

VARIATION IN *DECONYCHURA LONGICAUDA*
IN CENTRAL AMERICA AND COLOMBIA

BY THOMAS R. HOWELL

THE Long-tailed Woodcreeper (*Deconychura longicauda*) is one of the least common of the dendrocolaptids found in Central America. The range of the northernmost subspecies, *typica*, is given by Peters (1951) as southwestern Costa Rica and western Panamá east to the Río Calovébora (= Calovévora). On January 21 and 22, 1953, I collected two birds of this species at Arenal, 25 km. east of Jalapa, Department of Nueva Segovia, Nicaragua. This locality is at an elevation of 1200 ft. in primeval rain forest near the western edge of the Caribbean slope in extreme northern Nicaragua. As Arenal is several hundred miles north of the previously recorded range of the species, I compared my two specimens with a few examples of *typica* from Costa Rica to see if there were any detectable differences. The variability of these few birds prompted me to assemble a series of virtually all Central American specimens of *Deconychura longicauda* in United States museums, a total of 29. In addition to the two Nicaraguan birds, there are 20 from Costa Rica (and measurements of one other subsequently made into a skeleton) and seven from Panamá, including the type of *darienensis* Griscom. I have also examined what I believe to be all specimens of this species from Colombia, a total of nine, including the type of *minor* Todd. Other South American forms were not studied as they are outside the scope of the present work; the most recent review of the entire genus is still that of Zimmer (1929). Dorsal and ventral views of selected specimens examined, including types, are given in Plates 26 and 27.

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TABLE 1
LOCALITY, DATE OF COLLECTION, AND MEASUREMENTS (IN MM.) OF SPECIMENS OF *Deconychura longicauda* FROM CENTRAL AMERICA AND COLOMBIA

