

Faunistics

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AVIAN BODY MASSES FROM THE CERRADO REGION OF CENTRAL BRAZIL

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Few comprehensive reports have been published on the body masses of birds from the cerrado region of Brazil (Fry 1970, Cavalcanti & Marini 1993). Other less detailed reports on bird masses from the cerrado region include Sick (1958) and Oniki (1980, 1990). Most literature on Brazilian bird masses are from Amazonian localities (see references in Cavalcanti & Marini 1993). As pointed out by Wilson (1975) and Karr *et al.* (1978), body masses are valuable in testing several ecological and evolutionary hypotheses.

Here, we present the masses of 878 specimens of birds belonging to 103 species (Table 1), mist-netted or collected during field work in 11 localities in the cerrado region of central Brazil between 1984 and 1994. The cerrado region is covered by a variety of vegetation types, ranging from grassland (campo) to dense savanna (cerradão) and gallery forests. More detailed description of cerrado vegetation can be found in Eiten (1972). Birds were mist-netted or collected in: (1) Distrito Federal, mostly at Fazenda Água Limpa (DF) (15°57'S, 47°56'W), as well as several other sites; (2) Fazenda Salto e Ponte (SP), Prata (19°12'S, 48°08'W), (3) Fazenda Zebu Ecológica (ZE), Uberaba (19°45'S, 47°55'W), (4) Paracatú (PA) (17°14'S, 46°52'W) and (5) Santa Fé de Minas (SF) (16°45'S, 45°30'W), in Minas Gerais state; (6) Minaçú (MI) (13°30'S, 48°15'W), (7) Silvânia (SJ) (16°35'S, 48°45'W) and (8) São João da Aliança (SJ) (14°46'S, 47°30'W), in Goiás

state; (9) Represa do Rio Manso (MA) (14°45'S, 56°W) in Mato Grosso state; (10) campus of Federal University of São Carlos (FU) (21°58'S, 47°52'W) and (11) Fazenda Água Branca (AB), São Carlos (22°10'S, 48°10'W), in São Paulo state. Locality abbreviations as above are in brackets after bird masses. Habitats sampled include cerrado *sensu strictu* and *sensu lato*, secondary cerrado, gallery forest, and man-made environments such as pastures and cultivated fields.

Body masses were taken with Pesola and Accu-Weigh spring scales to the nearest 0.1, 0.5 and 1.0 g. For sample sizes of 10 or more we give the mean \pm standard deviation, range and sample in parenthesis. For samples smaller than 10, individual masses are provided, and numbers in parentheses are the sample sizes for a particular mass value. All body masses are from adult specimens, unless otherwise indicated. Age and sex abbreviations are: J, juvenile; S, subadult; M, male; F, female; I, indeterminate. Double letters represent more than one specimen.

The list includes masses of birds endemic or "near-endemic" to the cerrado region (cf. Cra-craft 1985, Cavalcanti 1988), such as *Hylocryptus rectirostris* (= *Automolus rectirostris*), *Herpsilochmus longirostris*, *Melanopareia torquata*, *Antilophia galeata*, *Cyanocorax cristatellus*, *Basileuterus leucophrys* and *Saltator atricollis*. The list mainly

Table 1. Body masses of birds from the cerrado region. Abbreviations as in the text.

