

A SYSTEMATIC REVISION OF THE AUSTRALIAN THORNBILLS.

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No other group of Australian passerine birds has provided as many systematic difficulties as the Tits or Thornbills. This has resulted mainly from the paucity of specimens available to most authors in the past, and to the introduction over a period of years of many unnecessary names. The H. L. White Collection of Australian birds has greatly minimized the first of these difficulties, and it is the basis of the present effort to clarify the confusion in nomenclature; this collection has been supplemented by specimens in the general collection of the National Museum and by some excellent material kindly sent on loan by the Queensland, Australian, Tasmanian, South Australian and Western Australian Museums. About 700 specimens have been examined.

Within the genus *Acanthiza* as here defined Mathews alone has proposed about fifty names, more than half of which he has already consigned to synonymy (Syst. Av. Aust., 1930). In the present revision it has been necessary to retain only eleven of Mathews' names, two of which replace preoccupied names. The number of genera and forms recognized by various authors during the past thirty years may be seen at a glance in the following table:

	Genus	Subg.	Species	Subsp.
North, Aust. Mus. Spec. Cat., i, 1901-04 ..	2	—	12	?
Mathews, Handlist, 1908	1	—	21	—
Mathews, Checklist, 1913	3	—	13	48
Mathews, Birds of Aust., ix, 1922	3	1	10	70
Mathews, Syst. Av. Aust., 1930	1	—	10	53
Campbell, Emu, xxv, 1925	2	—	17	?
R.A.O.U. Checklist (2nd ed.), 1926 .. .	1	2	17	—
Present paper	1	—	10	34

Since the completion in manuscript of this paper, Campbell has published notes and maps showing the distribution of the seventeen species recognized by him (Emu, xxxv, p. 324).

Except on the east coast where three species range northwards almost to the 15th parallel of latitude, the distribution of Australian Thornbills is chiefly extra-tropical, the approximate northern limit being the 20th parallel of south latitude.

Of the three species which occur in Tasmania, only *A. ewingi* is absent from the mainland, and it is worthy of note that it is the only species of the genus represented in recent collections from King and Flinders Islands, Bass Strait.

To provide a basis for comparison between races it has been necessary to describe in full a typical example of each species; accordingly the typical form in each instance is included first irrespective of its geographical position.

Colour terms are from Ridgway's *Color Standards and Nomenclature*, and all measurements are in millimetres.

Genus ACANTHIZA Vigors and Horsfield.

Acanthiza Vigors and Horsfield, Trans. Linn. Soc., xv, 1927, p. 244.

Type by original designation, *Motacilla pusilla* White.

Geobasileus Cabanis, Mus. Hein., i, 1851, p. 32. Type, by monotypy, *Saxicola chrysorrhoa* Quoy and Gaimard.

Milligania Mathews, Aust. Av. Rec., i, 1912, p. 112. Type, by original designation, *Acanthiza robustirostris* Milligan.

Subacanthiza Mathews, Birds of Aust., ix, 1922, p. 449. Type, by monotypy, *Acanthiza lineata* Gould.

The original description of *Geobasileus* is not available to me, but authors who have accepted that genus have stressed the difference in size and wing formula, and the bright colour of the rump compared with *Acanthiza*. The difference in size is slight, *chrysorrhoa* having a longer wing and bill, but shorter tail and tarsus compared with the type of *Acanthiza*, and the only difference in wing formula is that in *chrysorrhoa* the third primary approaches nearer in length to the fourth than in *pusilla*. The main distinguishing feature of *Geobasileus* is the distinct colour of the rump, but this does not warrant generic rank. Indeed, a striking difference in colour of rump is characteristic of other species of the group, and is a trenchant subspecific character between races of *pusilla*. The retention of *Geobasileus* on this single feature has led to peculiar divisions of the species by some authors. Because of the light buff colour of the rump it has been customary to refer *reguloides* to *Geobasileus*, and for many years Mathews included *hedleyi* (= *A. iredalei hedleyi*) as a species of that genus, while retaining *iredalei* in *Acanthiza*.

The two species for which *Milligania* and *Subacanthiza* were erected in no way differ from *Acanthiza*, and the author of both names recently retained only *Acanthiza* where formerly he accepted three genera and one subgenus (Syst. Av. Aust., p. 601).

ACANTHIZA PUSILLA (White).

As a result of the wide distribution of this species, in which it is approached only by *chrysorrhoa* within the genus, marked racial differences are apparent in a series of specimens. In some instances these differences have been accorded specific rank and, principally owing to lack of material, the tendency to follow early workers in this respect persists. North (Aust. Mus. Spec. Cat., No. 1, i, 1904, p. 268 *et seq.*) remarked on the obvious similarity of some species, and Mathews relegated some to the status of subspecies. In this paper *katherina*, *apicalis*, *whitlocki* and *albiventris* (with *hamiltoni* as a synonym), all of which are accorded specific rank in the R.A.O.U. Checklist (1926), are included as races of *pusilla*.

Acanthiza pusilla pusilla (White).

Motacilla pusilla White, Journ. Voy. New South Wales, 1790, p. 257; New South Wales.

Malurus maculatus Vieillot, Nouv. Dict. d'Hist. Nat., xx, 1818, p. 215; New South Wales.

Acanthiza pusilla bunya Mathews, Bull. Brit. Ornith. Club, xl, 1920, p. 105, Bunya Mountains, S. Queensland.

Acanthiza pusilla dawsonensis Campbell, Emu, xxii, 1922, p. 63; Dawson River, Queensland.

Range.—From vicinity of Sydney, New South Wales, north at least to the Dawson River, south-eastern Queensland (coastal).

Specimens Examined.—Twenty from the following localities: *Queensland*: Dawson River (type of *dawsonensis*), Coomera River, Brisbane. *New South Wales*: Clarence River, near Scone, Tarana, Lithgow, Mulgoa, various localities near Sydney.

Measurements.—Twenty adult specimens of both sexes: wing, 48-53 (50.8); tail, 40-46 (42.9); exposed culmen, 8-9 (8.7); tarsus, 17-19 (17.9).

Male.—General colour of dorsal surface buffy olive; forehead tawny olive, each feather tipped blackish brown, with lighter curved subterminal band indicated; feathers of lores and below eyes greyish, tipped and margined blackish brown; ear-coverts buffy olive with lighter shafts; wings fuscous, margins of both upper-coverts and quills brownish olive, lighter on distal part of primaries; upper tail-coverts snuff brown; tail saccardo's umber, suffused snuff brown at base, and crossed by a broad subterminal band of black, which is reduced to black spots on two central feathers; feathers of chin, throat and breast white with dark grey bases and distinctly margined brownish black, giving a striated appearance; abdomen white, tinged olive-buff, merging into dark olive-buff on flanks; under tail-coverts pinkish buff; axillaries and under wing-coverts white, the latter tipped fuscous; inner margins of wing-quills cartridge buff. "Bill blackish brown; eyes red; feet dark brown."

Female.—Similar to male.

As the type locality is close to the southern extremity of the range of this form, some birds from the vicinity of Sydney resemble the adjoining race to the south (*macularia*), but specimens from south Queensland and localities north of Sydney are typical. The type and only specimen of *dawsonensis* differs from *pusilla* in its lighter lower under surface, and in having a narrow white margin towards the tip of inner web of lateral tail feathers, thus approaching *albiventris*. In depth of tail band and general upper colouration it is similar to *pusilla* and possibly the differences noted are the result of intergradation with *albiventris*, but adequate series from coastal eastern Queensland are essential for an understanding of the relationship of the three races of *pusilla* and other species in the vicinity of Rockhampton.

Acanthiza pusilla katherina De Vis.

Acanthiza katherina De Vis, Ann. Queensld. Mus., No. 6, 1905, p. 43;
Bellenden Ker Range, Queensland.

Range.—From about Cairns to south of Cardwell, north-eastern Queensland.

Specimens Examined.—Fifteen from Bellenden Ker Range, Ravenshoe, and Herberton district.

Measurements.—Five specimens of both sexes: wing, 51-55 (53·2); tail, 42-44 (42·8); exposed culmen, 9·9-5 (9·2); tarsus, 17-18 (17·2).

Subspecific Characters.—Differs from all other races of *pusilla* in the rich greenish colour of the dorsal surface, olive to dark olive; feathers of forehead deep olive-buff, rather than tawny as in typical *pusilla*; dark throat striations much less prominent, and remainder of ventral surface yellowish, deep olive-buff to dark olive-buff on flanks.

Although a distinct and easily recognized form, specific separation of *katherina* is not warranted. The lack of material noted under typical *pusilla* applies equally to this race, and while it is probable that the range of *katherina* extends considerably south of Cardwell, specimens have yet to be obtained.

Acanthiza pusilla macularia (Quoy and Gaimard).

Saxicola macularia Quoy and Gaimard, Voy. Astrol., i, 1830, p. 199;
Western Port, Victoria.

Acanthiza pusilla samueli Mathews, Aust. Av. Rec., ii, 1913, p. 76;
Myponga, South Australia.

Acanthiza pusilla cambrensis A. G. Campbell, Emu xxii, 1922, p. 63;
Cape Jervis, South Australia.

Range.—From south-eastern New South Wales, through southern Victoria to the vicinity of Adelaide, South Australia.

Specimens Examined.—Twenty-one from the following localities: *Victoria*: Marlo, near Port Albert, Fernshaw, Phillip Island, Somerville, Kilsyth, Bayswater, vicinity of Melbourne, Port Fairy. *South Australia*: Salt Creek, Coorong, twenty miles west of Port Victor.

Measurements.—Twenty-one adult specimens of both sexes: wing, 48-53 (51); tail, 40-46 (44.5); exposed culmen, 8-9 (8.7); tarsus, 18-20 (18.8).

Subspecific Characters.—Near to typical *pusilla* but darker, more brownish above and on flanks; light subterminal band of forehead feathers more distinct. Dorsal surface brownish olive; flanks buffy brown.

South Australian specimens from near Port Victor are typical *macularia*. The single example from the Coorong, however, exhibits distinct evidence of intergradation with *albiventris* which ranges almost to the coast in that part of South Australia only.

Acanthiza pusilla diemenensis Gould.

Acanthiza diemenensis Gould, Synop. Birds of Aust., 1838, pl. 59; Tasmania.

Range.—Tasmania.

Specimens Examined.—Seven from the following localities: Hobart, Sandford, Bagdad, Launceston.