Museum Number	Locality Number	Locality	Date	Males			Females		
				Wing	Tail	Culmen (from nostril)	Wing	Tail	Culmen (from nostril)
UCLA 34566	1	Nicaragua: Dept. Nueva Segovia; Arenal, 25 km. E. of Jalapa (1200 ft.)	Jan. 21, 1953	96.1	90.0	15.8			
UCLA 34567	1	Nicaragua: Dept. Nueva Segovia; Arenal, 25 km. E. of Jalapa (1200 ft.)	Jan. 22, 1953	99.6	97.5	17.7			
UCLA 34491	2	Costa Rica: Alajuela Prov.; Quebrada Azú de San Carlos (800 ft.)	Mar. 22, 1934				83.0	80.0*	14.0
AMNH 390570	3†	Costa Rica: Limón Prov.; Hacienda La Ibérica (400 ft.)	Apr. 18, 1925						
UMMZ 132541	4†	Costa Rica: Cartago Prov.; El Sauce	Oct. 19, 1950	101.2	99.5	15.5	81.5	90.2	13.0
LACM 16268	5	Costa Rica: Puntarenas Prov.; Las Agujas (50 ft.)	Apr. 30, 1929	98.3	97.0	15.5			
LACM 16269	5	Costa Rica: Puntarenas Prov.; Las Agujas (50 ft.)	May 10, 1929	99.5	molt	15.6			
MCZ 116982	6	Costa Rica: San José Prov.; Pózo Azú	Mar. 20, 1898	101.8	95.0	16.0			
AMNH 525407	6	Costa Rica: San José Prov.; Pózo Azú	May 12, 1902				88.5	85.1	15.2
AMNH 525406	7	Costa Rica: Puntarenas Prov.; Pózo de Pital	Mar. 7, 1893	99.4	98.0	17.0			
USNM 198295	7	Costa Rica: Puntarenas Prov.; Pózo de Pital	Mar. 16, 1893				85.0	89.0	13.8
MCZ 123195	8	Costa Rica: Puntarenas Prov.; El General	June 29, 1908				86.7	87.5	13.4
UMMZ 132550	9†	Costa Rica: Puntarenas Prov.; 3 mi. N. of Piedras Blancas	Aug. 23, 1951				85.0	86.5	13.7*
UMMZ (skel.)	9†	Costa Rica: Puntarenas Prov.; 3 mi. N. of Piedras Blancas	Aug. 23, 1951						
UMMZ 132542	10	Costa Rica: Puntarenas Prov.; Las Animas, Buenos Aires	May 4, 1952	100.0	96.0	—			
CM 28551	11	Costa Rica: Puntarenas Prov.; El Pózo de Térraba	July 8, 1907	molt	94.8	—	84.0	82.5	14.1
AMNH 175016	11	Costa Rica: Puntarenas Prov.; El Pózo de Térraba	June 20, 1907	98.0	95.5	—			
CM 28396	11	Costa Rica: Puntarenas Prov.; El Pózo de Térraba	June 21, 1907				89.5	molt	14.5
CNHM 7084	12	Costa Rica: Puntarenas Prov.; Palmar	Feb. 7, 1892	95.0	90.5	15.6			
AMNH 360569	13†	Costa Rica: Puntarenas Prov.; Volcán de Osa (500 ft.)	Feb. 7, 1892	98.0	97.2	16.1			
AMNH 390567	14	Costa Rica: Puntarenas Prov.; Puerto Jiménez	Oct. 4, 1923	95.3	95.3	15.2			
CNHM 69206	14	Costa Rica: Puntarenas Prov.; Puerto Jiménez	July 31, 1922	94.7	99.0	14.6			
AMNH 390568	14	Costa Rica: Puntarenas Prov.; Puerto Jiménez	Dec. 4, 1929				84.6	87.5	14.0
MCZ 107892	15	Panamá: Chiriquí Prov.; Divalá	July 19, 1922	97.2	91.3	16.0			
AMNH 525408	16	Panamá: Chiriquí Prov.; Bogava (Bugaba) (800 ft.)	Dec. 6, 1900	95.0	93.5	16.5			
AMNH 247595	17	Panamá: Bocas del Toro Prov.; Almirante (500 ft.)	Nov. 5, 1903				87.0	84.5	14.0
AMNH 246794	18	Panamá: Bocas del Toro-Veraguas Prov. border; Guaval, Río Calovéora (800 ft.)	June 28, 1927				86.0	84.0	13.5
USNM 41587	19	Panamá: Canal Zone; Lion Hill	Sept. 18, 1926						
MCZ 152426	20	Panamá: Panamá Prov.; Port Antonio, Río Chepo	Illegible						
MCZ 140513	21	Panamá: Darién Prov.; Cana (2600 ft.) (type of <i>darienensis</i>)	Feb. 22, 1927				86.0	84.0	13.2
USNM 426231	22	Colombia: Dept. Antioquia, Nirocolí	Aug. 6, 1928				85.5	80.5*	13.0
ANSP 160723	23	Colombia: Dept. Córdoba, Quimari (700 m.)	Jan. 28, 1950				85.5	82.5*	13.8
ANSP 160721	23	Colombia: Dept. Córdoba, Quimari (700 m.)	Apr. 27, 1949	99.4	89.5*	—			
ANSP 160722	23	Colombia: Dept. Córdoba, Quimari (700 m.)	Mar. 22, 1949	99.0	91.0*	14.3*			
ANSP 160724	24	Colombia: Dept. Córdoba, Murucú (500 m.)	Mar. 30, 1949	98.0	93.5*	15.8			
USNM 426232	25	Colombia: Dept. Antioquia; Villa Artiga, 7 km. NE. of Pavarandocito (400 ft.)	May 26, 1949	93.2*	96.0	14.5	87.2	84.5*	—
CM 59022	26	Colombia: Dept. Santander; El Tambor (type of <i>minor</i>)	Apr. 17, 1950						
CM 59296	26	Colombia: Dept. Santander; El Tambor	Dec. 11, 1916	92.0	89.0*	14.5			
USNM 411260	26	Colombia: Dept. Santander, Hcda. Santana, 8 mi. NE. of Conchal (2000 ft.)	Jan. 15, 1917	94.0	100.0	14.5	88.5	85.0	13.5
			Oct. 29, 1949						

* Structure heavily abraded, broken, or incompletely grown.

formation on his collection, and to Robert D. Burns for taking the photographs used herein.

LIFE HISTORY

Almost nothing has been published on the habits and ecology of the Long-tailed Woodcreeper in Central America, and what little has been recorded can be summarized briefly. The species seems to inhabit deep forest of the humid tropical zone from sea level to as high as 2600 feet. No unusual habits have been reported, and behavior is probably similar to that of other medium-sized Dendrocolaptidae. Only seven of the specimens before me have information on the label as to gonad condition. A female (USNM 198295) with two fresh eggs was taken on March 7, 1893; one (UMMZ 132542) with the ovary greatly enlarged was taken on May 4, 1952; another (UMMZ 132550) with the ovary slightly enlarged, was taken on August 23, 1951. A male (AMNH 390570) marked "testes maximum" was taken on April 18, 1925. Birds with gonads not enlarged have been taken in the months of June, August, September, and January. These meager data suggest that breeding takes place primarily during the early months of the year, possibly continuing on into midsummer. Five specimens, taken from the end of April through May, June, and early July, exhibit replacement of wing, tail, and body feathers. Birds taken in all other months of the year are not in molt. This suggests that there is a single post-breeding molt by adults. One specimen (UMMZ 132541) taken October 19, 1950, has very downy abdominal plumage and is surely an immature of the year. On the other hand, birds showing various stages of wear have been taken in all months of the year. The rectrices are especially subject to abrasion, and they are often worn down asymmetrically.

