BULLETIN ZOOLOGISCH MUSEUM



Vol. 9 No. 7 1982

DESCRIPTION OF TWENTY FOUR NEW SUBSPECIES OF AMERICAN OTUS

(AVES, STRIGIDAE)

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ABSTRACT

This paper gives a summary of the results of a comprehensive revision of the American species of the genus Otus Pennant, 1769, contained in a thesis presented at the Free University, Amsterdam. A checklist of American Otus is given, comparing the revised classification with that of Peters (1940). Twenty four new subspecies proposed in the thesis are validated herewith.

INTRODUCTION

The last complete revision of the genus Otus Pennant, 1769, was given by Peters (1940). Many new discoveries were described since, and a new revision was long overdue. A general review of the species of Otus appeared some years ago (Hekstra, 1973), however, without giving subspecific details, as it served mainly to inform a

That revision deals with 16 species and 110 subspecies of which 24 are indicated as new subspecies. The purpose of this paper is the validation of these new subspecies by formal publication.

broad public about the general appearance, variation and distribution of the Scops and Screech Owls. For my own convenience I decided to pursue my revision of the genus *Otus* in portions, starting with the American species. The results were presented in the form of a thesis at the Free University of Amsterdam (Hekstra, 1982)¹⁾.

¹⁾ Copies of the thesis can be ordered directly from the author.

SCOPE OF THE REVISION

For each of the 16 species an introduction to their taxonomy, structure and features, measurements, geographical variation, voice and habitat is given. Approximately 2600 specimens in 45 museums have been investigated. After an introduction to the problems involved (chapter 1), the methods, materials and the museums visited are listed with the date of the last visit (chapter 2). In chapter 3 an attempt to a definition of the genus and of five subgenera is made. The occurrence of colour morphs is discussed in chapter 4. Chapter 5 deals with species problems, in particular with superspecies and related problems. Chapter 6 serves to discuss ecological differentiation and distributional radiations. It is concluded that there appear to be hitherto uncolonized niches, which raise the question whether these are indications of a relatively young species radiation. Distributional maps are added, which reflect likely ranges before the great deforestations and habitat changes of the last century took place.

Many details are summarized in tables. Table I gives the climatic zone for each subspecies. Table II shows cross-sections in ten mountainous areas to illustrate the zonal and horizontal distribution of the local races. Table III depicts the wing formulas, showing the most important geographical variation. Table IV gives maximum, minimum and average lengths of wing, tail, tail/wing index, tarsus, mid-toe, bill and tufts for each subspecies, The list of references is kept short by not repeating literature quoted in Peters' Checklist (1940).

RESULTS OF THE REVISION

In my revision the following details are new:

- a) Widening the genus limits and recognising subgenera for systematic rather than nomenclatorial purposes (chapter 3).
- b) Recognition of several superspecies at different stages of species differentiation and geographical background (chapter 5).
- c) Recognition of 16 species of American Otus as opposed to 17 by Peters, but as three (O. lambi, O. marshalli and O. seductus) were not known in 1940, the original 17 are re-arranged into 14 by merging the following species together:
- 0. minimus and 0. clarkii with 0. ingens,
- 0. watsonii with 0. atricapillus,
- 0. roboratus with 0. choliba; and splitting:
- 0. asio in 0. asio and 0. kennicotti.
- d) Transferring some races to another species:

- aequatorialis from 0. albogularis to 0. in-
- huberi from 0. watsonii to 0. guatemalae.
- e) Recognition of subspecies groups (sufficiently isolated to become potentially, sooner or later, an "incipient species"); and of series (a number of subspecies to be regarded as a section of clinal variation, but not sufficiently isolated to become, potentially, an "incipient species").
 - f) Restoration of a few older names.
- g) Proposal of several new subspecies, many of which are intended to draw attention to hitherto overlooked or unknown geographical variation.

The following names, published prior to 1940 and not listed by Peters, are recognised as valid taxa or synonyms (in chronological order and with numbers referring to the checklist):

- carolinensis (= 0. asio asio) 9.5

 Asio scops carolinensis Brisson, 1760,
 Orn., I: 497.
- portoricensis (= 0. choliba portoricensis)
 11.12

Scops portoricensis Lesson, 1831, Traité d'Orn., I: 107.

- lophotes (= 0. atricapillus lophotes) 14.2
 Scops lophotes Lesson, 1831, Traité d'Orn., I: 107; priority over watsonii Cassin, 1848.
- macabrum (= 0. albogularis macabrum) 16.4 Syrnium macabrum Bonaparte, 1850, Consp. Avium, I: 53.
- argentinus (= 0. atricapillus argentinus) 14.8 Ephialtes argentina Lichtenstein, 1854, Nomencl. Mus. Berol.: 7.
- ocreatus (= 0. asio ocreatus) 9.2
 Ephialtes ocreata Lichtenstein, 1854, Nomencl. Mus. Berol.: 7.
- enano (= 0. trichopsis trichopsis) 5.6
 Scops asio enano Ridgway, 1873, Bull. Essex Inst., 5: 200.
- krugii (= 0. nudipes krugii) 4.3

 Gymnoglaux krugii Gundlach, 1874, Journ.
 f. Orn., 22: 310 (315).
- idahoensis (= 0. flammeolus idahoensis) 1.4

 Megascops flammeolus idahoensis Merriam,
 1891, North Am. Fauna, 5: 96, pl. 1.
- ridgwayi (= 0. trichopsis ridgwayi) 5.5

 Megascops ridgwayi Nelson & Palmer, 1894,
 Auk, 11: 40.
- semplei (= 0. asio semplei) 9.3

Otus asio semplei Sutton & Burleigh, 1939, Auk, 56: 174.

The following names, published in or after 1940, are recognised as valid taxa or synonyms (in chronological order):

- helleri (= 0. guatemalae helleri) 3.14

 Otus guatemalae helleri Kelso, 1940, Biol.
 Leaflet, 12: 1.
- suttoni (= 0. kennicotti suttoni) 10.9
 Otus asio suttoni Moore, 1941, Proc. biol.
 Soc. Wash., 54: 154.
- sortilegus (= 0. kennicotti sortilegus) 10.6

 Otus asio sortilegus Moore, 1941, Proc. biol. Soc. Wash., 54: 155.
- seductus (= 0. seductus) 13.1

 Otus vinaceus seductus Moore 1941, Proc. biol. Soc. Wash., 54: 156.