Measurements.—Seven adult specimens of both sexes: wing, 51-56 (54.1); tail, 39-48 (42.5); exposed culmen, 9-10 (9.2); tarsus, 18-19.5 (18.4).

Subspecific Characters.—Closely resembling the typical form in colouration, but tinged greyish olive above, and tips of inner web of most tail feathers narrowly margined white. The bill and wing averages slightly longer than *A. p. pusilla*.

Size has been stressed as the chief characteristic of *diemenensis*, and while it averages slightly more in length of bill and wing than *A. p. pusilla*, it is similar to some races in all measurements. The greyish olive colour of the back, and the narrow white margin at tip of inner web of some tail feathers appear more definite characters.

Acanthiza pusilla archibaldi Mathews.

Acanthiza magnirostris A. J. Campbell, Emu, ii, 1903, p. 202; King Island. (Not *Acanthiza magnirostris* Gould, Synop. Birds of Aust., 1838, pl. 60.)

Acanthiza archibaldi Mathews, Nov. Zool., xvii, 1910, p. 501; new name for *Acanthiza magnirostris* A. J. Campbell.

Range.—King Island, Bass Strait.

Specimens Examined.—Three, including type of *magnirostris* A. J. Campbell.

Measurements.—

	Wing	Tail	Exposed Culmen	Tarsus
♂ (type)	53	40	13	18
♂ imm.	53	41	12	18
♀ imm.	55	43	12	18

Subspecific Characters.—Similar to *diemenensis* in colouration, but differing from all forms in the great length of bill.

The three specimens from which A. J. Campbell described this race are the only available representatives of *pusilla* from King Island. The single adult (type) is in very worn plumage which accounts for the greater length of wing and tail of the immature female. The outstanding feature of this race is the extraordinary long bill which is accepted as characteristic only in view of the fact that both immature specimens exhibit the same feature.

During a recent visit to King Island no specimen of this form was seen, although I made an intensive search. On the other hand *Acanthiza ewingi* was fairly numerous.

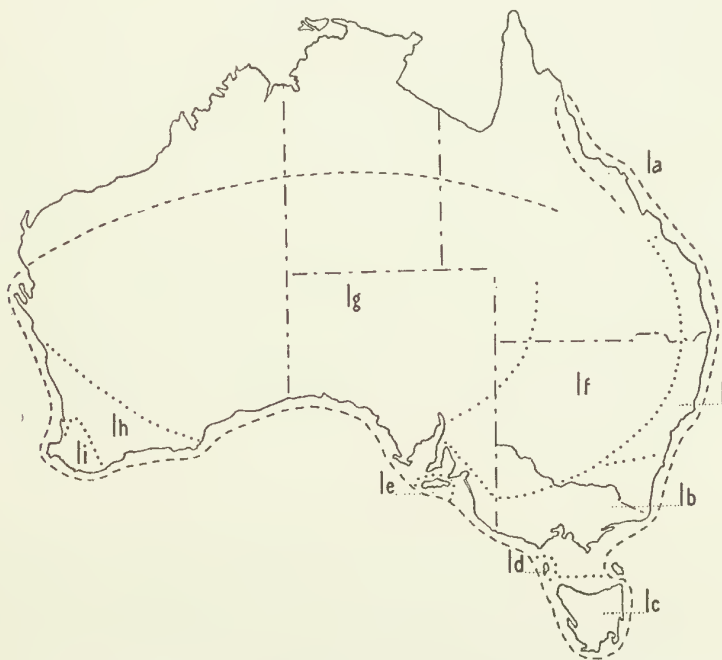


FIG. 1. DISTRIBUTION.

- 1, *Acanthiza pusilla pusilla*; 1a, *A. p. katherina*; 1b, *A. p. macularia*;
 1c, *A. p. diemenensis*; 1d, *A. p. archibaldi*; 1e, *A. p. zietzi*;
 1f, *A. p. albiventris*; 1g, *A. p. whitlocki*; 1h, *A. p. apicalis*; 1i, *A. p. leeuwinensis*.

Acanthiza pusilla zietzi North.

Acanthiza zietzi North, Aust. Mus. Spec. Cat., i, 1904, p. 271; Kangaroo Island, South Australia.

Acanthiza halmaturina A. G. Campbell, Emu, v, 1906, p. 141; Kangaroo Island, South Australia.

Range.—Kangaroo Island, South Australia.

Specimens Examined.—Twelve from the following localities: Queenscliff (type of *zietzi*), Vivonne Bay, Kingscote, and type of *halmaturina* labelled "Kangaroo Island."

Measurements.—Eleven adult specimens of both sexes: wing, 47-53 (50.7); tail, 40-46 (44); exposed culmen, 8-10 (8.9); tarsus, 18-20 (19).

Subspecific Characters.—Darker throughout than any other race of *pusilla*. Dorsal surface suffused dark greyish olive and the flanks greyish olive to drab.

The dull, dark colouration of *zietzi* makes it an easily recognized race.

Acanthiza pusilla albiventris North.

Acanthiza pyrrhopygia Gould, Birds of Aust., iii, 1847, pl. 58; Murray River, South Australia. (Not *Acanthiza pyrrhopygia* Vig. and Horsf., Trans. Linn. Soc., xv, 1827, p. 227).

Acanthiza albiventris North, Aust. Mus. Spec. Cat., i, 1904, p. 276; Dubbo, New South Wales.

Acanthiza albiventris hamiltoni Mathews, Bull. Brit. Ornith. Club, xxvii, 1911, p. 97; New South Wales, error = Coonalpyn, South Australia.

Acanthiza pusilla cobborensis Mathews, Birds of Aust., ix, 1922, p. 412; Cobbora, New South Wales.

Acanthiza pusilla lingerandi Mathews, *ib.* p. 430; Lingerandi, Victoria.

Range.—South-central Queensland, inland New South Wales, north-western Victoria and adjoining area of South Australia, west to Yorke Peninsula, and possibly to extreme south of Eyre Peninsula, South Australia.

Specimens Examined.—Twenty-nine from the following localities: *Queensland*: Chinchilla. *New South Wales*: Gunnedah, Manilla, Cobbora, Narrabri. *Victoria*: Kow Plains. *South Australia*: Fifty miles south of Pinaroo, Coombe, Wellington, Winganin, Murray River.

Measurements.—Twenty-nine specimens of both sexes: wing, 49-55 (51.7); tail, 40-47 (44); exposed culmen, 8.9-5 (8.9); tarsus, 17-19.5 (18.3).

Subspecific Characters.—Differs from all coastal and insular races in being paler, drab to hair brown above, whiter on the under surface, and feathers of forehead are mainly blackish brown with distinct white or buffy white sub-terminal band. Distinguished from all forms of the species by the conspicuous russet to tawny colour of upper tail-coverts and outer margins of basal portion of tail feathers. Equalled only by *whitlocki*, the other, more pallid inland race, in depth of tail-band (12-14 mm.), which is more distinct on central tail feathers, and in having a large white spot at tip of inner web of lateral tail feathers.

The striking russet colour of the upper tail-coverts and the greater depth of black tail-band are characters the specific worth of which cannot be maintained when a good series of all races of *pusilla* is examined. Specimens from the probable area of intergradation with *whitlocki* are lacking, but those from the southern part of the range approach *macularia* in being darker above and on the flanks. One example from Wingamin, South Australia, which has been compared with the type of *A. pyrrhopygia* Gould by Dr. Witmer Stone and declared similar, closely resembles *macularia* in its darker colouration, particularly the flanks, which are buffy brown, and the depth of tail-band is less than in typical *albiventris* but greater than *macularia*.

Individual variation is exemplified in a series of twelve birds from Cobbora, New South Wales, close to Dubbo, the type locality of *albiventris*. In some specimens the lower under surface, including under tail-coverts, is white except for a tinge of pinkish buff on the flanks, and there are various stages up to specimens with deeply-coloured flanks, dark olive buff to buffy brown, and pinkish buff under tail-coverts. There is similar, though not so notable, variation in the colour of upper parts, and failure to recognize these differences as individual or, in part, the result of worn plumage, has been the cause of much confusion. North named those with light, almost white, lower under surface *albiventris*, and Mathews named Cobbora specimens with rich coloured under surface *cobborensis*; those from the south showing an approach to *macularia* in colouration were named *hamiltoni* (= *pyrrhopygia* Gould) of which *lingrandi* is a pure synonym. Six specimens of the same series were listed by Campbell (Emu, xxv, p. 262 and 265), three as "*Acanthiza pyrrhopygia* Gould" and three as "*A. albiventris* North," but in the distributional maps recently published by that author, only "*A. albiventris*" is shown as inhabiting that area (Emu, xxxv, p. 324).

Acanthiza pusilla whitlocki North.

Acanthiza whitlocki North, Vict. Naturalist, xxvi, 1909, p. 55; Lake Way, Western Australia.

Acanthiza pusilla venus Mathews, Nov. Zool., xviii, 1912, p. 348; Venus Bay, Eyre Peninsula, South Australia.

Acanthiza tanami Mathews, *ib.* p. 349; Tanami, Central Australia.

Acanthiza pusilla arno Mathews, Aust. Av. Rec., ii, 1912, p. 44; Arno Bay, Eyre Peninsula, South Australia.

Acanthiza pusilla consobrina Mathews, *ib.*; Leigh's Creek, South Australia.

Acanthiza pusilla jayi Mathews, Aust. Av. Rec., ii, 1914, p. 98; Macdonnell Ranges, Central Australia.

Acanthiza pusilla peroni Mathews, Bull. Brit. Ornith. Club, xxix, 1918, p. 23; Peron Peninsula, Western Australia.

Acanthiza pusilla nullaborensis H. L. White, Emu, xxi, 1922, p. 164; Zanthus, Western Australia.

Acanthiza apicalis erema A. G. Campbell, Emu, xxii, 1922, p. 64; Kychering, South Australia.

Acanthiza pusilla dundasi Mathews, Birds of Aust., ix, 1922, p. 431; Lake Dundas, Western Australia.

Range.—Interior of the continent from south-western Queensland and extreme western New South Wales, west to coastal mid-western Australia; to Tanami in the north and Eyre Peninsula in the south.

Specimens Examined.—Forty-nine from the following localities: *Central Australia*: Powell's Creek, Hermannsburg, Mission Plain, Palm Valley. *South Australia*: Everard Ranges, Moorilyanna, McDouall Peak, Lake Gairdner, Gawler Ranges, Port Broughton, Iron Knob, Nonning, Mt. Hope, Wilcherry, Coffin's Bay Peninsula, Kychering (type of *A. apicalis erema*), Ooldea. *Western Australia*: Naretha (type of *nullaborensis*), Zanthus, Kalgoorlie, Lake Way, Yalgoo, Shark Bay, Peron Peninsula, Sullivan's Creek, Ebano, Yandanooka, Morewa.