There is no evidence of migration, but the data by no means rule out the possibility that it may occur.

TAXONOMY

This woodcreeper is not a strikingly marked species. A general description of its appearance, with no attempt to indicate precise shades of color, may prove helpful and is as follows: upperparts largely olive brown, pileum darker and with buffy shaft streaks; upper tail coverts rufous; an indistinct buffy superciliary stripe; auricular and malar areas streaked with buffy and dusky brown; throat buffy; pectoral area with buffy spots margined with dark brown; abdomen light olive brown variously streaked with buffy, especially anteriorly; under tail coverts rufous, sometimes faintly streaked with buffy;

wings largely rufous chestnut; wing linings pale cinnamon buff; tail chestnut; bill straight, about as long as the head proper; culmen slightly decurved at tip. The sexes are alike in color, but males are usually larger in all dimensions. For more detailed descriptions, see Ridgway (1911) and Zimmer (1929).

Subspecies of *Deconychura longicauda* are characterized by differences in both color and size. Measurements of culmen from the anterior edge of the nostril, wing, and tail of all specimens examined by me are given in Table 1. As the habitat of this species is essentially

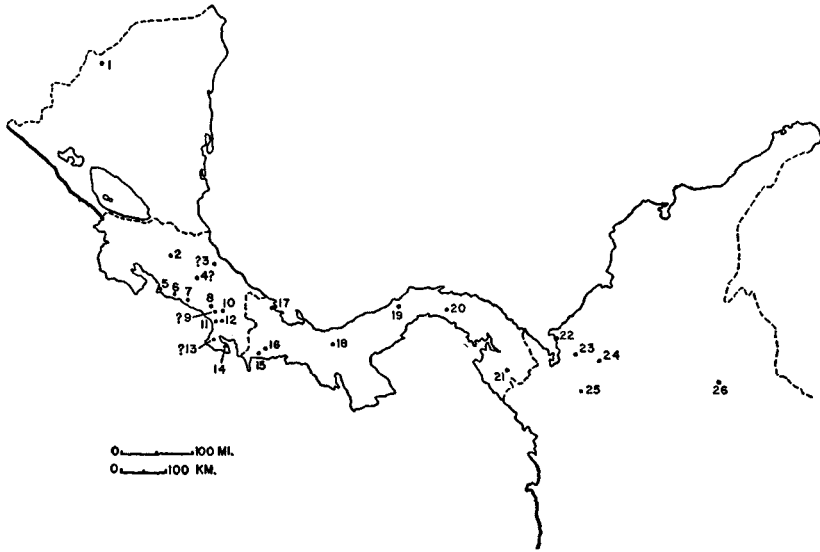
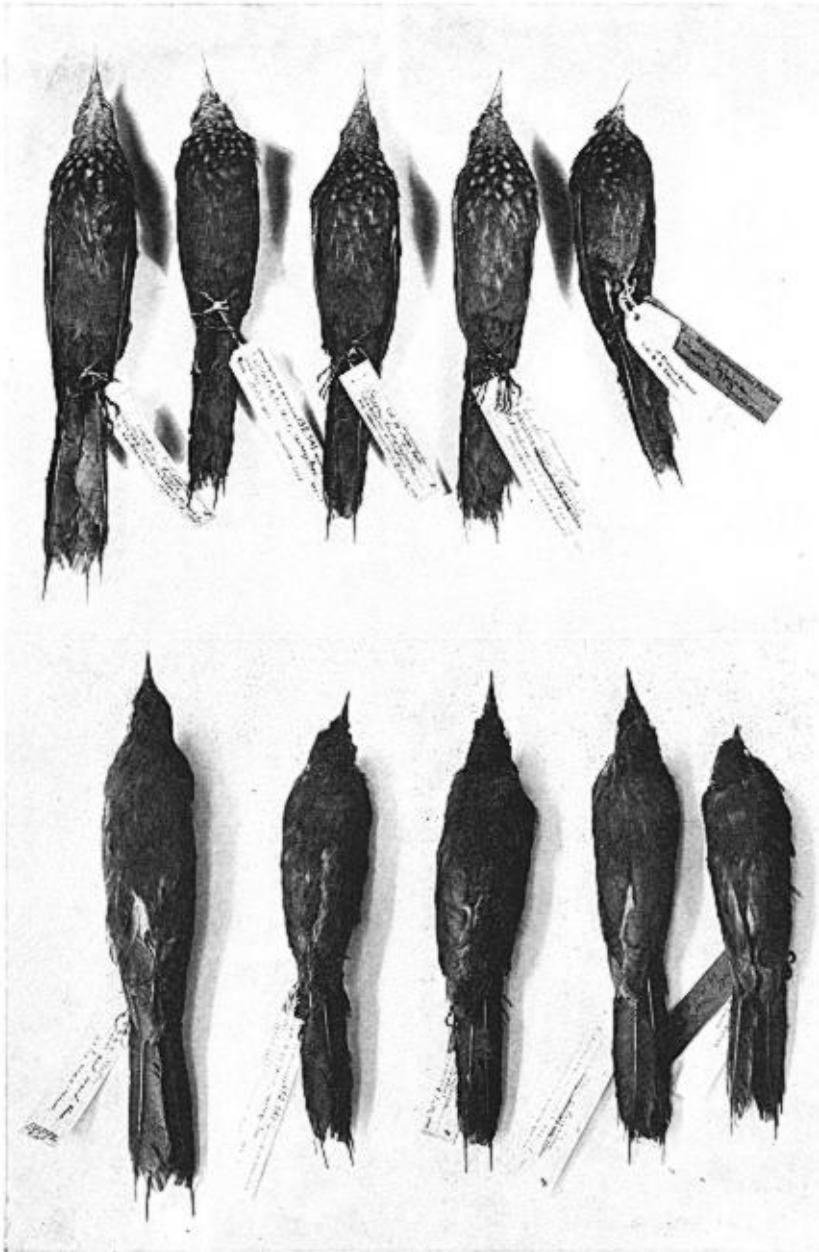


