

No. 4.— *The Anoles. II. The Mainland Species from Mexico Southward*

BY THOMAS BARBOUR

INTRODUCTION

This list is in no sense final. The author is under no delusions as to its unsatisfactory nature. The final arrangement of *Anolis*, especially the indicating of phyla, of "Formen kreisen," the probable division of this unwieldy genus into several genera and a complete list of the species will not be written for many, many years. Nevertheless our knowledge of *Anolis* has advanced enormously since the appearance of the second volume of the Catalogue of Lizards in the British Museum from the pen of Dr. G. A. Boulenger in 1885.

This list then is simply an attempt to set forth our present state of knowledge.

I list those forms of which the validity and status is well established and all others concerning which there is no information to counter-indicate their validity. The synonymy is not complete nor intended so to be. It contains the important references since the work of Boulenger which I have just mentioned. For convenience, however, the original description is given and the type locality is likewise recorded as well as the place where the types are preserved. The last information, however, is not complete for some cotypes have no doubt been distributed of which I know not, while in other cases they appear to be lost.

Where species have been originally proposed under some generic name other than *Anolis* this name appears within parentheses. Boulenger's Catalogue of 1885 gives full details concerning this synonymy of years ago and this stands except where his conclusions are counter-indicated herein.

This little paper is the complement to one which I published in the Bulletin of the Museum of Comparative Zoölogy, Vol. 70, 1930, p. 103-144, in which I listed all of the Insular Anoles known to that year.

I have added occasional notes as to seasonal appearance or abundance where I have information worth recording.

It is a pleasure to record the assistance which I have had from my old friend and student Professor E. R. Dunn, who has read the whole manuscript and added many valuable notes and suggestions, as well as from my other friends, Mrs. Frederick M. Gaige, Miss Doris Cochran, and needless to say I have never written a paper which

amounted to much of anything without having benefited from the advice and sage criticism of Dr. Stejneger. No one of these scholars is, however, to be held accountable for errors of omission or commission.

Anolis aequatorialis Werner, Zoöl. Ans., **17**, 1894, p. 157 (type locality, Ecuador; type in Vienna Institute of Zoöl. and Comp. Anat.; collected by Schmarda).

Said to be allied to *A. pachypus* of Central America. The type should be re-examined.

Anolis albi Barbour, Proc. N. Engl. Zoöl. Club., **12**, 8 Feb. 1932, p. 101 (type locality, Andagoya on the San Juan River above Buenaventura, Colombia; types in Mus. Comp. Zoöl.; Dr. W. H. White leg.).

A species of the excessively rainy forest of the Choco, which seems to be without close allies among the many forms described from that region.

Anolis altae Dunn, Proc. N. Engl. Zoöl. Club., **12**, 7 Aug. 1930, p. 17 (type locality, Acosta Farm, 7000 ft. alt., Volcan Barba, Costa Rica; type, Mus. Comp. Zoöl. 29,385; collected by E. R. Dunn and Manuel Valerio).

Most closely allied to *Anolis concolor*.

Anolis andianus Boulenger, Cat. Liz. Brit. Mus. **2**, 1885, p. 60 (type locality, Milligalli, Ecuador, 6200 ft. alt.; type in Brit. Mus., 1 ♀; collected by E. Whymper).

A species somewhat similar to *Anolis chloris* but larger, with the dorsal scales tubercular rather than keeled.

Anolis antonii Boulenger, Ann. Mag. Nat. Hist., (8), **2**, 1908, p. 517, fig. 2 (type locality, San Antonio, southwestern Colombia; type in Brit. Mus., 1 ♀; collected by Merwin G. Palmer).

Anolis tolimensis Werner, Zoöl. Anz. **47**, 1916, p. 303 (type locality, Cañon [not "Coñon"] de Tolima, 1700 m. alt., Colombia; types 8 specimens in Landesmuseum, Brünn, Austria; collected by Fassl.).

The allocation of *A. tolimensis* Werner to the synonymy of *A. antonii* is probably correct but better topotypical material, together with an actual comparison of the types is obviously desirable.

Anolis apollinaris Boulenger, Proc. Zoöl. Soc., London, 1919, p. 79, fig. 4, a-b (type locality, near Bogota, Colombia; type in Brit. Mus., 1 ♀; collected by Hermano Apolinar Maria). Burt, Proc. U. S. Nat. Mus., Wash., **78**, Dec. 1930, p. 8 (Macas, Oriente, Ecuador; collected by Madira). Burt, Bull. Amer. Mus. Nat. Hist., **61**, June 11, 1931, p. 255 (many locs. in Colombia).

Burt maintains that this species is allied to *A. chrysolepis* and mentions its similarity to *A. gemmosus* with which it may be identical or subspecifically connected.

Anolis aureolus Cope, Proc. Am. Philos. Soc., **22**, 1885, p. 390 (type locality, Yucatan; types now Mus. Comp. Zoöl., 10,929 [formerly U. S. Nat. Mus. 25,858] from Yucatan and 24,850-1 and 25,854-7 in U. S. Nat. Mus.; collected Yucatan, by A. Schott; Guatemala, by Henry Hague). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 49 (no specimens). Günther, Biol. Cent. Amer. Rept., 1885, p. 45 (nominal mention). Barbour and Cole, Bull. Mus. Comp. Zoöl., **50**, 1906, p. 148 (Chichen Itza, Yucatan; in Mus. Comp. Zoöl.; collected by L. J. Cole).

Anolis acutirostris Ives, Proc. Acad. Nat. Sci. Phila., 1891, p. 459 (type locality, Citilpech, Yucatan; type, a single ♂ No. 7889, Acad. Nat. Sci. Phila. collection). Barbour and Cole, Bull. Mus. Comp. Zoöl. **50**, 1906, p. 149 (Chichen Itza, Yucatan; Mus. Comp. Zoöl. Coll.; L. J. Cole, Leg.).

Apparently a very common species in the dry scrub of central Yucatan.

Anolis baccatus Bocourt, Miss. Sci. Mex., Rept., livr. **2**, 1873, p. 59, pl. 14, fig. 14 (type locality, Mexico; type in Paris Mus., 1 ♀; collected by Sallé). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 54 (no specimens). Günther, Biol. Cent. Amer., Rept., 1885, p. 46 (nominal

mention). Cope, Proc. Am. Philos. Soc., **22**, April 17, 1885, p. 391 (diagnosis).

We have in this Museum a single specimen apparently representing this species from Sepaquite, Guatemala. I have photographs of the type in the Paris Museum.

Anolis beckeri Boulenger, Proc. Zoöl. Soc. London, 1881, p. 921 (type locality, Yucatan; types in Royal Belgian Mus., 2 ex.; collected by M. A. Boucard). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 46 (no specimens). Günther, Biol. Cent. Amer., Rept., 1885, p. 45 (nominal mention). Barbour and Cole, Bull. Mus. Comp. Zoöl., **50**, 1906, p. 149 (Chichen Itza, 1 in Mus. Comp. Zoöl.; collected by L. J. Cole).

We have this species only from the vicinity of Chichen Itza, where it seems to be rare.

Anolis binotatus Peters, Monatsb. Berl. Acad., 1863, p. 140 (type locality, Guayaquil; type no. 4685 in Berlin Mus.; collected by Consul Reisf.). Bocourt (part), Miss. Sci. Mex., Rept., livr. **2**, 1873, p. 92, livr. **3**, 1874, pl. 16, fig. 22-23 (fig. 22 is of type).

I thought I took this species in Darien, but I was mistaken and I have not seen it.

Anolis (Dactyloa) biporcatus (Wiegmann), Herp. Mex., 1834, p. 47 (type locality, not specifically mentioned, Mexico; type in Berlin Mus.).

Anolis biporcatus Bocourt, Miss. Sci. Mex., Rept., livr. **2**, 1873, p. 98, pl. 15, fig. 8 (had a cotype and others from several localities in Guatemala and "Cuba" [in errore]). O'Shaughnessy, Ann. Mag. Nat. Hist., (4), **15**, 1875, p. 274 (a short note referring Cope's *A. vittigerus* to the synonymy). Boulenger, Cat. Liz. Brit. Mus. **2**, 1885, p. 88 (many localities in Cent. Amer., Venez., Ecuador and Trinidad, these, in part at least, referable to *A. vittigerus*). Günther, Biol. Cent. Amer. Rept., 1885, p. 52 (synonymy, list of localities, part).

Anolis carolinensis (part) Duméril & Bibron, Erp. Gén., **4**, 1837, p. 127 (erroneous allocation to synonymy).

Anolis principalis (part) Gray, Cat. Liz. Brit. Mus., 1845, p. 202 (erroneous allocation to synonymy).

Anolis bourgaei Bocourt, Miss. Sci. Mex., Rept., livr. 2, 1873, p. 76, pl. 15, fig. 9 (type locality, Huatusco and Orizaba, Vera Cruz, Mexico; types first ex. in Berlin Mus., second in Paris Mus.; collector anonymous and Bourget). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 74 (no specimens).

I wish the type of the species might be found and settle the identity of this doubtful form. I had confused it with *Anolis copei* but Dr. Dunn has corrected me in this. It is not at all improbably an earlier name for what we are calling *Anolis petersii*.

Anolis bitectus Cope, Proc. Acad. Nat. Sci. Phila., 1864, p. 171 (type locality, Western Ecuador; types 2 ex. in Brit. Mus.; collected by Fraser). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 71, pl. 5, fig. 2 (types only). Burt, Bull. Amer. Mus. Nat. Hist., 61, June 11, 1931, p. 256 (Ventura, Ecuador).

I have seen no specimens of this apparently valid species.

Anolis bocourtii Cope, Jour. Acad. Nat. Sci. Phila., (2), 8, 26 Nov. 1875, p. 167 (type locality, Nauta, Peru; cotypes in Acad. Nat. Sci. Phila., Mus. Zoöl. Univ. Mich. and Mus. Comp. Zoöl.; collected by Orton). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 50 (no specimens).

Orton collected a fine series of this form. I have seen no recent material.

Anolis boettgeri Boulenger, Ann. Mag. Nat. Hist., (8), 7, 1911, p. 19 (type locality, Huancabamba [in errore] really Oxapampa, Eastern Peru, types 4 ♀ in Brit. Mus.; collected by Enrique Boettger).

