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HEMISPINGUS PARODII, A NEW SPECIES OF TANAGER FROM PERU

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In the course of field work on the ecology and distribution of birds in the eastern Andes of Peru, we encountered a tanager that appears to represent a new species, as described below (and see frontispiece).

Hemispingus parodii sp. nov.

PARODI'S TANAGER

HOLOTYPE.—American Museum of Natural History No. 810,463; Adult male from the Cordillera Vilcabamba, 12°36'S, 73°29'W, elevation 3,480 m, Dept. of Cuzco, Peru; 28 July 1968; collected by John S. Weske and John W. Terborgh; prepared by Weske; original No. 1849.

DIAGNOSIS.—A moderately large *Hemispingus*, nearest *H. calophrys* (Sclater and Salvin, 1876) of the Bolivian Yungas but throat yellow; superciliary stripe yellow and decidedly narrower; crown, lores, and face patch dusky olive; nuchal area with a less pronounced demarcation in color between crown and back; back slightly darker greenish olive; and abdomen more yellowish.

DISTRIBUTION.—At elevations from about 3,200 to 3,500 m on the crest and upper slopes of the northern Cordillera Vilcabamba in the Province of La Convención, Department of Cuzco, Peru. The type locality lies on a high ridge bordering the canyon of the Río Mapitunari, a tributary of the Río Apurímac.

DESCRIPTION OF THE HOLOTYPE.—Back, rump, and upper tail coverts between Citrine and Dark Citrine (capitalized colors are from Ridgway, 1912); crown dusky olive, darker on forehead and lighter posteriorly, the individual feathers being dull blackish with Dark Citrine edgings and basal areas; chin and throat Lemon Chrome; malar area and anterior breast between Lemon Chrome and Primuline Yellow; flanks and sides of breast Citrine; central breast and belly near Lemon Chrome but slightly duller; under tail coverts Sulphine Yellow. A Lemon Chrome superciliary stripe from the base of the bill to the nape, brightest over the eye, the individual feathers being finely tipped with olive; lores and postocular region olive; auriculars and suboculars dull yellowish with paler shaft streaks; postauricular patch Dark Citrine, bordered posteriorly by a dull yellowish streak extending from the throat. Remiges dusky; primaries edged with Sulphine Yellow; secondaries, tertials, and upper wing coverts with margins the color of the back; rectrices with Dark Citrine outer webs and dusky inner webs; tail moderately

graduated, the outermost rectrices being ca. 11 mm shorter than the central (and longest) ones. Soft part colors (in life): maxilla black; mandible medium gray; tarsi and toes pale gray; and iris dark brown.

MEASUREMENTS OF THE HOLOTYPE (mm).—Chord of wing 72.7; tail (from insertion of the two central rectrices to the tip of the longest rectrix) 69.9; tarsus 22.4; bill length (from anterior edge of nostril to tip of maxilla) 7.8; bill depth (at posterior edge of the nostril) 4.9.

ETYMOLOGY.—It is a pleasure to name this species in honor of our friend José Parodi Vargas, who provided us with a base for our expeditions at his Hacienda Luisiana and generously aided us in countless other ways.

REMARKS

Variation in the Type Series.—The eight specimens at hand vary individually in darkness of crown pigmentation but otherwise are quite uniform. One male is blackish on the forecrown and dusky on the occiput, while at the other extreme, another male has a dusky forecrown and a hindcrown which is mainly olive and only slightly darker than the back. On one female, the dusky centers of the crown feathers form fairly distinct streaks, but in the other the crown appears unstreaked and closely matches that of the holotype. Females average smaller than males but otherwise are externally indistinguishable. There is no significant variation in soft part colors.

Habitat.—The habitat of *Hemispingus parodii* is a mixture of elfin forest and tall grassland on the uppermost slopes of the northern Cordillera Vilcabamba. Treeline is ill-defined in this area, but with increasing elevation there is progressively more grassy vegetation and a reduced number of woody plants. Trees are short and gnarled, with a profuse epiphytic covering including lichens, orchids, and bromeliads. Several kinds of bamboo and one species of tree fern are found also. The area is one of cool temperatures and high humidity, for the slopes are customarily in the clouds by day except in early morning. We found *H. parodii* from the summit of the range at 3,520 m down to an elevation of 3,190 m. The general habitat is the same as that of *Gallinago imperialis* and was pictured by Terborgh and Weske (1972).