- surutus (= 0. choliba surutus) 11.5

 Otus choliba surutus Kelso, 1941, Biol.
 Leaflet, 13: 1.
- bolivianus (= 0. guatemalae bolivianus) 3.14

 Otus guatemalae bolivianus Bond & De Schauensee, 1941, Notulae Naturae, 93: 2.
- remotus (= 0. albogularis remotus) 16.5

 Otus albogularis remotus Bond & De Schauensee, 1941, Notulae Naturae, 93: 3.
- portoricensis (= 0. choliba kelsoi) 11.18
 Otus choliba portoricensis Kelso, 1942,
 Biol. Leaflet, 14: 2.
- chiapensis (= 0. cooperi chiapensis) 12.2

 Otus cooperi chiapensis Moore, 1947, Proc. biol. Soc. Wash., 60: 13.
- yumanensis (= 0. kennicotti gilmani) 10.5

 Otus yumanensis Miller & Miller, 1951, Condor, 53: 17.

CHECKLIST OF AMERICAN OTUS

Names of authors are given only for taxa not mentioned by Peters.

Revised classification (Hekstra, 1982)

Peters' Check-list (1940)

- A. SCOPS OWLS (Subgenus Scops; partim)
- 1. Otus flammeolus (Flammulated Scops Owl)
- a. flammeolus group
- 1.1 0. f. meridionalis n.ssp.
- 1.2 O. f. flammeolus
- b. idahoensis group
- 1.3 0. f. frontalis n.ssp.
- 1.4 0. f. idahoensis (Merriam, 1891)
- 1.5 0. f. borealis n.ssp.
- 1.6 0. f. rarus

- 0. flammeolus flammeolus
- 0. flammeolus rarus
- B. BARE-LEGGED SCREECH OWLS (subgenus Gymnoglaux)
- Otus lawrencii (Bare-legged or Cuban Screech Owl)
- 2.1 O. l. lawrencii
- 2.2 O. l. exsul

- Gymnoglaux lawrencii lawrencii
- Gymnoglaux lawrencii exsul

- C. SCREECH OWLS (subgenus Megascops)
- 3. Otus guatemalae (Vermiculated Screech Owl)
- a. cassini group
- 3.1 0. g. pettingilli n.ssp.

7.1

0. marshalli Weske & Terborgh, 1981

3.2	0. g. cassini	0.	guatemalae cassini
b.	hastatus group		
3.3	0. g. hastatus	0.	guatemalae hastatus
3.4	0. g. tomlini		guatemalae tomlini
c.	guatemalae group		
3.5	0. g. thompsoni	0.	guatemalae thompsoni
3.6	0. g. marmoratus		guatemalae guatemalae (partim)
3.7	0. g. fuscus		guatemalae fuscus
3.8	0. g. peteni n.ssp.		
3.9	0. g. guatemalae	0.	guatemalae guatemalae
3.10	0. g. dacrysistactus		guatemalae dacrysistactus
d.	vermiculatus group		
3.11	0. g. vermiculatus	0.	guatemalae vermiculatus
3.12	0. g. centralis n.ssp.		3.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
3.13	0. g. napensis	. 0.	guatemalae napensis
3.14	0. g. helleri Kelso, 1940	•	guasania napona po
0	(incl. 0. g. bolivianus Bond & De Schauensee, 1941)		
3.15	0. g. huberi	Ò.	watsonii watsonii (partim)
3.16	0. g. pallidus n.ssp.	•••	par only
e.	roraimae group		
3.17	0. g. roraimae	0.	guatemalae roraimae
f.	pacificus group	•	gradulated 101 aurilla
3.18	0. g. pacificus n.ssp.		
3.19	0. g. rufue n.ssp.		
4.	Otus nudipes (Puerto Rican or Bare-legged		
4.	Vermiculated Screech Owl)		
4.1	O. n. nudipes	0	nudipes nudipes
4.2	0. n. newtoni		nudipes newtoni
4.3	0. n. krugii (Gundlach, 1874)	٠.	nacoped newoone
4.0	0. 10 12 1900 (California, 10/4)		
c.II	SPOTTED SCREECH OWLS		
	(superspecies 0. [trichopsis]: 0. trichopsis,		
	0. barbarus, 0. marshalli)		
5.	Otus trichopsis (Spotted Screech Owl)		
a.	mesamericanus group		
5.1	0. t. inexpectus n.ssp.		
5.2	O. t. pumilus	0.	trichopsis pumilus
5.3	0. t. mesamericanus	0.	trichopsis mesamericanus
b.	trichopsis group		
5-4	0. t. guerrerensis	0.	trichopsis guerrerensis
5.5	0. t. ridgwayi Nelson & Palmer, 1894		
5.6	0. t. trichopsis	0.	trichopsis trichopsis
	incl. Scops asio enano Ridgway, 1873		
5.7	0. t. aspersus	0.	trichopsis aspersus
	incl. Megascops pinosus	0.	trichopsis pinosus
6.	Otus barbarus (Santa Barbara Spotted Screech Owl)		
6.1	0. barbarus	0.	barbarus
7.	Otus marshalli (Cloud-forest Spotted Screech Owl)		

