac{1}{4}$  by  $2 \frac{7}{8}$  inside. Eggs 3 in number, having a very pearly white appearance, ground of a light grayish blue tinge, having under-markings of purplish gray, the darker markings of sepia which tone down in intensity to meet the darkest markings of the undertone (here I cannot decipher a word or two --J.H.) something like but not so bold as those of the oriole's egg markings. Small end of egg almost without markings, the larger end scarcely more marked than at the greatest circumference. The markings in size, distribution and tone have a novel and pleasing effect and seem in harmony in these particulars. June 2, 1885, two or three days sat upon.

206, Zonotrichia leucophrys--White Crown.

This bird nests above timber line, nests on ground in vicinity of moist, bushy localities. Made of grass and grass stems of different kinds and lined with a finer description of the same material. Nest fairly well made, set in the ground, moderately dense,  $2 \frac{5}{8}$  x  $3 \frac{7}{8}$  outside and  $1 \frac{3}{4}$  x  $2 \frac{3}{4}$  inside measure. Eggs of a lightish bluish greenish white, blotting speckles of chocolate brown and light reddish brown of two

shades of intensity, the whole having the appearance of mottling rather than being speckled. This softened character of the markings seem to be the effect of the fine or under markings furnishing the ground. Generally when fresh and unemptied these eggs have a soft wax-like appearance. Of the two specimens one has the markings very even over the whole, scarcely any difference, perhaps the larger end slightly more covered than the extreme small end. Of the 2nd example, altogether a lighter egg, showing much of the ground, the markings being less intense in tone and number, the extreme smaller end being a little lighter than the larger, which has the least indication of a confluent band round it. In the first example the markings approach confluence, in many places over the entire surface, the ground and markings being about equal. In 2nd example the ground preponderates 2 1/2 to 1.

July 4, 1885, nest and 3 eggs, lost one egg, only two specimens.

No. 220, Junco caniceps--Gray-headed Junco.

Nests on the ground. Fond of selecting sheltered places, side of hill or bank, concealed with care and cunning, set well into the ground, with sometimes only the smallest aperture for the entrance and exit of the bird, seldom selecting a bare place, but preferring some shrub, plant, tree or stump or roots of such, under or close to which it excavates sufficiently for its purpose. Bird somewhat difficult to flush. Nest of coarse grasses outside, lined with fine grasses hair and feathers sometimes. Eggs 4 and 5, clear white ground with small red speckles gathering quite thick at larger end,

sparse on the remaining surface. Nest  $4 \frac{1}{2}$  by  $3 \frac{1}{2}$ -- $2 \frac{1}{2}$  by  $1 \frac{3}{4}$ . Eggs  $2-56 \times 75$ ,  $1-58 \times 75$  and  $2-58 \times 76$ . Took nest May 30, 1883, with 3 eggs. June 11, 1884, nest with 4 young birds just hatched. July 18, 1884, young, 2nd brood. July 10, 1885, nest of 5 eggs 3 days sat upon. Ground of pale bluish green with with reddish brown freckles, gathered in band near larger end confluent more or less. Minute specks of same color over middle surface few at larger pale and ~~xxxxxxx~~ less at smaller end, specks two shades of intensity.

No. 245, Zamelodia melanocephala--Black-headed  
Grosbeak.

Nests low in bushes and small trees about 6 feet from ground, in a few cases 9 or 10 feet, mostly in thick bushes, favoring shade mostly but in a few cases departing slightly from this rule. Outside material of nests of stems of the creeping vine called old man's beard, some nests seemingly all of this material with a peculiar thin wiry tendril of this same creeper. This lining is peculiar to all the nests while the outside or intermediate structure differs such as having plant stems of different kinds, among them those of the wild hemp, etc. (I do not know what he means by wild hemp, which he continually mentions, as but one species of the hemp family is found native at least in Colorado, and that is the hop, which he would likely have called hop.--J.H.) Shallow rather and slight from underneath, the eggs can be seen through the bottom. Four eggs seem to be the full number, often 3 and sometimes only 2 are covered. There is a marked variety in this bird's eggs in size, shape and markings. Their ground color is from a pale dull bluish green to a very bright bluish



