

They might be placed between "*grinnelli*" and *stricklandi*, or between *benti* and *stricklandi*, but it appears to be impossible, even with a good series of specimens at hand, to decide exactly what the differences between *benti* and "*grinnelli*" are!

A subadult male and an adult female taken May 28 are the slenderest-billed examples of the five, and compare very favorably with seven toptotypical *benti* (from Grafton, North Dakota), courteously lent by the Museum of Zoology of the University of Michigan. They measure, respectively: wing, 93.3 and 90.2; tail, 56.5 and 53; bill-depth, 10.5 and 9.2.

Spurred Towhee, *Pipilo maculatus montanus*.—Noted daily in the Santa Ritas from May 23 to 30, but found to be much commoner in the evergreen-oak thickets high on the east side of Mt. Wrightson than anywhere in the low Upper Sonoran Zone of Madera Canyon. Young just out of the nest were noted May 30.

Scott's Sparrow, *Aimophila ruficeps scotti*.—A juvenile female, with full-grown flight feathers, was taken in Madera Canyon (at about 4000 feet elevation) on May 23.

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FURTHER ADDITIONS TO THE LIST OF BIRDS KNOWN TO BE PARASITIZED BY THE COWBIRDS

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IN the past four years, a number of new or interesting host records of the various cowbirds have come to my attention, which may now be added to previous compilations (The Cowbirds, 1929; Auk, 48: 52-65, 1931; Condor, 35: 189-191, 1933; Ibis, ser. 13, 4: 340-347, 1934; Wilson Bulletin, 46: 25-36, 104-114, 1934; Auk, 55: 41-50, 1938).

I am indebted to Mr. W. E. Unglish and Mr. H. R. Eschenberg of Gilroy, California, for a number of interesting records mentioned below.

Molothrus bonariensis (Gmelin). SHINY COWBIRD

To the 158 species and subspecies of birds listed as victims of the various races of the Shiny Cowbird, we may now add five more, bringing the total up to 163. These hosts involve three races of the Shiny Cowbird, as follows:

1. *Molothrus bonariensis bonariensis* (Gmelin). ARGENTINE SHINY COWBIRD

Pachyramphus polychopterus spixii (Swainson)

Paroaria coronata (Miller)

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The known hosts of this race of the parasite now total 115 forms.

2. *Molothrus bonariensis occidentalis* Berlepsch and Stolzmann. WESTERN SHINY COWBIRD

Mimus longicaudatus longicaudatus Tschudi

This brings the known victims of the Western Shiny Cowbird up to eight forms.

3. *Molothrus bonariensis minimus* Dalmas. SMALL SHINY COWBIRD

Holoquiscalus fortirostris fortirostris (Lawrence)

Loxigilla noctis barbadensis Cory

The list of hosts of this cowbird is hereby raised to a total of 26 forms.

Fuller data on these new hosts are presented below:

Pachyrampus polychopterus spixii (Swainson). Spix's Becard.—This bird has been found to be parasitized at Escobar, Buenos Aires Province, Argentina, whence Pereyra (Mem. Jardin Zool. La Plata, 9: 197, 1938) records a nest containing two eggs plus four of *Molothrus bonariensis*, January 19 (year not given).

Mimus longicaudatus longicaudatus Tschudi. Long-Tailed Mockingbird.—One record. Amadon (Auk, 57: 257, 1940) records a nest found near Lima, Peru, containing two eggs of the mockingbird and four of *Molothrus bonariensis occidentalis*, on February 9, 1913, by R. H. Beck, and now in the American Museum of Natural History.

Holoquiscalus fortirostris fortirostris (Lawrence). Barbados Grackle.—This grackle was first listed as a victim of *Molothrus bonariensis minimus* by Mrs. Anderson (What to See in the Barbados Museum: 34, 1937). Subsequently, Danforth (Journ. Barbados Mus. and Hist. Soc., 5, no. 3: 127, 1938) recorded a parasitized nest collected by K. C. Wood of Worthing, Christ Church, in the spring of 1937, which contained three eggs of the host and one of the parasite.

Paroaria coronata (Miller). Crested Cardinal.—All that is known of the Crested Cardinal as a molothrine host is the fact that it is listed as a victim of *Molothrus bonariensis bonariensis* in the northeastern part of Buenos Aires Province, by Pereyra (Mem. Jardin Zool. La Plata, 9, pt. 2: 259, 1938).