Species	Sex	Body mass [locality]
<i>Buteo magnirostris</i>	M	248.0 [PA] 277.0 [AB]
<i>Columbina talpacoti</i>	M	40.6, 46.0 (2) [DF]; 50.0, 43.0 [FU]; 46.0, 48.0, 48.2 [MA]
	F	37.0, 53.0 [AB]; 38.0 [DF]; 54.0 [MA]
	I	40.2, 45.1, 45.5, 46.5 [DF]; 34.5 [MA]
<i>Leptotila verreauxi</i>	F	142.5 [DF]; 158.0 [SI]
	I	207.0 [DF]; 143.0, 148.0 [FU]
<i>Leptotila rufaxilla</i>	F	178.0 [MA]
	I	170.0 [FU]; 139.0 [SP]
<i>Claravis pretiosa</i>	F	59.0, 82.0 [PA]
<i>Scardafella squammata</i> (= <i>Columbina squammata</i>)	M	55.5 [PA]
	I	46.0, 48.5 [SJ]
<i>Brotogeris versicolurus</i>	M	59.0 [MA]; 56.2, 63.5 [MI]
	F	52.0 [MA]
		59.0 [MA]
<i>Piaya cayana</i>		109.0 [FU]; 126.0 [MA]; 104.0 [MI]; 94.5 [PA]
<i>Tyto alba</i>		360.0, 400.0 (2), 405.0 [FU]
<i>Otus choliba</i>	F	126.0, 141.0 [FU]
	I	118.0 [FU]
<i>Speotyto cunicularia</i> (= <i>Athene cunicularia</i>)	IS	144.0, 145.0 [FU]
	I	185.0 [FU]
<i>Asio stygius</i>	I	633.0 [FU]
<i>Phaethornis pretrei</i>	F	4.4 [MI]
	I	5.5 [DF]; 6.0 [SP]
<i>Thalurania furcata</i>	F	3.5 [DF]; 5.0 [SP]
	I	4.5 [DF]
<i>Thalurania glaucopis</i>	M	4.0, 5.0, 5.1, 5.3, 5.4, 5.5, 6.1 [FU]
	F	4.0, 4.5, 5.0 [FU]
<i>Chloroceryle americana</i>	M	28.8 [DF]; 28.3, 29.5 [MA]
	F	119.0 [ZE]
<i>Chloroceryle amazona</i>	MJ	100.0 [MA]
	F	118.0 [MA]
<i>Baryphengus ruficapillus</i>		130.0, 137.0 [AB]
<i>Momotus momota</i>	I	140.0 [ZE]
<i>Galbula ruficauda</i>	M	22.5, 23.2 [MA]
		20.0, 21.0, 22.0, 23.0, 24.0 [DF]; 22.0 (2), 23.0 [SP]
<i>Picumnus minutissimus</i> (= <i>Picumnus albosquamatus</i>)		12.0 [FU]; 13.0 [SP]
<i>Colaptes campestris</i>	F	138.0, 171.0 [DF]
	IJ	86.0, 101.0, 104.0, 115.0 [FU]
	I	150.7 [DF]
<i>Veniliornis passerinus</i>	M	29.0, 33.0 [FU]
	F	30.0 [FU]
	I	33.5 [DF]; 29.0 [MA]

Table 1. Continuation.

Species	Sex	Body mass [locality]
<i>Sittasomus griseicapillus</i>		11.0, 13.0 (3), 13.1, 13.5, 14.0 (2) [FU]
<i>Lepidocolaptes angustirostris</i>		31.0 [AB]; 29.5, 30.0 (2), 31.0(2), 31.5 (2), 33.0 [FU]
<i>Synallaxis ruficapilla</i>		14.0, 16.5 [FU]
<i>Phacellodomus ruber</i>		50.0, 51.0 [ZE]
<i>Automolus leucophthalmus</i>		31.0, 33.0 (3), 35.0 [FU]
<i>Hylocryptus rectirostris</i> (= <i>Automolus rectirostris</i>)	IS I	48.0, 51.0 [SP] 44.0, 46.0, 51.0 [SP]
<i>Lochmias nematura</i>	I	21.0, 21.5, 22.5, 23.0, 24.5 [DF]; 22.0 [FU]; 20.0, 21.0 [ZE]
<i>Thamnophilus doliatus</i>	M F	28.0, 29.0 [SP]; 25.0 [ZE] 26.0, 27.0 [FU]; 32.0, 33.0 [SP]
<i>Thamnophilus punctatus</i>	M F	19.0, 20.0 (3), 22.0 [AB]; 16.5 [MI] 17.0, 19.0 (4), 20.0 (2) [AB]; 21.5 [FU]
<i>Dysithamnus mentalis</i>	M F I	11.0 [AB]; 12.0, 14.0 [FU]; 13.3 [MI] 12.5, 13.0, 15.0 [FU] 15.0 [MI]
<i>Herpsilochmus longirostris</i>	M F	12.0 (2) [SP] 13.0, 14.0 [SP]
<i>Conopophaga lineata</i>	M F	27.0, [DF] 23.0, 24.5, 28.0, [DF] 21.0, 22.0, 25.0 [AB]; 23.0, 24.5, 25.0 [DF]; 21.5 ± 0.7, 21.0–23.0 (11) [FU]
<i>Melanopareia torquata</i>	I	16.5, 18.0 [FU]
<i>Antilophia galeata</i>	M MS F I	22.0 (3) [AB]; 19.0, 20.0 (2), 21.0 (2), 22.0, 24.0 [FU]; 20.0 [SP] 20.0 (2), 21.0 [DF]; 19.5, 21.0, 23.5 [FU]; 19.0, 21.0 [SP] 20.0 [AB]; 21.0, 22.0, 24.0 [FU] 20.0 (2) [DF]; 20.0 (2) [FU]; 21.1 ± 2.4, 16.0–26.0 (15) [SP]
<i>Schiffornis virescens</i>	M F I	22.8 [DF] 26.7, 28.5 [DF] 23.0, 23.1, 24.5, 25.0, 26.5, 27.0 [DF]
<i>Xolmis cinerea</i>	F I	51.7 53.2 [DF]; 54.4 [SJ]
<i>Myiophobus fasciatus</i>	F I	8.1, 9.3 [DF] 10.5 (2), 11.0 [DF]
<i>Phyllomyias fasciatus</i>	I	9.0, 11.0 [DF]
<i>Pipromorpha rufiventris</i> (= <i>Mionectes rufiventris</i>)	F I	13.2 [DF] 14.0 [DF]
<i>Sirystes sibilator</i>	F I	34.5 [MI] 26.2 [MI]
<i>Muscivora tyrannus</i> (= <i>Tyrannus savana</i>)	M F I IJ	35.0 [DF]; 31.0 [SP] 28.3 [DF] 19.7, 24.9 [DF] 14.0, 20.0, 24.0, 26.0, 27.0, 28.0 [FU]