A fine distinct species of which there is a topotype in the Mus. Comp. Zoöl.

Anolis bombiceps Cope, Jour. Acad. Nat. Sci. Phila., (2), 8, 26 Nov. 1875, p. 168 (type locality, Nauta, Peru; type not in Acad. Nat. Sci.

Phila., lost; collected by Orton). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 94 (no specimens).

More intensive collecting at the type locality is necessary to establish the status of this apparently valid form.

Anolis boulengeri O'Shaughnessy, Proc. Zoöl. Soc., London, 1881, p. 242, pl. 24 (type locality, Canelos, Ecuador; type a ♀ in Brit. Mus.; collected by Buckley). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 58 (a note only that the species may be a synonym of *A. punctatus*).

More material is needed to determine the status of this form also. It is most unfortunate to describe Anoles from single *female* specimens as also Boulenger did on all too many occasions.

Anolis breviceps Boulenger, Proc. Zoöl. Soc. London, 1913, p. 1031, pl. 107, fig. 1 (type locality, Peña Lisa, Condoto, Choco, Colombia, 300 ft. alt.; types 3 ex. in Brit. Mus.; collected by Dr. H. G. F. Spurrell).

Of this species we have a specimen from Andagoya, not far from the type locality. It is a good, distinct species.

Anolis buckleyi O'Shaughnessy, Proc. Zoöl. Soc. London, 1880, p. 492, pl. 49 (type locality, Canelos, Ecuador, types 2 ♂ in Brit. Mus., collected by Buckley). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 58 (no new specimens). Cope, Proc. Am. Philos. Soc., 22, Oct. 2, 1885, p. 101 (Pebas, Peru; collected by Hauxwell).

Mr. O. C. Felton has recently sent us a topotype of this species right from Canelos.

Anolis capito Peters, Monatsb. Berl. Acad. 1863, p. 142 (type locality, Costa Rica; types 2, No. 4086, in Berlin Mus.; collected by Dr. C. Hoffman). Bocourt, Miss. Sci. Mex., Rept., livr. 2, 1873, p. 101, livr. 4, 1874, pl. 16, fig. 27 (specimens from Vera Paz and Tabasco; figures head of the type). Cope, Jour. Acad. Nat. Sci. Phila., (2), 8, 1875, p. 124 (Old Harbor near Pt. Limon, Costa Rica). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 94 (description, range Tabasco to Costa Rica. Specimen from Vera Paz in Brit. Mus.). Günther, Biol. Cent. Amer. Rept., 1885, p. 52 (synonymy, list of localities).

Cope, Proc. Am. Philos. Soc., November 20, 1885, p. 276 (Nicaragua; collected by Bransford). Dunn, Proc. New England Zoöl. Club, **12**, August 7, 1930, p. 18 (diagnosis, distribution).

Anolis carneus Cope, Proc. Acad. Nat. Sci. Phila., 1864, p. 171 (type locality, Lower Vera Paz forests, Guatemala; type an adult ♀ and juvenile ♂ in Brit. Mus.; collected by Osbert Salvin).

Anolis longipes Cope, Proc. Am. Philos. Soc., **31**, Dec. 23, 1895, p. 343 (type locality, Palmar and Boruca, Costa Rica; type from Palmar in Amer. Mus. Nat. Hist. No. 16,350; Boruca; Amer. Mus. Nat. Hist. 16,351-2; collected by Cherrie). Dunn, Proc. N. Engl. Zoöl. Club, **12**, August 7, 1931, p. 21 (synonymy, diagnosis, distribution). Occurs from Mexico to Darien.

Anolis chloris Boulenger, Proc. Zoöl. Soc. London, 1898, p. 110, pl. 10, fig. 3 (type locality, Paramba, Ecuador; type 1 ♂ in Brit. Mus.; collected by W. F. H. Rosenberg).

The Museum has a paratype from Paramba.

Anolis chrysolepis Duméril & Bibron, Erp. Gén., **4**, 1837, p. 94 (type locality, Guyana [French Guiana & Surinam]; types 2 specimens in Paris Museum). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 89 (synonymy, redescription, new localities — some obviously wrong). Barbour, Bull. Mus. Comp. Zoöl. **70**, April, 1930, p. 118 (synonymy). Burt, Bull. Amer. Mus. Nat. Hist., **61**, June 11, 1931, p. 257 (many localities in British Guiana; crit.).

The common, large, woodland Anole of Trinidad, occurring also in the Guianas and probably in the forest region of the Orinoco delta.

Anolis concolor Cope, Proc. Acad. Nat. Sci. Phila., 1862, p. 180 (type locality, Nicaragua; types 4 in U. S. Nat. Mus., No. 6055; collected by Charles Wright). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 74 (no specimens). Günther, Biol. Cent. Amer., Rept., 1885, p. 48 (nominal mention only). Dunn, Proc. N. Engl. Zoöl. Club, **12**, August 7, 1930, p. 17 (discussion).

Anolis refulgens (non Schlegel) Hallowell, Proc. Acad. Nat. Sci. Phila., 1860, p. 480 (Nicaragua).

The Museum has a cotype Mus. Comp. Zoöl. No. 22,341 from Nicaragua and a good series from Old Providence Island which I got last year.

Anolis copei Bocourt, Miss. Sci. Mex., Rept., livr. **2**, 1873, p. 77, pl. 15, fig. 10 (type locality, Santa Rosa de Pansos, Guatemala; types in Paris Museum; collected by Miss. Sci. Mex.). Cope, Jour. Acad. Nat. Sci. Phila., (2), **8**, 1875, p. 121 (3 in Phila. Acad. from Old Harbor, near Pt. Limon, Costa Rica). Cope, Proc. Am. Philos. Soc., **22**, November 11, 1885, p. 276 (Nicaragua, collected by Bransford). Dunn, Proc. N. Engl. Zoöl. Club, **12**, August 7, 1930, p. 19 (discussion, synonymy).

Anolis copii Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 65 (synonymy, description. "W. Ecuador" in errore?), Günther, Biol. Cent. Amer. Rept., 1885, p. 47 (Costa Rica; collected by Salvin). Boulenger, Proc. Zoöl. Soc., London, 1898, p. 111 (Paramba, Ecuador, collected by Rosenberg).

Anolis fraseri (part) Günther, Proc. Zoöl. Soc., London, 1859, p. 407 (type locality, Andes of Western Ecuador; types in Brit. Mus.; collected by Fraser; 1 ♀ — *A. copei* included in series of cotypes). Bocourt, Miss. Sci. Mex., Rept., livr. **2**, 1873, pl. 15, fig. 10 (figures ♀ cotype of *A. fraseri* which was really an *A. copei*.)

Anolis brevipes Boettger, Cat. Rept. Senck. Mus., **1**, 1893, p. 57 (type locality, Cairo Plantation, La Junta, near Pto. Limon, Costa Rica; type 1 ♀ Senckenberg Mus., No. 5047, 1 a; collected by Carl Fleishmann).

Anolis obtusirostris Peters, Mon. Berl. Acad., Jan. or Feb., 1874, p. 741 (type locality, Chiriqui Province, Panama; type 1 ex. Berlin Mus., No. 7,829). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 95 (redescription, no specimens).

Anolis petersii Schmidt, Smith. Misc. Coll., **89**, 1, March 16, 1933, p. 9 (Gatun, Panama Canal Zone).

I agree with Dunn that this is the southern representative of *Anolis petersii* which occurs in Mexico and part of Guatemala. This species, or perhaps really better subspecies, ranges southward to Panama. It is the rather sluggish, heavy bodied, green Anole which is not uncommon in wooded areas of the Canal Zone especially

during the rainy season. I do not mean by this that it is strictly a forest species for it is not.

Dr. Stejneger writes me that the Library of Congress copy of the Berlin Monatsberichte has the original covers and internal evidence shows that Peters' important paper appeared between 3 Jan. and 10 Feb. 1874. *Copei* of Bocourt definitely appeared in 1873, for the Smithsonian copy of his work is in the original covers also.

Anolis crassulus Cope, Proc. Acad. Nat. Sci. Phila., 1864, p. 173 (type locality, Coban, Guatemala, 2 spec., and "Central America," 1 spec.; types in Brit. Mus. and Acad. Nat. Sci. Phila. 8,023-27, Central Guatemala, Vaux coll., a probable cotype in U. S. Nat. Mus., No. 13,977 from Nicaragua). Bocourt, Miss. Sci. Mex., Rept., livr. 2, 1873, p. 82, livr. 4, 1874, pl. 17, fig. 17 (Plateau of Guatemala). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 81 (synonym and description). Günther, Biol. Cent. Amer., Rept., 1885, p. 50, pl. 27, fig. F. (Vera Cruz, fide Sumichrast *in litt.* only). Cope, Proc. Am. Philos. Soc., 22, November 20, 1885, p. 276 (Nicaragua; collected by Bransford).

Dunn says this species is distinct from *Anolis tropidonotus* of Mexico. There are none in this Museum.

Anolis cumingii Peters, Mon. Berl. Acad., 1863, p. 140 (type locality, Mexico; type 1 ♀ in Berlin Mus.; collected by Herr. Cuming). Bocourt, Miss. Sci. Mex., Rept., livr. 2, 1873, p. 89, livr. 3, 1874, pl. 16, fig. 20 (fig. of type and description of ♀ type and ♂ in Milan Mus.). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 80 (no specimens, difference from *A. sallaei* noted). Günther, Biol. Cent. Amer. Rept., 1885, p. 50 (nominal mention only).

Another species of very unsatisfactory status. I have seen no specimens.

Anolis cupreus Hallowell, Proc. Acad. Nat. Sci. Phila., 1860, p. 481 (type locality, Nicaragua; types in U. S. Nat. Mus. and Mus. Comp. Zoöl.). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 80 (synonymy, description, records for Guatemala and Costa Rica).