Breeding Information.—Data on the gonadal condition in our series of *H. parodii* provide a basis for tentatively determining the species' breeding season. Two males taken in early August were in full breeding condition, each having 10 mm testes and a cloacal protuberance (1 and 5 August). The testes of four males collected in mid and late July were considerably enlarged (15 July—6 mm testes; 15 July—9 mm; 21 July—9 × 5 mm; 28 July—left testis 9 × 5 mm and right, 7 × 5 mm). None of these birds had a cloacal protuberance. A female taken 24 July was in breeding condition (ovary and oviduct much enlarged, largest ovum 6 mm) but two August birds were not (2 August—ovary 4 mm, not enlarged; 10 August—ovary 5 mm, largest ovum 1½ mm). These data suggest that the breeding season

for *H. parodi* was just beginning in late July. That breeding had not occurred earlier is suggested by the absence of any juvenal birds or birds with incompletely pneumatized skulls, by the lack of females with a brood patch, and by the relatively unworn plumage of our specimens. Unfortunately we have no information on vocalizations or other behavior.

Ecological Relationships.—A feature of avian distribution on the slopes of the Cordillera Vilcabamba is elevational replacement of ecologically similar species. In accordance with the competitive exclusion principle, evidence points to competition between congeners as a mechanism limiting their respective elevational ranges (Terborgh, 1971). In the northern Cordillera Vilcabamba, *Hemispingus parodii* appears to replace the species *H. atropileus* in the highest montane regions. *H. atropileus*, a slightly larger bird, is common in elfin forest from 2,600 to 2,800 m and was found once at 3,300 m, above the lower elevational limit of *parodii* and in the same netline in which several *parodii* were caught. On the west side of the Apurímac Valley, where *parodii* is not present, *atropileus* ranges to the upper limit of trees. Seemingly, it has been able to expand its elevational range in the absence of competition from its congener. Two much smaller congeneric species, *H. superciliaris* and *H. xanthophthalmus*, have elevational ranges which overlap those of *parodii* and *atropileus* in the Cordillera Vilcabamba, but we feel that they are sufficiently different in size and feeding behavior to minimize competition with the latter two.

All individuals of *H. parodii* that we encountered were trapped in mist-nets. Birds of this species comprised 1.8 percent of our captures in nets from 3,170 to 3,340 m elevation and 0.5 percent of the catch at 3,500 m. Based on capture rates, the commonest species in the area were the tanagers *Iridosornis reinhardti* and *Anisognathus igniventris*, the hummingbird *Metallura tyrianthina*, the flower-piercer *Diglossalafresnayii*, the finch *Catamenia homochroa*, the furnariid *Schizoeaca fuliginosa*, and the flycatcher *Ochthoeca frontalis*.

Another fairly common species at these elevations is *Basileuterus luteoviridis*. This large warbler bears a striking similarity to *Hemispingus parodii* in color and size. The two species are alike in having citrine upperparts, yellow underparts and superciliaries, and olive facial markings. They are most readily distinguished by crown color—citrine, like the back, in *B. luteoviridis* but dusky olive in *H. parodii*. In addition, *B. luteoviridis* has flesh-colored tarsi and toes, longer rictal bristles, and a flatter bill with a solid black mandible. *B. luteoviridis* is a bird of dense cloud forest understory as well as elfin forest. In the Cordillera Vilcabamba its elevational range is much broader than that of *H. parodii*, extending from 2,100 m to 3,520 m.