Measurements.—Forty-five adult specimens of both sexes: wing, 48-55 (51.9); tail, 42-50 (45.4); exposed culmen, 8.5-10 (9); tarsus, 18-20 (18.8).

Subspecific Characters.—Much paler than all other races of *pusilla*. General colour above light greyish olive; upper tail-coverts snuff brown, and this colour does not extend on to outer margins of tail feathers; lower ventral surface white, faintly tinged pinkish buff on flanks and under tail-coverts; feathers of forehead blackish brown with light, almost white, subterminal bands as in *albiventris* with which this race agrees in depth of tail-band and extent of white on inner webs of lateral tail feathers.

If consideration had been given to the general similarity of environmental conditions throughout the interior of Australia the synonymy of this form would not be so extensive. It would appear that even Mathews has realized the uselessness of most of the above names for he has since consigned six of them, including five of his own, to synonymy, although in so doing no proper understanding is shown of faunal areas in Australia (Syst. Av. Aust., p. 603).

In the series examined individual variation is apparent. Most birds from Eyre Peninsula, in the south, are slightly darker, deeper grey above and more buffy on the flanks, but these can be matched by occasional specimens from central and mid-west Australia. Three examples from the extreme south-east of Eyre Peninsula have the upper parts more brownish and the upper tail-coverts tinged reddish brown, thus approaching *albiventris* and it is possible that more material may prove the presence of that race in the extreme south of

Eyre Peninsula. The single specimen from Kychering, South Australia, described by A. G. Campbell under *A. apicalis erema*, is immature and in poor condition, but obviously is to be referred here.

Acanthiza pusilla apicalis Gould.

Acanthiza apicalis Gould, Birds of Aust., iii, 1847, pl. 57; Swan River, Western Australia.

Range.—South-west Western Australia, approximately west of a line between Geraldton and Israelite Bay, except extreme south-west.

Specimens Examined.—Thirty from the following localities: Doodlakine, Kellerberrin, Guildford, Perth, Kelmscott, Kalamunda, Mandurah, Dumbleyung, Gnowangerup, Broome Hill, Tenterden, Gordon River, Stirling Ranges.

Measurements.—Thirty adult specimens of both sexes: wing, 49-54 (51·7); tail, 43-50 (46·5); exposed culmen, 8·5-9·5 (8·9); tarsus, 17·5-19·5 (18·6).

Subspecific Characters.—Resembling *whitlocki* but darker above, hair brown tinged buffy olive, and upper tail-coverts buffy to olive brown; much darker, dark olive-buff to buffy brown on flanks and under tail-coverts. Extent of white at tips of inner web of tail feathers less than in *whitlocki* and *albi-ventris*, and tail-band (8-10 mm.) intermediate in depth between these two inland forms (12-14 mm.) and remaining coastal and insular races (6-7 mm.).

In colouration and depth of tail-band specimens from the north and south of the range of this form approach *whitlocki* and *leeuwinensis* respectively, thus affording ample evidence of intergradation.

Acanthiza pusilla leeuwinensis A. G. Campbell.

Acanthiza pusilla leeuwinensis A. G. Campbell, Emu, xxii, 1922, p. 63; Wilson's Inlet, Western Australia.

Acanthiza pusilla northi Mathews, Birds of Aust., ix, 1922, p. 431; Wilson's Inlet, Western Australia.

Range.—Forest country of extreme south-west Western Australia.

Specimens Examined.—Twenty-nine from the following localities: Albany, Torbay, Denmark, Wilson's Inlet (type of *leeuwinensis*), Irwin's Inlet, Bald Island, Augusta, Ellensbrook, Cape Naturaliste, Bunbury, Harvey River, Wandering.

Measurements.—Twenty-eight adult specimens of both sexes: wing, 48-55 (50·8); tail, 42-53 (45·3); exposed culmen, 8·5-9·5 (9); tarsus, 18·5-20 (18·8).

Subspecific Characters.—This race differs from all other forms in the rich brownish colour of the upper parts, flanks, and under tail-coverts. It is similar to other coastal and insular races in depth of tail-band (6-7 mm.). Dorsal surface olive brown; feathers of forehead with buffy brown subterminal bands; upper tail-coverts snuff brown; flanks and under tail-coverts clay colour to tawny-olive.

The similarity of conditions within the range of this race and *A. p. macularia* is reflected in the resemblance of the two forms. Typical *leeuwinensis* is sharply distinct from the adjoining *apicalis* but some specimens examined afford clear evidence of intergradation.

ACANTHIZA EWINGI Gould.

Acanthiza ewingi Gould, Birds of Aust., iii, 1844, pl. 55; Tasmania.

Acanthiza rufifrons Campbell, Emu, ii, 1903, p. 203; King Island, Bass Strait.

Acanthiza dovei Mathews, Birds of Aust., ix, 1922, p. 415; Mount Arthur, Tasmania. *Nom. nud.*

Range.—Tasmania, King and Flinders Islands, Bass Strait.

Specimens Examined.—Seventeen from the following localities: *Tasmania*: Hobart, Arre River, Launceston. *King Island*: type of *rufifrons*, near Currie, Surprise Bay, Naracoopa, Sea Elephant River, Yambacoon. *Flinders Island*: near Whitemark.

Measurements.—Seventeen adult specimens of both sexes: wing, 51-55 (52.6); tail, 45-50 (46.5); exposed culmen, 8-10 (9); tarsus, 19-21 (20).

Male.—Forehead from tawny-olive to snuff brown, each feather narrowly tipped blackish brown; remainder of dorsal surface light brownish olive; lores, above and below eyes, and ear-coverts grey to brownish grey, each feather narrowly margined brown; wing quills fuscous; upper wing-coverts fuscous black, and all, except outermost greater coverts broadly tipped or margined light brownish olive on outer web; outer web of outermost five or six primaries basally snuff brown, forming a conspicuous patch, distally becoming olive then whitish; outer web of remainder of primaries and secondaries basally blackish, distally becoming light brownish olive; upper tail-coverts snuff brown; tail drab, suffused snuff brown at base, crossed by a broad, subterminal band of black, indistinct on central feathers, and some of the lateral feathers narrowly tipped white on inner margin; upper portion of ventral surface greyish white, each feather with indistinct brownish margins; lower portion of ventral surface white, tinged buffy olive on flanks; under tail-coverts white; axillaries, under-wing coverts, and inner margin of wing-quills white. "Eyes red; feet greyish flesh-colour." Bill dark brown, paler at base of lower mandible.

Female.—Similar to male.

For many years the status and range of *ewingi* have been in doubt. Consigned by Gould (Handb. Birds of Aust., i, 1865, p. 365) to the synonymy of *A. diemenensis* (= *A. pusilla diemenensis*) most authors since have accorded it specific rank, but Mathews included it as a subspecies of *pusilla* confined to high altitudes in Tasmania. However, all Tasmanian specimens available to me are from coastal localities where *A. pusilla diemenensis* also is common, and recently, examples of *ewingi* were obtained from both King Island, the habitat of *A. pusilla archibaldi* (= *magirostris* Campb.), and Flinders Island,

Bass Strait. Thus, it is clear that *ewingi* is not confined to the mountainous country of Tasmania, but is found throughout the range of two races of *pusilla*, and in view of the marked and constant difference in colouration between it and all forms of *pusilla*, specific rank is plainly warranted.



FIG. 2. DISTRIBUTION.
2, *Acanthiza ewingi*.

Compared with any race of *pusilla*, this species differs in lacking any indication of a light subterminal band on forehead feathers; in having a conspicuous snuff brown wing patch, bounded on two sides by fuscous black; in colour of ventral surface, the upper part of which is greyish, without distinct darker striations, and the lower portion is more clearly white with pure white under tail-coverts, in marked contrast to the buff under tail-coverts of *pusilla*. In dimensions it averages more in length of tarsus.

The single specimen from King Island for which A. J. Campbell proposed the name *rufifrons* is typical *ewingi*.

There are numerous smaller islands in Bass Strait and near the coast of Tasmania where *ewingi* and the preceding species are probably present, but definite records are wanting.

ACANTHIZA REGULOIDES Vigors and Horsfield.

Three forms, long considered worthy of recognition, appear admissible.

An unusual feature of the distribution both of this species and of *A. chrysorrhoa* is that only typical examples have been obtained at Cobbora, which lies west of the eastern coastal range. The Hunter River valley forms a break in the mountainous country in that area, but the vicinity of Scone, on the Hunter River, is the normal western limit of the range of coastal forms.

Acanthiza reguloides reguloides Vigors and Horsfield.

Acanthiza reguloides Vig. and Horsf., Trans. Linn. Soc., xv, 1827, p. 226; Parramatta, New South Wales.

Geobasileus reguloides tarana Mathews, Emu, xiv, 1914, p. 60; Tarana, New South Wales.

Geobasileus reguloides cobbora Mathews, Aust. Av. Rec., ii, 1915, p. 130; Cobbora, New South Wales.

Geobasileus reguloides nesa Mathews, Bull. Brit. Ornith. Club, xl, 1920, p. 106; Bunya Mountains, Queensland.

Range.—South-eastern Queensland to south of Sydney, New South Wales.

Specimens Examined.—Twenty-six from the following localities: *Queensland*: Burnett River, Brisbane. *New South Wales*: Cobbora, Scone, Hawkesbury River, Turrumurra, vicinity of Sydney, Tarana (type of *tarana*).

Measurements.—Twenty-five adult specimens of both sexes: wing, 49-55 (52.7); tail, 36-43 (39.1); exposed culmen, 8.5-9 (8.8); tarsus, 16-17 (16.5).

Male.—General colour of upper parts deep greyish olive to greyish olive on rump; forehead anteriorly pinkish buff, followed by feathers similar in colour to upper surface, each with a curved subterminal band of light buff; lores, feathers surrounding eyes and ear-coverts white, tinged buff, and margined greyish olive; wings fuscous, quills with pale outer margins, and lesser upper wing-coverts deep greyish olive like back; upper tail-coverts chamois; basal half of tail light pinkish cinnamon with white shafts and margined chamois; tail distally blackish brown, broadly tipped avellaneous, indistinct on central feathers, increasing outwards, and continuing down the outer web of outermost feathers; chin, throat, and breast white, tinged straw yellow and most of the feathers narrowly tipped brownish, merging into straw yellow of remainder of under surface and under tail-coverts; axillaries white, tinged straw yellow; under wing-coverts and inner margin of wing-quills pale pinkish buff. "Eyes pale yellow; bill and feet dark brown."

