

PROCEEDINGS
OF
The Academy of Natural Sciences
OF
PHILADELPHIA

VOLUME LXXXIII
1931

THE ACADEMY OF NATURAL SCIENCES
OF
PHILADELPHIA
1932

THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA HAS FOR SALE
 REPRINTS FROM ITS PROCEEDINGS FROM 1922 INCLUSIVE. PRICE
 LISTS WILL BE SUPPLIED ON APPLICATION TO THE EDITOR.
 PAPERS ISSUED IN THE 1931 VOLUME ARE PRICED AS
 FOLLOWS, INCLUDING POSTAGE:

BAKER, H. BURREINGTON. Nearctic Vitreine Land Snails. 33 pp., 8 pls.	0.75
BOND, JAMES. A New Nuthatch from the Island of Grand Bahama. 1 page.....	0.25
BOWEN, W. WEDGWOOD. Angolan Birds Collected during the Gray African Expedition,—1929. 36 pp., 10 pls.	1.25
———. East African Birds Collected during the Gray African Expedition, 1929. 69 pp., 11 pls.	1.50
———. A New East African Francolin. 3 pp. Geographical Forms of Polhierax Semitorquatus. 4 pp. South African Forms of Saxicola torquata. 2 pp. A New Subspecies of Woodpecker from East Africa. 1 p. Two New Subspecies of Sudanese Birds. 3 pp. Each	0.25
CARRIKER, M. A., JR. Descriptions of New Birds from Peru and Bolivia. 13 pp.	0.35
DESCHAUENSEE, R. M. A New Form of Francolin. 1 p. A New Race of Sandgrouse from Lake N'Gami. 1 p. A New Race of Turdoides Jardinei from Bechuanaland. 1 p. A New Species of Flycatcher from Damara-land. 2 pp. Two New Birds from South Africa. 2 pp. Each	0.25
FOWLER, HENRY W. Fishes Obtained by the Barber Asphalt Company in Trinidad and Venezuela in 1930. 20 pp.	0.40
———. Fishes Obtained by the DeSchauensee South African Expedition, —1930. 17 pp.	0.40
———. A Small Collection of Fishes from Singapore. 6 pp.	0.30
GORDON, SAMUEL G. The Grootfontein Southwest Africa Meteoric Iron. 5 pp.	0.25
HEARD, MORGAN. Orthoptera of Kansas. 109 pp.	1.50
PENNELL, FRANCIS W. Escobedia,—A Neotropical Genus of the Scrophulariaceae. 16 pp., 5 pls.	0.50
PILSBRY, HENRY A. The Cirriped Genus Pyrgoma in American Waters. 3 pp.	0.25
———. The Miocene and Recent Molluscs of Panama Bay. 14 pp., 1 pl.	0.35
REHN, JAMES A. C. African and Malagasy Blattidae (Orthoptera),—Part I. 83 pp., 5 pls.	1.25
STONE, WITMER. Three New Birds from Honduras. 3 pp.	0.25

Price of the complete recent volumes of the Proceedings \$6.25 each, or to subscribers \$5.00 postpaid. Cash to accompany orders for reprints.

ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA
 Logan Square, Philadelphia, Pa.

PROCEEDINGS

OF

The Academy of Natural Sciences

OF

PHILADELPHIA

VOLUME LXXXIII

1931

PHILADELPHIA
THE ACADEMY OF NATURAL SCIENCES
1932

This One



5RQ9-FNY-Q3PJ

PUBLICATION COMMITTEE

HENRY A. PILSBRY, Sc.D., <i>Chairman</i>	WILLIAM J. FOX, <i>Editor</i>
J. PERCY MOORE, Ph.D.	MILTON J. GREENMAN, M.D.
MORGAN HEBARD	CHARLES M. B. CADWALADER
<i>The President, EFFINGHAM B. MORRIS, ex-officio</i>	