C. III COMMON SCREECH OWLS (superspecies O. [asio]: O. lambi, O. asio, 0. kennicotti) 8. Otus lambi (Lamb's Common Screech Owl) 8.1 O. lambi Moore & Marshall, 1959 O. asio (Eastern Common Screech Owl) Q. series floridanus 9.1 0. a. floridanus 0. asio floridanus O. a. ocreatus Lichtenstein, 1862 9.2 b. series asio 9.3 O. a. semplei Sutton & Burleigh, 1939 9.4 O. a. mccallii O. asio mecallii 9.5 0. a. asio O. asio asio incl. Asio scops carolinensis Brisson, 1760 c. series naevius 0. a. naevius 9.6 0. asio naevius 9.7 0. a. hasbroucki O. asio hasbroucki 9.8 0. a. swenki 0. asio swenki 9.9 0. a. maxwelliae O. asio maxwelliae 10. Otus kennicotti (Western Common Screech Owls) vinaceus group а. 10.1 0. k. xantusi 0. asio xantusi 10.2 0. k. cardonensis O. asio cardonensis 10.3 0. k. sinaloensis 0. asio sinaloensis 10.4 0. k. vinaceus O. asio vinaceus 10.5 0. k. gilmani 0. asio gilmani incl. O. asio yumanensis Miller & Miller, 1951 0. k. sortilegus Moore, 1941 10.6 0. k. quercinus 10.7 O. asio quercinus 10.8 0. k. bendirei 0. asio bendirei b. cineraceus group 10.9 O. k. suttoni Moore, 1941 10.10 O. k. cineraceus O. asio cineraceus 10.11 O. k. invoensis 0. asio inyoensis 10.12 O. k. clazus O. asio clasus 10.13 O. k. aikeni 0. asio aikeni 10.14 O. k. mychophilus O. asio mychophilus 10.15 O. k. macfarlanei O. asio macfarlanei c. kennicotti group 10.16 O. k. saturatus 0. asio kennicotti (partim)

O. asio brewsteri

O. asio kennicotti

C.IV SAVANNAH SCREECH OWLS

10.17 O. k. brewsteri

10.18 O. k. kennicotti

(superspecies Otus [choliba]: O. choliba, O. cooperi, O. seductus)

- 11. Otus choliba (Choliba Screech Owl)
- a. choliba group
- 11.1 O. ch. caatingensis n.ssp.

11.2	0. ch. decussatus	0. choliba decussatus
11.3	0. ch. chapadensis n.ssp.	
11.4	0. ch. wetmorei	0. choliba wetmorei
11.5	O. ch. surutus Kelso, 1941	
11.6	0. ch. choliba	0. choliba choliba
11.7	0. ch. uruguaii n.ssp.	
11.8	0. ch. alilucuco n.ssp.	
11.9	0. ch. koepckei n.ssp.	
11.10	0. ch. alticolus	0. choliba alticola
11.11	0. ch. caucae n.ssp.	
11.12	0. ch. portoricensis (Lesson, 1831)	
11.13	0. ch. luctisonus	0. choliba luctisonus
11.14	0. ch. duidae	0. choliba duidae
11.15	0. ch. guyanensis n.ssp.	
11.16	O. ch. montanus n.ssp.	
11.17	0. ch. crucigerus	0. choliba crucigerus
11.18	O. ch. kelsoi n.ssp.	
	(replaces 0. ch. portoricensis Kelso, 1942)	
11.19	O. ch. margaritae	0. choliba margaritae
b.	roboratus group	
11.20	0. ch. roboratus	0. roboratus
12.	Otus cooperi (Cooper's Screech Owl)	
12.1	0. co. cooperi	0. cooperi
12.2	0. co. chiapensis Moore, 1947	
13.	Otus seductus (Balsas Screech Owl)	
13.1	0. sed. seductus	
	(0. vinaceus seductus Moore, 1941)	
13.2	0. sed. colimensis n.ssp.	
c.v	BLACK-CAPPED SCREECH OWL	
14.	Otus atricapillus (Black-capped Screech Owl)	
a.	lophotes group	
14.1	0. atr. ater n.ssp.	
14.2	O. atr. lophotes (Lesson, 1831)	
	incl. 0. watsonii	0. watsonii watsonii
14.3	O. atr. morelius n.ssp.	
14.4	0. atr. inambarii n.ssp.	
14.5	0. atr. ustus	0. watsonii usta
14.6	0. atr. fulvescens n.ssp.	
b.	atricapillus group	
14.7	0. atr. atricapillus	0. atricapillus
14.8	0. atr. argentinus (Lichtenstein, 1854)	
	incl. 0. choliba pintoi	0. atricapillus (partim)
c.	sanctaecatarinae group	
14.9	0. atr. sanctaecatarinae	O. atricapillus (partim)
	incl. 0. choliba maximus	0. atricapillus (partim)

C.VI RUFESCENT SCREECH OWLS

15.	0tus	ingens	(Rufescent	Screech	Ow1)	•
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- a. ingens group
- 15.1 O. i. minimus
- 15.2 0. i. ingens
 - incl. Ciccaba aequatorialis
- 15.3 O. i. venezuelanus Phelps & Phelps, 1954
- b. clarkii group
- 15.4 0. i. colombianus Traylor, 1952
- 15.5 0. i. clarkii

O. clarkii

O. minimus

0. ingene

D. WHITE-THROATED SCREECH OWLS (subgenus Macabra)

- 16. Otus albogularis (White-throated Screech Owl)
- 16.1 0. alb. obscurus Phelps & Phelps, 1953
- 16.2 O. alb. meridensis
- 16.3 0. alb. albogularis
- 16.4 O. alb. macabrum (Bonaparte, 1850)
- 16.5 0. alb. remotus Bond & De Schauensee, 1941

O. albogularis meridensis

0. albogularis aequatorialis

O. albogularis albo-gularis

DESCRIPTIONS OF 24 NEW SUBSPECIES

The numbers under the names refer to the place in the checklist.

Abbreviations used:

AMNH	American	Museum of	Natural	History,
	New York,	N.Y., U.S.	A.	

ANSPh Academy of Natural Sciences, Philadelphia, Penn., U.S.A.

BMNH British Museum (Natural History), London, U.K.

ChiMNH Chicago Museum of Natural History, Chicago, Ill., U.S.A.

CMP Carnegie Museum, Pittsburgh, Penn., U.S.A.

DenMNH Denver Museum of Natural History, Denver, Col., U.S.A.

KCP Koepcke Collection, Lima, Peru.

LACM Los Angeles County Museum, Los Angeles Cal IISA

les, Cal., U.S.A.
LSUMZ Louisiana State Univerity, Muséum of

Zoology, Baton Rouge, La., U.S.A.

MAKB Museum Alexander Koenig, Bonn, FRG.

MCZ Museum of Comparative Zoology, Harvard University, Cambridge, Mass., U.S.A.