Table 1. Continuation.

Species	Sex	Body mass [locality]
	M	38.0 [DF]
	F	40.0 [MI]
	IS	40.0 [FU]
	I	44.0, 45.0, 47.0, 52.0, 58.0 [FU]
<i>Megarhynchus pitangua</i>	IS	54.0 [FU]
	I	60.0 [AB]; 55.0 [DF]; 68.0 [FU]; 54.0, 61.0 [SP]
<i>Myiodymastes maculatus</i>	M	42.7, 62.5 [MI]
	I	45.0 [FU]
<i>Myiozetetes similis</i>	I	28.0, 31.0 [FU]
<i>Pitangus sulphuratus</i>	M	67.0, 69.5 [FU]
	F	50.7 [DF]
	IS	63.0 [FU]
		62.0, 64.0 (3), 67.0 [FU]
<i>Casiornis rufa</i>	I	21.0, 22.0 (2), 24.0 [AB]; 20.0 [SP]
<i>Myiarchus tyrannulus</i>	IS	25.0 [FU]
	I	30.0 [AB]; 28.5, 29.0, 31.5 [FU]; 24.0, 27.0 [SP]
<i>Empidonax euleri</i> (= <i>Lathrotriccus euleri</i>)		11.0, 13.0 (3), 14.0, 15.0 [AB]; 11.0 (3), 12.0 [FU]; 14.0 (2) [SP]
<i>Cnemotriccus fuscatus</i>		20.0 [AB]; 12.0, 13.0 [DF]
<i>Platyrinchus mystaceus</i>	M	9.0, 9.1, 9.5 [FU]
	F	7.5, 8.5, 9.0 [FU]
	I	9.0 (3), 10.0 [AB]; 11.0 [DF]; 9.0 (2) [FU]
<i>Tolmomyias sulphurescens</i>	F	16.6 [DF]
	I	15.0, 16.0, 17.0, 18.0 (2), 18.5, 21.0 [DF]; 14.0, 15.5, 17.0 [FU]; 14.0, 16.0 (2), 18.0 (2) [SP]
<i>Idioptilon margaritaceiventris</i> (= <i>Hemitriccus</i> <i>margaritaceiventris</i>)		8.0 (2) [AB]
<i>Serpophaga subcristata</i>		5.0 [FU]
<i>Elaenia flavogaster</i>		22.0 (2), 22.5, 23.5, 24.0 [FU]
<i>Elaenia mesoleuca</i>		16.5, 17.0, 17.5, 18.0 (3), 18.5 (2), 19.5 [FU]
<i>Elaenia cristata</i>		19.0, 20.1, 20.3, 21.0 [FU]
<i>Elaenia chiriquensis</i>		14.0, 15.0 (2), 16.0, 16.5, 16.6, 17.0 (2), 17.5 [FU]
<i>Elaenia obscura</i>		27.0 [AB]; 25.0, 26.0 (2), 29.0 [FU]
<i>Suiriri suiriri</i>		19.0, 21.5, 22.5 [FU]
<i>Camptostoma obsoletum</i>	I	6.0, 7.0 [AB]; 8.0 (2) [FU]
<i>Leptopogon amaurocephalus</i>	I	15.0 [AB]; 10.5, 11.0, 11.5 (2), 12.0 (3), 13.0 [DF]; 11.0 (2), 12.0 [FU]; 12.0 [ZE]
<i>Notiochelidon cyanoleuca</i>		11.0 [DF]; 10.0 (2), 12.0 [FU]
	M	11.1 [DF]
<i>Stelgidopteryx ruficollis</i>	M	14.2, 15.0, 15.5 [MA]; 10.0 [SF]
	F	14.0 [MA]
	I	16.1 ± 1.4, 14.0–19.0 (25) [FU]
<i>Cyanocorax cristatellus</i>	IJ	127.0, 134.0, 142.0 [FU]
<i>Thryothorus leucotis</i>	I	18.0, 19.0, 20.0 [FU]; 20.0 [SP]