Günther, Biol. Cent. Amer., Rept., 1885, p. 50 (synonymy, copy of Blg. 1. c., list of locality records). Boettger, Cat. Rept. Senckenb. Mus., 1, 1893, p. 59 (San José, C. R.). Dunn, Proc. N. Engl. Zoöl. Club, 12, August 7, 1930, p. 17 (Discussion of status, distribution). Schmidt, Field Mus. Publ. Zoöl., 12, 16, Nov. 21, 1928, p. 195 (Salvador).

Anolis hoffmanni Peters, Monatsb. Berl. Acad., 1863, p. 142 (Costa Rica, collected by Hoffmann). Bocourt, Miss. Sci. Mex., Rept., livr. 2, 1873, p. 86, pl. 15, fig. 15-16 (fig. of type and a ♂ from Costa Rica, suspects close similarity with *cupreus*).

Anolis dollfusianus Bocourt, Miss. Sci. Mex., Rept., livr. 2, 1873, p. 84, livr. 3, 1874, pl. 16, fig. 19 (3 cotypes from forest near San Agustín, and 1 from Volcan Atitlán, alt. 1,200 m., Guatemala, collected by Dollfuss of Miss. Sci. Mex.).

Dunn remarks that this species is common in Upper Costa Rica and Nicaragua. It, with *Anolis intermedius*, is very common about San José. There are large series in the Museum as well as cotypes.

Anolis cymbops Cope, Proc. Acad. Nat. Sci. Phila., 1864, p. 173 (type locality, Vera Cruz, Mexico; type 1 ♀ in Brit. Mus.). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 73 (redescription). Günther, Biol. Cent. Amer. Rept., 1885, p. 48 (nominal mention only).

I have never seen this species at all.

Anolis damulus Cope, Proc. Acad. Nat. Sci. Phila., 1864, p. 169 (type locality, unknown; type in Brit. Mus., ♂). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 47, pl. 2, fig. 2 & 2 a (redescription; type poorly figured).

Dr. A. G. Ruthven, who has examined the type of this species tells me he believes it to be valid. No further information as to the range of the species has been forthcoming.

Anolis eulaemus Boulenger, Ann. Mag. Nat. Hist., (8), 2, 1908, p. 516, fig. 1 (type locality, Las Pavas, southwestern Colombia; type in Brit. Mus., 1 ♂; collected by Merwin G. Palmer).

Boulenger says that this species is related to *Anolis fasciatus* of which I suspect it may be but a subspecies.

Anolis fasciatus Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 59, pl. 3, fig. 1 (type locality, Guayaquil, Ecuador; type 1 ♂ in Brit. Mus.; collected by Mr. Fraser). Peracca, Bol. Mus. Torino, **19**, 465, 1904, p. 3 (3 examples Rio Peripa, Ecuador shows that *elegans* goes into synonymy and cites Boulenger as agreeing). Burt, Bull. Amer. Mus. Nat. Hist., **61**, June 11, 1931, p. 258 (near Bucay; Sumaco Mts., and Normandia, Ecuador).

Anolis elegans Boulenger, Proc. Zoöl. Soc. London, 1898, p. 109, pl. 10, fig. 2 (type locality, Chimbo, Ecuador; type 1 ♂ in Brit. Mus.; collected by W. F. H. Rosenberg).

Anolis irregularis Werner, Verh. Ges. Wien., **51**, 1901, p. 594 (type locality, unknown; type a ♂ in Berlin Mus., fide Dr. O. Wettstein *in litt.*).

Another species of which, I am sorry to say, we have no examples.

Anolis festae Peracca, Bol. Mus. Torino, **19**, 465, 1904, p. 4 (type locality, Balzar, humid coastal plain of Ecuador; types 2 ♂ and 1 ♀ in the Royal Museum, Turin, Italy; collected by Dr. E. Festa).

An apparently valid species known from the types only.

Anolis fraseri (part) Günther, Proc. Zoöl. Soc. London, 1859, p. 407, (type locality, Andes of Western Ecuador; types in Brit. Mus., originally included 1 ♀ *A. copei*; collected by Fraser). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 65, pl. 4 (specimens from Quito and Nañegal beside type; no mention as to which one is figured). Burt, Bull. Amer. Mus. Nat. Hist., **61**, June 11, 1931, p. 258 (Rio Pescado and Bucay, Ecuador).

Anolis deVillei Boulenger, Bull. Soc. Zoöl. France, 1880, p. 42 (type locality, Quito, Ecuador; type 1 in Paris Museum).

Another Ecuadorian species of which I have not seen specimens.

Anolis fusco-auratus D'Orbigny, Voy. Amer. Mer., Rept., pl. 3, fig. 2, (type locality, "Chile"; type in Paris Museum, collected by D'Orbigny). Duméril & Bibron, Erp. Gén., **4**, 1837, p. 110 (redescription); Guichenot in Gay, Hist. Chile Rept., 1848, p. 21. Bocourt, Nouv. Archiv. Paris Mus., **6**, 1870, Bull. p. 15 (type locality corrected Prov. Moxas, Bolivia). Miss. Sci. Mex., Rept. livr. **2**, 1873, pl. 14, fig. 16 (Bolivia, Quito & Brazil). Boulenger, Bull. Soc. Zoöl. France, **5**, 1880, p. 42 (Quito); Cat. Liz. Brit. Mus., **2**, 1885, p. 48 (description, synonymy, additional locality records); Zoöl. Rec. 1887, rept. p. 10 (*A. bruneti* = *A. fusco-auratus*). Peracca, Bull. Mus. Torino, **19**, 465, 1904, p. 2 (Gualaquiza, Ecuador). Burt, Proc. U. S. Nat. Mus., Wash., **78**, 6, December, 1930, p. 8 (Hyutaihan, Lower Amazon, Brazil). Burt, Amer. Mus. Nat. Hist., **61**, June 11, 1931, p. 259 (many localities in British Guiana, Colombia and Ecuador).

Dactyloa fusco-aurata Fitzinger, Syst. Rept., 1843, p. 67. Tschudi Faun. Peru, 1845, p. 24 (Vitoc, Peru).

Anolis viridaeneus, Peters, Mon. Berl. Ac., 1863, p. 147 (Quito; type, compared with type of *fusco-auratus* in Paris by Bocourt, declared identical).

Anolis brumeti (sic) Thominot, Bull. Soc. Philom., (7), **11**, 1887, p. 184 (type 1 ex. Brazil, in Paris Mus., collected by Brunet).

We have this species from the Rio Ucayali, Peru where it is common, as well as from Buenavista, Dept. of Santa Cruz, Bolivia. From the latter locality Mr. José Steinbach has sent a fine suite to the University of Michigan Museum.

Anolis gadovii Boulenger, Proc. Zoöl. Soc., London, 1905, **2**, p. 245 (type locality, Tierra Colorada, So. Guerrero, Mexico; type in Brit. Mus.; collected by Gadow).

Known from the type only.

Anolis gemmosus O'Shaughnessy, Ann. Mag. Nat. Hist., (4), **15**, 1875, p. 280 (type locality, unknown; type in Brit. Mus.; collected by J. Brenchley). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 60, pl. 3, fig. 2 (description and locality, Intac, Ecuador). Fowler, Proc. Acad. Nat. Sci. Phila., 1913, p. 169 (Bucay, Ecuador). Burt, Bull. Amer. Mus. Nat. Hist., **61**, June 11, 1931, p. 256.

Burt suspects that *Anolis apollinaris* may be a synonym or at most a Colombian subspecies of this form. I suspect that the latter surmise is the correct one.

Anolis godmani Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 85 (type locality, Guatemala; (This cotype in Brit. Mus. is *A. limifrons*). Mt. Irazu, Costa Rica; cotypes 5 in Brit. Mus., 2 in Mus. Comp. Zoöl.; collected by Salvin & Godman). Dunn, Proc. N. Engl. Zoöl. Club, **12**, August 7, 1930 (status).

According to Dunn this species differs from *Anolis limifrons* only in having keeled ventrals not smooth ones.

The Museum has two specimens from Navarro, Costa Rica, taken by Dr. E. R. Dunn. He informs me that it is really an annectant between *A. limifrons* and *A. tropidogaster*. We agree that as it has a rather well defined range the name had best be maintained.

Anolis gracilipes Boulenger, Proc. Zoöl. Soc. London, 1898, p. 112, pl. 11, fig. 3 (type locality, Paramba, Ecuador; types 4 ex. in Brit. Mus.; collected by W. F. H. Rosenberg).

I know of no specimens other than the types having been taken.

Anolis granuliceps Boulenger, Proc. Zoöl. Soc. London, 1898, p. 111, pl. 11, fig. 2 (type locality, Paramba, Ecuador; types several specimens in Brit. Mus.; collected by W. F. H. Rosenberg).

Another form known from the type series only.

Anolis guentheri Bocourt, Miss. Sci. Mex., Rept., livr. **2**, 1873, p. 61, pl. 14, fig. 15 (type locality, Mexico; type 1 ex. Paris Mus., ex. Mus. Milan). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 54 (redescription, no specimens). Cope, Proc. Am. Philos. Soc., **22**, April 17, 1885, p. 391 (diagnosis).

I know of no specimen of this species with a definite locality nor have I ever seen a single individual.

Anolis heliactin Cope, Proc. Acad. Nat. Sci. Phila., 1864, p. 172 (type locality, Mexico; type, in poor condition, head only well preserved; 1 ex. Acad. Nat. Sci. Phila., No. 7,914 ex. Paris Mus.). Bocourt, Miss. Sci. Mex. Rept. livr. 2, 1873, p. 106, pl. 8, fig. 4, 4a, 4b, 4c, pl. 16, fig. 32 (Oaxaca, Mex., 1 ex. Paris; collected by Sallé). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 72, (redescription, 1 example, no locality, Brit. Mus.).

A southern Mexican species which I have never seen but which, from Bocourt's figure, must be a singularly lovely little form.

Anolis humilis Peters, Mon. Berl. Akad., 1863, p. 138 (type locality, Veragua; type no. 500 Berl. Mus.; collected by von Warszewicz; cotype in Paris Mus.). Bocourt, Miss. Sci. Mex., Rept., livr. 3, 1873, p. 105, pl. 8, fig. 7 pl. 16, fig. 31 (notes and figures of a cotype). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 82 (description, record for "Vera Paz," [loc.?]). Dunn, Proc. N. Engl. Zoöl. Soc., 12, 1930, p. 16, 23. Schmidt, Smith. Misc. Coll., 89, 1, March 16, 1933, p. 8 (Cerro Brujo, Prov. Colon, Panama).