Loxigilla noctis barbadensis Cory. Barbados Bullfinch.—One record; a nest with three eggs of the host and one of *Molothrus bonariensis minimus*, collected by K. C. Wood, at Britton's Hill, Christ Church, Barbados, August 23, 1937, and recorded by Danforth (Journ. Barbados Mus. and Hist. Soc., 5: 127, 1938). This set is now in the U. S. National Museum (no. 40082).

Molothrus rufo-axillaris Cassin. SCREAMING COWBIRD

This cowbird is parasitic almost entirely on the Bay-winged Cowbird, but recently has been found to lay eggs occasionally in the nests of other species. As far as known, no definite records exist of its young being raised by any of these occasional hosts; but there is no reason to suppose that this is in any way improbable. Pereyra (Mem. Jardin Zool. La Plata, 9, pt. 2: 260, 1938) writes that he has found (or been told by Señor Pablo Girard that he has found) eggs attributed to this cowbird in the nests of the following birds:

Furnarius rufus rufus (Gmelin). Rufous Ovenbird
Thamnophilus major major (Vieillot). Large Ant Thrush
Pitangus sulphuratus bolivianus (Lafresnaye). Bienteveo
Mimus saturninus modulator (Gould). Calandria
Turdus rufiventris rufiventris Vieillot. Red-bellied Thrush
Sicalis pelzelni Sclater. Yellow House Finch

The known victims of this cowbird now total eight species. It is possible that in some of these instances the nests used were not occupied by their builders, but by Bay-winged Cowbirds. However, this cannot be proved without more data than are available.

Molothrus ater (Boddaert). NORTH AMERICAN COWBIRD

To the 246 species and subspecies of birds listed as victims of the various races of this cowbird, we may now add twelve more, bringing the total up to 258. The additions are indicated by an asterisk in the following lists. These and a few other recent records involve three races of the cowbird (*buphalus* and *californicus* not considered valid forms) as follows:

1. **Molothrus ater ater** (Boddaert). EASTERN COWBIRD

**Coccyzus erythrophthalmus* (Wilson)
 **Penthestes atricapillus atricapillus* (Linnaeus)
 **Vireo solitarius alticola* Brewster
Vireo philadelphicus (Cassin)

The known hosts of this cowbird now total 149 forms.

2. **Molothrus ater artemisiae** Grinnell. NEVADA COWBIRD

**Steganopus tricolor* Vieillot
 **Oreoscoptes montanus* (Townsend)
 **Turdus migratorius propinquus* Ridgway
Hylocichla guttata faxoni Bangs and Penard

The Nevada Cowbird's list of victims is hereby increased to 92 forms.

3. *Molothrus ater obscurus* (Gmelin). DWARF COWBIRD

- **Vireo belli medius* Oberholser
- Xanthocephalus xanthocephalus* (Bonaparte)
- **Agelaius phoeniceus littoralis* Howell and van Rossem
- Euphagus cyanocephalus* (Wagler)
- **Spinus lawrencei* (Cassin)
- **Pipilo maculatus falcifer* McGregor
- **Junco oreganus montanus* Ridgway
- **Melospiza melodia samuelis* (Baird)

We now know 96 hosts for this race of the cowbird.

Fuller data on these and other recent records are presented below.

Steganopus tricolor Vieillot. Wilson's Phalarope.—Williams and Trowbridge (*Auk*, 56: 77, 1939) found two nests of this bird parasitized by Nevada Cowbirds at the Bear River Refuge, Utah, June 6, 1938. The nests were about twenty-five yards apart and were fairly well concealed in damp salt-grass on a small artificial island in the lower marshes. "Each contained four phalarope and two cowbird eggs. Since these instances seemed from available information to constitute a new host record, subsequent visits to the nests were made to learn the ultimate fate of the eggs. On June 21, it was found that all the phalarope's eggs in one nest had hatched and the two cowbird's eggs were left. These were later flooded. In the second nest, on June 28, three phalarope's eggs were found hatched. The remaining phalarope's egg was pipped but had been destroyed by flooding along with the cowbird's eggs. One of the cowbird's eggs in the first nest was evidently infertile, but the others were advanced in development."