Female.—Similar to male.

The type of *tarana* and specimens from Cobbora do not differ from typical *reguloides*, and this appears to be admitted by Mathews, who has consigned both *tarana* and *cobbora* to synonymy (Syst. Av. Aust., p. 609).

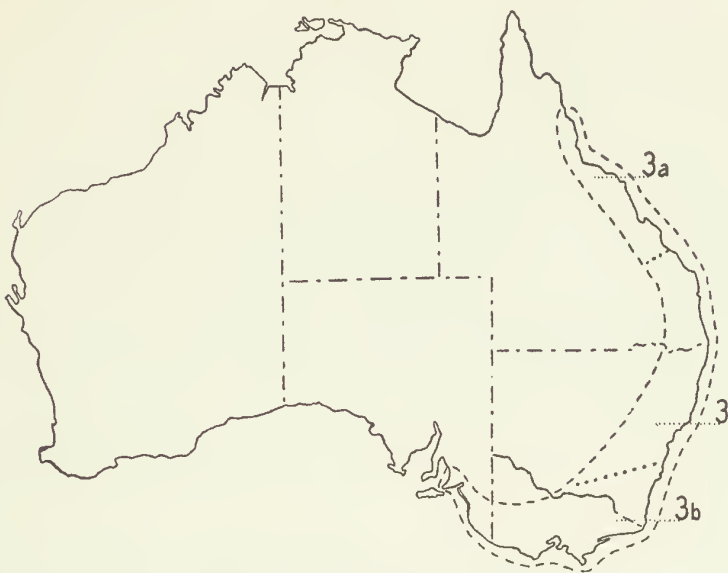


FIG. 3. DISTRIBUTION.

3, *Acanthiza reguloides reguloides*; 3a, *A. r. squamata*; 3b, *A. r. australis*.

Acanthiza reguloides squamata De Vis.

Acanthiza squamata De Vis, Proc. Roy. Soc. Queensld., vi, 1889, p. 248; Herberton, Queensland.

Range.—From vicinity of Cairns, north-eastern Queensland, south to the Dawson River.

Specimens Examined.—Two from Herberton, and Rio Station, Dawson River.

Measurements.—Male and female respectively: wing, 53, 50; tail, 39, 40; exposed culmen, 9, 9; tarsus, 17, 16.

Subspecific Characters.—Much lighter in colouration than *A. r. reguloides* and *A. r. australis*. Upper surface from greyish olive on crown to citrine-drab on rump; upper tail-coverts straw yellow; under surface barium yellow.

The scarcity of material from east coastal Queensland is again apparent in the number of specimens available of this race, but there is no question as to its validity. The Dawson River specimen is slightly darker than the one from Herberton, the type locality, and as two specimens of *A. r. reguloides* from Gayndah to some extent approach this race it would appear that intergradation with *reguloides* takes place in the area south-east of the Dawson River and north of Gayndah.

Although the relationship of this form and *A. r. reguloides* is obvious, it was erroneously included as a race of *chrysorhoa* by Mathews (Birds of Aust., ix, 1922, p. 465).

Acanthiza reguloides australis (North).

Geobasileus australis North, Aust. Mus. Spec. Cat., i, 1904, p. 287; Woodside, South Australia.

Acanthiza reguloides connectens Mathews, Nov. Zool., xviii, 1912, p. 352; Ringwood, Victoria.

Acanthiza reguloides grampianensis Ashby, Emu, xxvi, 1927, p. 290; Hall's Gap, Grampian Range, Victoria.

Range.—From south-eastern New South Wales, south and west to the vicinity of Adelaide, South Australia.

Specimens Examined.—Nineteen from the following localities: *Victoria*: Fernshaw, Healesville, Whittlesea, Lower Plenty River, Springvale, Croydon, Kilsyth, Bayswater, Muddy Creek, Parwan, Raywood, Nhill, Winiam. *South Australia*: Mt. Lofty, Upper Sturt, Callington, fifty miles south of Pinaroo.

Measurements.—Nineteen adult specimens of both sexes: wing, 50-56 (52.7); tail, 37-44 (39.2); exposed culmen, 9-10 (9.1); tarsus 16-17.5 (16.6).

Subspecific Characters.—Differs from both *A. r. reguloides* and *A. r. squamata* in its darker colouration throughout. Dorsal surface dark olive rather than deep greyish olive of typical *reguloides*; upper tail-coverts honey yellow; tail basally pinkish cinnamon, feathers margined honey yellow; lower ventral surface Naples yellow.

Victorian material examined is representative and is plainly to be referred here. The dark, more buffy, under surface as distinct from yellow in *reguloides* and *squamata* is a feature of this form.

ACANTHIZA INORNATA Gould.

It has been remarked that this species is closely related to *A. nana*, but a careful examination reveals that *inornata* is more closely allied to *iredalci* and *reguloides*, although all three are specifically distinct.

From the series examined two forms appear worthy of recognition.

Acanthiza inornata inornata Gould.

Acanthiza inornata Gould, Proc. Zool. Soc., 1840, p. 171; Swan River, Western Australia.

Acanthiza inornata carnarvoni Mathews, Aust. Av. Rec., ii, 1913, p. 76; Carnarvon, Western Australia.

Acanthiza inornata strellyi Mathews, *ib.*; Strelly River, Western Australia.

Range.—Coastal Western Australia from the De Grey River south, except extreme south-west.

Specimens Examined.—Eleven from the following localities: Solomon's Wells, Lake Yanchep, Perth, Guildford, Kelmscott, Brookton.

Measurements.—Eleven adult specimens of both sexes: wing, 47-52 (49.1); tail, 34-39 (36.4); exposed culmen, 8.9-5 (8.8); tarsus, 16-18 (16.8).

Male.—General colour of upper surface deep olive, tinged greyish, to citrine-drab on rump and upper tail-coverts; feathers of forehead with a curved subterminal band of cinnamon buff and tipped blackish brown; lores, feathers above and below eyes, and ear-coverts deep olive-buff, with narrow blackish brown margins; wings fuscous, lighter on outer margins of quills and upper coverts, from whitish on primaries to deep olive on inner secondaries and coverts; tail drab, tinged buffy brown at base, lighter at tip of inner webs, and crossed by a broad subterminal band of black which is indistinct on two central features; median portion of under surface deep olive-buff merging into dark olive-buff on sides of breast and flanks; feathers of chin, throat, and upper breast indistinctly tipped blackish brown; under tail-coverts white, tinged olive-buff; axillaries, under wing-coverts and inner margin of wing-quills pale pinkish buff. "Eyes pale buff; bill dark horn; feet blackish."

Female.—Similar to male.

As no specimens are available from coastal mid-western Australia, despite many collecting efforts, it would seem that the species is a rarity in that area which is the northern limit of its range. From the meagre descriptions of *carnarvoni* and *strellyi* they appear to be based on examples of typical *inornata* in unworn and worn plumage respectively. Mathews (Syst. Avium Aust., p. 605) has since consigned both names to the synonymy of *submastersi*, which, however, in my opinion, is a synonym of *mastersi*.

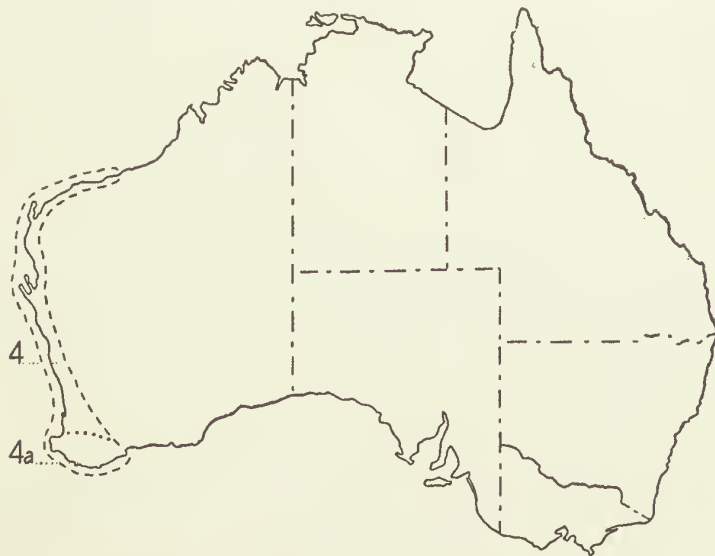


FIG. 4. DISTRIBUTION.

4, *Acanthiza inornata inornata*; 4a, *A. i. mastersi*.

Acanthiza inornata mastersi North.

Acanthiza mastersi North, Agr. Gaz. New South Wales, xii, 1901, p. 1,425; Albany, Western Australia.

Acanthiza inornata submastersi Mathews, Aust. Av. Rec., i, 1912, p. 45; Stirling Ranges, Western Australia.

Range.—Extreme south-west Western Australia.

Specimens Examined.—Seventeen from the following localities: Warren River, Lake Muir, Irwin's Inlet, Wilson's Inlet, Torbay, Albany, Stirling Ranges.

Measurements.—Sixteen adult specimens of both sexes: wing, 47-51 (48·5); tail, 35-38 (36·3); exposed culmen, 8·5-9·5 (9); tarsus, 16-17·5 (16·8).

Subspecific Characters.—Much darker, more brownish, in colouration both above and below than typical *inornata*. Upper surface brownish olive; median portion of under surface warm buff merging into dark olive-buff tinged citrine-drab on sides of breast, flanks, and under tail-coverts; dark margins to feathers of chin and throat more prominent.

This race is no exception to the rule that almost all forms described before the literature of Australian ornithology became cluttered with hundreds of unnecessary trinomials are valid and easily recognized.

It is plain that the birds from the Stirling Ranges are to be referred here, although occasional specimens are slightly paler than typical *mastersi*.

ACANTHIZA IREDALEI Mathews.

There has been confusion as to the relationship of the three races admitted here, and unwarranted doubt has been expressed regarding the correct specific name. Briefly it may be stated that as *Acanthiza tenuirostris* Zietz is preoccupied, it is clear that *iredalei*, which has line priority over *morgani*, becomes the name for the species, and there is no apparent reason for according other than subspecific rank to both *hedleyi* and *rosinae*.