Anolis quaggulus Cope, Proc. Am. Philos. Soc., 22, April 17, 1885, p. 391 (type locality; San Juan R., Nicaragua; type 1 ex., No. 24,979, U. S. Nat. Mus.; collected by R. Kennicott). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 83 (description but had seen no specimen). Cope, Proc. Am. Philos. Soc., 22, November 20, 1885, p. 276 (Nicaragua, coloration).

It occurs from Darien to Nicaragua.

We have an enormous series from many places in Costa Rica and Honduras as well as western Panama.

Anolis impetigosus Cope, Proc. Acad. Nat. Sci. Phila., 1864, p. 174 (type locality, unknown; type 1 ex. Brit. Mus.). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 55, pl. 2, fig. 3 (description, no new specimens).

Known from an unique with no locality. Imagine making such a specimen the type of a new species; but this was not considered a sin in 1864!

Anolis incompertus incompertus Barbour, Proc. N. Engl. Zoöl. Club, 12, 8 Feb. 1932, p. 99 (type locality, Villavicencio, Terr. of San

Martin, Colombia; type series in Mus. Comp. Zoöl.; Brother Niceforo Maria leg.).

Probably near *A. lemniscatus* and from a region hitherto unexplored herpetologically. Villavicencio is near the edge of the great Amazonian forest in the lowlands of southeastern Colombia.

Anolis incompertus nicefori Barbour. Proc. N. Engl. Zoöl. Club, **12**, 8 Feb. 1932, p. 100 (type locality, Humbo, Dept. of Boyacá, Colombia; types in Mus. Comp. Zoöl., Brother Niceforo Maria leg.).

I take this to be the representative of *A. i. incompertus* in the highlands of Boyacá.

Anolis insignis Cope, Proc. Acad. Nat. Sci. Phila., 1871, p. 213 (type locality, "San José" — probably the forests of La Palma — Costa Rica; type formerly in U. S. Nat. Mus., now lost; collected by Van Patten). Jour. Acad. Nat. Sci. Phila., (2), **8**, 1875, p. 120, pl. 24, fig. 1 (description). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 63 (description, no new localities). Dunn, Proc. N. Engl. Zoöl. Club, **12**, August 7, 1930, p. 21 (diagnosis).

A fine, big, forest species rare in upper Costa Rica. We have it from La Palma on the old road from Guapiles to San José.

Anolis intermedius Peters, Mon. Berl. Akad., 1863, p. 143 (type locality, Veragua; type 1 ♂ in Berlin Mus.). Bocourt, Miss. Sci. Mex., Rept., livr. **3**, 1873, p. 69, pl. 15, fig. 4 (description and notes). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 78 (description, synonymy, new locality records). Cope, Proc. Am. Philos. Soc., **31**, 1897, p. 344 (San José, C. R.). Dunn, Proc. N. Engl. Zoöl. Club, **12**, August 7, 1930, p. 18 (diagnosis, distribution).

Anolis nannodes Cope, Acad. Nat. Sci. Phila., 1864, p. 173 (type localities, Coban, Vera Paz, Guatemala; 2 ex. in Brit. Mus.; 1, "Arriba" [*i.e.* highlands], Costa Rica, U. S. Nat. Mus. 12,206 [3 ex.] and 1, Jalapa, Mexico, formerly in U. S. Nat. Mus., now lost). Bocourt, Miss. Sci. Mex., Rept., livr. **3**, 1873, p. 71, pl. 15, fig. 5.

Anolis tessellatus O'Shaughnessy, Ann. Mag. Nat. Hist., (4), **15**, 1875, p. 279 (type locality, Costa Rica; type in Brit. Mus.).

Said to be not uncommon around San José. We have it from Jalapa, Mexico, as well as from Mt. Irazú and the Cerro Carpintero, Costa Rica.

Anolis jacare Boulenger, Ann. Mag. Nat. Hist. (7), **11**, 1903, p. 482 (type locality, Merida, Venezuela, alt. 1,600 m.; types in Brit. Mus.; collected by Briceño). Burt, Proc. U. S. Nat. Mus., Wash., **78**, Dec. 1830, p. 8 (Tapatá, Dept. Norte de Santander, Colombia). Burt, Bull. Amer. Mus. Nat. Hist., **61**, June 11, 1931, p. 259 (Rio Chama, Rio Alborregas and Rio Milla, Venezuela).

A fine, well defined species which we have from Merida.

Anolis kugleri Roux, Verh. Naturf. Ges. Basel, **40**, 2, 1929, p. 29 (type locality, El Mene, Acosta distr., Prov. Falcon, Venezuela; type 1 ♀ in Basel Mus. No. 9,927).

Roux allies this form on the one hand with *Anolis fusco-auratus* of the Amazonian Forest and on the other with *Anolis antonii* of Colombia.

Anolis kidderi Ruthven, Occ. Papers, Mus. Zoöl. Univ. Mich., 257, 1933, p. 1 (type locality: Merida, Yucatan; type 1 specimen in Mus. Zoöl., Univ. Mich., no. 72851).

Known only from type locality. Probably related to *A. ustus*, *nebulosus* and *sallaei*, according to describer.

Anolis laeviventris Wiegmann, Herp. Mex., 1834, p. 47 (type locality, Mexico; type 1 example ♂ in Berlin Mus.?). Peters, Mon. Berl. Acad., 1863, p. 141 (redescription). Bocourt, Miss. Sci. Mex., Rept., livr. **3**, 1873, p. 87, pl. 16, fig. 18-18 a. Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 76 (copy of description).

We have not this species in the collection.

Anolis latifrons Berthold, Abh. Ges. Gottingen, **3**, 1847, p. 6, pl. 1, fig. 2 (type locality, Popayan, Colombia, type in Mus. Göttingen?). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 62 (redescription only). Barbour, Occ. Papers Mus. Zoöl. Univ. Mich., no. 129, 1923, p. 5

(Sapo Mts., E. Panama and synonymy). Dunn, Proc. N. Engl. Zoöl. Club, **12**, August 7, 1930, p. 21 (diagnosis). Burt, Proc. U. S. Nat. Mus., Wash., **78**, December 1930, p. 8 (Turbo, Colombia). Burt, Bull. Amer. Mus. Nat. Hist., **61**, July 11, 1931, p. 259 (Quesada R., W. Colombia; criticism).

Anolis princeps Boulenger, Ann. Mag. Nat. Hist., (7), **9**, 1902, p. 54 (type localities, St. Javier, Salidero, Rio Lita, and Paramba, N. W. Ecuador; types in Brit. Mus.). Peracca, Bol. Mus. Torino, **19**, 465, 1904, p. 4 (forests of Rio Peripa, Ecuador; collected by Festa).

A splendid, giant species of the deep, rainforest where Brooks and I found it in Eastern Panama and which we have also from the Choco of Colombia.

Anolis lemniscatus Boulenger, Proc. Zoöl. Soc. London, 1898, p. 113, pl. 10, fig. 4 (type locality, Chimbo, Ecuador; types in Brit. Mus.). Peracca, Bol. Mus. Torino, **19**, 465, 1904, p. 3 (Rio Peripa, Ecuador). Burt, Bull. Amer. Mus. Nat. Hist., **61**, July 11, 1931, p. 260 (Bucay, Ecuador).

The Museum is fortunate in having a cotype of this species from Chimbo.

Anolis lemurinus Cope, Proc. Acad. Nat. Sci. Phila., 1861, p. 213 (type locality, Veragua, probably Cucuyos as in *A. limifrons*): types 3 ♂ and 1 ♀ in Acad. Nat. Sci. Phila., now lost; collected by R. W. Mitchell. Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 86 (copy of original description). Schmidt, Smith. Misc. Coll., **89**, 1, March 16, 1933, p. 8 (diagnosis; Mt. Pirri, Darien).

Anolis (Dracontura) vittigerus (Cope), Proc. Acad. Nat. Sci. Phila., 1862, p. 192 (Truando R., Colombia; cotypes in Acad. Nat. Sci. Phila. and U. S. Nat. Mus. No. 4,332; collected by Schott on the Michler Expedition). Dunn, Proc. N. England. Zoöl. Club, **12**, August 1930, p. 18 (diagnosis, synonymy).

Anolis palpebrosus Peters, Mon. Berl. Akad., Jan. or Feb. 1874, p. 740 (type locality, Chiriqui Prov., Panama; type Berlin Mus. No. 7,868). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 77 (redescription, no specimens). Dunn, Proc. Acad. Nat. Sci. Phila., **84**, March 22, 1932, p. 27 (records, specimens from Tela, Lancetilla, Potrerillos, Lake Yojoa, Patuca and La Ceiba, Honduras).

Anolis frontatus Thominot, Bull. Soc. Philom. Paris, (7), **11**, 1887, p. 185 (type locality, Darien; type Paris Mus. No. 1,669, Alpha; collected by Viguiet).

Anolis biporcatus Peracca, Bol. Mus. Torino, **19**, 465, 1904, p. 4 (Punta de Sabana, Darien; collected by Festa). Boulenger, Proc. Zool. Soc. London, 1898, p. 113 (Paramba, Ecuador; collected by Rosenberg).

Anolis binotatus Barbour, Occ. Papers, Mus. Zool. Univ. Mich., **129**, 1923, p. 6 (Darien, colors in life).

Schmidt has made a good case for the determination of the Mt. Pirri specimen in Washington, and Dunn feels sure that this arrangement of synonyms is probably now correct. I owe him a deep debt of gratitude for setting me straight on this species. It really seems to be well set off from Peters' *A. binotatus* which is still known only from the type from Guayaquil.

Anolis lentiginosus O'Shaughnessy, Ann. Mag. Nat. Hist., (4), **15**, 1875, p. 279 (type locality, Surinam; type 1 ex. in Brit. Mus.). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 93, pl. 6, fig. 1 (description, synonymy). Van Lidth de Jeude, Notes Leyden Mus. **25**, 1904, p. 88 (Hanie, Gonini R., Surinam).