green and more or less speckled over with umber or neutral brownish markings to a brighter reddish brown. Some sets are very beautiful apart from the markings being a little harsh, resembling fly marks somewhat, markings more numerous at larger end. Roots lining of reddish burnt sienna color and always the same. Both birds plucky and demonstrative after covering is commenced. Two broods a season. The cow bunting favors this bird's nest very frequently. Both birds assist in sitting. Took nest June 1, 1884, 3 eggs. June 19, 1884, two nests incubated and young. 3 nests June 15, 1884, 8 eggs. July 14, 1884, 3 eggs, 2nd brood. 1885, June 1, 4 nests, A 4, B 3, C 2, D 2, June 10, 2 nests slightly sat upon, June 16, 2 nests G 2, H 3, slightly sat upon, I nest badly so.

256, Calamospiza bicolor (C. melanocorys--J.H.)-Lark  
Bunting.

Nests on the plains at the side of or in center of bunches of stunted grease-weed, nest well set in ground or in roots of the weed, which was 8 or 9 inches high. Nest more bulky than Eremophila (shore lark--J.H.), made of similar material, grass and grass stems, lined with finer grasses which seem to be beetled with the birds mandibles. Locality that of Eremophila away from water but in more grassy situations. Eggs of beautiful greenish blue, deeper and brighter in color than Sialia arctica. June <sup>4</sup> 4, 1885, 5 eggs slightly sat upon, nest 2 by 4 1/8--5/8 by 2 3/4; 4 eggs much sat upon, nest 2 3/4 by 5--1 5/8 by 3 1/4. Some part of the first nest littered away.

Zonotrichia gambeli--Gambel's White-Crowned Sparrow.

(A line drawn diagonally through the following paragraph would indicate that Mr. Gale intended to cancel the entire paragraph, perhaps because he concluded that his identification was incorrect, but others have been cancelled in the same way, a note of which will be made in each case.--J.H.)

Nest on side of bank well settled in ground. Outside of stirps of inner bark and straws, finer grasses for middle structure and lined with fine grasses, hair and feathers. Eggs 4 in number, light bluish white ground with an under peckling of quiet munsey red, and stronger markings of a more reddish brown. Took nest June 10, 1884, 4 eggs.

239, Pipilo chlorurus--Green-tailed towhee.

Nest on the ground, sheltered places. Nest in one case close by little shrub, not particularly well concealed. Nest of stiff plant and grass stalks outside, lined with fine grass, fine grass roots, horsehair, etc. Eggs 4 in number, of a white ground speckled. Took nest June 11, 1884.

256, Calamospiza bicolor (C.melanocorys)-J.H.) Lark  
Bunting.

This bird in the last two or three years has increased greatly in numbers on the plains about Denver, Colorado, choosing those places with stunted bushes and high weeds. Has many peculiarities of the Bobolink No. 257, nests on the ground.

No. 258, Molothrus ater--cowbird.

This bird, like the European cuckoo, lays its eggs in other birds nests. Eggs vary very much in size, markings and shape. In this last respect they are mostly of a short oval approaching to roundness, of a clean white ground, thickly speckled or marked with brownish coffee or chocolate colored markings. My experience does not hold good the theory that this bird only lays one egg in a nest of other birds, as I have found upon more than one occasion two eggs of the cowbird in the same nest. It might be that different birds laid them, but the eggs unquestionably looked as if one bird laid both. Again the theory that the cowbird's eggs hatch first and that the legitimate brood was sacrificed to it will not hold good, for in a nest of Agelaius phoeniceus No. 261 two eggs perfectly fresh of the cowbird and a legitimate egg at least 4 days incubated. I have an idea that for every egg this bird deposits in a foreign nest she destroys a legitimate egg. Once in the vicinity of the nest No. 261 (Agelaius phoeniceus--J.H.) the rather as I thought extra demonstration of the birds led my curiosity to get at the nest. It was fastened to some bullrushes beyond my reach in deep water. The next day observing the same anxiety manifested by these birds I made good to obtain the nest in which was a solitary cowbird's egg. The watchfulness, pugnacity and dislike of 260 (yellowheaded blackbird, perhaps a mistake--J.H.) to anything approaching its nest makes it very difficult to understand how the cowbird manages it. Again, as an offset to this idea, is the following experience: I took a nest of Empidonax pusillus No. 325 (Probably E. traillii--J.H.) in which