CONTENTS

For Announcements, etc., see General Index

	PAGE
BAKER, H. BURRINGTON. Nearctic Vitreine Land Snails. Published March 31, 1931	85
BOND, JAMES. A New Nuthatch from the Island of Grand Bahama. Published July 24, 1931	389
BOWEN, W. WEDGWOOD. Angolan Birds Collected during the Gray African Expedition,—1929. Published June 9, 1931	263
—————. East African Birds Collected during the Gray African Expedition,—1929. Published March 27, 1931	11
—————. A New Subspecies of Woodpecker from East Africa. Published December 14, 1931	451
—————. A New East African Francolin. Published May 30, 1931	301
—————. Geographical Forms of <i>Polihierax semitorquatus</i> . Published May 9, 1931	257
—————. South African Forms of <i>Saxicola torquata</i> . Published February 7, 1931	7
—————. Two New Subspecies of Sudanese Birds. Published April 24, 1931	229
CARRIKER, M. A., JR. Descriptions of New Birds from Peru and Bolivia. Published January 21, 1932	455
DE SCHAUSENSEE, R. M. A New Form of Francolin. Published December 31, 1931	453
—————. A New Race of Sandgrouse from Lake N'Gami. Published October 30, 1931	441
—————. A New Race of <i>Turdoides Jardinei</i> from Bechuanaland. Published January 23, 1932	469
—————. A New Species of Flycatcher from Damaraland. Published December 14, 1931	449
—————. Two New Birds from South Africa. Published January 24, 1931	5
FOWLER, HENRY W. Fishes Obtained by the Barber Asphalt Company in Trinidad and Venezuela in 1930. Published August 11, 1931	391
—————. Fishes Obtained by the DeSchaunsee South African Expedition,—1930. Published May 15, 1931	233
—————. A Small Collection of Fishes from Singapore. Published November 13, 1931	443
GORDON, SAMUEL G. The Grootfontein Southwest Africa Meteoric Iron. Published May 15, 1931	251
HEBARD, MORGAN. Orthoptera of Kansas. Published May 15, 1931	119
PENNELL, FRANCIS W. <i>Escobedia</i> ,—A Neotropical Genus of the Scrophulariaceae. Published October 1, 1931	411
PILSBRY, HENRY A. The Cirriped Genus <i>Pyrgoma</i> in American Waters. Published March 31, 1931	81
—————. The Miocene and Recent Mollusca of Panama Bay. Published November 13, 1931	427
REHN, JAMES A. G. African and Malagasy Blattidae (Orthoptera),—Part I. Published July 14, 1931	305
STONE, WITMER. Three New Birds from Honduras. Published January 23, 1931	1
Abstracts of the Minutes of the Proceedings	471

THE GEOGRAPHICAL FORMS OF POLIHIERAX SEMITORQUATUS

BY W. WEDGWOOD BOWEN.

In the *Journal für Ornithologie*, 1914, pages 675 to 678, the forms of the African Pigmy Falcon were reviewed by Zedlitz, who recognized the following four races, one of which he described therein as new:

1. *Polihierax s. semitorquatus* A. Smith. Wing 124–131 mm. Upper parts of male dark gray; back like the crown. South Africa to Tanganyika Territory (“S.-bis D. O.-Afrika”).
2. *P. s. homopterus* Oberholser. Wing 116–123 mm. Upper parts (not the crown) slightly lighter. Hawash River to Lake Stefanie.
3. *P. s. deckeni* Zedlitz. Wing 110–117 mm. Upper parts, including the crown, a shade lighter than in the previous form; distinctly paler than in *semitorquatus*. South Somaliland and Kenya Colony to Lake Baringo.
4. *P. s. castanotus* (Heuglin). Quoted as having a wing-length, ♂, 116 mm., but not seen by him. Middle White Nile.

