

Generic Allocation of the Japanese Marsh Warbler *Megalurus pryeri* (Aves: Sylviidae)

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Abstract The generic allocation of the Japanese Marsh Warbler *Megalurus pryeri* is discussed. The genus *Megalurus* is probably a polyphyletic group. The type species of the genus is *M. palustris*, which is a different bird from *M. pryeri* in many respects. We suggest that *pryeri* be placed in the genus *Locustella* until its relationships with other sylvine species are better known.

The Japanese Marsh Warbler or Pryer's Grass Warbler *Megalurus pryeri* is a small sylvine warbler of the eastern Palearctic. In size this bird is slightly larger than the Fan-tailed Warbler *Cisticola juncidis*, being about equal to small species of reed and grasshopper warblers *Acrocephalus* and *Locustella*. It is a rare and local bird of reed beds and swamps and two subspecies are known. Nominate subspecies *M. p. pryeri* breeds only in northern Honshu north of the Kanto Plain and winters in warmer areas along the Pacific coast in central Honshu (OSJ, 1974); the other subspecies *M. p. sinensis* breeds in northeastern China (Manchuria) and possibly in southern Ussuriland (Lake Khanka), migrating south to the Yangtze River basins (WATSON et al., 1986; CHENG, 1987).

In appearance *M. pryeri* is similar to certain species of *Locustella*, such as *L. lanceolata*, *L. naevia* and *L. certhiola*. The upperparts are russet brown streaked with black, whereas the underparts are whitish with light olive brown on the sides of body and the under tail-coverts. The bill is short, shorter than that of similar sized *L. lanceolata*, slender, and pointed. There are short, weak rictal bristles, which are sometimes invisible without a magnifier, at the gape. The tail, 12 rectrices, is buffish chestnut with black shaft streaks, of moderate length, and markedly graduated (the difference between the longest and shortest rectrices is about 23 mm). The tarsi are long, but not strong. The first primary is rather broad (about 3 mm in width) and about half as long as the second. The wing formula is given in Table 1. Sexes are alike except for females being somewhat smaller than males. There is a partial spring molt, in which three to five outer primaries and body feathers are replaced (cf.

Table 1. Wing formulae of three species of sylvine warblers.

	<i>Megalurus palustris</i>	<i>Megalurus pryeri</i>	<i>Locustella lanceolata</i>
1st primary	p.c. +25.5	p.c. +9.3	p.c. +0.5
2nd	6.5	6.6	2.7
3rd	w.p.	0.8	w.p.
4th	w.p.	w.p.	2.3
5th	1.0	1.0	5.1
6th	2.0	2.5	8.4
7th	5.8	4.6	10.3
8th	9.4	6.1	11.2
9th	14.1	7.2	12.0
10th	17.2	8.9	15.4
Wing length	95.0	56.3	55.3

Two specimens of *M. palustris* and 3 specimens each of *M. pryeri* and *L. lanceolata* were measured and average values are given. First primary was measured from the longest primary covert (p.c.) and 2nd to 10th primaries were from the wing point (w.p.). The values for 6th to 10th primaries are approximate due to technical difficulty in measurement. All values are in mm.

SHIGETA, 1991).

The species was first described by SEEBOHM (1884) under the name of *Megalurus pryeri*. It has remained as one of the rarest birds in Japan since its discovery, although there are more sight and nesting records in the past decade than in previous decades. Its nesting was first known in 1936 (YAMASHINA, 1938). When described, SEEBOHM considered *pryeri* to be structurally the same as *Luscinola* (= *Bradypterus*) *thoracica*, but to have the pattern of color of *Megalurus*, noting that its nearest ally is *M. gramineus* of Australia. Later, however, he placed the bird in the genus *Luscinola* together with *L. melanopogon* and *Bradypterus luteoventris* (SEEBOHM, 1890). Since then the species was assigned to various genera such as *Luscinola*, *Tribura* and *Bradypterus* until DELACOUR (1942) restored its position in *Megalurus*.

As currently recognized, *Megalurus* consists of six species of grass warblers (WATSON et al., 1986). Aside from *M. pryeri* of Japan and China, one species is Oriental (Indo-malayan), three are mainly or exclusively Papua-Australian, and the other is endemic to New Zealand and the adjacent islands. They are probably of polyphyletic origin. The New Zealand species, *M. punctatus*, at least may not be closely related to the rest of species of the genus and this species is often preferred to be placed in a separate genus *Bowdleria* (e.g. OLSON, 1990).