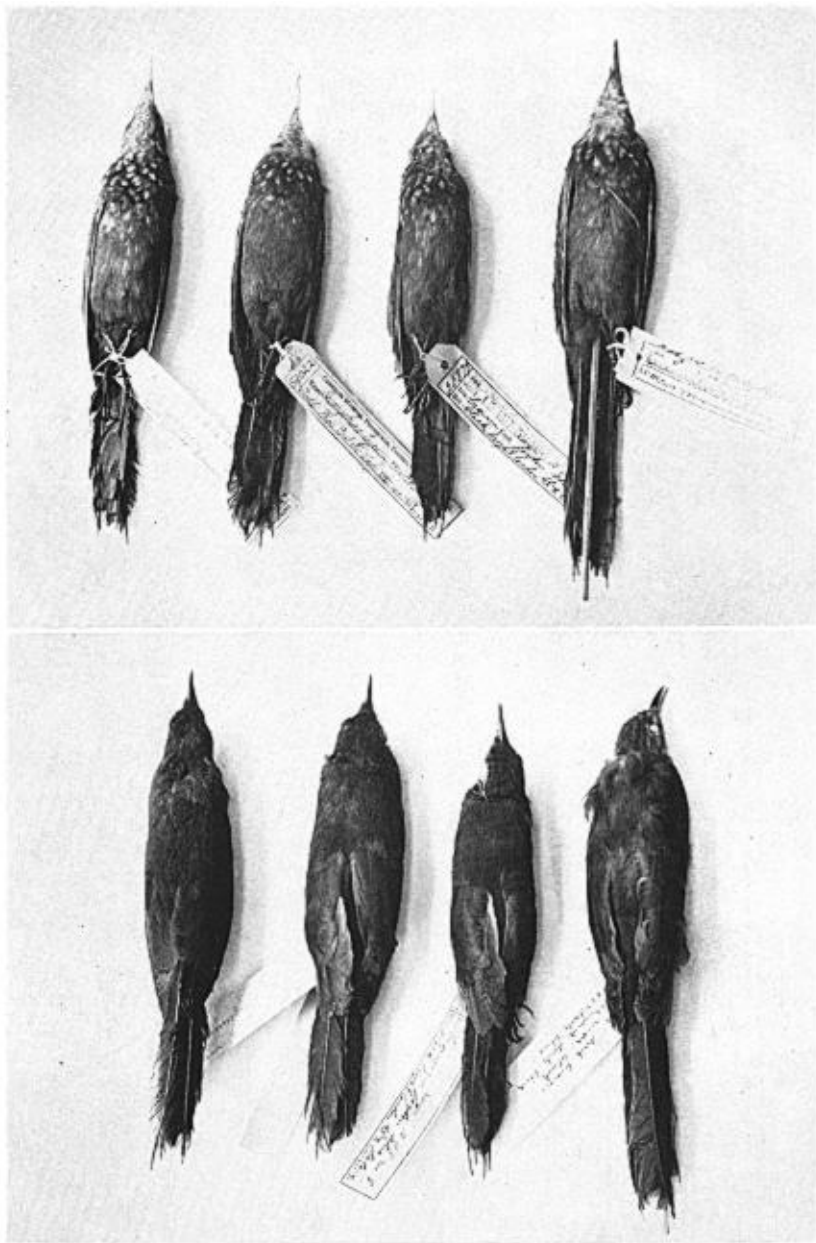
FIGURE 1. Outline map of Nicaragua, Costa Rica, Panama, and northwestern Colombia, showing localities listed in Table 1.