were 3 legitimate eggs with a cowbird's egg twice their size embedded in the bottom of the nest, evidently having been laid there before any eggs of the owner of the nest were, as it was covered up with fine grasses, hair, etc., with which the bird No. 325 lines its nest. It seemed to me that not being able to get the egg out of the nest she covered it up. Other nests of 260 seemed to have tolerated the intrusion. In these cases perhaps the cowbird destroyed one of the legitimate eggs to cheat the bird. June 6, 1 starling's nest 2 eggs cowbird, fresh, 1 starling incubated 4 days. June 7, 1 yellowbird, 4 eggs and 1 cow bunting. June 10, 1 starling with solitary egg of cowbunting. June 15, 1 blackheaded grosbeak with 1 cowbird, 1 unknown nest of 3 strange eggs 1 starlings, probably nest was the latter's and 2 cowbirds.

274, Scolecophagus cyanocephalus--Brewer's blackbird.

Nests in low dwarf trees and bushes 5 to 10 feet from the ground. Nest of grass stems, etc., outside, fine grasses inside. Complement of eggs 6 in number, light bluish ground, which ground is covered with a general light or rusty brown color sometimes and further marked in each variety with dark brown and black markings, freckles and blotches. May 29, 4 nests of 6 eggs each fresh. Shape of egg tumid, with an obtuse smaller end. Size 1.19 by 0.80, and resemble those of rusty grackle 1.05 by 0.78. Male 9 1/2 to 10 1/2, wing about 5 1/2, tail about 4 1/2, eye clear lemon yellow. Female average 9 in. in length. Eye of female bronze. Generally nesting on ground, Eggs resemble its congener, the rusty.

No. 280, Corvus corax carnivorus--American raven.

The largest of the crow family. Nests on rock ledges mostly difficult of attainment. Lays from 5 to 7 eggs and as early as 1st April. (No indication in his notes that he has ever had any experience with the species.--J.H.)

No. 286, Pica rustica hudsonica--Black-Billed Magpie.

(P. pica hudsonia--J.H.)

Nests low as a general thing, sometimes in evergreens, at others in low small trees or bushes. Very clumsy and large in general appearance, the nest proper is at the bottom of this bunch as large as a half bushel basket at least, made with sticks and twigs, lined with stringy bark. The large loose covering piled up over the top of branches and twigs adds very much to its clumsy appearance. No mistaking it or chance of passing it by unseen. Eggs of a slightly greenish white ground, covered very generally with light greenish olive markings, the general tone of the egg a quiet lightish olive gray, something in the way of 149a (white-rumped shrike--J.H.) and also 300 (shore lark--J.H.). May 21, 1884, 2 nests with young 15 days old and 1 nest young 5 days old, 2 with young 10 days old and 1 nest 6 eggs complement.

No. 286, Pica rustica hudsonica--Black-billed magpie.