MHNGen Muséum d'Histoire Naturelle, Genève, Switzerland.

MHNPar Muséum National d'Histoire Naturelle, Paris, France.

NHMBas Naturhistorisches Museum, Basel, Switzerland.

NHMWien Naturhistorisches Museum, Wien, Austrià.

NHRMSt Naturhistoriska Riksmuseet, Stock-

holm, Sweden.

RMNHL Rijksmuseum van Natuurlijke Historie,

Leiden, The Netherlands.

SenckMF Senckenberg Museum, Frankfurt, FRG. SMNStut Staatliches Museum für Naturkunde,

Stuttgart, FRG.

UCalMVZ University of California, Museum of Vertebrate Zoology, Berkeley, Cal., U.S.A.

UKansMNH University of Kansas, Museum of Natural History, Lawrence, Kansas, U.S.A.

UmichMZ University of Michigan, Museum of Zoology, Ann Arbor, Mich., U.S.A.

USNM United States National Museum, Washington, D.C., U.S.A.

UWiscZM University of Wisconsin, Zoological Museum, Madison, Wisconsin, U.S.A.

YalePM Yale Peadbody Museum, New Haven,

Conn., U.S.A.

ZMBerl Zoologisches Museum, Berlin, FRG.

ZMHamb Zoologisches Museum, Hamburg, FRG.

ZMHamb Zoologisches Museum, Hamburg, FRG. ZMKøb Zoologisk Museum, København, Denmark. ZSBSM Zoologische Sammlung des Bayrischen

Staates, München, FRG.

Otus flammeolus meridionalis new subsp. (1.1)

Type.-

UCalMVZ 10978, male adult, 25 Aug. 1938, Cuapongo, Guerrero, Mexico; wing 127 mm; collected by W.W. Brown.

Distribution and habitat .-

Guatemala and Southern Sierra Madre; breeding above 6000 feet.

Diagnosis .-

Rufous parts more brilliantly red and grey parts with glossier black markings than flammeolus; smaller and glossier than rarus (winter visitors).

Additional specimens examined .-

Guatemala: 1 Tecpam in ChiMNH (Jan.), 2 Tecpam, Chichavak (= Chicuac) in DenMNH (Dec.); wings 129-133 mm; Guerrero: 3 Cuapongo (Aug.), and 1 Chilpancingo (Dec.) in UCalMVZ by Brown; wings 127-136 mm.

Derivation of name .-

 $\it meridionalis:$ the most southerly of its species.

Otus flammeolus frontalis new subsp. (1.3)

Type .-

USNM 119630, breeding female, Estes Park, Front Range, Colorado, 20 June 1890, wing 141 mm; collected by W.G. Smith. One year later Smith collected a very similar breeding female at the same place (USNM 124426), paratype.

Distribution and habitat .-

Eastern Rocky Mountains, Front Range, Colorado; not yet known in Wyoming, elevations up to 8000 feet in Canadian and transition zones. Probably migrating in winter to central Mexico via western Texas.

Diagnosis.-

Generally much darker than flammeolus red parts almost dark chestnut brown; upper parts with very black shaft streaks and vermiculations.

Additional specimens examined .-

5 Colorado, Front Range at Estes Park, Boulder (MCZ 133016), Beulah (BMNH 98.7.12.288), West Creek (DenMNH 33698), 1 New Mexico, Rio Arribas, 14 miles W. of Tres Piedras (USNM 242466); wings 135-142 mm. Migration is suggested by specimen USNM 141213, Texas nr. Presidio, 19 Aug. 1890, wing 144.5 mm, closely resembling frontalis type.

Derivation of name.-

frontalis: from the Front Range, Colorado, USA.

Otus flammeolus borealis new subsp.

(1.5)

Type.~

UCalMVZ 10.700, female adult, Penticton, Okanagan Valley, British Columbia, on lake shore, 22 Oct. 1901; wing 142 mm; collected by Allan Brooks.

Distribution and habitat .-

East of the Cascade Range from N.E. California through central Oregon (west of line from Lake View to the Blue Mountains), all of the Columbia Basin (Washington and northern Idaho and interior of British Columbia, at least as far as Kamloops, but possibly including most or all of the Fraser River Valley; elevations 4000-7000 feet, Canadian Zone.

Diagnosis .-

On average slightly larger than *idahoensis* and with less white, duller grey underground, darker vermiculations and markings, and less warm red and brown on facial disc, neck and scapulars. Differs from *rarus* in having red, brown and ochre colouring duller and less bright.

Additional specimens examined .-

N. California: 8 Sierra Co., 2 Lassen Co., 2 Modoc Co. and 1 Washoe Co. nr. Crystal Bay, all in UCalMVZ, and 1 at Fort Crook (in USNM); wings 136-147 mm; Oregon: 1 Homestead (in USNM) and 1 Umatilla and 5 at Sisters (in UCalMVZ); wings 139.5-142 mm; Washington: 2 Mt. Aix (in LSUMZ), 1 Pasco (in USNM) and 4 Stayawhile LSUMZ), 1 Pasco (in USNM) and 4 Stayawhile Spring (in UCalMVZ); wings 137-145.5 mm; Br-Col.: 1 Penticton (type) and 1 Kamloops (not seen). Specimens collected in winter, resembling borealis are 3 in BMNH from Valley of Mexico and Oaxaca, and 2 in LSUMZ from Cerro Campanazio, San Luis Potosi, and nr. Morelia, Michoacan. Furthermore, there is one very interesting specimen (LSUMZ 13221) collected 2 Jan. 1949 in Baton Rouge, Louisiana, closely resembling the one from Mt. Aix, Wash.; it was found with an injured left wing, and that is the likely reason for deviation from it's migration route to Mexico - provided the specimen really belongs to the borealis population, for which there is no proof; wing 141 mm.

Derivation of name.-

borealis: the most northerly of its species.

Otus guatemalae pettingilli new subsp. (3.1)

Type.-

Otus guatemalae pettingilli "G.M. Sutton, 1949" (manuscript name). (Tamaulipas, Mexico, above Rio Savinas near Gomez Farias, female, 11 Apr. 1941, collected by O.S. Pettingill Jr.; depicted in J.T. Marshall, Mon. Western Found. Vert. Zool.; July 1967, specimen at the top of pages 66-67).