TABLE 1
MEASUREMENTS IN MILLIMETERS OF THREE SPECIES OF *HEMISPINGUS*

| Measurement | <i>H. parodii</i> | | | | <i>H. calophrys</i> | | | | <i>H. atropileus auricularis</i> | | | |
|-------------|-------------------|------|------|-----------|---------------------|------|------|-----------|----------------------------------|------|------|-----------|
| | N | Mean | S.D. | Range | N | Mean | S.D. | Range | N | Mean | S.D. | Range |
| MALES | | | | | | | | | | | | |
| Wing chord | 6 | 72.0 | 0.9 | 70.8-73.0 | 7 | 70.0 | 3.4 | 65.8-73.9 | 15 | 75.6 | 3.5 | 70.1-80.4 |
| Tail length | 6 | 68.4 | 1.4 | 66.0-69.9 | 7 | 66.8 | 2.0 | 63.3-69.2 | 15 | 72.5 | 3.0 | 67.3-79.0 |
| Bill length | 6 | 7.8 | 0.2 | 7.5-8.1 | 7 | 7.7 | 0.4 | 7.2-8.4 | 14 | 8.7 | 0.3 | 8.0-9.2 |
| Bill depth | 6 | 4.8 | 0.2 | 4.5-5.1 | 5 | 5.0 | 0.2 | 4.8-5.3 | 14 | 5.5 | 0.2 | 5.0-5.7 |
| FEMALES | | | | | | | | | | | | |
| Wing chord | 2 | 69.0 | — | 67.5-70.5 | 4 | 67.4 | 2.4 | 64.4-70.1 | 10 | 72.9 | 4.2 | 65.1-80.5 |
| Tail length | 2 | 66.4 | — | 65.8-66.9 | 4 | 65.6 | 1.8 | 63.1-66.9 | 9 | 71.4 | 3.6 | 65.2-77.9 |
| Bill length | 2 | 8.2 | — | 8.0-8.3 | 3 | 7.6 | — | 7.0-7.9 | 10 | 8.7 | 0.2 | 8.5-9.0 |
| Bill depth | 2 | 5.1 | — | 4.8-5.3 | 3 | 4.9 | — | 4.9-5.0 | 9 | 5.4 | 0.2 | 5.2-5.7 |

Symbols: N—sample size, S.D.—standard deviation.

The significance, if any, of the apparent convergence in the two species is not evident.

Systematic Relationships.—In investigating the systematic relationship of *Hemispingus parodii*, we have been led to review the status of the races of *H. atropileus*, which shows considerable resemblance to the new form. Hellmayr (1936) considered *H. atropileus* to consist of three or possibly four subspecies: nominate *atropileus* of eastern Colombia and Ecuador; *chorigaster*, a western Colombian race perhaps not distinct from *atropileus*; *auricularis*, a somewhat smaller Peruvian form with brighter underparts but like the nominate race in having a narrow, whitish superciliary line; and *calophrys* of Bolivia, a still smaller form with a broad, golden ochraceous superciliary. The race *intermedius*, described by Carriker (1934) from northern Peru, was considered by Zimmer (1947) to be indistinguishable from *auricularis*. It is clear that *H. parodii* and *H. atropileus auricularis* are not conspecific, since their ranges meet and overlap slightly, as was shown above, and there is no indication of intergradation. Since *parodii* and *calophrys* are allopatric, the possibility exists that they are conspecific. Such a taxonomic arrangement would entail recognition of *calophrys* as a species distinct from *H. atropileus*. The habitat, climatic, and elevational preference of *calophrys* is apparently similar to that of *auricularis* and *parodii*. Elevations noted on *calophrys* specimen labels are 3,500 m, 10,000 ft, and 10,700 ft. Bond and Meyer de Schauensee (1942) describe two of its localities with terms like "cold, foggy, and rainy" and "forest and boggy meadows." We have been able to locate only 16 specimens of *calophrys*, all from the Yungas

TABLE 2

COMPARISON OF PLUMAGE COLORATION AND PATTERN IN THREE SPECIES OF *HEMISPINGUS*

| Character | <i>H. parodii</i> | <i>H. calophrys</i> | <i>H. atropileatus auricularis</i> |
|---------------------------------|--------------------------|---------------------|------------------------------------|
| Crown patch | | | |
| Width | Wide | Narrow | Wide |
| Color | Dusky olive | Black | Black |
| Superciliary stripe | | | |
| Width | Narrow | Wide | Narrow |
| Color | Yellow | Orange-ochraceous | White or buffy-white |
| Face patch | | | |
| Width | Narrow | Narrow | Wide |
| Color | Dark olive | Blackish to dusky | Black |
| Throat color | Yellow | Orange-ochraceous | Ochraceous yellow |
| Color of central abdominal area | Yellow tinged with olive | Yellowish olive | Yellow tinged with olive |

of Bolivia in the Departments of La Paz and Cochabamba. We have examined all of these except the holotype, from Tilo Tilo and now in the British Museum, and two individuals, one from Sandillani and one from the La Paz vicinity, now in Munich. No information on the biology of *calophrys* is available in the literature to aid in determining its taxonomic status.