The peculiarly-restricted range of this species in South Australia and Victoria is unusual, but it should be noted that it overlaps the range, respectively, of the closely related *reguloides* and *inornata* only in the extreme east and west.

Acanthiza iredalei iredalei Mathews.

Acanthiza tenuirostris Zietz, Trans. Roy. Soc. S. Aust., xxiv, 1900, p. 112; Leigh's Creek, South Australia. (Not *Acanthiza tenuirostris* Lafresnaye, Rev. Zool., 1841, p. 242.)

Acanthiza iredalei Mathews, Bull. Brit. Ornith. Club, xxvii, 1911, p. 97; Lake Way, Western Australia.

Acanthiza morganii Mathews, *ib.*; new name for *Acanthiza tenuirostris* Zietz.

Geobasileus tenuirostris uranie A. G. Campbell, *Emu*, xxv, 1925, p. 62; Shark Bay, Western Australia.

Range.—From coastal mid-western Australia, south-east to the vicinity of Leigh's Creek, Port Augusta, and the north of Eyre Peninsula, South Australia.

Specimens Examined.—Twenty-eight from the following localities: *Western Australia*: Carnarvon, Shark Bay (type of *G. t. uranie*), Day Dawn, Lake Way, Naretha. *South Australia*: Stuart's Range, Leigh's Creek (type of *tenuirostris* Zietz), Coralbignie, Wertigo, Eyre Peninsula.

Measurements.—Twenty-three adult specimens of both sexes: wing, 47-51 (43.1); tail, 38-42 (40.1); exposed culmen, 7-8 (7.6); tarsus, 16-18 (16.8).

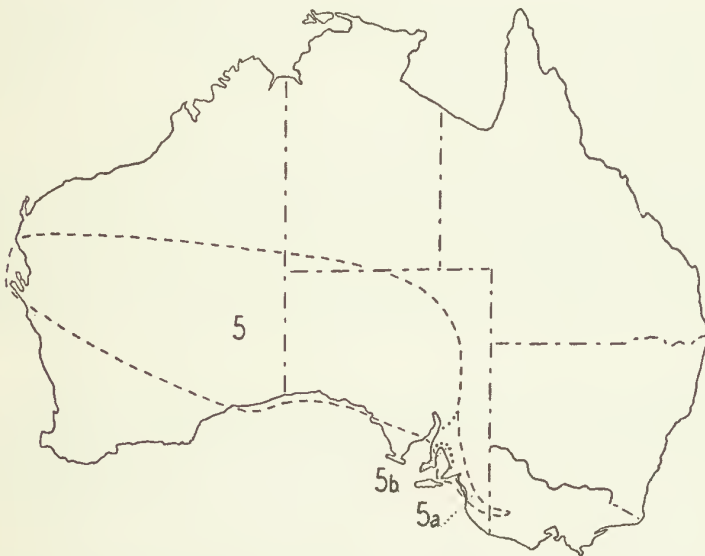


FIG. 5. DISTRIBUTION.

5, *Acanthiza iredalei iredalei*; 5a, *A. i. hedleyi*; 5b, *A. i. rosinae*.

Male.—Dorsal surface greyish olive, lighter on lower back and feathers of forehead distally blackish brown with a curved subterminal band of white; lores, feathers above and below eyes, and ear-coverts pale olive-buff, with narrow blackish brown margins; wings hair brown, much lighter on outer margins of quills and upper coverts; upper tail-coverts cartridge buff to cream buff; tail basally hair brown, merging into blackish brown, each feather broadly tipped and margined on outer web drab, with a white spot at tip of inner margin of all but central feathers; extent of drab and white increasing outwardly to whitish on outer web of outermost feathers; chin, throat and upper breast whitish, tinged pale olive-buff, the feathers distally finely margined blackish brown; remainder of ventral surface olive-buff, to cream buff on flanks; under tail-coverts cartridge buff; axillaries and under wing-coverts cream buff; inner margins of wing quills whitish. "Eyes pale buff; bill and feet black."

Female.—Similar to male.

Topotypical specimens in no way differ from the type of *Acanthiza tenuirostris* Zietz, which I have examined, and other material from South Australian localities. The birds from Shark Bay described by Campbell under *Geobasileus tenuirostris uranie* comprise three adult females and two immature examples. The adults are in worn plumage, which explains the lack of olive colour on the dorsal surface noted by Campbell.

In length of bill and tarsus this form averages less than *hedleyi* and *rosinae*.

Acanthiza iredalei hedleyi Mathews.

Acanthiza iredalei hedleyi Mathews, Aust. Av. Rec., i, 1912, p. 78; Meningie, South Australia.

Acanthiza winiamida Wilson, Emu, xvi, 1917, p. 169; Winiam, Victoria.

Range.—From the Little Desert, mid-western Victoria, west and north-west to south of Port Augusta, South Australia.

Specimens Examined.—Eleven from the following localities: *Victoria*: Winiam (type of *winiamida*). *South Australia*: Coombe, Salt Creek, near Meningie, Port Broughton.

Measurements.—Eleven adult specimens of both sexes: wing, 49-53 (50·1); tail, 38-43 (40·4); exposed culmen, 7·5-8 (8·1); tarsus, 17-18 (17·3).

Subspecific Characters.—Intermediate in colouration between typical *iredalei* and *rosinae*, being darker than the former and lighter than the latter. Dorsal surface deep to dark greyish olive; chin and throat greyish, tinged olive-buff, with blackish brown margins of feathers more marked than in *iredalei*; remainder of under surface olive-buff to deep olive-buff, suffused citrine-drab to deep olive on sides of breast and flanks; axillaries and under coverts deep olive-buff.

This race closely resembles *iredalei* and to accord it other than subspecific status is clearly unwarranted. Winiam material described under *A. winiamida* does not differ from typical *hedleyi*.

Acanthiza iredalei rosinae Mathews.

Acanthiza rosinae Mathews, Aust. Av. Rec., ii, 1913, p. 9; near Adelaide, South Australia.

Range.—Samphire flats bordering the east and north-west shores of St. Vincent's Gulf, South Australia.

Specimens Examined.—Twelve from St. Kilda, near Adelaide, South Australia.

Measurements.—Twelve adult specimens of both sexes: wing, 48-50 (49); tail, 39-43 (40·6); exposed culmen, 8·8-5 (8·1); tarsus, 17·5-19 (18).

Subspecific Characters.—Much darker in colouration than both other forms. Dorsal surface dark olive; white subterminal band of forehead feathers tinged brownish; wings fuscous; upper tail-coverts dark olive-buff; tail blackish brown to black, and lighter tips much restricted; chin and throat greyish with distinct blackish brown margins as in *hedleyi*; remainder of ventral surface buffy olive to olive, lighter on median portion; axillaries and under wing-coverts buffy olive; inner margins of quills greyish.

As evidence of the confusion associated with the genus, originally this form was compared with the type of *Acanthiza reguloides australis* (North) and accorded specific rank. Subsequently Mathews listed it as a race of *Geobasileus hedleyi*, which in the first place was described as a race of *Acanthiza iredalei*.

While similar in size to *hedleyi*, this is the darkest race of the species. Its restricted range is probably unique in Australia.

ACANTHIZA UROPYGIALIS Gould.

This species is distributed throughout the interior where the annual rainfall does not exceed 15 inches. Two forms can be distinguished and the ranges of these correspond with the difference in habitat between the area immediately west of the coastal highlands and the arid inland.

Acanthiza uropygialis uropygialis Gould.

Acanthiza uropygialis Gould, Synop. Birds of Aust., 1838, pl. 60; New South Wales.

Acanthiza uropygialis ruthergleni Mathews, Nov. Zool., xviii, 1912 p. 350; Rutherglen, Victoria.

Range.—South-central Queensland, south through inland New South Wales to northern Victoria and adjoining part of South Australia.

Specimens Examined.—Twenty-eight from the following localities: *New South Wales*: Mogil Mogil, Cobbora, Grenfell, Byrock, Bourke, Moolah, Coonamble, Yandembah. *Victoria*: Junction Murray and Darling Rivers, Rutherglen, Linga, Kow Plains, Ouyen, Grampians, Nhill. *South Australia*: Renmark, Murray River, Swan Reach.

Measurements.—Twenty-five adult specimens of both sexes: wing, 50-54 (51·6); tail, 36-41 (38·9); exposed culmen, 8-9 (8·3); tarsus, 16-17·5 (16·6).

Male.—Dorsal surface olive brown tinged drab, except crown which is suffused russet; forehead blackish brown, each feather with curved subterminal band of white; lores, above and below eyes, and ear-coverts dull white, each feather narrowly margined brown; wings fuscous, margins of upper coverts and quills lighter, to whitish on primaries; upper tail-coverts and basal half of tail tawny; distal portion of tail black, tipped drab except for white spot at tip of inner margin of all but central feathers; chin, throat,

and breast dull or greyish white, suffused light drab on sides of breast, and each feather indistinctly tipped blackish brown; remainder of ventral surface and under tail-coverts white, the flanks tinged cinnamon buff; axillaries, under wing-coverts and inner margins of wing-quills white, tinged pale pinkish buff. "Eyes buff; bill dark horn; feet black."

Female.—Similar to male.

Specimens from Rutherglen and elsewhere in Victoria and South Australia do not differ from typical examples.

Although there is little doubt that this form ranges throughout south-central Queensland, the necessary Queensland material, as in other instances, is again a desiderata.



FIG. 6. DISTRIBUTION.

6, *Acanthiza uropygialis uropygialis*; 6a, *A. u. melli*.

Acanthiza uropygialis melli Mathews.

Acanthiza uropygialis melli Mathews, Nov. Zool., xviii, 1912, p. 350; Eyre Peninsula, South Australia.

Acanthiza uropygialis augusta Mathews, *ib.*; Port Augusta, South Australia.

Acanthiza uropygialis nea Mathews, *ib.*; Burracoppin, Western Australia.

Acanthiza uropygialis murchisoni Mathews, *ib.*; East Murchison, Western Australia.

Acanthiza uropygialis condora Mathews, Aust. Av. Rec., i, 1912, p. 78; Leigh's Creek, South Australia.

Geobasileus uropygialis moora A. G. Campbell, Emu, xxii, 1922, p. 65; Moora, Western Australia.

Geobasileus uropygialis erema A. G. Campbell, *ib.*; Kychering Soak, South Australia.

Acanthiza uropygialis kycheringi Mathews, Bull. Brit. Ornith. Club, xliii, 1922, p. 14; new name for preceding.

