

THE WILSON BULLETIN
A QUARTERLY MAGAZINE OF ORNITHOLOGY
Published by the Wilson Ornithological Society

VOL. 99, NO. 1

MARCH 1987

PAGES 1-151

Wilson Bull., 99(1), 1987, pp. 1-6

**TANGARA PHILLIPSI, A NEW SPECIES OF TANAGER
FROM THE CERROS DEL SIRA, EASTERN PERU**

GARY R. GRAVES AND JOHN S. WESKE¹

ABSTRACT.—A new species of tanager, *Tangara phillipsi* sp. nov., from the Cerros del Sira, Peru is described. *T. phillipsi* belongs to a monophyletic “black-capped” species complex of the Andean forest of western South America. Received 29 Nov. 1985, accepted 21 Mar. 1986.

Between 1969 and 1972, John Terborgh and Weske made collections in the previously unexplored Cerros del Sira, a series of isolated peaks (to 2450 m elevation) connected by a low-elevation ridge to the Eastern Cordillera of the Andes, which lies about 100 km to the west. Preliminary descriptions of the region and analyses of the ecology of the avifauna have been reported elsewhere (Weske and Terborgh 1971, 1977; Terborgh and Weske 1975). The evolutionary relationships of the avifauna of the Cerros del Sira and other Andean outliers to those of the Eastern Cordillera are of great interest. Here we report the discovery of a spectacular new species of tanager endemic to the Sira, related to *Tangara heinei* (Black-capped Tanager) and the “black-capped” species group of *Tangara* species (see Frontispiece).

***Tangara phillipsi* sp. nov.**

SIRA TANAGER

HOLOTYPE.—American Museum of Natural History (AMNH) No. 820969; adult male from the Cerros del Sira 9°26'S, 74°45'W, 1300 m, Departamento de Huánuco, Peru, collected 26 July 1969, by John S. Weske; original number 2091.

DIAGNOSIS.—A medium-sized, sexually dichromatic *Tangara* most similar to *T. heinei*. The male differs from *T. heinei* in having the belly, breast, and sides of the neck (connecting

¹ Division of Birds, National Museum of Natural History, Smithsonian Institution, Washington, D.C. 20560.



The "black-capped" species-group of *Tangara* (females above, males below).
T. heinei, upper left, range = stippled. *T. viridicollis*, *fulvigula* (male only), center left,
and *T. v. viridicollis*, lower left, ranges = lines slanting downward to right
(also present in the Cerros del Sira). *T. phillipsi*, sp. nov., center right, Cerros del Sira = star.
T. argyrofenges caeruleigularis, lower right, range = lines slanting downward to left.
Bolivian populations (*t. a. argyrofenges*) are similar to *T. a. caeruleigularis*.
Acrylic and ink painting by Morton L. Isler.

the crown and breast) black, instead of grayish-blue or blue (see Frontispiece). The contrasting throat patch is more restricted, and the tips of throat feathers are less bifurcated, and less elongated and pointed than in *T. heinei*. *T. phillipsi* is distinguished from *T. viridicollis* and *T. argyrofenges* in having grayish-blue edgings on wings and tail in conjunction with a metallic bluish-green throat patch as opposed to grayish-blue wings and yellowish-orange throat in *T. viridicollis* or black wings and tail and bluish-green throat in *T. argyrofenges*. Females differ from *T. heinei* by having a darker gray breast and belly, and less bifurcated, pointed throat feathers; from *T. viridicollis* in lacking a golden-olivaceous suffusion on crown, auriculars, and throat; and from *T. argyrofenges* in lacking bright yellowish-green flanks and back.

