

IDENTIFICATION OF LEAF WARBLERS IN THAILAND

by

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Sixteen species of leaf-warblers, *Phylloscopus*, also known as willow-warblers, occur in Thailand, mostly as migrants and winter visitors. Small members of the warbler subfamily, Sylviinae, ranging in length from $3\frac{3}{4}$ inches (*P. maculipennis*) to $5\frac{1}{4}$ inches (*P. schwarzi*), these inconspicuous, dull green, slender-billed birds forage upon small insects picked from leaves and twigs during rapid progression by hops and short flights through dense vegetation. Most feed in the crown foliage of tall trees; a few such as *P. fuscatus* and *P. schwarzi* haunt dense shrubbery and feed on or near the ground and along streams. O. Austin in his "Birds of the world" remarks that the 30 odd leaf-warblers are the most vexing of all birds to identify and that they are more easily recognized by song than plumage. In Thailand, however, we are denied the criterion of song except for snatches heard from spring migrants because only the one species, *P. davisoni*, nests here and regularly sings. Therefore we must turn to recent, unfaded, and properly identified museum skins and published authority—that of K. Williamson—for morphological distinctions by which species may be identified, in the hand only.

Following the tradition of Ticehurst's 1938 review of leaf-warblers, Williamson's 86 page treatise on the genus *Phylloscopus*, "Identification for ringers 2" (British Trust for Ornithology, Oxford, 1962), "deserves," according to K. Parkes in the Auk, April 1965,

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“some sort of prize for the most misleading title in current ornithological literature.” It is a definitive scholarly monograph providing a mass of data. The field biologist or “ringer” must sift out important characters and construct his own identification aids. We admire the philosophy implied in Williamson’s position: that thorough knowledge of a group is prerequisite to using even the simplest field key—that to use a key you should go through the same learning process as did the author of that key. However, with due allowance to the pitfalls of over-simplification and neglect of individual variation, we submit our short-cut solution to the problem of identifying leaf-warblers, in the form of table 1.

All the traits we use are buried in Williamson’s book, which we hereby acknowledge. But we mostly rely upon our own experience in netting birds and preparing specimens for identification in Thailand from 1964 to 1967 1) during an arbovirus ecology study for SEATO Medical Research Laboratory, and 2) during banding expeditions in cooperation with Mr. Ben King, of the Migratory Animals Pathological Survey. We thank both the SEATO Laboratory and MAPS for this support. We banded 42 leaf-warblers, prepared 29 study skins, and examined 174 skins prepared by Mr. King and his assistants, Messrs. Chairat and Nivesh, as well as 38 recent skins collected by Mr. Kitti for the Applied Scientific Research Corporation of Thailand. These 237 recent, unfaded specimens from Thailand are now divided among the collections of SEATO Laboratory, Smithsonian Institution, and ASRCT. The number of specimens of each species examined is shown in the synopsis which follows, as a rough index of relative frequency of capture in nets in Thailand forests.*

Synopsis of *Phylloscopus* of Thailand

Arranged from plain to ornate and intended to suggest relationships. All species have a pale supercilium bordered beneath by a dark line through the eye.

* The principles of laboratory animal care as promulgated by the National Society for Medical Research were observed.

I. Brownish, plain. Inhabit understorey vegetation, near the ground.

P. fuscatus, dusky leaf-warbler. Brown above (27).

P. schwarzi, Radde's leaf-warbler. Thick bill (34).

P. armandii, streaked-breasted leaf-warbler. Grayish throat, yellowish belly all streaked with yellow (5).

P. subaffinis, buff-bellied leaf-warbler. Golden buff below (5).

II. Narrow wing bars, slight white in tail. Arboreal or lower branches.

P. borealis, arctic leaf-warbler. Vestigial 10th primary (8).

P. trochiloides, greenish leaf-warbler. Large 10th primary (12).

P. tenellipes, pale-legged leaf-warbler. Pale feet (15).

III. Single narrow wing bar, slight white in tail, crowned. Arboreal.

P. coronatus, eastern crowned leaf-warbler. White belly, contrasting lemon yellow vent (3).

IV. Wing bars present, white (or pale yellow) in tail, crowned. Arboreal.

P. reguloides, Blyth's leaf-warbler. Pale greenish-yellow belly, white border of inner web and tip of outer tail feathers (19).