Subsequent authors have recognized but two of these forms. Thus, H. Kirke Swann (*Synopsis of the Accipitres*, Part IV, p. 183, 1922) relegates *homopterus* and *deckeni* to the synonymy of *castanotus*, which he states to be the darker bird, with a range covering South Abyssinia, Somaliland, and Kenya Colony. Wing measurements given by him show no difference, thus: *P. s. semitorquatus* (Bechuanaland to Damaraland, Orange Free State, and Basutoland), ♂ 117, ♀ 121 mm.; *P. s. castanotus*, ♂ 115–119, ♀ 120 mm. Selater (*Systema Avium Ethiopicarum*) recognizes the same two forms, but includes Tanganyika Territory in the range of *castanotus*.

The reason why *semitorquatus* is said by Zedlitz to be the darkest form, whereas according to Swann it is the paler, is explained by the fact that Zedlitz examined only birds from northern Tanganyika Territory. These he assumed, upon the authority of Reichenow and others, to be typical *semitorquatus* and three birds from South-West Africa in the Berlin Museum were thought to be not typical, and were disposed of thus. Swann, on the other hand, appears to have examined only birds from farther south.

Recently Friedmann has discussed (*Bull.* 153, U. S. Nat. Mus., pp. 100–102, 1930) the racial forms of this falcon and recognizes, like Swann and Slater, two forms. These he says “. . . meet in Kenya Colony. The latter [*castanotus*] is smaller than the former [*semitorquatus*], but seems to increase in size (average) as it goes north, approximating the size of *homopterus*.” In another place he remarks that “the typical, southern,

race is supposed to have wings of from 124–131 millimeters,¹ yet the two South African birds examined have wings of 119 and 122 millimeters, respectively (and they are both females and should therefore be at the higher rather than the lower size limit).” Friedmann tabulates the measurements of 23 specimens examined by him and concludes that “size has no constant geographical significance in this falcon and it necessarily follows that races based on size characters cannot be maintained.” However, nine specimens from Abyssinia and northern Somaliland are listed by him as having wing lengths from 116 to 121 mm. and therefore fall within the limits of *homopterus* set by Zedlitz. One bird from Burao, British Somaliland, is smaller—wing 112 mm. Whether we accept Zedlitz’s statement that birds of both races sometimes occur together in the non-breeding season, or not, the fact remains that nine out of the ten birds examined by Friedmann from the range of *homopterus* agree with the measurements given by Zedlitz for that form. From Kenya Colony seven specimens measured by him have wings from 112 to 116 mm. and thus agree with Zedlitz’s measurements of the form *deckeni*. Two from the North Guaso Nyiro River are rather larger, but, as I shall show below, most of Kenya Colony is intermediate territory between the largest and the smallest races, and thus considerable variation is to be expected. Friedmann appears not to have examined any specimens from south Somaliland.

While studying the series of this falcon in the Blayney Percival collection I was at once struck by the considerable difference in size between specimens from northern Kenya and Jubaland and those from southern Kenya. This difference has already been noted by Van Someren (Nov. Zool., XXIX, p. 44, 1922) who states that “there are certainly two distinct forms of the African Falconet—the southern or typical, extending from South Africa to as far north as the Athi Plains (wings: ♂ 120–124, ♀ 125 mm.), and a northern race from Abyssinia to Baringo which is paler and smaller . . . wings: ♂ 110–115, ♀ 120 mm.” In another paper (Journ. E. Afr. and Uganda N. H. Soc., No. 35, p. 37, 1929) this author gives the wing measurements of nine specimens from Jubaland and northern frontier of Kenya as 108–115 mm. In identifying the northern (smaller) birds with *homopterus* and the southern (larger) ones with *semitorquatus* he was, however, wrong.

From the above quotations, taken in conjunction with the series seen by me (tabulated below) it will be noticed that: 1, the bird of southern Somaliland is certainly smaller than that of Abyssinia and northern (British) Somaliland, and with one exception (noted above) fits the size limits set by Zedlitz; 2, birds from Kenya Colony, between the North Guaso

¹ He is evidently here quoting Zedlitz, who, as I have pointed out above, assumed Tanganyika specimens to be typical *semitorquatus*.