Range.—South-western Queensland and extreme western New South Wales, west to inland mid-western Australia; north at least to Macdonnell Ranges and south to Eyre Peninsula.

Specimens Examined.—Fifty-one from the following localities: *South Australia*: Nonning, Mt. Gunson, Gawler Ranges, Lake Gairdner, Kychering (type of *G. u. erema*), Ooldea, Musgrave Ranges, Ernabella, Everard Ranges, Oodnadatta. *Central Australia*: Macdonnell Ranges: Hermannsburgh, James Ranges. *Western Australia*: Naretha, Zanthus, Doodlakine, Kellerberrin, Jonesville, Yalgoo, Day Dawn, Lake Way.

Measurements.—Fifty-one adult specimens of both sexes: wing, 48-54 (50.9); tail, 35-43 (39.1); exposed culmen, 8.8-5 (8.3); tarsus, 16-18 (16.05).

Subspecific Characters.—Differs from typical *uropygialis* in its paler colouration throughout. Dorsal surface drab to hair brown, russet on crown almost lacking; under surface more distinctly white, the light drab on sides of breast and cinnamon buff on flanks much reduced.

The name *mellori* is used for this form because of line priority. The original diagnosis, which is either incorrect or based on an abnormally coloured specimen, is as follows:

"Differs from *A. w. ruthergleni* in its greyer upper colouration, only the head and upper back being greenish. South Australia (Eyre's Peninsula)."

This quotation is repeated by Mathews in his *Birds of Australia* and in addition, a specimen, stated to be the type of *mellori*, is described in full with the "head, back, and wings mouse brown," and the type locality given as "Murray Flats, S. Australia." It will be admitted that mouse brown is closer to the drab colour of the dorsal surface than grey and greenish, but the Murray Flats, which is within the range of typical *uropygialis* as defined here, is considerably to the east of Eyre Peninsula and is separated from that area by both sea and land.

The other subspecies named, in my opinion, are not separable. The specimens from which *G. u. erema* was described are immature.

ACANTHIZA ROBUSTIROSTRIS Milligan.

Acanthiza robustirostris Milligan, Emu, iii, 1903, p. 71; Day Dawn, Western Australia.

Acanthiza marianae S. A. White, South Aust. Ornith., ii, 1915, p. 45; Everard Ranges, Central Australia.

Milligania robustirostris liberia Mathews, Aust. Av. Rec., iii, 1916, p. 61; Siberia Soak, Western Australia.

Milligania robustirostris moorilyanna Mathews, Bull. Brit. Ornith. Club, xxxvi, 1916, p. 90; Everard Ranges, Central Australia.

Range.—Inland mid-western to Central Australia.

Specimens Examined.—Nineteen from the following localities: *Western Australia*: Day Dawn, Yalgoo, Lake Way, Borewell. *Central Australia*: Musgrave Ranges, Everard Ranges, Moorilyanna, Snider's Hill, Cockatoo Creek, Hermannsburgh.

Measurements.—Seventeen adult specimens of both sexes: wing, 50-54 (52); tail, 39-45 (41·9); exposed culmen, 8-8·5 (8·2); tarsus, 17·5-19 (18).

Male.—Forehead blackish, each feather with a curved subterminal band of white; from forehead to nape neutral grey, shafts of feathers prominently brownish black; lores, above and below eyes whitish, each feather margined dark brown; upper and lower back mouse grey; feathers of rump broadly tipped white, tinged buff; upper tail-coverts wood brown; basal portion of tail avellaneous, becoming blackish brown and pale drab at tip, with a white spot at tip of inner margins of all except central feathers; wings fuscous, outer margins of basal half of primaries and greater wing-coverts, and both margins of secondaries dull white; upper and median wing-coverts broadly margined mouse grey; general colour of ventral surface including under tail-coverts, white, dull on chin and throat, tinged grey and buff on breast, and vinaceous buff on flanks; axillaries, under wing coverts and inner margins of wing-quills white, tinged buff. "Eyes reddish brown; bill and feet black."

Female.—Similar to male.

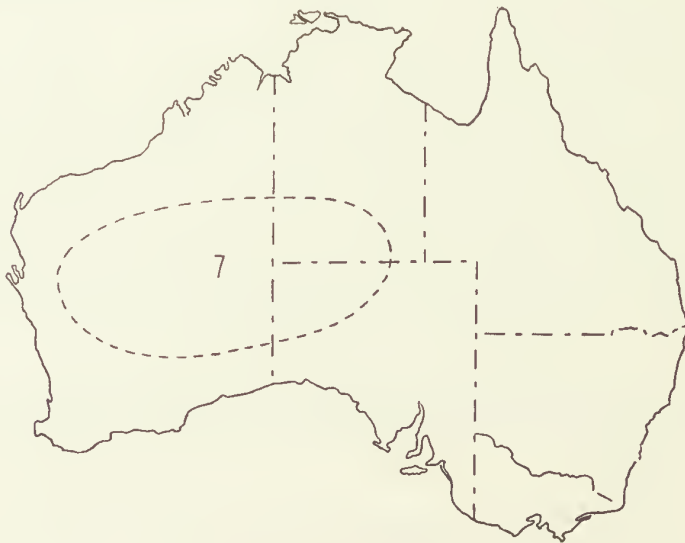


FIG. 7. DISTRIBUTION.

7, *Acanthiza robustirostris*.

Although resembling *uropygialis* in the rufescent colour of base of tail and upper tail-coverts, this is a well-marked and distinct species, and both species are found in the same area. The grey colour of the dorsal surface, and blackish shaft lines of the crown are characters peculiar to *robustirostris*. I have

failed to find anything unusual in the shape and size of the bill, notwithstanding it was referred to in naming the species, and has been used even as a generic character. In structure and measurements *robustirostris* is very similar to other species of the genus.

No difference is apparent between specimens from the type locality and those from Everard Ranges and elsewhere in Central Australia. The rainfall and general conditions being similar at and between these two points, racial differences are not to be expected. The author of *M. r. liberia* has consigned that name to synonymy (Mathews, Birds of Aust., ix, 1922, p. 462).

ACANTHIZA NANA Vigors and Horsfield.

Six types and one paratype of the nine forms named have been available to me and it is clear that only four subspecies are warranted. In this species it is the inland pallid form, *A. n. modesta* (type of *dawsoniana*), that is represented in a collection from the lower Dawson River, Queensland.

Acanthiza nana nana Vigors and Horsfield.

Acanthiza nana Vig. and Horsf., Trans. Linn Soc., xv, 1827, p. 226; Sydney, New South Wales.

Acanthiza nana dorotheae Mathews, Emu, xiv, 1914, p. 60; Lithgow, New South Wales.

Acanthiza nana clelandi Mathews, *ib.*, p. 121; new name for preceding.

Acanthiza nana belltrees A. G. Campbell, Emu, xxii, 1922, p. 64; Scone, New South Wales.

Range.—South-eastern Queensland to south of Sydney, New South Wales.

Specimens Examined.—Twenty-three from the following localities: *Queensland*: Gowrie. *New South Wales*: Scone (type of *belltrees*), Blacktown, Woolahra, Narrabeen, various localities vicinity of Sydney, Liverpool, Lithgow (type of *dorotheae*).

Measurements.—Twenty-two adult specimens of both sexes: wing, 47-52 (49); tail, 34-39 (35·6); exposed culmen, 7-8·5 (7·9); tarsus, 15-17 (16·5).

Male.—Dorsal surface olive citrine to yellowish citrine on rump and upper tail-coverts, with crown tinged buffy and forehead straw yellow; indistinct superciliary stripe citron yellow; feathers of lores and cheeks straw yellow with dusky tips, and those of the ear-coverts dark brown with shafts straw yellow; wings fuscous, margins of coverts and outer margins of inner secondaries olive-citrine to dull citrine, outer margins of remainder of wing-quills citron yellow; tail hair brown with outer webs basally and outer margins distally yellowish citrine, the whole crossed by a broad subterminal band of black which is reduced to large spots on the two central feathers;

chin and upper throat chamois to cream-buff, merging into citron yellow of remainder of ventral surface and under tail-coverts, with flanks strontian yellow and sides of breast tinged olive-citrine; axillaries and under wing-coverts white, tipped pale yellow; inner margins of wing-quills white. "Eyes yellowish white; bill dark brown; feet brownish black."

Female.—Similar to male.

The type of *belltrees* and other specimens from Scone are in unworn plumage, and therefore slightly brighter in colouration than those from south Queensland to the north, and Sydney, (the type locality) in the south. Mathews has consigned *burtoni* to synonymy, and the type of *dorotheae* is typical *nana*.

Acanthiza nana flava H. L. White.

Acanthiza nana flava H. L. White, Emu, xxii, 1922, p. 97; Herberton, Queensland.

Range.—From about Cairns to south of Cardwell, north-eastern Queensland.

Specimens Examined.—Type and paratype from Ravenshoe.

Measurements.—One male, one female respectively: wing, 52, 48; tail, 41, 38; exposed culmen, 8, 8; tarsus, 15, 15.

Subspecific Characters.—Differs from all other races of *nana* in its richer, much brighter colouration; nearest to typical *nana* and markedly different from *modesta* and *mathewsi*. Dorsal surface dark citrine to citrine; chin and throat antimony yellow merging into strontian yellow of remainder of ventral surface; axillaries citron yellow with dusky bases.

In describing this form from two specimens, probably the only two in an Australian collection, doubtless H. L. White was influenced by the known distinction in the fauna of the range given. The difference in colouration is striking and *A. n. flava* appears well worthy of recognition.

Acanthiza nana mathewsi Hartert.

Acanthiza nana mathewsi Hartert, Bull. Brit. Ornith. Club, xxv, 1910, p. 82; Springvale, Victoria.

Range.—From south of Sydney, New South Wales, south and west to north of Adelaide, South Australia.

Specimens Examined.—Twelve from the following localities: *Victoria*: Rosedale, Springvale (paratype of *mathewsi*), Raywood, You Yangs. *South Australia*: Grange, Sandy Creek, Laura.

Measurements.—Eleven specimens of both sexes: wing, 48-52 (49.7); tail, 38-42 (38.6); exposed culmen, 8-8.5 (8.1); tarsus 16-17 (16.7).

Subspecific Characters.—Resembling *A. n. modesta*, but darker and much duller in colouration than any other race. Upper surface saccardo's olive; chin and throat pinkish buff to cinnamon buff, extending on to breast and becoming dull citrine on lower under surface.