This bird builds a large unwieldy nest on the outside as large as a half bushel basket, of sticks and twigs with a covering of the same. Under the covering on all sides more or less open, that upon which the bird entered at one or more points being sufficiently so to admit of the birds doing so. The nest proper is deep and compactly made and roomy to ac-

commodate sometimes as many as 8 young ones. Inner structure consists variously of moss, rootlets, bark fibre, hair, etc., and sometimes pine needles. Eggs of gray greenish white ground, freckled over with a drab or brown greenish gray markings, in some instances very thickly covering the ground, in general appearance only lighter resembling *Lanius l. excubitorides*. Full complement 8 eggs same as that bird. Varying in height 7 to 20 feet. 1884, May 21, 1 nest 6 eggs fresh and 2 nests with 1 and 2 eggs each, 5 nests with young birds. 1885, May 4, 1 nest 8 eggs fresh, 2 nests with 1 and 3 eggs each; May 11, 2 nests with young birds, 2 nests with eggs 1-7, 1-5, the former slightly sat upon. Mud enters largely into the construction of the nest proper. 1885, May 25, 6 eggs old nest taken up, 12 feet high. Nest in piniferous trees quite as often as in deciduous bushes, in the former almost entirely among the mountains and on the plains or in gulches they chose the latter perforce. A canopy or covering of twigs characterized each nest.

290c, Cyanocitta stelleri macrolopha--Long-crested

Jay (C.s.diademata--J.H.)

Breeds in the Colorado mountains from foothills up to 10,000 feet. Seldom seen on the plains. Nests like *crinata* on a branch close to the stem of the tree, somewhat more carefully constructed and equally if not more cunningly concealed.

306, Tyrannus verticalis--Western Tyrant.

Nests much like *Tyrannus carolinensis* (T.tyrannus--J.H.) sometimes in same tree with that bird. In department it re-

sembles it very much, nesting a week or ten days earlier. Of three nests A, B, and C, outside of sticks or stiff plant stems, middle structure of finer like material felled with wool or hair, roots and feathers. Birds plucky and demonstrative over their nests. The eggs resemble in markings those of carolinensis in ground color and markings, which, by the bye, are not quite so heavy or beautiful. Their general confluence at the larger end as a rule is absent. The complement of eggs also is larger. Of 6 nests June 3, 1884, A 6 eggs, B 3, C 2, D 2, E 1 and F 2. Dry Creek. Ground color and markings same as carolinensis, the latter more distributed over the surface of this bird's eggs.

No. 316, Sayornis saya--Say's pewee.

Nest on rafter of an old shanty about 6 feet from floor, materials composing nest being such as would be found lying about a place of the kind. Outside of plant stems and fibre, middle structure manilla shreds, cotton, twine, hair and cobwebs and lined with ox-tail hair, the whole matted together. 2.25 high and 4.25 across outside measure, 1.25 deep and 2.75 across inside measure. Eggs 5 in number, of a uniform rich, milky white, no markings and very fragile. June 25, 1885, eggs quite fresh. Average measurement 78 x 60.

No. 318, Contopus (Nuttallornis--J.H.) borealis--Olive-sided Flycatcher.

Nests pretty high up in spruce trees upon horizontal branch about midway or 1/3 from end and about 30 feet high. Nest small for size of bird and not at all dense. Outside of twigs well adjusted to the branch, middle structure and

lining of fine roots. 1885, July 10, nest with young birds 5 or 6 days old.

370, Sphyrapicus thyroideus--Black-breasted woodpecker.

This species affects generally old pine or spruce trees and stumps that are rotten and easily worked, frequenting the same tree for three or more years like 369 (S. varius--J.H.) and making a fresh nest each year. This bird also breeds in the aspens and if it excavates for itself it chooses a rotten tree. Where this is not to be found it will as I have found it take up with an old nest of 369. I never knew it to bore the live aspen like 369 and do not think it has the capacity. The male bird however is a strong, powerful fellow for its size. This species like 369 in number, color and size of egg they are nearly alike. They nest about a week earlier, however. June 13, 1885, 2 nests of 5 eggs each, fresh, 1 nest with young; June 15, 1 nest 4 eggs slightly set upon, 1 nest with young; June 23, 3 nests with young.

375, Melanerpes erythrocephalus--Red-headed.

This bird excavates for itself. 1885, June 11, nest of 2 eggs resting on chips; same date and also 16th June two nests just made, no eggs.

376, Melanerpes torquatus--Lewises. (Asyndesmus lewissi--J.H.)