The type species of genus *Megalurus* is *M. palustris*, which occurs from Punjab to Vietnam, on Java and Bali, and in the Philippines (WATSON et al., 1986). It is a large grass warbler with a stout, slightly decurved bill. The upperparts are buffy brown streaked with black, streaking narrowly on the crown and nape but very boldly on the mantle, scapulars and wing coverts. The tail is characteristically long, longer than the wing, and greatly graduated. The rectrices are pointed, considerably stiff, and usually frayed or disintegrated. There are three strong rectal bristles. The first primary is

very large, much longer than half the second, reaching two-third of the second in the specimens we examined. The tarsi and feet are very strong. Sexes are alike. BAKER (1924) stated that there is no spring molt in *Megalurus*, but we were unable to confirm this statement.

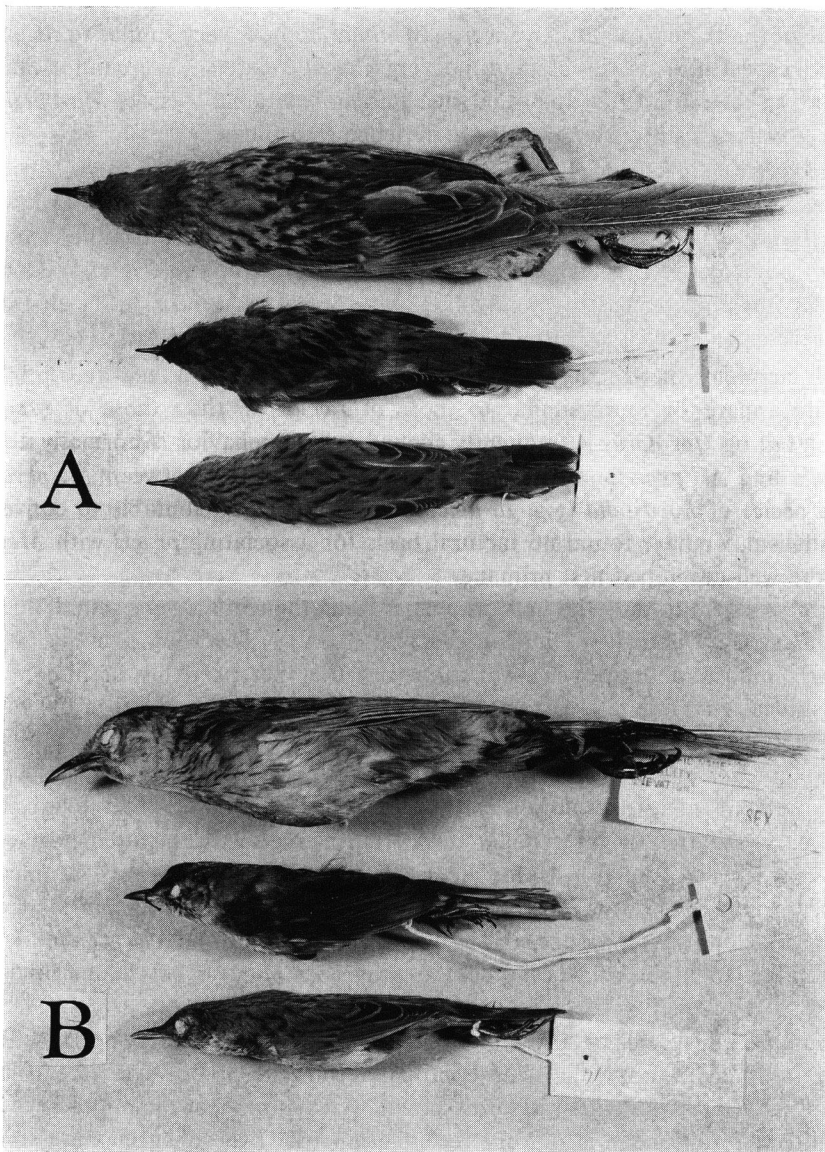


Fig. 1. Dorsal (A) and lateral (B) aspects of *Megalurus palustris* (top), *Megalurus pryeri* (middle), and *Locustella lanceolata* (bottom).

BAKER (1924) also noted a peculiarity in the structure of foot in *Megalurus*, i.e. the foot is deeply cleft between the middle and inner toes and the latter is partially reversible. We found this statement to be correct for *M. palustris* and *M. timoriensis*, but the foot is similarly cleft in *Acrocephalus* spp. and *Locustella* spp. It is probably an adaptation for clinging to a vertical stem and may be a common feature among the birds inhabiting reed beds, swamps and grassland.

One of the Papua-Australian species, *M. timoriensis*, is very similar to *M. palustris* in every respect and no doubt they are very closely related. We cannot make any comment on the affinities of the other two Papua-Australian species, *M. albolimbatus* and *M. gramineus*, since we have little experience with them.