Distribution and habitat .-

San Luis Potosi and Tamaulipas in foot-hill tropical wood of oak-sweetgum up to temperate zone (7000 feet).

Diagnosis.-

Resembling 0. trichopsis even more than cassini, but toes entirely naked. Smaller and darker than cassini, greyer on upper parts and the
"hastate" vermiculations on under parts more
reduced, making the general appearance more
like 0. trichopsis. Inner webs of primaries as
cassini, with strongly reduced bars and spots,
resembling 0. trichopsis and 0. barbarus. Tarsi well feathered to joint of toes.

Additional specimens examined .-

1 San Luis Potosi: 1 Llano de Garzas (7000 ft) and 1 Llano de la Cruce (6200 ft), Cerro Coneja Region, both in LSUMZ; wings 140.5-150.5 mm); Tamaulipas: 1 near Gomez Farias (type specimen) not measured.

Derivation of name .-

pettingilli: from a manuscript name on a label (by Griscom?).

Otus guatemalae peteni new subsp. (3.8)

Type.-

UMichMZ 137395, female adult, 18 Apr. 1920, Laguna Perida, Peten, Guatemala, collected by P.N. Shufeldt; red morph; contained a fully formed egg in the oviduct.

Distribution and habitat .-

Wet forests of northern Guatemala, Belize and southern Quintana Roo; possibly also in adjacent parts of Chiapas and Campeche, Mexico.

Diagnosis .-

Both morphs more red-brown than marmoratus and guatemalae. The brown morph is similar to what Sharpe described as the red morph of guatemalae, and is about as brown as vermiculatus but with less fine vermiculations. The red morph is a deeper warm red-brown than the brown morph. Lower 1-4 mm of tarsi bare.

Additional specimens examined .-

In addition to the type, specimens from Lake Tikal (in MCZ) and from La Libertad, Tayabaj Quiche and Chuntuqui (in USNM) and from Chetumal (in UKansMNH) are regarded as peteni; 7 specimens; wings 159.5-178 mm.

Derivation of name.-

peteni: from Lake Peten, Guatemala.

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Otus guatemalae centralis new subsp.

(3.11)

Type .-

USNM 484980, female adult, Cerro Mali, 4100 feet, Darien, Panama, 14 Feb. 1964, dark morph, collected by C.O. Handley in a mist net in evergreen forest; wing 159 mm.

Distribution and habitat .-

Panama east of Chiriqui through Darien into Serrania de Baudo (Colombia); perhaps also in adjacent north-western Colombia (Cordoba, Bolivar, Magdalena); not on Pacific side of Western Panama.

Diagnosis .-

Intermediate in appearance between vermiculatus and guatemalae. All measurements similar to vermiculatus, but the plumage pattern is more similar to guatemalae with coarse streaks, bars and patches, and more reduced vermiculations. Brighter colours than in pallidus. Tarsi bare for less than lower quarter.

Additional specimens examined.-

Western Panama: 1 Bocas del Toro; Eastern Panama: 1 Colon, 1 Upper Trinidad, 1 La Laguna, 2 Cana, 1 Cerro Mali; Colombia: 1 Alto del Buey (Baudo); wings 159-168 mm. Specimens in AMNH, ANSPh, BMNH, MCZ, RMNHL, USMN and ZMBerl.

Derivation of name.-

centralis: because it has a central place in the distribution of its species.

Otus guatemalae pallidus new subsp.

(3.16)

Type.

AMNH 476699, Andes de Cumana, Northern Venezuela, adult, sex unknown, red morph, March 1897, ex Museo Delmas, wing 167 mm.

Distribution and habitat .-

Northern Venezuela in coastal Andes mountains from Puerto Cabello to Peninsula Paria; also to be expected in the Sierra de Perija of northern Colombia.

Diagnosis.-

Much less red-brown than huberi. Resembling guatemalae in both morphs, but coloration averaging paler brown. Tarsi fully feathered.

Additional specimens examined .-

Specimens collected between Peninsula Paria and Puerto Cabello in northern Venezuela: 3 in AMNH; 2 in ChinMH; 1 in BMNH; 1 in SenckMF; wings 163-174 mm.

Derivation of name .pallidus: has a pale appearance.

> Otus quatemalae pacificus new subsp. (3.18)

Type . -

BMNH 023.13.1564, female adult, 27 Aug. 1899, Morropon 140 m, Piura NW Peru; grey morph, wing 150 mm; collected by P.O. Simons.

Distribution and habitat.Pacific lowlands of Northern Peru from around Sullana (dept. Piura) probably as far south as the coast of the dept. La Libertad where the same climate and vegetation occur (foliaged woodland, 3900-6500 ft. according to Maria Koepcke).

Diagnosis .-

Much smaller than adjacent napensis, nuchal and cervical collars (hind neck) more distinctly contrasting with plumage of head and back: facial rim more distinct, face less red or rufous; inner webs of primaries less distinctly barred. In all these respects slightly resembling 0. trichopsis, particularly mesamericanus. Also resembles cassini, but plumage pattern on under parts less "hastate" vermiculated.

Additional specimens examined .-

AMNH 175093, Piura, Palambla 3900-6500 ft., 22 Sept. 1922 by Watkins; ChiNHM 123996, Piura, Amotape Mts., 23 Feb. 1944 by Sandborn; NHMBas 13279, Piura, Sullana, Mallares Angolito, 17 March 1959 by Markl; wings 145-153.5 mm. Twoother specimens in MAKB and eight in the Peruvian collections of Maria Koepcke and W. Markl have not been examined.

Derivation of name .-

pacificus: from the Pacific side of Peru. The name pacificus was suggested by late Maria Koepcke (in litt.) who intended to publish several of her West Peruvian findings but put her data at my disposal.

> Otus guatemalae rufus new subsp. (3.19)

USNM 88.7.20.64, sex unknown, adult, March 1880, Balzar Mts. western Ecuador; extreme red morph, wing 142.5 mm; collected by Illingworth. Distribution and habitat .-

Pacific lowland and foothills around the Bay of Guayaquil from Tumbes, Peru to Rio Vinces, western Ecuador.