This bird uses old flickers' nests and does not excavate for itself. Oftimes it and the sparrow hawk fight for the same nesting accommodations. 1885, June 11, 2 nests, 1-7,



and 1-4 eggs, the former ~~fresh~~ fresh, the latter slightly incubated, nests in old flickers' holes; June 17, nest with young birds.

378b, Colaptes Auratus mexicanus--Flicker.

(C. cafer collaris--J.H.)

1885, May 8, nest with 7 fresh eggs in box elder 3 1/2 feet  
from ground.  
" 19, Do. 4 in stump 5 feet high.

395, Asio americanus--Long-eared owl.

(A. wilsonianus--J.H.)

Nests in old magpie's nests generally. Sometimes build a nest for themselves but not often. Complement of eggs 4, of a beautiful pure white. 1884, May 30, nest 2 eggs and 2 young, eggs with large embryos. 1885, May 7, nest 4 eggs fresh in box elder, old magpie's nest 15 feet high; May 8, nest and 4 eggs in box elder 12 feet high in old magpie's nest, the tree weighted down with snow of April 24th caused the eggs to fall out and was abandoned by the owls, one egg still entangled in the nest, the others thrown into the snow were saved from being broken, but all were damaged by the frost cracking the shells, incubation had just been commenced. 1885, May 9, nest with 4 young owlets 10 or 12 days old in box elder about 16 feet from ground.

402c, Scops (Megascops)--J.H.) asio maxwelliae--Rocky

Mt. Screech Owl.

Nests in tree holes, natural holes or those of old flickers' nests. 1884, May 30, nest with well feathered young in old rotten stump 3 or 4 feet from ground. 1885, May 6, nest occupied by flicker last year, 3 or 4 small owlets in

white down 3 or 4 days old: May 9, nest in old flicker's hole, with 3 young owlets seemingly a week old, took female off nest with my hand, observed the eggs were tawny in color, 6 feet from ground.

405b, Bubo virginianus arcticus <sup>(pallidus - J.H.)</sup> ~~Arctic~~ horned owl.

In old hawk's nest about 40 feet from ground, owlets I should say 30 days old, two in number, parent less in size and tawny brown. 1885, May 6, nest in cottonwood, 40 feet high, two young ones 30 days old; May 9, nest with 3 young owlets about a month old in old magpie's nest, about 14 feet from ground. 1886, March 24, nest 3 eggs, in cottonwood tree 30 feet from ground, last year's nest of red-tailed hawk, 3 in. depression in center, feathers in nest; eggs of dull white, slightly granulated and incubated about 10 days for two of them, the third egg not more than 6 days. The male bird was keeping sentry within two hundred yards of the nest. The female flew from the nest when I was within 60 yards of it and flew about a couple of hundred yards distant, never closer than 50 yards from the nest while I was climbing to it, not at all demonstrative. The bird seemed to me smaller and darker than *Bubo virginianus*.

No. 420, Tinnunculus (Falco--J.H.) sparverius--Sparrow Hawk.

Nests in tree holes, either natural holes or those made by flickers. Bottom of nests flat, with few weed stems beetled or torn up, no feathers and sometimes nothing but dirt xxx or rotten wood. The same site taken up year after year. Before using the site the birds will guard it against the aggression

of other birds like Lewis' woodpecker, for instance, for some time previous. Starting the bird from the nest if setting has begun it will be found that the 4, 5 or 6 eggs will form two rows parted, and suggests that upon the flat area of nest bottom the body of the bird rests upon the floor between these rows and that each row is held close to the body by the wings. June 11, 1885, took nest 5 eggs, A, 18 feet high, pine tree, slightly sat upon; nest 5 eggs, B, 15 feet high, old spruce fork, slightly sat upon; June 18, nest 4 eggs, C, (Dutton) badly sat upon somewhat.

436b, Buteo borealis calurus--Western Red Tail.