continuous throughout the Central American part of its range, any regular variation might be expected to be clinal in a direction corresponding to the long axis of this relatively narrow land mass. Therefore, the birds are arranged by locality from north to south and southeast, following the configuration of Central America. Each locality has been given a number, and these have been mapped in Figure 1. A question mark in Figure 1 indicates a locality that is accurate in general but uncertain in detail.

Two specimens (UCLA 34566, UMMZ 132541) were not sexed by the collector but can be allocated on the basis of their measurements. One (AMNH 247595), although labelled "♂ TNE" (= testes not enlarged), is almost certainly mis-sexed and is here considered a female.



DECONYCHURA LONGICAUDA. Ventral and dorsal views of AMNH 390570, UMMZ 132541, AMNH 390568, MCZ 152426, and MCZ 140513 (type of *dariensis*). Data for each specimen are given in Table 1.



DECONYCHURA LONGICAUDA. Ventral and dorsal views of USNM 426231, CM 59022 (type of *minor*), CM 59296, and ANSP 160722. Data for each specimen are given in Table 1.

These measurements fail to reveal any clines or any sort of regular variation in size. There is no overlap between the sexes in wing length and only slight overlap in the other two measurements. In Central American males, tail length exceeds wing length in only one instance, whereas in females tail length is greater in five cases. Wing and tail lengths appear to vary independently of each other in both sexes, and culmen length is not consistently correlated with either wing or tail length.

The following remarks on color variation apply only to Central American birds excluding the type of *darienensis*; this specimen and the Colombian birds will be discussed presently.

The color and distinctness of the buffy shaft streaks on the pileum vary from pale and well marked (USNM 198295, CNHM 7084) to dull and obscure (CNHM 69206, AMNH 390568). The size and distinctness of the streaks and/or spots on the nape are equally variable. Back color seems deeper and brighter in some specimens than in others, but the variation is slight and the paler and duller individuals are in more worn plumage. Also, the preparation of the skin influences the appearance of the back color, for the area just back of the nape is duller than the more posterior part of the back. An elongate skin shows these duller feathers more prominently and over a wider area than does a "telescoped" specimen.

Buffiness of the throat is variable. The throat feathers are darkest at the edges, and wear influences the color by reducing the margins. Color varies from deep buffy (UCLA 34567, UMMZ 132550, AMNH 247595) to pale buff (MCZ 123195, MCZ 107892). The color of the pectoral spots varies directly with throat color. The shape of the spots is generally diamond-like or sagittate (UCLA 34491, UMMZ 132542, AMNH 390570), but often the sharp outlines are rounded (AMNH 247595, MCZ 123195) or the spots may be drop shaped (LACM 16269). The size of the spots seems to vary with body size—larger in males, smaller in females. The color of the margins of the pectoral spots varies from blackish brown (CNHM 69206, AMNH 390570, AMNH 247595) to paler shades of brown (USNM 41587, CM 28396) but is always darker than the flanks or abdomen. Worn birds usually have paler margins, but not always (LACM 16269, CNHM 7084). Buffy markings on the abdomen vary from few and faint (UCLA 34566, UMMZ 132541 [imm.], AMNH 246794) to linear and well defined (UMMZ 132550, AMNH 247595), to broad and poorly defined (MCZ 152426, MCZ 123195). When the markings are few, they are confined to the anterior part of the abdomen. In those birds in which the streaking is heavy, there are usually some

faintly buffy streaks along the shafts of the under tail coverts. The rufous color of the latter varies in depth and brightness.

The presence or extent of rufous color on the scapular border of the wing seems to be a matter of individual variation. It may be well marked (CNHM 7084) or almost absent (CM 28396) or anything in between. The intensity of the cinnamon buff color of the wing linings is not constant. There is little or no variation in color of the remiges and rectrices.