Coccyzus erythrophthalmus (Wilson). Black-billed Cuckoo.—One record, a nest with a cowbird's egg, found apparently not far from Buffalo, New York, by Frank Morris and Edward A. Eames (*Our Wild Orchids*: 181, 1929). I am indebted to Mr. H. G. Deignan for calling this record, buried in botanical literature, to my attention.

Empidonax difficilis difficilis Baird. Western Flycatcher.—Previously known as a molothrine host from a single record, it has now been so recorded twice more. H. R. Eschenberg found a nest near Gilroy, California, April 28, 1932, with two eggs of the Flycatcher and one of the Dwarf Cowbird. W. E. Unglish found a similar combination of eggs at Betebel, California, June 1, 1937.

Pyrocephalus rubinus mexicanus Sclater. Vermilion Flycatcher.—To the few previous records may be added one more. Dille (*Oologist*, 57: 87, 1940) found a nest with one egg of the flycatcher and one of the Dwarf Cowbird near Nogales, Arizona.

Penthestes atricapillus atricapillus (Linnaeus). Black-capped Chickadee.—F. M. Packard (Bird Banding, 7: 129–130, 1936) found a nest of this bird containing four eggs of the chickadee and two of the cowbird, at the Austin Ornithological Research Station, North Eastham, Cape Cod, Massachusetts, on May 25, 1936. This is the first definite case of this sort to come to my attention.

Oreoscoptes montanus (Townsend). Sage Thrasher.—The Sage Thrasher had not been recorded as a cowbird victim until Twomey (Annals Carnegie Museum, 28: 456, 1942) found a nest parasitized by the Nevada Cowbird in the Uinta Basin, Utah, in the summer of 1937.

Turdus migratorius propinquus Ridgway. Western Robin.—Twomey (Annals Carnegie Museum, 28: 456, 1942) found a nest of this robin with an egg of the Nevada Cowbird, in the Uinta Basin, Utah, in the summer of 1937. This is the first case of its kind, so far as I know.

Hylocichla guttata faxoni Bangs and Penard. Eastern Hermit Thrush.—This thrush has long been known as a victim of the eastern race of the cowbird and is now recorded as a host of the Nevada Cowbird as well. Cowan (Occ. Papers Brit. Col. Prov. Mus., no. 1: 44, 1939) writes that of eight nests found at Tupper Lake, Peace River, British Columbia, seven were parasitized.

Corthylio calendula calendula (Linnaeus). Eastern Ruby-crowned Kinglet.—To the single previously known record may be added a second one reported by W. L. Holt (Auk, 54: 589, 1942) who found a kinglet feeding a young cowbird out of the nest at Scarborough Beach, Maine, July 22, 1941. The fact that the young cowbird was not seen in the kinglet's nest makes this record less definite than it would otherwise have been, as birds are known to respond to the food call of young birds they may not have reared themselves.

Vireo belli medius Oberholser. Texas Vireo.—Van Tyne and Sutton (Misc. Publ. Mus. Zool. Univ. Mich., 37: 94, 1937) record this vireo as a commonly parasitized victim of the Dwarf Cowbird in Brewster County, Texas.

Vireo solitarius alticola Brewster. Mountain Vireo.—Dickey (Oologist, 58: 111, 112, 1941) found a nest of this vireo with three eggs of the vireo and one of the cowbird near Cheat River, West Virginia, and another with a cowbird's egg embedded in its wall at Point Mountain, Randolph County, West Virginia.

Vireo philadelphicus (Cassin). Philadelphia Vireo.—Baillie and Harrington (Trans. Roy. Can. Inst., 21, pt. 2: 239, 1937) record that

C. E. Hope saw a Philadelphia Vireo feeding and caring for a young cowbird in Sudbury District, Ontario, July 18, 1937. This is not an entirely conclusive record, as birds are sometimes known to feed young that they have not raised, but it is probably a valid one. This vireo was previously known to be victimized by the Nevada Cowbird; this is the first instance of its being affected by the Eastern Cowbird.

Geothlypis trichas sinuosa Grinnell. Salt Marsh Yellow-throat.—To the single previous record may be added two more. W. E. Unglish found a nest at Soup Lake, Gilroy, California, on May 1, 1936, containing one egg of the warbler and one of the Dwarf Cowbird; H. R. Eschenberg found a similar set of eggs at the same place, May 25, 1935.