This species is apparently confined to Dutch Guiana. I have not seen specimens.

Anolis leptoscelis Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 92, pl. 5, fig. 3 (= *A. nitens* O'Shaughnessy, non Wagler; var. locs. in Peru, i.e. Pebas and Yurimaguas).

Anolis macropus Cope, Proc. Am. Philos. Soc., **25**, Nov. 7, 1885, p. 101 (type locality, Pebas, Peru; type formerly in Acad. Nat. Sci. Phila., now lost).

Anolis leptoscelis Boulenger, Zool. Rec., 1886, Rept. p. 13 (= *A. macropus* Cope).

Another little known species of the Amazonian Forest. I know of no recent specimens.

- Anolis limifrons* Cope, Proc. Acad. Nat. Sci. Phila., 1862, p. 178 (type locality, Cucuyas, [sic], Cucuyos, Veragua Prov., Panama [an abandoned mine on the Rio Santiago]; type, Acad. Nat. Sci. Phila. 7,900-7,901). Bocourt, Miss. Sci. Mex., Rept., livr. 3, 1873, p. 65, pl. 14, fig. 20 (redescribed). Barbour, Occ. Papers, Mus. Zoöl. Univ. Mich., No. 129, 1923, p. 6 (Mt. Sapo, E. Panama). Dunn, Proc. N. Engl. Zoöl. Club, 12, August 7, 1930, p. 19 (synonymy, diagnosis, distribution). Schmidt, Smith, Misc. Coll., 89, 1, March 16, 1933, p. 9 (many localities, Canal Zone and Panama).
- Anolis pulchripes* Peters, Monatsb. Ac. Berl. Jan. or Feb. 1874, p. 739 (type locality, Chiriqui Prov., Panama; type 1 ex. in Berlin Mus.). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 53 (redescription, no specimens). Type examined by Dr. E. R. Dunn.
- Anolis schiedii* Garman, Proc. Boston Soc. Nat. Hist., 18, 1876, p. 407, Panama.
- Anolis rivieri* Thominot, Bull. Soc. Philom. Paris, (7), 6, 1882, p. 251 (type locality, Panama; type 1 ex. in Paris Mus.; collected by M. Rivière).
- Anolis sallaei* Barbour, Bull. Mus. Comp. Zoöl., 46, 1906, p. 225 (Pearl Islands, Bay of Panama). Barbour, Occ. Papers, Mus. Zoöl. Univ. Mich., No. 129, 1923, p. 6.
- Anolis rodriguezii* Bocourt, Miss. Sci. Mex., Rept., livr. 2, 1873, p. 62, pl. 13, fig. 1 (type locality, Pansos, Rio Polochic, Guatemala; type in Paris Mus.; collected by Juan Rodriguez). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 49 (suspects not different from *A. fusco-auratus*, but had no material). Cope, Proc. Am. Philos. Soc., 22, November 20, 1885, p. 276 (Nicaragua; collected by Bransford). Cope, id. loc. p. 391 (diagnosis).
- Anolis trochilus* Cope, Proc. Acad. Nat. Sci. Phila., 1871, p. 215 (type locality, San José, Costa Rica; type, Acad. Nat. Sci. Phila., 7,804, ♂, somewhat dried but in fine condition; collected by Van Patten). Jour. Acad. Nat. Sci. Phila., (2) 8, 1876, p. 121 (Costa Rica and Nicaragua) id. p. 157 (Buhio, [sic], Bohio Soldado, Panama), Proc. Am. Philos. Soc., 31, 1897, p. 334 (Palmar and Sierpe, Costa Rica). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 50 (redescription). Günther, Biol. Cent. Amer., Rept., 1885, p. 45 (nominal mention only).
- Anolis bransfordii* Cope, Proc. Acad. Nat. Sci. Phila., 1874, p. 67 (type locality, Nicaragua; type in Acad. Nat. Sci. Phila., 7,890).

♂ not quite adult, soft and bleached but in good condition for study; collected by Dr. John T. Bransford, U. S. N.). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 50 (no specimens). Günther, Biol. Cent. Amer., Rept., 1885, p. 45 (nominal mention only). Cope, Proc. Am. Philos. Soc., **22**, March 27, 1885, p. 183 (Nicaragua; U. S. Nat. Mus. 13,739; collected by Moser). Cope, id. loc. p. 391 (diagnosis).

This abundant little lizard found in the dry scrub as well as in the rainforest is a most confusing species. As I have it, it is possibly composite. Dunn has seen the types of *limifrons*, *rivieri*, *pulchripes* and *rodriguezi* and declares them all the same species. However, a Mus. Comp. Zoöl. specimen from Peralta, Costa Rica and Acad. Nat. Sci. 7,890 from Machuco, Nicaragua, type of *bransfordii*, are not in agreement with each other nor with the general run of *trochilus*, *limifrons* specimens. These two are the only two specimens of the general type of *limifrons* that seem to differ considerably. They may be merely variant individuals. Of course the northern and southern specimens may also turn out to be separable races.

Anolis lindeni Ruthven, Proc. Biol. Soc. Wash., **25**, 1912, p. 163 (type locality, Santarem, Brazil; type an adult ♂, No. 8,306, Mus. Comp. Zoöl.; collected by Charles Linden).

Known from the unique type, a well preserved adult male.

Anolis liogaster Boulenger, Proc. Zoöl. Soc., London, 1905, **2**, p. 245 (type locality, Omilteme, Guerrero, Mexico; types ♂ & ♀ in Brit. Mus.; collected by Gadow).

Anolis lionotus Cope, Proc. Acad. Nat. Sci. Phila., 1861, p. 210 (type locality, Cucuyas, (sic) Cucuyos, Veragua [Cf. sub. *A. limifrons*]; type 1 ex. in Acad. Nat. Sci. Phila., No. 7,909; collected by R. W. Mitchell). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 70 (copy of original description). Burt, Bull. Amer. Mus. Nat. Hist., **61**, June 11, 1931, p. 260 (Boca de la Raspadura, Colombia).

Anolis oxylophus Cope, Jour. Acad. Nat. Sci. Phila., (2), **8**, Nov. 26, 1875, p. 123, pl. 24, fig. 4, pl. 28, fig. 5 (type locality, omitted. It

was Costa Rica; types 2, U. S. Nat. Mus. Nos. 30,556-7; collected by W. M. Gabb). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 85 (redescription, no specimens). Cope, Proc. Am. Philos. Soc., **11**, November 20, 1885, p. 276 (Nicaragua, collected by Bransford).

Anolis rixii Boulenger, Proc. Zoöl. Soc. London, 1894, p. 727, pl. 48, fig. 1 (type locality, Chontales mines, Nicaragua; type 1 ♂ in Brit. Mus., No. 94-10-1-12; collected by R. A. Rix).

We have this species from Chontales, Nicaragua, as well as from several localities in Costa Rica and from western Panama to the Canal Zone. It occurs from Nicaragua to Colombia.

Anolis longicrus Roux, Zoöl. Anz., **31**, 1907, p. 762 (type locality, Surinam; ♂ cotype Neuchatel, ♀ Basle).

I have, thanks to Dr. Roux, seen a photograph of the type of this species and believe it allied to, if not identical with, *Anolis chrysolepis*.

Anolis macrolepis Boulenger, Ann. Mag. Nat. Hist., (8), **7**, 1911, p. 21 (type locality, Novita, Rio Tamana and Condoto, Choco, southwestern Colombia; 150 ft. alt.; types 1 ♀ and 2 ♂ in Brit. Mus.; collected by Merwin G. Palmer).

Another little known species of the Chocoan forest which I have never seen.

Anolis macrophallus Werner, Mit. Zoöl. Mus. Hamburg, **34**, 1917, p. 32 (type locality, San José de Guatemala; type in Hamburg Mus., fide Dr. O. Wettstein *in litt.*).

A small form apparently allied to *A. cupreus* or *A. godmani* or both and known from the type only.

Anolis maculiventris Boulenger, Proc. Zoöl. Soc. London, 1898, p. 111, pl. 11, fig. 1 (type locality, Paramba, N. W. Ecuador, 2 ex. in Brit. Mus.).

A good, valid species which we have from Dr. Spurell's Chocoan collection; Ex. Brit. Mus. in exchange.

Anolis mariarum Barbour, Proc. N. Engl. Zoöl. Club, **12**, 8 Feb. 1932, p. 100 (type locality, Sampedro, 45 km. north of Medellín, Antioquia, Colombia; type series in Mus. Comp. Zoöl., Brother Niceforo Maria leg.).

One of the series allied to *A. chloris*.

Anolis meridionalis Boettger, Zeit. Naturw., **58**, 1885, p. 215, p. 437 (type locality, Paraguay; type originally in a dealer's possession, subsequently lost. Fide Mertens *in litt.*).

Anolis holotropis Boulenger, Ann. Mag. Nat. Hist., (6), **15**, 1895, p. 522 (type locality, Matto Grosso, Brazil; type 1 ♀ in Brit. Mus.; collected by C. Ternetz).

There is a fine series of this pretty little species in the Academy of Natural Sciences of Philadelphia. It was collected at Chapada, Matto Grosso, Brazil by H. H. Smith and from it we have received several specimens in exchange.

Anolis microtus Cope, Proc. Acad. Nat. Sci. Phila., 1871, p. 214 (type locality, San José, Costa Rica; type in U. S. Nat. Mus., No. 31,282; collected by Van Patten). Jour. Acad. Nat. Sci. Phila. (2), **8**, Nov. 28, 1875, p. 119, pl. 24, fig. 2 (type only). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 62 (Irazu, Costa Rica). Dunn, Proc. N. Engl. Zoöl. Club, **12**, August 7, 1930, p. 21 (diagnosis, distribution).

Another of the big rainforest forms which we have from La Palma, Costa Rica, collected with *Anolis insignis*.

Anolis nebuloides Bocourt, Miss. Sci. Mex., Rept., livr. **2**, 1873, p. 74, pl. 13, fig. 10 (type locality, Putla, Oaxaca, Mexico; types 4 ex. in Paris Mus.). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 77 (Huamuchla, Mexico).