The range of *parodii* and the nearest locality for *calophrys*, not far north-east of La Paz, lie about 750 km apart. The intervening area of Andean slope in southeastern Peru has been visited by such collectors as Chapman, Watkins, and Carriker, but no specimens resembling either of the two forms have been taken. The richness of the black and golden-ochre head coloration varies within the series of *calophrys* specimens at hand, but no morphological trend toward *parodii* in specimens from geographically nearer localities is apparent. Similarly, there is a gap of 570 km between the southernmost locality for *H. atropileus auricularis* (Occobamba Valley, Depto. Cuzco) and the nearest point in the range of *calophrys*. Measurements and characteristics of *parodii*, *calophrys*, and *auricularis* are summarized in Tables 1 and 2. *H. calophrys* seems to differ about equally from *H. parodii* and *H. atropileus auricularis* in plumage coloration and markings. In size, it is similar to the former and somewhat smaller than the latter. Until additional information is available on vocalizations of the various forms and on populations in geographically intermediate areas, if any, it seems best to consider *H.*

parodii and *H. calophrys* each as full species and to recognize *H. atropileus* as a polytypic species (comprising populations to which have been applied the names *chorigaster*, *intermedius*, *auricularis*, as well as *atropileus*), ranging from Colombia to Peru near the city of Cuzco.

SPECIMENS EXAMINED

The museums housing the specimens are cited in parentheses: AMNH, American Museum of Natural History; USNM, U.S. National Museum of Natural History; ANSP, Academy of Natural Sciences of Philadelphia; NS, Naturmuseum Senckenberg; LSU, Louisiana State University Museum of Zoology; FM, Field Museum of Natural History.

Hemispingus parodii.—PERU: Cordillera Vilcabamba (all from within 2 km of the type locality), 6 ♂♂, 2 ♀♀, 1 ♀ skeleton (AMNH), 1 unsexed alcoholic (USNM).

Hemispingus calophrys.—BOLIVIA: Hichuloma, 1 ♂, 1 ♀ (ANSP); Incachaca, 1 ♂ (ANSP); Cillutincara, 1 unsexed (AMNH); Unduavi, 1 ♂, 1 ♀ (NS); Km 104, Prov. Chapare, 4 ♂♂, 2 ♀♀, 1 unsexed (LSU).

Hemispingus atropileus auricularis.—PERU: Cordillera Vilcabamba, 2 ♂♂, 2 ♀♀ (AMNH); Puncu, Depto. Ayacucho, 1 ♂ (AMNH); Yuraccyacu, Depto. Ayacucho, 2 ♀♀ (LSU); Tocopoqueu, Occobamba Valley, 1 ♂ (AMNH), 1 ♂ (USNM); Maraynioc, 2 ♂♂, 1 ♀ (AMNH), 1 ♂ (USNM); Rumicruz, 1 ♂, 2 unsexed (AMNH); Cordillera Carpish, 3 ♂♂, 1 ♀, 1 unsexed (LSU); Carpish Pass, 1 ♀ (AMNH); Carpish Ridge, 1 ♂, 1 ♀ (FM); Bosque Zapatagocha, Depto. Huánuco, 1 ♂ (FM); La Lejia, 1 ♂, 2 ♀♀ (AMNH).

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NEW LIFE MEMBER



Donald Richard Eckelberry is now a Life Member of the Wilson Ornithological Society. He was born in Sebring, Ohio, and at an early age developed a love of nature and later a facility for painting it. He studied at the Cleveland Institute of Art, and after he left there he pursued a number of jobs before becoming a premier artist and illustrator of birds. He has travelled widely in pursuit of birds, for he prefers to paint species that he knows. Among his best-known feats of illustration are those in Richard Pough's *Audubon Bird Guides* and James Bond's *Guide to the Birds of the West Indies*. Mr. Eckelberry has written several articles on nature and is a member of various organizations, including the A.O.U. He is married and lives in Babylon, Long Island, New York.



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