P. davisoni, white-tailed leaf-warbler. Brighter greenish-yellow belly, white inner web of outer tail feathers (43).

P. cantator, yellow-faced leaf-warbler. White belly, yellow throat and vent (2).

P. ricketti, mountain leaf-warbler. Yellow underparts (3).

V. Broad double wing bars, slight white in tail, patterned tertials. Arboreal.

P. inornatus, yellow-browed leaf-warbler (occasional trace of median pale crown stripe) (24).

VI. Conspicuous wing bars, white in tail, crowned, patterned tertials, yellow rump. Arboreal.

P. proregulus, yellow-rumped leaf-warbler. Slight white in tail, pale underparts (16).

P. maculipennis, ashy-throated leaf-warbler. Conspicuous white in tail; gray throat contrasts with greenish-yellow belly (6).

P. pulcher, orange-barred leaf-warbler. Conspicuous white in tail, yellowish-green underparts, golden-orange wing bars (15).

Terms of description may be defined as follows: plain coloration means uniform dark above except for the supercilium and eye stripe common to the entire genus, pale beneath, unrelieved by any light marks on the wing or tail. Wing bars are formed by pale buffy tips to the greater and middle secondary wing coverts; if faint and narrow they are apt to be confined to the greater coverts; if broad and conspicuous they adorn both sets of coverts. "Crowned" means the top of the head is decorated by a pale median streak bordered on each side by blackish. "Patterned tertials" refers to whitish edges or spots on the three innermost secondary flight feathers, next to the body. Easily discerned in the field, this trait makes *P. inornatus* the only species readily identifiable in the wild. Its patterned tertials (in the absence of crown and yellow rump) plus the distinctive call *weest* (Williamson) reveal it as our most abundant wintering leaf-warbler in trees. The most ornate leaf-warblers possess a yellow rump patch in addition to all the foregoing adornments. "White in tail"—on the three outermost retrices—consists either of a narrow inner edging, a conspicuous inner border curving onto the tip as in *P. reguloides* (fig. 1 left), or a straight broad white streak covering most of the inner web as in *P. davisoni* (fig. 1 right). The difference between the "vestigial" 10th (outermost) primary of *P. borealis* and the larger feather of *P. trochiloides* is shown in fig. 2.

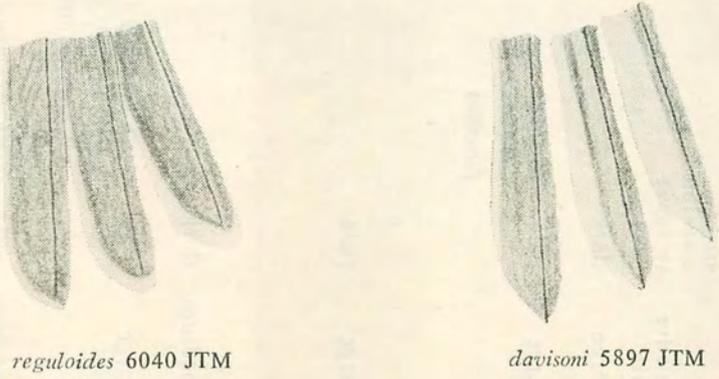


Fig. 1 Right outer tail feathers in two species of *Phylloscopus*.