W. W. Brown has recently sent this Museum this species from Chivela, Oaxaca, Mexico. We have also a specimen from Acapulco, collected by Nelson and Goldman. (In ex. U. S. Nat. Mus.).

Anolis (*Dactyloa*) *nebulosus* (Wiegmann), *Herp. Mex.*, 1834, p. 47 (type locality not specifically mentioned = Mexico; type in Berlin Museum).

Anolis nebulosus Bocourt, *Miss. Sci. Mex., Rept.*, livr. 2, 1873, p. 68, pl. 15, fig. 3 (type a ♀ figured, others in Paris Museum from Colima, Azucar, Oaxaca, Cuernavaca). Cope, *Proc. Am. Philos. Soc.* 18, 11 August 1879, p. 261 (Batopilas, Chihuahua). Boulenger, *Cat. Liz. Brit. Mus.*, 2, 1885, p. 76, (description).

Anolis boulengerianus Thominot, *Bull. Soc. Philom.* (7), 11, 1887, (types, 3 ex., Paris Mus. from Isthmus of Tehuantepec, Mexico; collected by Sumichrast).

We have this from a number of localities in Mexico as well as from the Tres Marias Islands (Slevin leg. in exch. Calif. Acad. Sci.). Specimens taken by W. W. Brown at Cuernavaca in Morelos and Chilpancingo in Guerrero seem to be more or less intermediate with *A. nebuloides*. When the ranges of the species are completely known these forms may appear as subspecies one of the other.

Anolis (*Draconura*) *nitens* (Wagler), *Syst. Ampl.*, 1830, p. 149 (type locality, "America;" type in Berlin Museum?). Gray, *Cat. Liz. Brit. Mus.*, 1845, p. 207 (synonymy, diagnosis).

Anolis refulgens Duméril and Bibron, *Erp. Gén.*, 4, 1837, p. 91 (type from Surinam in Leyden Mus.).

Anolis (*Draconura*) *nitens* Peters, *Mon. Berl. Acad.*, 1863, p. 142 (Costa Rica; 2 in Berlin Mus.; collected by Hoffmann). Bocourt, *Miss. Sci. Mex., Rept.*, livr. 3, 1874, pl. 16, fig. 25 (figured type of *A. refulgens*).

Anolis nitens Boulenger, *Cat. Liz. Brit. Mus.*, 2, 1885, p. 91 (description). Burt, *Bull. Amer. Mus. Nat. Hist.*, 61, June 11, 1931, p. 260 (Mt. Roraima and Esmeralda near Mt. Duida, Venezuela).

Anolis nitens bondi Fowler, *Proc. Acad. Nat. Sci. Phila.*, 1913, p. 171, pl. 10 (type locality, Cariquito, Venezuela; type No. 18,277 in Acad. Nat. Sci. Phila.).

I have not seen this species.

Anolis notopholis Boulenger, Ann. Mag. Nat. Hist., (6), **17**, 1896, p. 17 (type locality, Buenaventura, Colombia; types in Brit. Mus.; collected by W. F. H. Rosenberg).

A very distinct and peculiar species, as shown by a topotype in the Mus. Comp. Zoöl.

Anolis ortonii Cope, Proc. Acad. Nat. Sci. Phila., 1868, p. 97 (type locality, Napo or Upper Marañon [probably the latter]; types formerly in Acad. Nat. Sci. Phila., now lost). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 51 (description; Pebas, Pozuzo, Peru; Canelos, Pallatanga, Guayaquil, Ecuador). Peracca, Bol. Mus. Torino, **19**, 465, 1904, p. 3 (Gualaquiza and Rio Santiago, Oriente, Ecuador; collected by Festa). Burt, Bull. Amer. Mus. Nat. Hist., **61**, June 11, 1931, p. 261 (Rio Chimate near La Paz, Rurrenabaque, Bolivia and Perené, Peru).

Anolis cyanocephalus Bocourt, Nouv. Archiv. Mus. Paris, **6**, 1870, Bull. p. 13; Miss. Sci. Mex., Rept., livr. **2**, 1873, pl. 14, fig. 7 (type locality, Cayenne [?]; type ♂ in Paris Mus. fig.).

Anolis bouvieri Bocourt, Miss. Sci. Mex., Rept., livr. **2**, 1873, p. 58, pl. 14, fig. 8 (type locality, Escuintla, Guatemala; type ♂ in Paris Mus. fig.).

Anolis bouvieri O'Shaughnessy, Ann. Mag. Nat. Hist., (4), **15**, 1875, p. 274 (Pebas, Peru; Guayaquil, Ecuador).

Anolis bouvieri O'Shaughnessy, Proc. Zoöl. Soc. London, 1881, p. 243 (Canelos & Pallatanga, Ecuador). Cope, Proc. Am. Philos. Soc. **22**, Oct. 2, 1885, p. 101 (Pebas, Peru).

A(nolis) bouvierii Cope, Proc. Am. Philos. Soc., **22**, April 17, 1885, p. 391 (diagnosis).

We have a single specimen from the Rio Ucayali, Peru.

Anolis pachypus Cope, Jour. Acad. Nat. Sci. Phila., (2), **8**, 1876, p. 123, pl. 24, fig. 3 (type locality, Pico Blanco, Costa Rica; type No. 30,683 in U. S. Nat. Mus.; collected by Gabb). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 63 (redescribed, no specimens). Dunn, Proc. N. Engl. Zoöl. Club, **12**, August 7, 1930, p. 16 (important discussion of status).

Anolis tropidolepis Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 53 (type locality, Irazu Mt., Costa Rica; types several ♂♂ & ♀♀ Brit. Mus.; collected by F. D. Godman).

Anolis curtus Boulenger, Proc. Zoöl. Soc. London, 1898, p. 919, pl. 55, fig. 2 (Cerro de la Estrella, Cartago, Costa Rica; type 1 ♂ in Brit. Mus.; collected by C. F. Underwood). (Exact topotype compared with the type of *pachypus* by Miss Cochran 5/10/28).

A Costa Rican highland form.

Anolis palmeri Boulenger, Ann. Mag. Nat. Hist., (8), **1**, 1908; p. 112 (type locality, Los Mangos, S. W. Colombia; types 1 ♂ and 1 ♀ in Brit. Mus.; collected by M. G. Palmer).

Another species known from the type alone.

Anolis pentaprion Cope, Proc. Acad. Nat. Sci. Phila., 1862, p. 178 (type locality, Truando River, Colombia; type formerly (?) in U. S. Nat. Mus., now lost; collected by A. Schott of the Lt. Michler Expedition). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 64 (description, ex., Guayaquil). Schmidt, Smith. Misc. Coll., **89**, 1, March 16, 1933, p. 10 (Bohio, Panama, loc. now under Gatun Lake).

Anolis sulcifrons Cope, Scient. Bull. Phila. Mus., **1**, 1899, p. 6, pl. 2, fig. 1 (type locality, Colombia; type in Colombian Government exhibit at Chicago, 1893. The collection was apparently made near Barranquilla. Type now in the Cope Collection, Amer. Mus. Nat. Hist., No. 38, 750). Burt, Bull. Amer. Mus. Nat. Hist., **61**, June 11, 1931, p. 262 (notes on type).

Anolis panamensis Boulenger, Proc. Zoöl. Soc. London, 1890, p. 81 pl. 13, fig. 2 (type locality, Panama; types 2 specimens Brit. Mus. No. 89-17-2-31).

Found from Nicaragua to Colombia. I have had this synonymy long since arranged as here presented, and Dunn confirms the equality of the last with the first name. (Dunn, Proc. N. Engl. Zoöl. Club, **12**, August 7, 1930, p. 20).

A sluggish, pale, lichen-like species not uncommon in the Canal Zone during the rainy season, excessively rare during the dry months.

Anolis peraccae Boulenger, Proc. Zoöl. Soc. London, 1898, p. 108, pl. 10, fig. 1 (type locality, Chimbo, Ecuador; types 6 ex. in Brit. Mus.; collected by W. F. H. Rosenberg). Peracca, Bol. Mus. Torino, **19**, 465, 1904, p. 3 (forests on Rio Peripa, Ecuador). Burt, Bull. Amer. Mus. Nat. Hist., **61**, June 11, 1931, p. 261 (Ventura, Ecuador).

We have this species from the Rio Sapayo, northwestern Ecuador, taken by Mr. W. F. H. Rosenberg.

Anolis petersii Bocourt, Miss. Sci. Mex., Rept., livr. **2**, 1873, p. 79, pl. 13, fig. 2 & pl. 15, fig. 11 (type locality, Alta Vera Paz, Guatemala; type 2 ex. in Paris Mus., No. 1,641 beta). Boulenger, Cat. Liz. Brit. Mus. **2**, 1885, p. 66 (Mexico). Dunn Proc. N. Engl. Zoöl. Club, **12**, August 7, 1930, p. 19 (diagnosis).

Anolis biporcatus Cope, Proc. Acad. Nat. Sci. Phila., 1871, p. 215 (confused comparison with *A. insignis*).

Anolis petersii bivittata Werner, Verh. Zoöl. Bot. Ges. Wien, **46**, 1898, p. 351 (type locality, Guatemala; types 2 ♂ in Munich Mus.).

Note what I have said concerning this species under the heading of *Anolis copei*.

Anolis poecilopus Cope, Proc. Acad. Nat. Sci. Phila., 1862, p. 179 (type locality, Carthagena (sic.), and the R. Truando, Colombia; types formerly in U. S. Nat. Mus., now lost; collected by A. Schott). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 84 (redescription, no specimens). Schmidt, Smith. Misc. Coll. **89**, 1, March 16, 1933, p. 9 (Cana, Panama. Notes on validity).

Anolis gaigei Barbour, Occ. Paper. Mus. Zoöl. Univ. Mich., **129**, Jan. 25, 1923, p. 6 (Records specimens from Sapo Mts., Darien).

Dr. Dunn has shown that this species, set up by Schmidt (1. c.) is the species which our Darien specimens really represent. These are the only ones in this Museum.

Anolis polylepis Peters, Monatsb. Ac. Berl., Jan. or Feb. 1874, p. 738 (type locality, Chiriqui Prov., Panama; types 12 ex. in Berlin Mus., 2 now in Mus. Comp. Zoöl.; collected by H. Ribbe).

Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 52 (redescription, no specimens). Dunn, Proc. N. Engl. Zoöl. Club, **12**, August 7, 1930, p. 20 (diagnosis, distribution).

A common form on the Volcan de Chiriqui. We have it from several stations indicating an altitudinal range of 5,000–6,000 feet.

Anolis punctatus Daudin, Hist. Nat. Rept., **4**, 1802, p. 84, pl. 48, fig. 2 (type locality, South America; type a single specimen in Paris Mus. if still in existence. "Found on Antilles, especially San Domingo."). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 57 (complete synonymy to date; description, various localities). Van Lidth de Jeude, Notes Leyden Mus., **20**, 1904, p. 88 (Upper-Nickeri R. Coppename R., Surinam). Burt. Bull. Amer. Mus. Nat. Hist., **61**, June 11, 1931, p. 261 (Kartabo, Brit. Guiana).

Anolis steinbachi Griffin, Ann. Carnegie Mus., **11**, April 1917, p. 308 (type locality, Provincia del Sara, Bolivia, type No. 988 ♀, Carnegie Museum, Pittsburg).

Anolis catenifer Ahl, Zoöl. Anz., **62**, 1925, p. 85 (type locality, Brazil, type in Berlin Mus., a ♀ from the Hänschke coll.).

It would be impossible to find a more typical *A. punctatus* than the type of *A. steinbachi*; for the figures of this specimen may be absolutely matched by any of our series from Buenavista, in the Province of Santa Cruz, Bolivia (ex. Univ. Mus. Mich.). The species evidently has a very wide range in the lowland forests.

Anolis purpurescens Cope, Bull. Phila. Mus., **1**, 1899, p. 7 (type locality, Truando R., Colombia; type 1 ex. U. S. Nat. Mus., No. 4,321, poor condition; collected by Arthur Schott).

This species is common in the deep forest on Barro Colorado Island and has been distributed under the name of *Anolis squamulatus*. Fresh material from Colombia will be necessary before this allocation of *Anolis purpurescens* can be considered settled. I have been using the name *Anolis longipes* for this species, but Dr. Dunn has very kindly informed me that the cotypes of this species now in the American Museum of Natural History are both specimens of *Anolis capito*.

Anolis rhombifer Boulenger, Proc. Zoöl. Soc., London, 1894, p. 728, pl. 48, fig. 2 (type locality, Chontales Mines, Nicaragua; types, Brit. Mus., Nos. 94-10-1-9, 10; collected by R. A. Rix).

Known from Nicaragua only.

There are no specimens in this Museum. Doctor K. P. Schmidt has examined the cotypes of *A. rhombifer* and finds that the species differs from *A. concolor* in manner as follows: in *rhombifer* the head is shorter, the frontal ridges distinctly less evident, the supraoculars only faintly keeled and the dorsal scales are uniform, whereas in *concolor* the two median dorsal scale rows are abruptly enlarged.

Anolis rosenbergii Boulenger, Ann. Mag. Nat. Hist., (6), **17**, 1896, pl. 16 (type locality, Buenaventura, Colombia; types in Brit. Mus.; collected by W. F. H. Rosenberg).

I suspect that of this species also only the types are known.

Anolis rubigenosus Bocourt, Ann. Sci. Nat. (Zoöl.), (5), **17**, 1873, art. 2 (type locality, Mexico; type in Paris Mus.). Bocourt, Miss. Sci. Mex., Rept., livr. **3**, 1874, pl. 17, bis, fig. 2 (figure of head of type).

Boulenger apparently missed this species when preparing his Catalogue of the Lizards in the British Museum. It appears from Bocourt to be valid.

Anolis salvini Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 75 (type locality, Guatemala, type 1 ex. in Brit. Mus., collected by F. D. Godman).

I know of no specimen but the unique type.

Anolis scapularis Boulenger, Ann. Mag. Nat. Hist., (8), **1**, 1908, p. 113, (type locality, Prov. Sara, E. Bolivia, 1800 ft.; type 1 ♂, Brit. Mus.; collected by J. Steinbach). Burt, Bull. Amer. Mus. Nat. Hist., **61**, June 11, 1931, p. 262 (Mapiri and Tumupasa, Bolivia; Perene, Peru).

I have not seen this little lizard. It must be a most attractive species.

Anolis (*Dactyloa*) *schedii* (Wiegmann). *Herp. Mex.*, 1934, p. 48 (type locality, Mexico, by inference; type in Berlin Mus., Bocourt speaks of the type as having no locality).

Anolis gibbiceps Cope, *Proc. Acad. Nat. Sci. Phila.*, 1864, p. 174 (Caracas, Venez.; type in Brit. Mus.).

Anolis scheidii Bocourt, *Miss. Sci. Mex., Rept.*, livr. 2, 1873, p. 64, pl. 14, fig. 19 (type examined in Paris; identical with specimens from Coban, Guatemala). Boulenger, *Cat. Liz. Brit. Mus.*, 2, 1885, p. 52 (redescription based on type of *A. gibbiceps*, only specimen in Brit. Mus.).

Boulenger has placed *A. gibbiceps* in this synonymy. He is almost certainly wrong in so doing, but the type must be examined before the species can be reallocated or reestablished. We do not have the species.

Anolis scypheus Cope, *Proc. Acad. Nat. Sci. Phila.*, 1864, p. 172, (type locality, Caracas, Venezuela [not given by Cope]; type 1 ♀ in Brit. Mus.). Boulenger, *Cat. Liz. Brit. Mus.*, 2, 1885, p. 90 (Caracas, Venezuela, Pallatanga & Canelos, Ecuador, E. Peru). Burt, *Bull. Amer. Mus. Nat. Hist.*, 61, June 11, 1931, p. 262 (Riobamba, San José de Sumaco and Tuvula, Ecuador).

Anolis chrysolepis Guichenot in Castlenau, *Amer. Sud. Rept.*, p. 15, pl. 4, fig. 1 (Sarayacu, Peru), Bocourt, *Miss. Sci. Mex., Rept.*, livr. 2, 1873, p. 101 (refers to difference in specimens from Para and Guianas). O'Shaughnessy, *Proc. Zoöl. Soc. London*, 1880, p. 491 (criticism).

Anolis (*Dracontura*) *chrysolepis* O'Shaughnessy, *Proc. Zoöl. Soc. London*, 1881, p. 241 (confused criticism).

Anolis chrysolepis O'Shaughnessy, *Ann. Mag. Nat. Hist.*, (4), 15, 1875, p. 278.

We have the species from Canelos and Riobamba, Ecuador.

Anolis sericeus Hallowell, *Proc. Acad. Nat. Sci. Phila.*, 8, 1856, p. 227 (type locality: "El Euceros le Jalapa" [sic.], El Encero de Jalapa. Vera Cruz, Mexico. Type a single specimen formerly in the Academy of Natural Sciences at Philadelphia, but now lost.)

Anolis sallaei Günther, Proc. Zoöl. Soc. London, 1859, p. 421 (type locality, Mexico; type 1 ♀ in Brit. Mus., Sallé coll.). Bocourt Miss. Sci. Mex., Rept., livr. 2, 1875, p. 90, pl. 13, fig. 3, pl. 16, fig. 21, 21a, 21b (Dueñas and St. Augustin, Guatemala). Werner, Verh. Zoöl. bot. Ges. Wien, 46, 1896, p. 345 (Honduras); p. 382 (Guatemala). Ruthven, Mich. Acad. Sci., 14, 1912, p. 231 (Achotal, Vera Cruz, Mex.); Zoöl. Jahrb. 32, 4, 1912, p. 313 (Cuatutolapam, Vera Cruz, Mex.). Dunn, Proc. N. Engl. Zoöl. Club, 12, August 7, 1931, p. 18 (diagnosis, synonymy, distribution). Schmidt, Field. Mus. Publ. Zoöl., 12, 16, Nov. 21, 1928, p. 195 (Devisadero, Salvador).

Anolis longicauda Hallowell, Proc. Acad. Nat. Sci. Phila., 1860, p. 481 (type locality, Nicaragua; type in Acad. Nat. Sci. Phila., dried and now unrecognizable).

Anolis jacobi Bocourt, Miss. Sci. Mex., Rept., livr. 2, 1873, p. 74, pl. 13, fig. 8 (Vera Cruz, Mex.; type Paris Mus.).

Anolis binotatus (part) Bocourt, Miss. Sci. Mex., Rept., livr. 3, 1873, fig. 23 (La Union, Salvador).

A common, very handsome and widespread woodland species. In 1930 (Proc. N. Engl. Zoöl. Club, 12, p. 8) Dunn confused this species with *Anolis palpebrosus*. In 1932 (Proc. Acad. Nat. Sci. Phila., 84, p. 27) having seen the types in Berlin and London he shows how the species differ one from the other.

Anolis sminthus Dunn & Emlen, Proc. Acad. Nat. Sci. Phila., 84, March 22, 1932, p. 26 (type locality, San Juancito, near Tegucigalpa. Honduras, alt. 6,800 ft.; type Acad. Nat. Sci. Phila., No. 19,878).

A form allied to *A. concolor* of Nicaragua and *A. altae* of Costa Rica, according to its describers.

Anolis solifer Ruthven, Occ. Papers, Mus. Zoöl. Univ. Mich., 32, December 6, 1913, p. 4, pl. 2 (type locality, La Concepcion, Santa Marta Mts., Colombia; type Mus. Comp. Zoöl., 6,549; collected by W. W. Brown). Misc. Publ. Mus. Zoöl. Univ. Mich., 8, 1922, p. 51.

Known from the type only. A very distinct species.

Anolis solitarius Ruthven, Occ. Papers, Mus. Zoöl. Univ. Mich., **32**, December 6, 1916, p. 2, pl. 1 (type locality, San Lorenzo, alt. 5,000 ft., Santa Marta Mts., Colombia; type Mus. Zoöl. Univ. Mich., 48,303; collected by F. M. Gaige). Misc. Publ. Mus. Zoöl. Univ. Mich., **8**, 1922, p. 58 (distribution).