Xanthocephalus xanthocephalus (Bonaparte). Yellow-headed Blackbird.—Although often victimized by cowbirds of the eastern race and of the Nevada form, the Yellow-headed Blackbird has not been recorded before as a victim of the Dwarf Cowbird. H. R. Eschenberg found a nest at Los Banos, California, on May 9, 1936, containing a Dwarf Cowbird's egg in addition to four eggs of the blackbird.

Agelaius phoeniceus littoralis Howell and van Rossem. Gulf Coast Red-wing.—Nye (*Oologist*, 56: 87, 1939) has reported this race of the red-wing as a victim of the cowbird at Brenham, Washington Co., Texas. The cowbird in that area is the dwarf form, *M. a. obscurus*.

Agelaius phoeniceus californicus Nelson. Bicolored Red-wing.—To the three previously listed records may be added as many more. H. R. Eschenberg found a nest with three eggs of the blackbird and two of the Dwarf Cowbird at Gustine, California, June 12, 1934. W. E. Unglish found one with two eggs of each at the same place and date, and one with three eggs of the blackbird and one of the cowbird at Los Banos, California, June 10, 1937.

Euphagus cyanocephalus (Wagler). Brewer's Blackbird.—Hitherto recorded as a victim of other races of the cowbird, the Brewer's Blackbird may now be added to the list of hosts of the Dwarf Cowbird, on the basis of a parasitized nest found by H. R. Eschenberg at Gustine, California, June 6, 1932. The nest contained three eggs of the blackbird and one of the cowbird.

Piranga rubra cooperi Ridgway. Cooper's Tanager.—Van Tyne and Sutton (*Misc. Publ. Mus. Zool. Univ. Mich.*, 37: 94, 1937) list this tanager as a victim of the Dwarf Cowbird in Brewster County, Texas. In a letter under date of September 8, 1942, Sutton informs me that on May 15, 1935, he and J. B. Semple saw a pair of Cooper's

Tanagers feeding a young cowbird near Hot Springs, along the Rio Grande. The cowbird appeared to be the only young bird of the brood. This tanager was previously known as a molothrine victim only on the basis of its inclusion in Bendire's list.

Spinus pinus pinus (Wilson). Northern Pine Siskin.—To the three previously listed instances of this bird as a victim of the Eastern Cowbird may be added three more—all in Wellington County, Ontario (Klugh, A.B., Ont. Nat. Sci. Bull., no. 2: 17–18, 1906). These records were previously overlooked as the paper in which they appeared was unknown to me.

Spinus lawrencei (Cassin). Lawrence's Goldfinch.—H. R. Eschenberg found a nest with four eggs of the goldfinch and one of the Dwarf Cowbird at Gilroy, California, June 20, 1934. In the Museum of Vertebrate Zoology at Berkeley, California, is a set of one egg of this goldfinch and two eggs of the Dwarf Cowbird, collected by Ashworth at Candalanga, Ventura Co., California. These two records serve to add this species to the list of molothrine victims.

Pipilo maculatus falcifer McGregor. San Francisco Towhee.—One record—a nest with three eggs of the towhee and one of the Dwarf Cowbird, found by H. R. Eschenberg at Betebel, Santa Clara Co., California, May 18, 1936.

Aimophila aestivalis bachmani (Audubon). Bachman's Sparrow.—To the two records of my earlier lists may be added a third. Brooks (Wils. Bull., 20: 100, 1908) reports a nest with three eggs of the sparrow and one of the Eastern Cowbird near French Creek, West Virginia.

Junco oreganus montanus Ridgway. Montana Junco.—One record—Cowan (Occ. Papers Brit. Col. Prov. Mus., no. 1: 59, 1939) found a parasitized nest at Tupper Lake, Peace River, British Columbia, May 20, 1938. The nest was deserted later.

Melospiza melodia samuelis (Baird). Samuel's Song Sparrow.—This race of the Song Sparrow may be added to the list of victims of the Dwarf Cowbird on the basis of a nest with three eggs of the sparrow and two of the cowbird, found by H. R. Eschenberg at Soap Lake, Gilroy, California, May 18, 1935.

***Tangavius aeneus* (Wagler). BRONZED COWBIRD**

To the previously known hosts of this cowbird, Amadon (Auk, 57: 257, 1940) has added one more—*Arremonops rufivirgatus rufivirgatus* (Lawrence), the Texas Sparrow.

U. S. National Museum
Washington, D. C.