DESCRIPTION OF HOLOTYPE.—Eying, lores, forehead, crown, and nape are glossy black, contrasting sharply with the back. The back, rump, upper tail coverts, sides of breast, and flanks silvery opalescent blue, the exact color varying with angle of reflected light. Remiges and upper wing coverts black; edges of the proximal $\frac{2}{3}$ – $\frac{3}{4}$ of the outer web of primaries, except the outermost one; and the entire outer web of secondaries Slate-blue (capitalized color name is from Ridgway 1912). Inner webs of the secondaries edged with white. Several upper tail coverts, rump feathers, and wing coverts tinted with green, a character of predefinitive plumages in *T. heinei*, *T. argyrofenges*, and *T. viridicollis*. Underwing coverts white. Central pair of rectrices black along the shaft, the rest of the feather dull grayish-blue. The outermost pair of rectrices black; remaining rectrices black, edged with grayish-blue along the outer web. The throat patch appears bluish-green; feathers of the throat patch, which extends from just below the eyering and auriculars across the sides of the throat to extreme upper breast, black with glossy, metallic bluish-green tips. The posterior margin of the throat patch poorly defined with several glossy bluish-green feathers scattered among glossy black feathers of the upper breast. Lower breast and belly black, becoming slightly duller posteriorly, and bordered laterally by the opalescent blue sides of the breast and flanks. Tibial feathers white. Undertail coverts bluish-gray, faintly edged with white. Soft part colors in life: iris dark brown, bill black except for gray base of lower mandible, tarsus dark grayish-brown.

MEASUREMENTS (mm).—(Holotype, AMNH 820969 ♂; AMNH 820998 ♀; Kp 1955 am ♀; Kp 1955 an ♀): wing chord (73.0, 69.7, 69.9, 72.6); tail (51.6, 47.5, 48.4, 48.7); tarsus (17.0, 16.9, 15.4, 16.3); culmen from anterior edge of nostril (7.0, 6.6, 5.9, 6.3).

DISTRIBUTION.—Known only from the slopes of the Cerros del Sira, 9°26'S, 74°45'W, Departamento de Huánuco, Peru, from 1300 to 1570 m elevation.

ETYMOLOGY.—We take pleasure in naming this tanager for Allan R. Phillips in recognition of his accomplishments in clarifying the taxonomic relationships of neotropical birds.

SPECIMENS EXAMINED.—*Tangara phillipsi*: PERU: type locality (AMNH 1 ♂, 1 ♀; Zoological Museum, University of Hamburg [Kp] 2 ♀♀). *T. heinei*: VENEZUELA: Mérida (National Museum of Natural History, Smithsonian Institution [USNM] 1 ♂, 1 ♀); Aragua (USNM 1 ♂). COLOMBIA: Sierra Nevada de Santa Marta (USNM 10 ♂♂, 3♀♀; AMNH 9 ♂♂, 3♀♀); Antioquia (USNM 9 ♂♂, 6♀♀; AMNH 3 ♂♂, 2♀♀); Cundinamarca (USNM 2 ♂♂; AMNH 9 ♂♂, 5♀♀); Cauca (USNM 4 ♂♂, 3♀♀; AMNH 7 ♂♂, 3♀♀); Norte de Santander (USNM 1 ♂, 2♀♀); Huila (USNM 5 ♂♂, 1 ♀; AMNH 2 ♂♂); Nariño (USNM 1 ♂; AMNH 1 ♂, 1 ♀); Caldas (USNM 1 ♂). ECUADOR: Napo (AMNH 2 ♂♂, 2♀♀). *T. argyrofenges*: PERU: Amazonas (Louisiana State University 2 ♂♂, 1 ♀); San Martín (Academy of Natural Sciences of Philadelphia 1 ♂); Junín (Field Museum of Natural History [FMNH] 1 ♂). BOLIVIA: Cochabamba (FMNH 5 ♂♂, 1 ♀); Santa Cruz (Carnegie Museum of Natural History 4 ♂♂; FMNH 1 ♂; University of Michigan Museum of Zoology 1 ♂). *T. viridicollis*: ECUADOR:

Azuay (USNM 1 ♂). PERU: Huánuco: Cerros del Sira (AMNH 1 ♂); Cuzco (USNM 2 ♂♂, 2 ♀♀).

REMARKS

Description of females.—The three female specimens, all collected on 24 July 1969, vary only slightly in color. The crown is dull bluish-green to grayish-blue with a scaled appearance caused by the exposed dark feather bases. Back, rump, upper tail coverts, sides, and flanks are shining golden green (darker, less yellow than in female *T. argyrofenges*). The pattern of the wings and tail is similar to that of the male, with grayish-blue being replaced with shining green. Under-wing coverts are white, tinted slightly with pale yellow. Feather tips of the chin, throat, auriculars and upper breast are bifurcated and bluish-green, contrasting with gray feather bases and forming an indistinct pectoral belt. The lower breast and belly are bluish-gray, becoming lighter near the center of the lower belly. Tibial feathers are grayish-white. The under tail coverts are greenish-gray with broad cream-colored borders.