Diagnosis. -

Resembles pacificus but smaller and much more rufous in both morphs; tarsi well feathered.

Additional specimens examined.-AMNH 181060, W. Ecuador at Cerro Manglar Alto, 17 May 1923; by Tate; brown morph. ChinHM 222288, NW Peru at Tumbes, 25 June 1954; by Kalinowski; red morph; wings 142.5-146 mm. Another red specimen from Vinces, collected by Salvadori and Festa but not seen is listed here, based on Chapmans description, Am. Mus. Novit. 332, 1928: 5.

Derivation of name .-

rufus: has a rufous appearance.

Otus trichopsis inexpectus new subsp.

(5.1)

Type.-

ChiMNH 15282, adult female, Porto Jimenez, Costa Rica, 30 May 1892, collected by Verrill; red morph, primaries clipped, but estimated length of wing 142 mm.

Distribution and habitat.-

Upper tropical to lower temperate zone on Pacific side of Costa Rica, and Western Panama; precise elevations not known.

Diagnosis .-

This form is the approximate ideal in appearance between 0. guatemalae pacificus and 0. trichopsis pumilus, and could be recognised under either species. The almost complete lack of feathers or bristles on the toes would support inclusion under 0. guatemalae (pacificus group), but the short tail makes it more closely resemble 0. tr. mesamericanus.

Additional specimens examined .-

In addition to the type I only know of two other specimens: BMNH 88.7.20.52, adult, sex unknown, Panama, without locality, Whiley collection, brown morph, wing 147 mm. BMNH 50.-1.31.123, adult, sex unknown, Central America, without locality, collected by Kellett & Wood before 1875, as the specimen was described by Sharpe (1875, Cat.B.B.M: 114); wing 150.5 mm, brown morph.

There have been no recent discoveries to indicate the present existence of this race. The habitat may have been completely destroyed.

Derivation of name. -

inexpectus: unexpected distribution (Costa Rica/Panama).

Otus choliba caatingensis new subsp. (11.1)

Type.-

ChiMNH 191645, male adult, July 1949, Janaúba, northern Minas Gerais, grey morph, wing 159 mm, collected by Ricardo Medeiros Berla.

Distribution and habitat .-

Deciduous dry tropical forest and scrub ("caatingas") of north-eastern Brazil from Maranhao and central Pernambuco through the interior of Bahia to northern Minas Gerais.

Diagnosis .-

Differs from the coastal decussatus by markedly blacker shaft-streaks and cross bars on whiter under parts; legs almost without ochre pigments. In its dark appearance resembles wetmorei, which inhabits similar deciduous forests, but caatingensis has more reduced vermiculations.

Additional specimens examined .-

Northern Maranhao: 5 Miritiba and 1 Primeira Cruz; wings 152.5-158 mm; Bahia: 2 Itha, and 2 Mun. da Barra; Minas Gerais: 1 Janaúba; wings 156-161.5 mm. Specimens in BMNH, ZSBSM, SMN-Stut, NHMWien, LACM and MCZ.

Derivation of name. -

caatingensis: from the caatingas, NE Brazil.

Otus choliba chapadensis new subsp.

(11.3)

Type.-

AMNH 34595, female adult, 9 Feb. 1883, Serra de Chapada, Mato Grosso collected by H.H. Smith.

Distribution and habitat .-

Savannahs ("campos") of western Minas Gerais, Goiás and Mato Grosso, possibly also in Guaporé.

Diagnosis .-

Intermediate in appearance between decussatus and wetmorei but paler than both (less buff-white underground and with generally more fulvous ochre on upper parts).

Additional specimens examined .-

Mato Grosso: 6 Sierra da Chapada, 1 Engenho do Cap. Gama, 1 Caicara and 2 without locality; wings 160-166 mm; Goias: 1 Araguantins, 1 Cana Brava, 1 Goiania and 1 without locality; Minas Gerais: 1 Cascata and 1 near Bagagem; wings 158-172 mm. Specimens in BMNH, AMNH, USNM, LSUMZ, MCZ, UWiscZM, ZSBSM, NHMWien.

Derivation of name. - chapadeness: from Chapada, Mato Grosso, Brazil.

Otus choliba urugaii new subsp. (11.7)

Type .-

AMNH 76736, female adult, 29 May 1958, Argentina, Misiones, Arroyo, River Uruguai, km 10; inter-morph, wing 180 mm; collected by W.H. Partridge, as one of a series of 14 containing 8 grey, 3 inter, and 3 red morphs (one very red).

Distribution and habitat .-

Subtropical conifer forests of the Upper Uruguai and Pelotas valley and adjacent parts of Misiones, Rio Grande do Sul, Santa Catarina and Paraná, and extending through the Serra Paranapiacaba into southern São Paulo.

Diagnosis.-

Resembling *choliba*, but with much more ochreous wash all over the plumage and with much denser vermiculations and irregular bars, particularly on the under parts.

'Additional specimens examined -

Brazil, São Paulo: 1 San Jeronymo, Tieté (very dense vermiculations), wing 170.5 mm; Santa Catarina: 1 without locality, juvenile, wing 173 mm; Argentina: 23 Misiones; wings 165-180 mm; 1 Entre Rios, Concepcion del Uruguay; Uruguay: 1 Ayo Negro and 1 without locality; wings 173-174 mm; those from the lower Urugai valley (Entre Rios; Uruguay) are intermediate with wetmorei. Specimens in AMNH, BMNH, MCZ, YalePM, LACM, LSUMZ, NHRMSt, MHNPar and ZSBSM.

Derivation of name.-

uruquaii: from the Rio Uruguai, Misiones, Argentina.

Otus choliba alilicuco new subsp. (11.8)

Type.-

BMNH 99.1.27.236, male adult, 15 Sept. 1895, Argentina, Prov. Salta, Rosario, black morph, wing 172 mm, collection of Dr. F.P. Moreno, by Gesling. (Vulgar name "alilicuco" in Tucuman; (see Menegaux, Rev. fr. Orn., 17: 290, 1925).