The dull olive colour of the back and greenish under surface, compared with the rich green and yellow of these parts in typical *nana* and *flava*, makes this an easily recognized race. Specimens from the extreme north-western part of the range are intermediate between *modesta* and *mathewsi*.

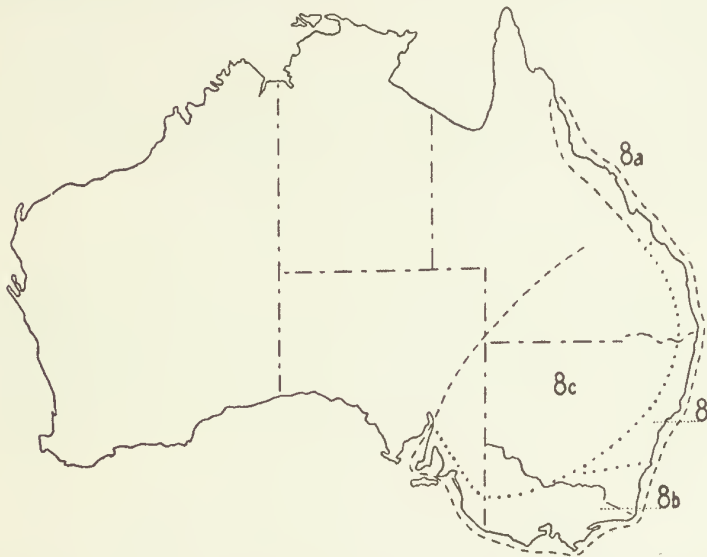


FIG. 8. DISTRIBUTION.

8, *Acanthiza nana nana*; 8a, *A. n. flava*; 8b, *A. n. mathewsi*; 8c, *A. n. modesta*.

Acanthiza nana modesta De Vis.

Acanthiza modesta De Vis, Ann. Queensld. Mus., No. 6, 1905, p. 43; Charleville, Queensland.

Acanthiza pygmea Milligan, Emu, xii, 1913, p. 167; Mallee, Victoria.

Acanthiza nana dawsoniana H. L. White, Emu, xviii, 1918, p. 122; Dawson River, Queensland.

Range.—From inland mid-eastern Queensland, south-west through inland New South Wales to north-western Victoria and adjoining part of South Australia.

Specimens Examined.—Twenty-three from the following localities: *Queensland*: Dawson River (type of *dawsoniana*), Charleville (type of *modesta*). *New South Wales*: Manilla district, Cobbora. *Victoria*: Kow Plains (type of *pygmea*), Raak. *South Australia*: Murray River, Flinders Range.

Measurements.—Twenty-two adult specimens of both sexes: wing, 48-54 (49·8); tail, 37-42 (38·8); exposed culmen, 8-9 (8·2); tarsus, 16-17 (16).

Subspecific Characters.—Differs markedly from all other forms, particularly typical *nana* and *flava*, in its much paler colouration throughout. Dorsal surface dull citrine, chin and throat Naples yellow, merging on breast to naphthalene yellow of remainder of ventral surface, tinged barium yellow on flanks.

The pallid colouration of this form is in striking contrast to the rich green and yellow of typical *nana*. Milligan described *pygmea* as being smaller in all dimensions compared with *mathewsi*, but this is not borne out by the type and topotypical material; indeed, all four forms are markedly similar in size. Greater length of bill was the reason for H. L. White naming *dawsoniana*, but one-half to one millimetre in length of culmen does not warrant separation. Specimens from widely separated localities exhibit this slight difference.

In his *Birds of Australia* (ix, 1922, p. 449) Mathews erroneously included *A. n. modesta* as a race of *A. lineata*, giving the range as "North Queensland."

ACANTHIZA LINEATA Gould.

Inhabiting chiefly mountainous and heavily-afforested country, the range of *lineata* is more restricted than that of any other species of the genus in eastern Australia. Two races can be distinguished, specimens from the south being distinctly darker than typical examples.

Acanthiza lineata lineata Gould.

Acanthiza lineata Gould, Synop. Birds of Aust., pt. iv, 1838, pl. 59; New South Wales.

Acanthiza lineata goulburni Mathews, Aust. Av. Rec., i, 1912, p. 93; New South Wales.

Acanthiza lineata whitei Mathews, Bull. Brit. Ornith. Club., xl, 1920, p. 106; Bunya Mountains, Queensland. (Not *A. lineata whitei* Mathews, Aust. Av. Rec., i, 1912, p. 44.)

Acanthiza lineata alberti Mathews, *ib.*, p. 121, new name for preceding.

Range.—South-eastern Queensland to south of Sydney, New South Wales.

Specimens Examined.—Twenty-eight from the following localities: *Queensland*: Ithaca Creek, Brisbane. *New South Wales*: Scone, Seaham, Enfield, vicinity of Sydney, Penrith, Mulgoa, Tarana, Lithgow.

Measurements.—Twenty-eight adult specimens of both sexes: wing, 50-56 (52.3); tail, 35-41 (38.5); exposed culmen, 8-9 (8.1); tarsus, 15-17 (16.4).

Male.—Forehead to nape olive-brown, the shaft of each feather white, merging into deep olive of back and becoming citrine-drab on rump and upper tail-coverts; feathers of lores, superciliary stripe, and ear-coverts white, each feather finely margined brown; wings fuscous, outer margins of coverts and quills deep olive to whitish on primaries; tail hair brown, basal half of each feather tinged citrine-drab on outer web and some with lighter margin on inner web at tip, the whole crossed by a broad subterminal band of black which is reduced to large spots on central feathers; chin, throat and breast white, tinged yellow and finely margined on both webs with dark brown, giving a striated appearance; sides of breast tinged deep olive; abdomen and flanks

deep colonial buff; under wing-coverts cartridge buff, inner margin of wing-quills white. "Eyes brownish; bill and feet dark brown."

Female.—Similar to male.

While specimens from south-eastern Queensland and the north-eastern part of New South Wales are similar, those from localities to the east and south-east of Sydney approach *chandleri* in colouration.

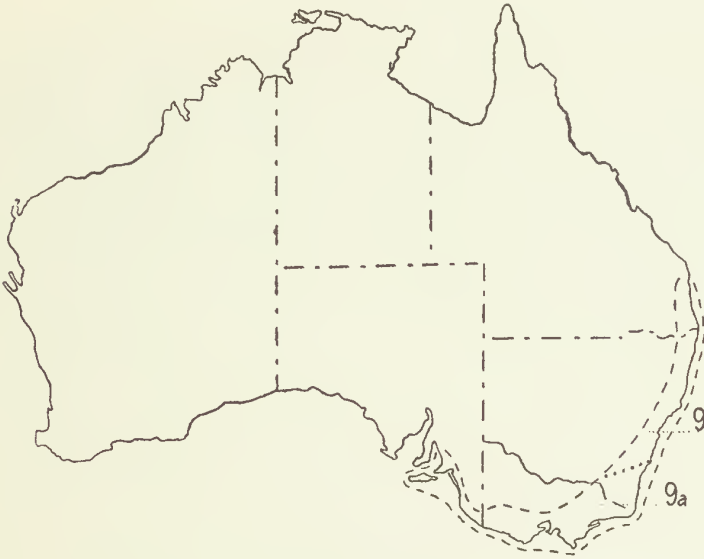


FIG. 9. DISTRIBUTION.

9, *Acanthiza lineata lineata*; 9a, *A. l. chandleri*.

Acanthiza lineata chandleri Mathews.

Acanthiza lineata chandleri Mathews, Nov. Zool., xviii, 1912, p. 349; Olinda, Victoria.

Acanthiza lineata clelandi Mathews, *ib.*; Mount Lofty, South Australia.

Acanthiza lineata whitei Mathews, Aust. Av. Rec., i, 1912, p. 44; Kangaroo Island, South Australia.

Range.—From south of Sydney, New South Wales, south and west to Mt. Lofty and Kangaroo Island, South Australia.

Specimens Examined.—Twenty-four from the following localities: *Victoria*: Big River, Healesville, Beaconsfield, Olinda, Kilsyth, Ringwood, Frankston, Grampians, Lorne. *South Australia*: Beachport, Mt. Lofty, various localities Kangaroo Island.

Measurements.—Twenty-three adult specimens of both sexes: wing, 50-57 (52·5); tail, 35-41 (38·7); exposed culmen, 8-9 (8·3); tarsus, 16-17 (16·4).

Subspecific Characters.—Darker, more brownish above than the typical form, and the lower ventral surface green rather than yellow. Top of head

bister brown; back and upper tail-coverts tinged brownish olive; lower breast tinged and flanks and abdomen entirely ecru-olive; under tail-coverts chamois.

This race was described as differing from *lineata* in being "much darker above and browner below." In specimens examined only the narrow margins of the throat and breast feathers are brown, the lower ventral surface is greenish as distinct from yellow in typical *lineata*. Birds from Kangaroo Island and South Australia are essentially similar to those from Victorian localities.

ACANTHIZA CHRYSORRHOA (Quoy and Gairmard).

This species is almost as widely distributed as *A. pusilla*, but apparently it is uncommon except in coastal areas. It has not been collected from any of the islands of Bass Strait or from Kangaroo Island, South Australia, although a fairly common form in Tasmania.

A feature of the species is the extension of the range of some races beyond the limits of normal faunal areas.

Acanthiza chrysorrhoa chrysorrhoa (Quoy and Gairmard).

Saxicola chrysorrhoa Quoy and Gairmard, Voy. Astrol., i, 1830, p. 198; New South Wales.

Acanthiza leighi Grant, Bull. Brit. Ornith. Club., xxiii, 1909, p. 73; Lithgow, New South Wales.

Range.—From south-eastern Queensland to south of Sydney, New South Wales; west to Cobbora.

Specimens Examined.—Thirty-four from the following localities: *New South Wales*: Warialda, Scone, Cobbora, Lithgow, Tarana, Helensburgh, Roseville, Lilyvale, Sutherland, Liverpool, Bowral, Goulburn.

Measurements.—Thirty-one adult specimens of both sexes: wing, 58-62 (59.9); tail, 36-42 (39.8); exposed culmen, 9-11 (9.7); tarsus, 16-17 (16.7).