Nyiro and the Athi Rivers, are mostly small, like the Somali form, but a few rather large examples do occur.

I am unable to detect any difference in color between northern and southern Somali birds, but nevertheless the difference in size appears to me sufficient to warrant recognition of the form *P. s. deckeni* Zedl.

On the validity of *P. s. homopterus* Oberh., I can give no judgment since I have seen no specimens of *castanotus* from the Upper Nile with which to compare it. It is noteworthy, however, that Oberholser, when describing *homopterus*, saw no specimens from the Nile, and merely disposed of Heuglin's race by saying that "it is reasonably certain that this name belongs as a synonym under *Polihierax semitorquatus semitorquatus*." Zedlitz recognized *homopterus*, but he likewise did not compare it with Upper Nile specimens. Swann, although no definite statement to that effect is made, probably compared Upper Nile with Abyssinian birds, and since he considers *homopterus* synonymous with *castanotus*, his opinion must be accepted, at least until a comparison is made.

Turning now to the bird of Tanganyika Territory and southern Kenya Colony, which was assumed by Zedlitz, Van Someren, and Friedmann to be *semitorquatus*, although a difference was noticed between it and specimens from S. W. Africa by Zedlitz, and a size difference was noted also by Friedmann between a Tanganyika and two Transvaal birds. Although having seen no material from Kuruman, Bechuanaland (type-locality of *semitorquatus*), I have nevertheless compared and found to be identical, specimens from Namaqualand on the one side and Transvaal on the other, and feel safe therefore in concluding that these are typical *semitorquatus*.

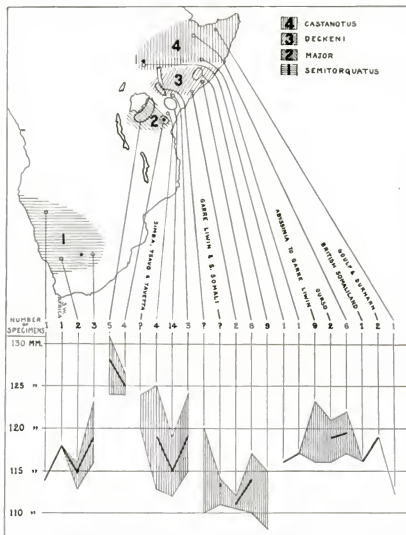
Compared with *semitorquatus*, Tanganyika and south Kenya birds are distinctly darker and larger, and can by no means be the same. Friedmann (*loc. cit.*) records a specimen from Mwanza, Tanganyika Territory, "undoubtedly of the typical race," but I have examined this bird and find that it agrees both in size and color with south Kenya specimens, and thus differs from the South African form. For the Tanganyika and south Kenya bird I propose the name:

Polihierax semitorquatus major subsp. nov.

Type: adult male, A.N.S.P. No. 93996, collected at Mbuyuni, Teita district, southeast Kenya Colony, 10 July 1919, by A. Blayney Percival.

Subspecific characters: larger and darker above than all races. Wing, ♂ 124-131, ♀ 124-129 mm. Van Someren (*Nov. Zool.*, 1922, p. 44) gives measurements slightly lower, but two of his localities (Simba and Tsavo) are situated on the northernmost limit of the range of this race, and as I have found in the case of four examined by me from Simba, intermediates between this and *P. s. deckeni* occur thereabouts.