No regular or clinal variation in coloration is apparent, nor is there consistent correlation of color and size characters.

The subspecific identity of the specimens examined should now be considered in the light of the extent of individual variation outlined above.

The two Nicaraguan specimens have no characters distinguishing them from a series of *typica* and are referable to that subspecies. The range of *typica* therefore extends as far as the Caribbean slope of extreme northern Nicaragua. All Costa Rican specimens are of course referable to *typica*.

The allocation of Panamanian specimens is somewhat more difficult and has a confusing history. Griscom (1928) provisionally identified birds from Almirante, in western Panamá, as *minor*, a supposedly small, pale race described by Todd (1919) from northern Colombia. Griscom later (1929) described *darienensis* from a single female specimen from Cana, Darién, in eastern Panamá, and at the same time cast further doubt on the identity of the birds from Almirante. Zimmer (1929) included specimens from western Panamá in *typica*, and doubted that *darienensis* was distinct from *typica*; he had not had an opportunity to examine the unique type. Griscom (1933), reporting on birds in the collection of Henry O. Havemeyer taken by A. P. Smith, assigned three females from the Río Chepo in eastern Panamá to *darienensis*, stating that these and the type averaged smaller and darker than a series of *typica* from Costa Rica, but mentioned that the Río Chepo birds were from a less humid area than Cana and were about "75% typical" of *darienensis*. He gave no measurements and presumably meant that they were paler than the type. Peters (1951) followed Griscom in calling these birds *darienensis* but questioned the validity of the race. He regarded it as doubtfully distinct from *minor*, not *typica*.

As the complete description of *darienensis* (Griscom, 1929) is quite short, it may be quoted here in full. "Type. No. 140,413, M.C.Z.; [140513 on white label] adult; Cana, eastern Panama; August 6, 1928; Rex B. Benson."

“*Characters*.—similar to *D. t.* [=l.] *typica* Cherrie of southwestern Costa Rica, but smaller and much darker; upper parts darker and more olive brown, less umber; underparts similarly darker and more olive; buffy of chin, throat and breast spots deeper, the border to the breast spots almost blackish; bend of wing only faintly washed with dark cinnamon; wing 85.5; tail, 80.5; culmen, 18.”

The Museum of Comparative Zoology has kindly allowed me to borrow the type of *darienensis* and one of the specimens from the Río Chepo that is now in that collection. The press of other affairs has prevented Mr. Havemeyer from locating the other two Río Chepo birds, and I have thus been unable to examine them. However, there is no indication in Griscom's paper (1933) that the specimens differed noticeably from one another, and Mr. Havemeyer's recollection is that they were altogether similar. I have assumed, therefore, that the other two specimens from the Río Chepo are essentially the same as the one examined by me. I have compared this one and the type with all the other *Deconychura* available to me. The wing lengths of both these specimens (85.5 and 86.0 mm.) are longer than those of six out of nine females of *typica* from Costa Rica. The tail length of the type of *darienensis* is given as 80.5 mm., which would make it shorter than that of any unworn female of *typica*. In the type, however, the two central tail feathers (which are the longest in this genus) are broken off near their bases. As these feathers usually project about four or five mm. beyond the next longest, the true tail length is probably about 85 mm. The Río Chepo bird has a tail length of 84.0 mm., and both are well within the size range of *typica*.

The type of *darienensis* is a dark individual. The breast region seems especially heavily pigmented, for the skin is strongly “telescoped” so that the blackish brown edgings to the pectoral spots are crowded closely together. A feather by feather comparison shows, however, that these dark margins are no blacker than those of several examples of *typica* from Costa Rica, such as AMNH 390568. The color of the back is also matched by several *typica* (UMMZ 132550, CM 28396), as is the buffy of the chin, throat, and breast spots (UMMZ 132550, AMNH 247595). The amount of cinnamon color on the bend (scapular border?) of the wing is too variable to be used as a taxonomic character. The general color of the abdomen is not as dark as that of some examples of *typica* (AMNH 390568, CNHM 69206) and is matched by several others, but the abdominal feathers of the type differ in having an extremely faint barring caused by pale tips or edgings and obscure darker subterminal bands. This pattern is so faint that it is noticeable only on close examination, and I doubt that it has any taxonomic significance.

In the type, the culmen from nostril measures 12.7 mm. This is shorter than that of any other Central American specimen, and the next smallest measure 13.0 (UMMZ 132541) and 13.4 (MCZ 123195). UMMZ 132541 is an immature female, and both it and the type differ from all others examined by me in that the tip of the culmen is straight and not decurved. This suggests the possibility that the tip of the bill has not attained its full development in either. The type, however, has no other characters indicating immaturity; the abdominal feathers are fairly worn and not downy. In any case, the culmen-from-nostril measurement of the type is only 0.7 mm. less than that of the next smallest adult, and in view of the variability of the species this difference is slight indeed.