Distribution and habitat .-

Subtropical sclerophyls and xerophytic shrub in the southern Andes foot-hills ("monte") south of the Cordilleras Central, from southern Bolivia (upper Pilcomayo valley) to central Argentina (prov. Cordoba); breeding above 500 m and descending out of breeding season to the plains in the area of wetmorei.

Diagnosis.-

Average size larger than wetmorei and generally darker, less rufous, with dark patterns on rather white under-ground.

Additional specimens examined .-

Argentina Salta: 1 Oran (Oct.), 1 Rosario (type), 1 Anta, 500 m (Sept.); 1 Tucuman 260 m (Sept.), 1 Tucuman 390 m (pullus, Dec.); Jujuy, 1 Juto 400 m (May); Santiago del Estero: 1 Suncho Corral 800 ft. (Apr.), 1 Lavalle 1800 ft. (June); wings 170-182 mm. For the occurrence in Cordoba see Lee, Ibis 1873: 137, White, B. of Arg. Rep. 1883: 40 and Frenzel, J.F. Orn. 1891: 115. Specimens in AMNH, BMNH, MCZ, NHRSt, MAKB, ChiMNH, ZSBSM and ZMKb.

Derivation of name.-

alilicuco: derived from the vulgar name at Tucuman, Argentina.

Otus choliba koepckei new subsp.

(11.9)

Koepcke collection 1699 a.u. on loan in AMNH, female adult, 3 Aug. 1960, Peru, Dep. Ancash, Quebrada Yanganuco, near Yungai, Cordillera Blanca, in Polylepis wood, 4000 m, grey morph, wing about 180 mm, collected by Maria Koepcke.

Distribution an habitat .-

Peruvian and Bolivian Andes between 1500-4500 m (5000-15000 ft), in Bolivia eventually lower; subtropical and lower temperate dry woodland and cloud forest, up to the tree limit.

Diagnosis .-

Resembling duidae but upper parts darker on average, less rufous, and under parts more white with heavy, black shaft streaks and cross bars; bars irregular and averaging 4 on each feather; tarsi yellowish. On average the Bolivian specimens are smaller and more rufous, intermediate with alilicuco.

Additional specimens examined .-

Peru, Ancash: 1 Yanac 13-15000 ft and 2 Quebrada (type locality); 6 Chachapoyas 8600-9400 ft; 1 Ayacucho Ninabamba 7500 ft; wings 173-187.5 mm; Bolivia, Dep. La Paz: 7 Chuluman and 5 Irupana, 1 Cochabamba, Tin Tin, above Mizque; wings 169.5-179 mm. Specimens in BMNH, AMNH, ANSPh, MAKB, ChiMNH, NHRMSt and Koepcke collection.

Derivation of name.-

koepckei: after Maria Koepcke, Peru.

Otus choliba caucae new subsp.

(11.11)

RMNHL 8091, male adult, 25 June 1938, Colombia, Rio Cauca, El Tambo, 5100 ft; dark morph, wing 177 mm; collected by Kjell von Schneidern.

Distribution and habitat .-

Upper Cauca and Upper Patia valley, Colombia, and possibly also in adjacent Ecuador; savannah and cultivation at elevations between 5000-6500 ft.

Diagnosis. -

Closely resembling very rufous red portoricensis but with strongly reduced cross-bars on the under parts, 3-4 on a feather against 5-6 in portoricensis; much more rufous than alticolus or luctisonus.

Additional specimens examined.— Colombia: 29 El Tambo, 1 Popayan; wings 173.5-182 mm; 3 Cali, 2 Pavos La Cumbre, 8 near Medellin, 2 Santa Rosa Bolivar; wings 172-190 mm. Specimens in AMNH, BMNH, USNM, ANSPh. CMP. ZSBSM, MNHGen and NHRMSt.

Derivation of name .-

caucae: after the Rio Cauca, Colombia.

Otus choliba guyanensis new subsp.

(11.15)

Type.-

BMNH 88.7.20.63, male adult, 9 Jan. 1884, Mt. Roraima, 3500 ft, Guyana, grey morph, wing 171.5 mm; collected by H. Whitely Jr.

Distribution and habitat .-

Higher parts of Venezuela (Bolivar) and the Guyanas above 350 ft.

Diagnosis .-

Darker, with heavier shaft streaks and denser vermiculations than coastal and Amazonian crucigerus, less blackish than duidae.

Additional specimens examined .-

Venezuela. Bolivar: 2 at base of Mt. Duida, 1 at Maripa, 1 Agua Salada, 1 Perico, 1 Cocal-Lar and 1 Auyantepui; Guyana: 3 Roraima, 4 Rupununi River, 1 Quonga, 1 Abary River, 1 Supenam River and 1 Demarara; wings 162-181 mm; no specimens seen from the interior of Surinam and French Guyana; specimens in AMNH, BMNH and MHNPar.

Derivation of name. guyanensis: from (British) Guyana.

Otus choliba montanus new subsp. (11.16)

Type.-

BMNH 1914.11.22.219, male adult, 15 Apr. 1909, Mérida. Montana Sierra, Valle, 2000 m, Venezuela: dark morph, wing 173.5 mm; one out of a series of many specimens collected by S. Briceno Gabaldon.

Distribution and habitat .-

Northeastern Andes from Cucuta (Colombia) throughout Venezuela, above 1000 ft.

Diagnosis.-

Closely resembling guyanensis but generally darker, less rufous, except in red morph specimens; under parts distinctly darker, but not as black as in duidae; much larger and darker than margaritae.

Additional specimens examined .-

Colombia, Andes of Cucuta: 1 Cucuta, 2 Soata and 1 Villa Felisa; Andes of Mérida, 2 Valencia, 2 Caracas, 1 San Julien and 1 Rio Caicara (northern Venezuela); 60 specimens; wings 168-179 mm; some specimens from northern Venezuela are paler, and intermediate in coloration, but not in measurements, with margaritae; specimens in BMNH, AMNH, USNM, SMNStut, MAKB, Senck-MF, ZSBSM and RMNHL.

Derivation of name.-

montanus: from Montana Sierra, Valle, Venezuela.

Otus choliba kelsoi new subsp.