Range: Northern Tanganyika Territory and southern Kenya Colony from the Unyamwezi and Kavirondo districts east to the Teita district, north to about the Athi River. Southern limits unknown. North of the Athi River and south of the Northern Guaso Nyiro River most specimens agree with the south Somali race, *deckeni*, but a few are larger, indicating intermediacy between these two races. Some wandering or local migration during non-breeding season (as suggested by Zedlitz) may also



Distribution and size variation of the four subspecies of *Polihierax semitorquatus*, plotted from measurements and data published by Zedlitz, Van Someren, and Friedmann, as well as that contained in the present paper. The ranges of the four races are shaded on the map (above), type-localities are shown as stars, and the localities of recorded specimens are inclosed by circles. From these localities, or districts, lines running to the graphs (below) show the size-range—maximum, minimum, and average (heavy black line) wing-lengths—of the specimens from each locality. The number of specimens measured is shown in each case by the figures immediately above the graphs. It will be noticed that the greater part of Kenya Colony is shown as intermediate territory, but the graphs below indicate that a great many specimens from there agree in size more with the form *deckeni*. The single small bird from the range of *castanotus* (last in graph) is probably to be accounted for as an unusual variant or a wanderer.

account for the occasional large birds found even as far north as the Guaso Nyiro River.

The distribution of the four recognizable races and their size-relationships are shown on the accompanying chart. Their characters may be briefly reviewed as follows:

1. *P. s. semitorquatus* (Smith). Upper parts paler than all others. Wing, ♂ 113-116, ♀ 114-122 mm.

2. *P. s. major* Bowen. Upper parts darker than all others. Wing, ♂ 124-131, ♀ 124-129 mm.

3. *P. s. deckeni* Zedlitz. Upper parts slightly paler than *major* but not so pale as *semitorquatus*. Wing, ♂ 110-116, ♀ 112-117 mm.

4. *P. s. castanotus* (Heuglin). Upper parts like *deckeni* (said to be slightly darker, but this is not evident in the limited material before me). Wing, ♂ 116-123, ♀ 116-123 mm.

It may be noted that *semitorquatus* is distinguished on color characters; *major* on color and size, while *deckeni* and *castanotus* are distinguished, one from the other, on size alone. Also, it is interesting to note that the northernmost and southernmost forms are similar in size, while in the intervening country the largest and smallest races occur.

Measurements of the series examined by me² are tabulated below:

SUBSPECIES AND LOCALITY	Sex	Wing	Tail	Culmen
<i>P. s. semitorquatus</i>		mm.	mm.	mm.
S. W. Africa				
Kalkfontein	♂	113.0	71.5	10.5
do	♀	116.0	69.0	11.0
Otjiwarongo	♀	114.0	66.0	11.0
Transvaal				
*Maquassi ³	♂	116.0	74.0	10.5
<i>P. s. major</i>				
South Kenya Colony				
Mbuyuni (type)	♂	124.5	79.0	11.5
Olgerei	♀	124.0	74.0	12.0
Maktai-Mbuyuni	♀	126.5	77.0	12.0
<i>P. s. deckeni</i>				
Kenya Colony (intermediate territory)				
Simba	[♂]	113.0	71.0	11.0
do	♀	122.0	74.0	11.5
do	♀	125.0	73.5	11.5
do	♀	115.0	72.5	12.0
*Barsaloi	♂	116.0	74.0	11.0

² This comprises the material in this Academy as well as that in the American Museum of Natural History. Three specimens from the Museum of Comparative Zoölogy have been examined also, but since my measurements of these agree with Friedmann's, already published, they are not included here. To the authorities of these institutions I wish to express my appreciation for these loans.

³ Localities marked with an asterisk are of specimens in the American Museum of Natural History; others are of those in this Academy.

*Barsaloi	♀	117.0	72.0	10.0
*do	♀	119.0	74.5	11.0
*Waso	♂	114.0	71.0	11.0
*Tana-Kenna	♂	116.0	75.5	11.0
*Kenna River	♂	119.0	78.0	11.0
Jubaland				
Baduna	♂	111.5	70.5	11.0
do	♀	112.0	71.0	11.5
<i>P. s. castanotus</i>				
North Somaliland				
Dunarn	♂	119.0	74.5	10.5