Table 1. Continuation.

Species	Sex	Body mass [locality]
<i>Mimus saturninus</i>	F	51.0, 65.2 [MA]
	IS	63.0 [FU]
	I	74.0, 76.0 (2) [FU]; 57.0 [MA]
<i>Turdus rufiventris</i>	I	62.0, 64.0, 76.0, 78.0 [DF]; 65.0, 66.0, 71.0, 72.0 (2), 77.0 [FU]
<i>Turdus leucomelas</i>	I	69.0 ± 3.8, 62.0-76.0 (10) [AB]; 55.5, 61.0, 62.5, 63.0, 65.5, 73.0 [DF]; 69.1 ± 4.9, 58.0-79.0 (44) [FU]; 67.3 ± 3.2, 63.0-73.0 (12) [SP]
<i>Turdus amaurochalinus</i>	M	56.0, 57.0, 58.0, 69.0 [AB]; 52.0 [FU]; 65.5 [MI]; 54.0 [SP]
	F	55.0, 57.0, 58.0 [AB]; 60.0 [DF]
	IS	58.5 [FU] 49.0, 51.0, 52.5, 53.5, 60.0 (2), 75.0 [DF]; 57.0, 57.5, 58.0 [FU]
<i>Poliophtila dumicola</i>	I	6.0, 6.4, 7.5 [DF]
<i>Cyclarhis gujanensis</i>	M	25.0 [MA]
	F	28.7, 29.5, 31.0 [MA] 26.0, 29.0 [DF]; 26.0, 28.0 (2) [FU]; 32.0 [MA]; 27.0, 29.0 [ZE]
<i>Vireo olivaceus</i>	M	14.5 [MA]; 14.1 [MI]
	I	15.5, 16.0 (2), 16.5 [DF]; 14.0, 14.1, 16.0 (2), 18.5, 19.0, 20.0 [FU]
<i>Molothrus bonariensis</i>	M	45.0, 47.0, 48.0, 49.0 [FU]
	F	39.0, 40.0, 42.0 [FU]
<i>Basileuterus flaveolus</i>	I	12.0 (2), 13.0 (4), 14.0 (2) [AB]; 12.0 [DF]; 13.0 (3), 13.5, 14.0, 14.5, 16.0 [FU]
<i>Basileuterus hypoleucus</i>		8.0 (2), 9.0 (3), 10.0, 11.0 [AB]; 8.0, 9.0 (2), 10.0 (2), 11.0 [FU]; 9.0 [SP]; 12.0 [ZE]
<i>Basileuterus leucophrys</i>		16.5, 17.0, 17.5, 18.0 (2), 19.0, 21.0 [FU]; 16.0 (2), 17.0 (3), 18.0 (2) [SP]
<i>Geothlypis aequinoctialis</i>	M	12.5 [MA]
	F	13.0 [DF]; 16.7 [MA]
<i>Coereba flaveola</i>	M	10.2, 11.5 [DF]; 10.0 [MA]
	I	9.5, 10.5 (2), 11.0 (4), 11.7, 12.0 [DF]; 10.5 ± 0.9, 9.0-12.0 (26) [FU]
<i>Conirostrum speciosum</i>	M	10.0 [AB]; 8.7 [MI]
<i>Dacnis cayana</i>	M	16.5, 19.0 [DF]; 13.5, 16.0 (2) [FU]; 13.3 [MI]
	F	15.0, 17.0 [DF]; 14.5, 16.0 (3) [FU]
	I	15.5, 18.0 [DF]; 15.6 [MI]
<i>Tersina viridis</i>	M	34.0 (2), 35.0 (2), 35.5, 36.0, 37.0 [FU]
	F	32.9 ± 2.2, 30.0-37.0 (12) [FU]
<i>Tangara cayana</i>	M	21.3 ± 1.6, 20.0-25.0 (19) [AB]; 20.0 (3), 21.0 (3), 21.5, 23.0 (2) [FU]; 19.0 [SP]
	F	20.0 (3), 21.0 (3), 22.0 (3) [AB]; 20.0 (2), 20.5, 21.0, 23.0 [FU]; 20.0 [SP]
<i>Thraupis sayaca</i>	M	30.0, 32.7 [DF]
	F	33.0 [DF]
	IS	34.0 [DF]
	I	33.0, 37.0, 43.0 [AB]; 32.0, 33.5, 34.0 (3), 35.0, 37.0 [DF]; 32.8 ± 3.1, 26.5-38.0 (13) [FU]
<i>Thraupis palmarum</i>	I	36.0 (2), 37.0, 40.0 (2) [DF]; 40.2 ± 1.7, 38.0-43.0 (10) [SP]