(11.18)

Type.-

AMNH 59483, male adult, 10 March 1893, Princetown, Trinidad, grey morph, wing 168 mm; collected by F.M. Chapman. Replaces Otus choliba portoricensis Kelso, 1942, Biological Leaflet, 14: 2 (Trinidad), preoccupied.

Distribution and habitat .-

Tobago (?), Trinidad and delta of the Orinoco, Venezuela.

Diagnosis.-

On average larger and darker than margaritae, guyanensis and montanus; particularly under parts with more grey vermiculations and brown pigments on white underground. Additional specimens examined.

20 Trinidad; wings 164-173 mm; no specimens examined from the Orinoco delta. Occurrence on Tobago doubtful.

Derivation of name.kelsoi: after Leon Kelso.

Otus seductus colimensis new subsp.

(13.2)

Type.-

LSUMZ 39853, male adult, 7 miles south of Colima, Colima, 24 Dec. 1958, wing 175.5 mm, collected by W.J. Schaldach, Jr., as one of a series of 21 specimens taken in Dec. 1958 and Jan. 1959.

Distribution and habitat .-

Basin of Colima river in the state of Colima, Mexico, and also likely in adjacent Jalisco; not in the coastal plains.

Diagnosis .-

Averages larger and more uniformly buff (less vinous) than seductus; toes more feather-ed.

Additional specimens examined .-

21 Colima, in a radius of 18 km around Colima: wings 173.5-190.5 mm. All specimens seen in LSUMZ.

Derivation of name.-

colimensis: from Colima, Mexico.

Otus atricapillus ater new subsp.

(14.1)

Type .-

USNM field nr. 196899, male adult, 22 July 1964, Belem, Para; wing 180 mm; collected by P.S. Humphrey.

Distribution and habitat .-

Forests of Para to Rio Tocantins.

Diagnosis.-

Differs from ustus and lophotes by being strongly blackish; almost purely black back and completely black cap separated by two dirty white collars; belly dirty ochre brown with heavy herring bone-like vermiculations; breast almost blackish.

Additional specimen examined .-

Para: Rio Tocantins: 1 at Baiao (AMNH 430282) slightly more intermediate with ustus; wing 184 mm.

Derivation of name.-

ater: has a black appearance.

Otus atricapillus morelius new subsp. (14.3)

Type .-

AMNH 115738, male, 22 July 1912, La Morelia, Rio Caqueta, 600 ft Colombia; wing 173.5 mm; collected together with a female by L.E, Miller. Distribution and habitat.—

Eastern slopes of the Andes in Colombia and Ecuador from the foot-hills (Morelia) up to 3000 ft (Rio Napo), including the rivers Guapa-ya, Pisqui, Curaray, Copataze, Punino and Capaguari.

Diagnosis.-

Closely resembling ustus but in both morphs more uniformly coloured, lacking the white spots on the under parts; generally darker brown. Much more rufous below and black brown on back than inambarii.

Based upon 7 specimens examined, morelius integrades with ustus at Sarayacu. There is an old undated specimen (SenckMF 25.403) collected by Nehr Korn at Bogota, Colombia, which is very rufescent but pale.

Additional specimens examined .-

1 Peru Rio Cenepa, Tutinucu (LSUMZ); 34 eastern Ecuador (BMNH, AMNH, ChiMNH, MCZ, NHMBæs, SenckMF, ZMHamb, NHRMSt and LSUMZ); 6 Colombia at Morelia, Meta and Bogota (AMNH, ChiMNH); wings 164-187 mm.

Derivation of name.-

morelius: from La Morelia, Colombia.

Otus atricapillus inambarii new subsp. (14.4)

Type.-

ChiMNH 222284, female, 28 June 1953, Quince Mil. Huajyumba, at side river of the Inambari, Cuzco, 630 m, Peru; wing 179.5 mm; collected by C. Kalinowski.

Distribution and habitat .-

Eastern slope of the Andes in Peru and Bolivia from the Upper Apurimac River to Cochabamba; elevations between 1000-3000 ft.

Diagnosis.-

Generally like ustus but breast and abdomen much more heavily vermiculated on a more purely

white underground, superficially resembling 0. guatemalae napensis. Scapular streak more white (less ochre) than in ustus. Differs from morelius in being less dark rufous brown and in having much more white on abdomen.

Additional specimens examined .-

Peru: 1 Macarpata at Rio Musiniscato, 2 Huajyumbe (ChiMNH), 1 Luisiana at Upper Apurimac (AMNH) and 7 Balta at Rio Curanja (LSUMZ); Bolivia: 1 Cochabamba at Chipiriri (LSUMZ); wings 170-180 mm.

Derivation of name.-

inambarii: from the Rio Inambari, Cuzco, Peru.

Otus atricapillus fulvescens new subsp. (14.6)

Type .-

AMNH 34597, female adult, 20 July 1883, Chapada, Mato Grosso; rufous morph; collected by H.H. Smith, wing 173 mm. On the label "Megascops fulvescens Ridgway", a nomen nudem.

Distribution and habitat .-

Remnant patches of forests spread through the savannahs from northern Bolivia and Mato Grosso to Bahia; now probably extinct.

Diagnosis.-

In both morphs much paler than *lophotes* but otherwise resembling that race rather than *ustus*; upper parts less uniformly dark and more mottled than in *ustus*, scapular streaks almost white rather than otherwise.

Additional specimens examined .-

Bolivia: 1 Victoria at Confluencia Rio Madre de Dios - Rio Beni, 175 m, in swamp forest (NHRMSt); Brazil, Mato Grosso: 1 Chapada, 4 Engenho do Cap Gama (AMNH, BMNH, NHMWien); Bahia: 2 without locality, by Wucherer and Parzudaki (BMNH); Amazonas: Rio Purus, 2 Hyutanakaw (CMP) and 1 Aramuâ (NHRMSt); Para: 2 Rio Tapajoz and Rio Est at Caxiricatuba (NHRMSt) and Trinidad (AMNH); those from Rio Purus and Rio Tapajoz intermediate with ustus; wings 164-174 mm.

Derivation of name. - fulvescens: has a fulvous appearance.

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received : 22.VI.1982 distributed : 17.XII.1982