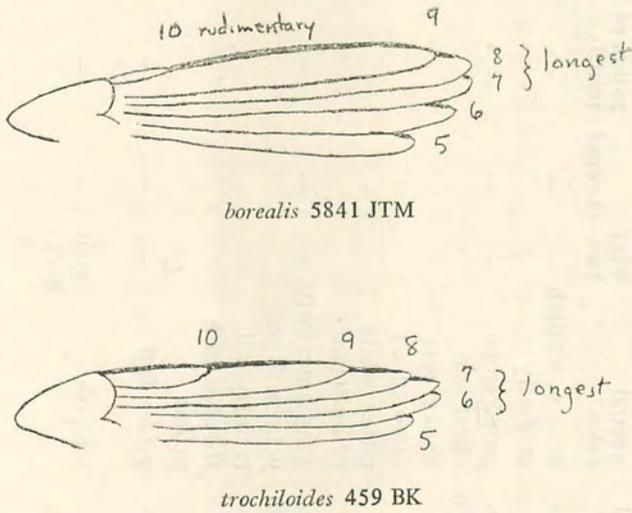


Fig. 2 Left outer primaries in two species of *Phylloscopus*.

Table 1. Comparison of Thailand Leaf-warblers.

	dorsal color	ventral color	wing bars	crowned	patterned tertials	yellow rump patch	white in tail	relative size	tip of mandible (= lower jaw)	other
<i>fuscatus</i>	<i>brown</i>	brown, whitish medially	—	—	—	—	—	large	dark	
<i>schwarzi</i>	olive-brown	pale brown chest and flanks; rest dimorphic: either white or pale buff	—	—	—	—	—	large	pale	<i>thicker bill than fuscatus</i>
<i>armandii</i>	olive-brown	gray anteriorly, yellowish posteriorly, all streaked with yellow	—	—	—	—	—	large	pale	
<i>subaffinis</i>	olive-buff	<i>golden buff</i>	—	—	—	—	—	medium	dark	
<i>borealis</i>	olive-green	whitish	small bars	—	—	—	narrow	large	pale	<i>10th primary 1/4 length of #9; #4 not emarginate outer web</i>
<i>trochiloides</i>	olive-green	pale greenish-yellow	small bars	—	—	—	narrow	medium	pale	<i>10th primary 1/2 length of #9</i>

Table 1. (Continued)

	dorsal color	ventral color	wing bars	crowned	patterned tertials	yellow rump patch	white in tail	relative size	tip of mandible (= lower jaw)	other
<i>tenellipes</i>	olive-brown, darker crown; golden brown on rump	white, with brown flanks	small bars	—	—	—	narrow	large	pale	<i>feet pale</i>
<i>coronatus</i>	olive-green	<i>whitish, with contrasting lemon yellow vent</i>	small bars	crowned	—	—	narrow	large	pale	
<i>reguloides</i>	green	pale greenish yellow	double bars	crowned	—	—	<i>strong white border of inner web curving to include tip</i>	medium	pale	
<i>davisoni</i>	green	bright greenish-yellow brighter than <i>reguloides</i>	double bars	crowned	—	—	<i>straight white inner web</i>	medium, smaller than <i>reguloides</i>	pale	<i>nests in Thailand</i>

Table 1. (Continued)

	dorsal color	ventral color	wing bars	crowned	patterned tertials	yellow rump patch	white in tail	relative size	tip of mandible (= lower jaw)	other
<i>cantator</i>	olive- green	<i>yellow throat and vent, white belly</i>	small double bars	crowned	—	—	narrow, pale yellow	medium	pale	
<i>ricketti</i>	olive- green	<i>yellow</i>	small double bars	crowned	—	—	narrow, pale yellow	medium	pale	
<i>inornatus</i>	olive- green	whitish	double bars	faint or lacking	<i>patterned</i>	—	narrow	medium	dark	
<i>proregulus</i>	olive- green	<i>pale greenish yellow becoming grayer anter- iorly</i>	double bars	crowned	patterned	yellow	very narrow	small	dark	
<i>maculipennis</i>	yellow- green	<i>gray anteriorly, yellow poster- iorly</i>	double bars	crowned	patterned	yellow	con- spicuous white	very small	dark	
<i>pulcher</i>	green	yellow-green	double <i>orange</i>	crowned	patterned	yellow	conspi- cuous white	medium	dark	