We have two specimens from the forests of the Sierra Nevada de Santa Marta, Colombia.

o/ *Anolis squamulatus* Peters, Monats. Ac. Berl., 1863, p. 145 (type locality, Puerto Cabella, Venezuela; types 2 ex. in Berlin Mus.). Bocourt, Miss. Sci. Mex., Rept., livr. **2**, 1873, pl. 14, fig. 21 (figure of head of [?] type). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 61 (redescription, no specimen).

Anolis frenatus Cope, Scient. Bull. Phila. Mus., **1**, 1899, p. 6, pl. 2, fig. 2 (type locality, "Colombia," collection of the Government of Colombia Exhibit at Chicago in 1893. Collection apparently made near Barranquilla. Type now lost.)

What I have often called by this name Dr. Dunn insists is really *A. longipes*. If this is so, I have never seen this species.

Anolis trachyderma Cope, Jour. Acad. Nat. Sci. Phila., (2), **8**, Nov. 26, 1875, p. 168 (type locality, Nauta, Peru; type 1 ex. Acad. Nat. Sci. Phila., 11,363; collected by Orton). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 87 (redescription, no specimens).

I do not know this species. It must be a most peculiar one.

Anolis transversalis A. Aug. Duméril, Cat. Method. Rept., 1851, p. 57 (type locality, Brazil; type 1 ex. in Paris Museum; collected by Castlenau and Deville). Archiv. Mus., **8**, 1856, p. 515, pl. 19, fig. 3-32 (redescription). Guichenot, in Castlenau, Voy. Amer. Sud., 1855, Rept. p. 19 (Sarayacu, Peru). Bocourt, Miss. Sci. Mex., Rept., livr. **2**, 1873, pl. 14, fig. 3 (type figured). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 58 (redescription, no specimens). Burt, Bull. Amer. Mus. Nat. Hist., **61**, June 11, 1931, p. 263 (Chanchamayo and Perene, Peru).

Anolis tigrinus Peters, Mon. Berl. Acad., 1863, p. 143, (type locality, Chine [?]; type ♂ in Berlin Mus.). Bocourt, Miss. Sci. Mex., Rept. livr. 2, pl. 14, fig. 2. Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 55 (description copied, no specimens).

Scytomycterus laevis Cope, Jour. Acad. Nat. Sci. Phila., (2), 8, Nov. 26, 1875, p. 165 (type locality, Between Moyabamba and Balsa Puerto, Huallaga R., Eastern Peru; type 1 ex. in poor condition, Acad. Nat. Sci. Phila., 11,368; collected by Orton).

Anolis laevis Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 56 (copy of original description).

Another form which we do not have.

Anolis tropidogaster Hallowell, Proc. Acad. Nat. Sci. Phila., 1856, p. 224 (type locality, Colombia; type no. 7618 in Acad. Nat. Sci., Phila., now simply a macerated skeleton).

Anolis radulinus Cope, Proc. Acad. Nat. Sci., 1862, p. 180 (type locality, Rio Truando, Colombia; types lost; collected by Lieut. Michler). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 86.

Anolis stigmatosus Bocourt, Nouv. Archiv. Paris Mus., 5, 1869, Bull. p. 43 (type locality, Rio Magdalena, Colombia; types 2 ♀ in Paris Mus., collected by Boucard). Miss. Sci. Mex., Rept. livr. 2, pl. 15, fig. 13 (type figured). Boulenger, Cat. Liz. Brit. Mus., 2, 1885, p. 87 (Tanti, Ecuador, 2,000 ft.). Schmidt, Smith. Coll., 89, 1, March 16, 1933, p. 9 (Many localities in Canal Zone).

Anolis gaigei Ruthven, Occ. Papers, Mus. Zoöl. Univ. Mich., 32, December 6, 1916, p. 6, pl. 3 (type locality, San Lorenzo, Santa Marta Mts., Colombia, alt. 2,700 ft.; type Mus. Zoöl. Univ. Mich. No. 48,304; collected by F. M. Gaige). Misc. Publ. Mus. Zoöl. Univ. Mich. 8, 1922, p. 58 (distribution). Barbour, Occ. Papers Mus. Zoöl. Univ. Mich., 129, January 25, 1923, p. 6 (Sapo Mts., E. Panama).

I thought I had gotten to the bottom of the confusion as to the name for this common form so widespread in Panama and Colombia, but Dr. Dunn tells me that possibly some of the published records of *Anolis limifrons* may belong here.

Anolis tropidonotus Peters, Mon. Berl. Acad., 1863, p. 135 (type locality, Huanuco [sic], probably Huatusco, State of Vera Cruz, Mexico; types 6 ex. in Berlin Mus.; collected by Hille). Ann. Mag. Nat. Hist., (4), **4**, 1869, p. 273 (argument vs. O'Shaughnessy who considers this sp. *Norops auratus*). Bocourt, Miss. Sci. Mex., Rept., livr. **2**, 1873, p. 103, pl. 13, fig. 6, pl. 16, fig. 30 (specimen from Orizaba; ♀ cotype figured). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 83 (synonymy, description, localities, Oaxaca). Günther, Biol. Cent. Amer. Rept., October 1885, p. 51 (no new information).

Norops auratus O'Shaughnessy, Ann. Mag. Nat. Hist., (4), **3**, 1869, p. 188 (confused *N. auratus* with *A. tropidonotus*). 1 c., (4) **4**, 1869, p. 274 (continues to argue for his error).

Norops tropidonotus O'Shaughnessy, Ann. Mag. Nat. Hist., (4), **15**, 1875, p. 277 (recognizes the "well marked species" but refers it to *Norops*).

One of the commonest Mexican species. We have great series from Vera Cruz, various localities in Honduras and we have a few from Nicaragua.

Anolis uniformis Cope, Proc. Am. Philos. Soc., **22**, 1885, p. 392 (type locality, Guatemala [many specimens], cotype, U. S. Nat. Mus. 24,859 Yucatan; also cotypes, Guatemala, U. S. Nat. Mus. 24,734-48, 50 and 6,774 (6 ex.); one cotype Mus. Comp. Zoöl. 10,933 [ex. U. S. Nat. Mus. 24,749]; collected by Henry Hague & A. Schott).

Anolis metallicus Bocourt, Ann. Sci. Nat. (Zoöl.) (5), **17**, 1872, art. 2; Miss. Sci. Mex., Rept., livr. **2**, 1873, pl. 17, bis, fig. 1.

A very common species in the highlands of Guatemala from about 5,000 to 10,000 feet. There is a cotype in the Museum as well as a large series of specimens collected by Mr. A. W. Anthony.

Anolis ustus ustus (Cope) Proc. Acad. Nat. Sci. Phila., 1864, p. 172 (type locality, Belize, Brit. Hond.; types 2 ♂ in Brit. Mus.). Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 73 (Belize & Yucatan). Barbour & Cole, Bull. Mus. Comp. Zoöl., **50**, 1906, p. 148 (Chichen Itza, Yucatan). Barbour, Proc. N. Engl. Zoöl. Club, **12**, 8 Feb. 1932, p. 98 (present form of name).

We have the species only from Chichen Itza, Yucatan and have received no specimens in recent collections.

Anolis ustus verae-pacis Barbour, Proc. N. Engl. Zoöl. Club, **12**, 8 Feb., 1932, p. 98 (type locality, Hacienda Chimoxan, Dept. of Alta Vera Paz, 60 miles N. E. of Coban, Guatemala; type series in Mus. Comp. Zoöl.; A. W. Anthony leg.).

A race of *A. u. ustus* from the Vera Paz rain forest.

Anolis utowanae Barbour, Copeia, No. 1, **12**, Apr. 1932, p. 11 (type locality, 10 miles north of Mazatlan, Sinaloa, Mexico; type in Mus. Comp. Zoöl., T. Barbour leg.).

A species apparently related to *A. baccatus* from the dry desert areas of coastal Sinaloa.

Anolis ventrimaculatus Boulenger, Ann. Mag. Nat. Hist., (8), **7**, 1911, p. 20 (type locality, Rio San Juan, Choco, southwestern Colombia; types: ♀ et pull. in Brit. Mus.; collected by Merwin G. Palmer). Burt., Bull. Amer. Mus. Nat. Hist., **61**, June 11, 1931, p. 263 (Boca de la Raspadura and Rio Quesado near Rio Atrato, Colombia).

I have not seen specimens of this species which seems to be allied to *Anolis gemmosus* and *A. maculiventris*.

Anolis williamsi Bocourt, Nouv. Archiv. Mus., **6**, 1870, bull., p. 16; Miss. Sci. Mex., Rept., livr. **2**, pl. 13, fig. 9 (type locality, Bahia, Brazil; type in Paris Mus.).

Anolis sallaei (part) Boulenger, Cat. Liz. Brit. Mus., **2**, 1885, p. 79 (*A. williamsi* wrongly placed in synonymy of *sallaei*).

I have not seen this species.

ADDENDA

Since this paper was written I have learned of four additional species which are important as coming from areas from which no Anoles have previously been known. They are:

Anolis nasofrontalis Amaral, Mem. Inst. Butantan, **7**, 1932, p. 58 (type locality: State of Espiritu Santo, Brazil; types nos. 440 and 440 A in Reptile Collection of the Museu Paulista).

Near *A. transversalis*.

Anolis pseudotigrinus Amaral, loc. cit., p. 60 (type locality, Rio Doce valley, State of Espiritu Santo, Brazil; type no. 721 B in Reptile Collection of the Museu Paulista).

Apparently near *A. transversalis*.

Anolis transfasciatus Amaral loc. cit. p. 60 (type locality, State of Espiritu Santo, Brazil; type no. 432 in Reptile Collection of the Museu Paulista).

Apparently allied to *A. fusco-auratus*.

Anolis garbei Amaral loc. cit., p. 62 (type locality, Monte Cristo, Rio Tapajos, Para, Brazil; type no. 706 in Reptile Collection of the Museu Paulista).

Closely related to *A. leptoscelis* from the Upper Amazon.



Barbour, Thomas. 1934. "The anoles. II. The mainland species from México southward." *Bulletin of the Museum of Comparative Zoology at Harvard College* 77, 121–155.

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