Table 1. Continuation.

Species	Sex	Body mass [locality]
<i>Ramphocelus carbo</i>	M	25.0, 27.0 [FU]; 26.5 [MI] 27.5 [DF]
<i>Piranga flava</i>	M	40.0 [FU]; 37.3 [MI]
	F	39.4 [MI]
<i>Tachyphonus coronatus</i>	M	24.0, 25.2, 26.5, 27.0, 28.0 [FU]
	F	26.5 [FU]
<i>Eucometis penicillata</i> (= <i>Trichothraupis penicillata</i>)	I	23.5, 26.0, 27.0, 27.5, 29.5 [DF]; 21.0, 27.0 [SP]
<i>Euphonia chlorotica</i>	M	9.9, 10.3 [MI] 9.7 [MI]
<i>Trichothraupis melanops</i>	M	22.0, 23.0 [FU]
	F	23.0, 27.0, 28.0 [FU]; M 20.0, F 20.0 [DF]
<i>Schistochlamys ruficapillus</i>	I	29.0, 39.0 [AB]; 32.0 [FU]
<i>Saltator similis</i>	I	50.0 [AB]; 43.0, 47.0, 49.0 [SP]; 59.0 [ZE]
<i>Saltator atricollis</i>	M	53.8 [DF]
<i>Volatinia jacarina</i>	M	9.6 [MI]; 9.0 [SP]
	MJ	9.7 [DF]; 10.0 [MI]
	F	10.5 [MI]; 10.0 [SP]
<i>Sporophila nigricollis</i>	F	8.5 [DF]
	MJ	10.5 [DF]
<i>Coryphospingus cucullatus</i>	M	14.0 [AB]
	F	13.0, 14.5 [FU]
<i>Arremon flavirostris</i>	I	28.0 [AB]; 23.0, 27.0 (3), 28.0 (2), 30.0, 31.5 (2) [FU]; 28.0 [SP]; 28.0 [ZE]
<i>Myospiza humeralis</i>	MJ	17.1 [DF] 17.2 [DF]
<i>Zonotrichia capensis</i>	M	18.4 [MI] 20.0, 22.0 [DF]; 20.5, 21.0, 22.5 [FU]; 17.5 [SJ]

contains widely distributed species, which are common also in the cerrado region. Scientific nomenclature follows Meyer de Schauensee (1970), and recently revised taxa are indicated in parenthesis according to Willis & Oniki (1991).

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