Nests in the crotch of upper branches in cottonwood trees. Large, somewhat bulky nest depressed, variously made of materials to be had, in some cases sticks and branches form the bulky outside, sometimes the stiff, strong stems of the and such-like material sunflower<sup>A</sup>, lined with inner bark strips, etc. Eggs 3 seem to be a full set, are of a dull greenish chalky white with more or less light brownish markings, some more strongly colored and defined than others, eggs in the same nest varying also considerably. Bird very shy and seemingly a coward, allowing its nest to be robbed without any demonstration whatever. 1885, June 2, (A, 1884-5) 3 3 eggs in nest same last year, 3 eggs then also. 1884, June 3, 4 nests, 3-3-3-2-, all more or less slightly sat upon. 1885, June 4, two nests of same bird without eggs. 1884, May 28, took 2 nests of this hawk, 3 eggs each, 1 fresh, and 1 slightly sat upon.

Zenaidura carolinensis--Mourning Dove--(Z. macroura--J.H.)

Constructs a very slight nest of a few twigs and a few dry grass leaves in the angle where ~~xxx~~<sup>a</sup> branch joins the trunk of a tree, upon a horizontal branch or bunch of undergrowth. Two eggs generally but often only one, of a pure white. It will sometimes select such places as the crown of a stump when it is sheltered from the wind by surrounding bushes. It hatches twice and perhaps three times in the season. Some pairs have their first nests latter part of May. It is claimed that this species nests also on the ground. It certainly looks as if it were the same bird, but why this difference of choice 'tis hard to say. There are no twigs used with the ground nest and in some cases very little nest. I observed in one instance when the location was liable to be slightly flooded by the irrigating process, that the nest was slightly raised off the ground, supported by some stems in a grass tuft. It seems to me also that the ground nest has invariably two eggs, whereas 25% of the tree nests have but one (when in process of hatching of course). It may be claimed that those birds found out on the plains have no trees or bushes to nest upon, but both are found promiscuously in localities that either ~~xxxx~~ choice could be made with equal advantage. Several years ago nesting in Indiana the same bird was there breeding and chose the crown of a stump for a nesting place, particularly when it was high, 4 to 12 feet (when broken off by the wind). I don't remember a single instance of finding a nest on the ground. It might be that there is some difference in these birds.

No. 459, Ectopistes migratorius--Passenger Pigeon.

Builds its nests in trees, on some large limb (horizontal) or close to the trunk where the limb joins, or between the divisions of the trunk when it divides, also in second growth small trees or bushes. Nest open and loosely constructed, a few twigs huddled together at several angles, upon which two white eggs are hatched, some cases only one.

No. 516, Oxyechus vociferus--Killdeer.

Nests on the ground upon the high dry places on the plains throughout the west, makes the least effort possible in preparing the place to lay its eggs, 4 in number, very pointed at the small end. Ground color of egg a light olive whitey brown, marked with cold black inky markings which are more numerous at the larger end. From the bare, gravelly or stony place selected for the nest the bird notes the approach of any one at some distance and runs along unperceived, when, after running for some distance, it takes to wing and alarms every other of its species for a half mile around by crying piteously, flying about you in circles and thus you run a kind of gauntlet for a couple of miles sometimes, every now and then escorted, receiving a change of escort, so that unless you stumble over the eggs 'tis impossible almost to find them, and while looking at them, so much the color of the surroundings are they that you may readily fail to see them. The best way to note the whereabouts of the nests is to hunt for them in the saddle when you have a wider vision and can better see where the bird starts running from. June 18, 1883, 4 eggs in nest a good deal incubated. May 25, 1885, 4 eggs in nest a good deal incubated.

No. 572, Ballus virginianus--Virginian Rail.

Nests in swales and swampy meadows among bullrushes water ankle deep found nest and 7 eggs well sat upon 1885, June 1st. (This has a diagonal ink line drawn through it as if to cancel it.-J.H.)

No. 580, Fulica americana--American coot.