Ecology.—*Tangara phillipsi* was a fairly common member of mixed-species flocks in the cloud forest canopy and was observed at heights of 11–25 m above the forest floor. It occurred in canopy flocks with the tanagers *T. arthus* (Golden Tanager), *T. cyanotis* (Blue-browed Tanager), *T. nigroviridis* (Beryl-spangled Tanager), *T. xanthocephala* (Saffron-crowned Tanager), *Piranga leucoptera* (White-winged Tanager), *Calochaetes coccineus* (Vermilion Tanager), *Anisognathus flavinucha* (Blue-winged Mountain-Tanager), *Chlorochrysa calliparaea* (Orange-eared Tanager), *Euphonia xanthogaster* (Orange-bellied Euphonia), *Diglossa glauca* (Deep-blue Flower-piercer), and *Cyanerpes caeruleus* (Purple Honeycreeper), as well as with *Pachyramphus albogriseus* (Black-and-white Becard) and *Philydor erythrocerus* (Rufous-rumped Foliage-gleaner). There were no obvious behavioral features that differentiated *T. phillipsi* from the 4 other *Tangara* species with which it was observed. Three specimens of *T. phillipsi* were caught together in a mist net strung near the ground, but mist-netting would not be expected to provide an effective means of sampling abundance of this species because of its arboreal habits. The two specimens prepared by Weske (AMNH 820969, testes 1.5 mm, skull ossified, weight 20.8 g; AMNH 820998, ovary 6 mm, skull ossified, 20.3 g) appear to be adult by skull ossification and plumage criteria, although the gonads did not indicate breeding activity. Skull ossification data were not recorded on the labels of the females prepared by Maria Koepcke (Kp 1955 an, ovary 6 × 4 mm, 19.2 g; Kp 1955 am, ovary 7 × 5 mm, 16.8 g). The wings and tail of these 2 females are rounded and

slightly worn, and the body plumage is perceptibly duller and more lax in texture than the AMNH female, suggesting that they may be immatures less than a year old; however, their wing and tail measurements are longer than those of the AMNH female.

DISCUSSION

The ancestor-descendant sequence of the evolution of plumage pattern and color within *Tangara* and related genera (*Iridophanes*, *Chlorochrysa*) is unknown. Certain features such as the club-tipped, waxy feathers in *Chlorochrysa* are probably synapomorphic. Other modifications (e.g., opalescent, "metallic," and iridescent plumage) may have arisen several times within the Emberizines and are not very useful in determining relationships within *Tangara*.

On the basis of plumage, however, a monophyletic "black-capped" species complex (*T. heinei* superspecies [*T. heinei*, *T. phillipsi*], *T. argyrofenges* [Green-throated Tanager], and *T. viridicollis* [Silvery Tanager]) is defined by several characters, the combination of which is unique among *Tangara*: (1) marked sexual dichromatism; (2) black crown and forehead in males; (3) contrasting throat patch in males; and (4) opalescence on the mantle, sides, and flanks of males. *Tangara cyanoptera* (Black-headed Tanager), sympatric with *T. heinei* in the Sierra Nevada de Santa Marta and Serranía de Perijá in northern Colombia, is the only other sexually dichromatic species of *Tangara* with a black cap or hood. The male of *T. cyanoptera* has a black hood and opalescent mantle, and the Tepui subspecies, *T. c. whitleyi*, has unmarked black wings, a character shared only with *T. argyrofenges* within the genus. This superficial resemblance and the peripheral distribution of *T. cyanoptera* suggest that it may be more closely related to the "black-capped" species complex than are other members of the genus. Because synapomorphies of plumage characters within the "black-capped" group cannot be determined, the cladistic relationship among taxa is uncertain. *T. heinei*, *T. argyrofenges*, and *T. viridicollis* exhibit only subtle geographic variation in plumage pattern and color, none of which "clines" toward the appearance of *T. phillipsi* (pers. obs.).