In summary, the type of *darienensis* is matched by examples of *typica* in all respects but two—the extremely faint barring of the abdomen and the slightly shorter culmen. In my opinion, the abdominal patterning is much too faint and the difference in culmen length too small to merit nomenclatural recognition. It is conceivable that a series of birds from Darién would show constant differences from *typica*, but at present there is no such series. The Río Chepo bird seen by me is no darker than even the paler examples of *typica* and no smaller than most of them in any dimension (see Plate 26). These facts were doubtless noted by Peters and led him to suggest that *darienensis* was not distinguishable from the pale race *minor*. However, as Griscom (1929) pointed out, the characters of the type of *darienensis* do not resemble those ascribed to *minor*. Furthermore, all other birds from Panamá (including the Río Chepo specimen) are within the range of variation of *typica* in both size and color. I feel, therefore, that all Central American specimens of *Deconychura longicauda* are referable to *typica*, and that *darienensis* is not separable from that subspecies.

The status of the nine birds from Colombia is not as clear cut as might be hoped. In Table 1 they have been arranged by locality in order of increasing distance from Central America, and this aligns them in an approximately west-to-east order. The specimens are all from the northwest quarter of Colombia, from localities at elevations from sea level up to about 2300 feet. Gonad size is indicated on USNM 426231 (ovary enlarged) and USNM 426232 (testes greatly enlarged); the dates of collection of these specimens suggest that the breeding season is at about the same time as it is in Central America. USNM 426232 and CM 59296 show new, incompletely grown remiges and rectrices, and the former exhibits some new feathers coming in on the upper breast. The plumage of the other parts of these two and

the entire plumage of all the others except USNM 426231 is considerably worn; the latter is noticeably worn only on the tail.

Todd (1919) described the race *minor* as follows: "Similar to *Deconychura typica* [= *longicauda*] *typica* Cherrie, but somewhat smaller; upper parts more olivaceous, less rufescent, and buffy markings of underparts paler and more restricted, wing (type), 92; tail 89; exposed culmen 22; tarsus, 19."

"Type, No. 59,022, Collection Carnegie Museum, adult male; El Tambor, Santander, Colombia, December 11, 1916; M. A. Carriker, Jr."

Todd's series presumably consisted of two birds, the type and a female (CM 59296) from the same locality. Zimmer (1929), doubtless noting that the measurements of the female were within the size range of *typica*, qualified Todd's diagnosis by stating "size possibly smaller." To this I would add that the tail of the type is so severely abraded that the distal portion is in tatters; the measurement of 89 mm. is probably about 5 mm. too short.

DeSchauensee (1950), having before him the large males from Quimarí (ANSP 160721, 160722, 160723), suggested that the type of *minor* was mis-sexed in order to account for its small measurements. However, the fact that no known female of this species from either Central America or Colombia has a wing more than 90 mm. long and since two recently taken males (USNM 411260 and 426232) from Colombia have wings almost as short as those of the type, one must consider the latter correctly sexed as a male.

The nine Colombian specimens should now be considered in the order in which they appear in Table 1. USNM 426231 is quite buffy on the underparts, more so than any of the other Colombian birds, and is indistinguishable both in color and size from several examples of *typica*. The locality at which it was taken is, geographically if not politically, just east of the junction of the Central American isthmus with South America, and it is not too surprising that this specimen has the characteristics of *typica*. The other eight Colombian specimens have, with moderate variation, the color characters ascribed to *minor*—more olivaceous back and paler, less buffy underparts. The measurements, on the other hand, vary within a wide range, and the sexes must be considered separately.

The type of *minor* has the shortest wing of any known male of this species. The primaries are worn, but probably not enough to affect the measurement by more than one or two mm. The culmen from nostril length is shorter by 0.1 mm. than that of the smallest male *typica*, but the true (unworn) tail length would be well within the size

range of *typica*. USNM 411260 is a topotype for all practical purposes; its wing and culmen measurements are about the same as the type, but the tail is the longest of any measured by me. The wing length of USNM 426232 is perhaps a little too short as the new wing feathers may not be fully grown—the sheaths are still complete near the proximal ends—but the tail is rather long and the culmen is the same as in the type and topotypical male. The three males from Quimarí, however, are quite large in all characters that can be accurately measured. The tails are extremely worn in all three, and the culmens are broken in two. These birds are apparently like *typica* in size, but they are as pale or paler than those from the type locality of *minor*. The specimens from Quimarí and Murucucú are in worn body plumage, and my first impression was that they were only faded examples of *typica*. Some worn examples of *typica* are as pale, but none lack the buffy tone of the underparts to the extent that the Quimarí and Murucucú birds do.