Nest of rush leaves in heap built in water above its level to be dry, large and rather flat. 1885, June 4, 1 egg only, of buffy cream color ground speckled over with reddish brown specks. (Cancelled by diagonal line as preceding--J.H.)

No. 733a, Bytes (Colymbus--J.H.) nigricollis californicus--Grebe. Nests in lakes, ponds, swales, etc., in rather open parts free from the heaviest weeds and rushes. Nests on heaps of muck level with the water, seeming to float on water quite wet. Eggs seem to be wet all the time, covered over with muck. Nothing like a nest or anything else on which the eggs are placed. 1885, May 27, took 3 eggs fresh, dull opaque greenish white, long oval and pointed, greenish inside, outside stained. June 4, took 3 eggs more from same nest quite fresh.

(The following is written on a blank furnished by the U. S. Natl. Museum about 1888 or 1889, as shown by the Bendire correspondence--J.H.)

Bubo virginianus subarcticus. (B. v. pallascens-J.H.)

1. Average number of eggs to a clutch or set three.
2. Largest number of eggs found by you in one set---Four, very rarely.
3. Earliest date of nesting? March 5.
4. Latest date of nesting? March 18.

One breed only if undisturbed.

5. One or more broods a season? One brood only if undisturbed, three clutches if repeatedly taken.
- (6. Stricken out. -J.H.)
7. Location of nest when in trees or bushes? Old nests of crows, hawks and magpies, and rock ledges, in foothills and mountains.
- (8. Question stricken out. -J.H.)
9. Height of nest from ground? From 15 to 60 feet.
10. Period of incubation if known? Four weeks as near as I can judge.
11. Unusual nesting sites? With us, in large tree holes, probably unusual from scarcity of said holes.
12. The various call notes? The hoot, in character similar to eastern species, and when their eggs or young are in danger they utter a kind of croaking groan.
13. Localities most frequented during breeding season? A locality once selected and nested on is their home, seldom staying a mile from it throughout the year.
14. Is the species a constant resident or not. Constant resident.
15. Is the species as abundant as formerly? Decreasing rapidly in numbers.
16. What are the principal causes of decrease? Advance of civilization.
17. Note any change of habits? Habits of all I have met with are alike.

Food chiefly rabbits and prairie dogs, these being the most plentiful, but anything is fish that gets into their nets. This is especially the case when they have young, who, when

half grown develop enormous appetites that call for the combined efforts of both parents to gratify. The duties of incubation are performed by the female altogether, the male providing her with food upon the nest. The second egg is not always laid consecutively, the third never. Three or four days very often intervenes. The nest is continuously covered from the first egg until the young are hatched. By the beginning of winter the young birds of their own accord or urged to do so by their parents begin their travels and may be met with almost anywhere in search of food and experience, too often relieved from the care of both by the merciless shotgun. My observations are that the young take upon themselves the duties of housekeeping the second year, provided always that their experience has survived the shotguns, traps, poisons and other civilizing details and allowed them to select a suitable home. The food supply of course is the chief factor influencing this choice. In some cases half a mile in extent of creek bottom defines their hunting ground, every square foot of which by careful watching night and day is familiar to them. No doubt every burrow and hiding place from a mouse to a jack rabbit within that area they are perfectly familiar with. Years of observation possess them with the knowledge of the age, character and sex of each little scampering varmint and they know just which to take and which to leave alone, not only with a view to maintaining a sufficient food supply, but perhaps actually by judicious care augmenting it, just as a skillful game keeper, keeping down the number of males and affording every possible protection to the other sex he augments his covies. Their advantages by observation over the game keeper



are manifold and perhaps their instincts are beyond his reasoning. Be this as it may, a choice once made of location is not abandoned unless civilization blot out the cover or kills the birds. No amount of worry or robbing of their two or three clutches year after year will drive them away <sup>from</sup> the locality. The fact is their vested rights and interests are such that they can't go and leave the homestead they have watched and tended with such protecting experience, care and knowledge now in such good working order--they won't go.



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Migration--3-49-107-114-115-172-218  
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