The present day distributions of *T. phillipsi* and *T. argyrofenges* appear to be relictual. *T. argyrofenges* is known from three widely separated regions along the eastern slope of the Andes between 5° and 18° S latitude: (1) the northern spur-like terminus of the Eastern Cordillera in the Departamentos de Amazonas and San Martín, Peru; (2) Conchapen Mountain (Yurinaqui Alto), 5000 ft (1525 m), an outlying ridge in the Departamento de Junín, Peru; and (3) the "Yungas" of the Departamentos de

La Paz, Cochambamba and Santa Cruz, Bolivia. The absence of *T. argyrofenges* in several well-collected localities (e.g., Cordillera Carpish, Cordillera Vilcabamba) lying between known populations indicates that its patchy distribution is not a sampling artifact.

Terborgh and Weske (1975), Terborgh (1977), and Fitzpatrick et al. (1977) suggested that interspecific competition may be reduced in the depauperate avian communities found on Andean outliers. Although the ecological relationships of *Tangara* are imperfectly known, we guess that competition would be most intense between closely related species. The pattern of distributional overlap within the "black-capped" complex provides little evidence to support or reject this hypothesis. A single subadult specimen (AMNH 821010 ♂, 15.7 g, collected 13 July 1969) of *T. viridicollis*, the only "black-capped" *Tangara* throughout most of the Peruvian Andes, was mist-netted in the Cerros del Sira in the same net lines that captured *T. phillipsi*. As no other individuals were observed or netted anywhere in the Sira, *T. viridicollis* is either rare in this locality or the unique specimen represents a wanderer from farther downrange or from the main Andes. *T. viridicollis* is syntopic with the Peruvian populations of *T. argyrofenges*. At least 5 other species of *Tangara* (*arthus*, *xanthocephala*, *cyanotis*, *nigroviridis*, *vassorii*) are known to occur sympatrically with all Peruvian populations of *T. phillipsi* and *T. argyrofenges* (pers. obs.), and 5 additional species of *Tangara* (*parzudakii*, *ruficervix*, *punctata*, *chrysotis*, *labradorides*) are known to occur sympatrically with at least one of those populations.

T. heinei, the taxon exhibiting the most overall similarity to *T. phillipsi*, does not occur sympatrically with other "black-capped" species—the southernmost population of *T. heinei* (Río Oyacachi, Ecuador) is apparently separated from the only known population of *T. phillipsi* by a gap of 1100 km. This suggests that the 2 taxa have been isolated from reciprocal gene flow for a considerable period.

ACKNOWLEDGMENTS

We are grateful to J. W. Terborgh and the late M. Koepcke, who, with Weske, carried out the ornithological fieldwork that resulted in the discovery of *T. phillipsi*. The expeditions to the Sira were supported by the National Science Foundation (Grants GB-12378 and GB-20170).

We thank the curators and staff of the American Museum of Natural History, Academy of Natural Sciences of Philadelphia, Carnegie Museum of Natural History, Zoological Museum, University of Hamburg, and the Louisiana State University Museum of Zoology for lending specimens. M. Isler, S. L. Olson, K. C. Parkes, J. V. Remsen, and T. S. Schulenberg made many helpful comments on the manuscript. We thank M. Isler for preparing the excellent Frontispiece.

LITERATURE CITED

- FITZPATRICK, J. W., J. W. TERBORGH, AND D. E. WILLARD. 1977. A new species of woodwren from Peru. *Auk* 94:195-201.
- RIDGWAY, R. 1912. Color standards and color nomenclature. Published by the author, Washington, D.C.
- TERBORGH, J. 1977. Bird species diversity on an Andean elevational gradient. *Ecology* 58:1007-1019.
- AND J. S. WESKE. 1975. The role of competition in the distribution of Andean birds. *Ecology* 56:562-576.
- WESKE, J. S. AND J. W. TERBORGH. 1971. A new subspecies of curassow of the genus *Pauxi* from Peru. *Auk* 88:233-238.
- AND ———. 1977. *Phaethornis koepckeae*, a new species of hummingbird from Peru. *Condor* 79:143-147.

COLOR PLATE

The Frontispiece painting has been made possible by an endowment established by George Miksch Sutton. The painting is by Morton L. Isler.