One of the Colombian females (USNM 426231) is, as mentioned previously, referable to *typica*. The other two, including a topotype of *minor*, are not outside the size range of *typica* in any dimension and are not even close to the lower limit of that range. The topotype, in fact, approaches the larger examples of *typica* in wing length.

It is obviously impossible to come to a definitive conclusion on the taxonomy of these Colombian specimens, but some tentative decisions may be made. First, USNM 426231 may be assigned to *typica*, extending the range of that subspecies into extreme northwestern Colombia. The male birds from the Department of Córdoba can be considered as representing the upper limit of size of *minor* or their large measurements may indicate intergradation with *typica*. Neither of these alternatives is entirely satisfactory. If the first is accepted, the size variation of *minor* is great indeed, with considerable overlap with *typica*. If the second is correct, it seems odd that the intergrades combine, without apparent modification, the size of *typica* with the coloration of *minor*—as though these were “either-or” characters. One would expect that intermediates would instead be slightly smaller than most *typica* and somewhat buffier than most *minor*. My inclination is to consider the Quimarí and Murucucú specimens as intergrades as these localities seem to be intermediate between the ranges of the two forms.

The other four birds may all be considered *minor*, but some slight recharacterization of that subspecies is necessary. The coloration is similar to that of *typica*, but with the upper parts more olivaceous and the entire underparts less strongly suffused with buffy, resulting in

paler, more whitish markings and a paler, more grayish abdomen and flanks. The extent of the markings on the abdomen may or may not prove to be more restricted; this is a highly variable character in *typica* and some examples are less extensively marked than is the topotypical female of *minor* (CM 59296). Zimmer (1929) found that the lores and auriculars of *minor* were whiter, less buffy, than in *typica*. The lores do not appear less buffy than those of many *typica* to my eye, but the basal part of the shafts of the auriculars seems to be somewhat whiter in *minor*. The few specimens available indicate that males of *minor* have a slightly shorter wing and culmen than those of *typica* but that the females do not differ in size from that race. The possibility should be mentioned that if the type is a young bird, its short wing and restricted abdominal markings may be due to immaturity, for these are also characteristics of an immature *typica* (UMMZ 132541). The wings of the other two males seem not quite as short as that of the type but are barely shorter than those of the smallest *typica*, as are their culmens. The rather short wing measurement leaves the tail longer than the wing in males, the reverse of the usual situation in *typica*. If the birds from the Department of Córdoba are considered *minor* and not intergrades, the race is still distinguishable on the basis of color characters.

In any case, the differences between *minor* and *typica* appear to me to be slight, and a larger series of the former in fresh plumage may show them to be even slighter than they seem at present.

The range of *minor* as presently known is not in contact with that of the other South American forms. The distributional gaps will surely be largely filled in by further collecting, but it is possible that *minor*, inhabiting the tropical lowlands of extreme northwestern South America, is more effectively isolated by mountain barriers from other subspecies than it is from *typica*. If so, this could explain why the characters of *minor* apparently do not form a bridge between *typica* and the other South American subspecies; instead, *minor* resembles *typica* more closely than it does the others.

The wide South American distribution of *Deconychura longicauda* indicates that it originated on that continent and that it has expanded northward into the humid tropical lowlands of Central America. As is well known to students of neotropical zoogeography, many avian species of southern origin range no farther north than the extensive lowlands of eastern Nicaragua. The fact that *Deconychura longicauda* occurs in the extreme northern portion of that area suggests that the species may be even more widely distributed along the Caribbean slope of Central America and may possibly still be expanding its range

to the north. In the event that new specimens are obtained outside the presently known range, it is hoped that the great variability of the species as evidenced by a large series will be seriously considered before nomenclatural action is taken.

Summary.—Variation in size and color was studied in 38 specimens of the Long-tailed Woodcreeper (*Deconychura longicauda*) from Central America and Colombia. The subspecies *typica* was found to range from the Caribbean slope of northern Nicaragua south to extreme northwestern Colombia; the race *darienensis* is not considered separable from *typica*. *Typica* appears to intergrade with the Colombian race *minor* at the western part of the range of the latter. Considerable uncorrelated variation in size and color is shown in both forms, and additional material may alter the taxonomic picture.

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