Male.—Narrow band across forehead, lores, and superciliary stripe white, most feathers very finely tipped black, appearing as a black spot immediately in front of eyes; ear-coverts dull white with narrow brownish margins; fore part of crown black, each feather broadly tipped white with indistinct dusky margins; feathers of posterior part of crown blackish brown, broadly margined light greyish olive, merging on nape into citrine-drab of mantle and lower back; wings fuscous, outer margins of quills lighter, from whitish on primaries to citrine-drab on inner secondaries, and margins of upper coverts light greyish olive; upper tail-coverts strontian yellow, longer feathers distally tinged greenish; tail basally strontian yellow, each feather with white shaft; tail distally black, each feather broadly tipped drab except for white spot at tip of inner web of lateral feathers; chin and throat white, some feathers on sides of throat finely tipped brownish; remainder of ventral surface straw yellow, richer on flanks, tinged drab on sides of breast, and some feathers

of upper breast tipped brownish; under tail-coverts barium yellow; under wing-coverts light drab and white, with axillaries white tinged yellow; inner margin of wing-quills white. "Eyes brown; bill and feet black."

Female.—Similar to male.

The unusual western extension of the range of this form has been remarked under *reguloides*; typical specimens only have been obtained at Cobbora, west of the coastal highlands.

Acanthiza chrysorrhoa sandlandi Mathews.

Acanthiza chrysorrhoa sandlandi Mathews, Nov. Zool., xviii, 1912, p. 351; Blackburn, Victoria.

Acanthiza chrysorrhoa perksi Mathews, *ib.*; Mount Lofty, South Australia.

Range.—From south-eastern New South Wales through southern Victoria to north of Adelaide, South Australia.

Specimens Examined.—Seventeen from the following localities: *Victoria*: Lower Plenty River, Beaconsfield, Springvale, Cheltenham, Preston, Parwan, Melton, Myers Flat, You Yangs. *South Australia*: Burnside, Buckland Park, Glen Osmond, Laura.

Measurements.—Seventeen adult specimens of both sexes: wing, 58-62 (59); tail, 36-43 (39·2); exposed culmen, 9-10 (9·1); tarsus, 16-17 (16·5).

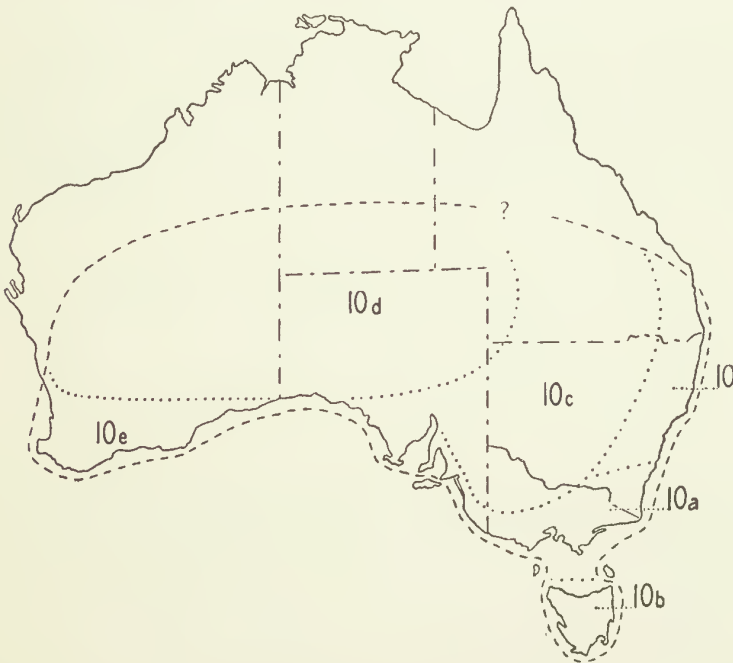


FIG. 10. DISTRIBUTION.

10, *Acanthiza chrysorrhoa chrysorrhoa*; 10a, *A. c. sandlandi*; 10b, *A. c. leachi*; 10c, *A. c. addenda*; 10d, *A. c. ferninandi*; 10e, *A. c. multi*.

Subspecific Characters.—Differs markedly from *A. c. chrysorrhoa* in its darker colouration, particularly the under surface, which is buff as distinct from yellow in the typical race. General colour above deep olive; chin and throat white, in some warm buff like remainder of median portion of under surface, merging into dark olive-buff on flanks and sides of breast; under tail-coverts white, tinged yellow; axillaries and under wing-coverts white tinged warm buff.

Easily distinguished by the deep buff colour of the under surface from all races of *chrysorrhoa* except *multi*, from which it differs in its more intense colouration and particularly in having the under tail-coverts washed with yellow, not pure white. Specimens from south-eastern South Australia are similar to typical *sandlandi*.

Acanthiza chrysorrhoa leachi Mathews.

Acanthiza chrysorrhoa leachi Mathews, Nov. Zool., xviii, 1912, p. 351; Tasmania.

Range.—Tasmania.

Specimens Examined.—Five from Launceston, Swansea and Hobart.

Measurements.—Five adults of both sexes: wing, 58-61 (59·6); tail, 38-44 (40·2); exposed culmen, 9-11 (10); tarsus, 16-17 (16·6).

Subspecific Characters.—Similar to *sandlandi*, differing only in the lighter colour of upper parts in which it equals typical *chrysorrhoa*.

The lighter colour of the upper surface is constant in the few specimens available, but this race is not markedly different from *sandlandi*. It appears worthy of recognition, however, in view of its insular habitat, and the fact that the species has not been collected in any of the Bass Strait islands.

Acanthiza chrysorrhoa addenda Mathews.

Acanthiza chrysorrhoa addenda Mathews, Aust. Av. Rec., i, 1912, p. 44; Port Augusta, South Australia.

Geobasileus chrysorrhoa normantoni Mathews, *ib.*, ii, 1913, p. 76; Normanton, Queensland.

Geobasileus chrysorrhoa mallee A. G. Campbell, Emu, xxii, 1922, p. 66; Mallee, Victoria.

Range.—Central Queensland, inland New South Wales, north-western Victoria and adjoining country of South Australia west at least to Eyre Peninsula.

Specimens Examined.—Fourteen from the following localities: *Queensland*: Charleville. *Victoria*: Kow Plains (type of *mallee*). *South Australia*: Moolawatana, Mt. Searle, Kallioota, Coffin's Bay Peninsula.

Measurements.—Fourteen adult specimens of both sexes: wing, 57-62 (59·2); tail, 38·43 (40·2); exposed culmen, 9-10 (9·8); tarsus, 16·5-17·5 (16·9).

Subspecific Characters.—Resembling *sandlandi* and *leachi* but altogether paler. Upper surface citrine-drab with nape light greyish olive; under surface white, tinged deep olive-buff.

Specimens from western New South Wales are lacking, but those from south Central Queensland, north-west Victoria, and the adjoining area of South Australia are clearly referable to one subspecies. As this bird is only an occasional visitor to north-central Queensland, it is probable that the specimens from which *normantoni* was described were forced north by dry conditions. Whether *normantoni* is to be referred here or to *ferdinandi* is not clear.

Acanthiza chrysorrhoa ferdinandi (Mathews).

Acanthiza pallida Milligan, Emu, iii, 1903, p. 111; Yalgoo, Western Australia. (Not *Acanthiza pallida* Finsch, Notes Leyden Mus., xx, 1898, p. 347).

Geobasileus chrysorrhoa ferdinandi Mathews, Bull. Brit. Ornith. Club, xxxvi, 1916, p. 90; Musgrave Ranges, Central Australia.

Geobasileus chrysorrhoa alexanderi Mathews, Aust. Av. Rec., iv, 1921, p. 137; new name for *Acanthiza pallida* Milligan.

Geobasileus chrysorrhoa pallescens A. G. Campbell, Emu, xxii, 1922, p. 65; Levi Ranges, Central Australia.

Geobasileus westernensis A. G. Campbell, Emu, xxii, 1922, p. 65; Moora, Western Australia.

Range.—Extreme western Queensland, and probably north-western New South Wales, west through Central Australia to inland mid-western Australia.

Specimens Examined.—Ten from the following localities: *Central Australia*: Macdonnell Ranges, Hermannsburg, James Ranges (type of *pallescens*). *Western Australia*: Ebano, Yandanooka, Wongan Hills.

Measurements.—Ten adult specimens of both sexes: wing, 56-62 (54.1); tail, 39-44 (41); exposed culmen, 10-11 (10.3); tarsus, 16.5-18 (17.4).

Subspecific Characters.—Much paler in colouration than any other race of *chrysorrhoa*. Similar to the typical form in its yellowish under surface and yellow under tail-coverts. Dorsal surface from light greyish olive on nape to yellowish citrine on lower back; under surface white, suffused straw yellow, except on chin and throat, and tinged cartridge buff on breast; under tail-coverts barium yellow.

Although the species is common in coastal areas it would seem, from the small number of the preceding and present races available, that such is not the case in the dry interior. Except that the breast is more deeply tinged cartridge buff, the type of *pallescens* is similar to other specimens from central and inland Western Australia. The single example from Wongan Hills in its darker upper parts reflects the proximity of that locality to the range of *A. c. multi*, and it is apparent that *G. c. westernensis* was described from a similar specimen.

Acanthiza chrysorrhoa multi Mathews.

Acanthiza chrysorrhoa multi Mathews, Nov. Zool., xviii, 1912, p. 351;
Wilson's Inlet, Western Australia.

Range.—Form north of Perth, south-east to the southern coast and east towards the South Australian border.

Specimens Examined.—Twenty-nine from the following localities: Perth Herdsman's Lake, Gracefield, Mandurah, Harvey River, Beverley, Dumbleying, Broome Hill, Wonerup, Cape Naturaliste, Ellensbrook, Lake Muir, Wilson's Inlet, Albany, Bannister, Stirling Ranges, Lake Dundas, Zanthus.

Measurements.—Twenty-nine adult specimens of both sexes: wing, 54-62 (59); tail, 37-43 (41·3); exposed culmen, 9·5-11 (10); tarsus, 17-18·5 (17·5).

Subspecific Characters.—Most closely resembling *addenda* but under surface white prominently tinged pinkish buff rather than deep olive-buff, and under tail-coverts white; upper parts more brownish, light brownish olive, with mouse grey nape.

This race is sharply distinct in colouration from *A. c. ferdinandi*. Most available specimens are from localities in, or bordering on, the area of good rainfall (30-40 inches) in south-west Australia. It is surprising, therefore, to find *multi* represented by two examples from Lake Dundas and Zanthus, both of which localities are in generally arid country similar to that inhabited by *ferdinandi*. Possibly the presence of these birds in that class of country resulted from a movement induced by temporary suitable conditions, but more material from a wide area is essential for a proper understanding of the distribution of these two forms in Western Australia.