The generic limits of sylvine genera are notably difficult due to the absence of good generic characters. Generic criteria of many genera, including *Megalurus* and *Locustella*, need to be reinvestigated. Despite these potential difficulties, *M. pryeri* seems to be a bird very different from *M. palustris* and *M. timoriensis*. DELACOUR (1942), in referring *pryeri* to *Megalurus*, stated only that *pryeri* shows all the main characteristics of *Megalurus*, differing from congeners only by its extremely small size.

The characteristics of the bill, rectal bristles, tail, tarsi and feet, and molt of *M. pryeri* are apparently more similar to those of *Locustella* than those of *Megalurus*. The long tail of *Megalurus* is frequently cocked, which behavior is normally absent in *Locustella* and *M. pryeri*. Although the closer resemblance between *M. pryeri* and certain species of *Locustella* (e.g. *L. lanceolata*) could be attributable to convergence or parallelism, we have found no factual basis for associating *pryeri* with *Megalurus* except the well-developed first primary.

In *M. pryeri*, not only the first primary is long, the wing is very rounded (Fig. 2). This is a feature frequently found in sedentary birds. The wing formula and wing shape are important in species distinction, but they are probably of limited use in generic allocation. There are examples in which related species differ in the wing formula according to migratory or sedentary habit. For example, the Moustached Warbler *Luscinola melanopogon*, a predominantly sedentary species, is separated generically from migratory reed warbler *Acrocephalus* by virtue of its relatively long first primary, but the former genus is now often merged with the latter (e.g. WATSON et al., 1986; see also MEAD, 1985, for further discussions on the adaptive significance of the wing formula). We may also emphasize that, although both *M. palustris* and *M. pryeri* have a long first primary, in the former the first primary is apparently much larger relative to other primaries and the wing is pointed rather than rounded, the wing structure of the two species is thus not exactly the same.

Nominate subspecies of *M. pryeri* is predominantly a sedentary species with short distance seasonal movements. The continental subspecies, however, seems to be a moderate migrant as its winter records show. We assume that the migratory habit of the continental subspecies is of very recent origin (the two subspecies are similar in size and wing formula; cf. WITHERBY, 1912). In any case, *M. pryeri* does not seem to be a strong flyer.



Fig. 2. Right wing of an adult male *Megalurus pryeri*, showing a large first primary and rounded wing form.

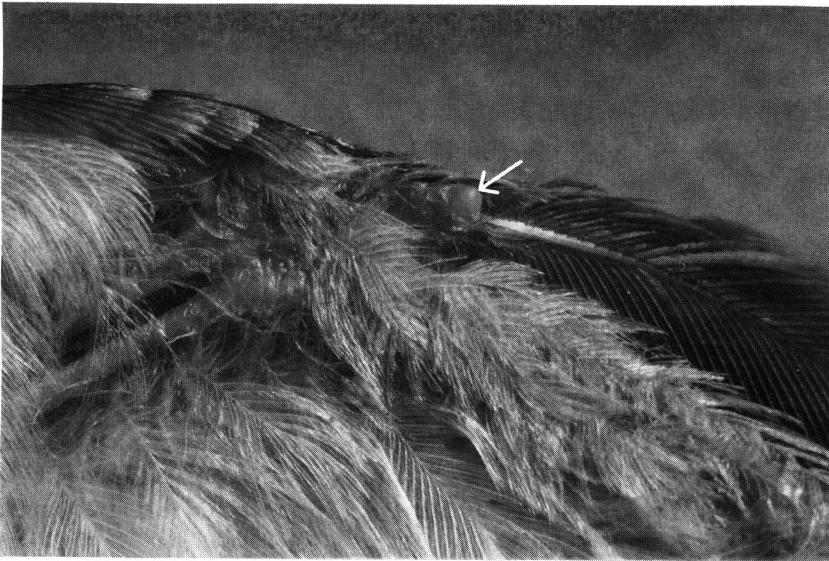


Fig. 3. Vestigial claw on the wing of *Megalurus pryeri*. This claw (shown by an arrow) is more easily observable in the nestling, but it also occurs in adults. About 1–1.5 mm in size.



Fig. 4. Tongue-spots of nestling *Megalurus pryeri*. The anterior spot normally disappears by the time the nestling fledges. Many, but not all, fledged juveniles retain the posterior two spots.

Among the grass and reed warbler group a few characters are peculiar to *M. pryeri*. The eggs are immaculate white with little gloss (YAMASHINA, 1938; SHIGETA, pers. obs.); so far as known, the eggs of *Megalurus*, *Locustella* and *Acrocephalus* are speckled, fleckled or variously marked on the paler or darker ground color. However, in other sylvine genera both immaculate white and speckled eggs are common and these two types occur in a single genus (e.g. *Phylloscopus*).

The really unique feature of *M. pryeri* among the Sylviidae is the presence of a vestigial wing claw, which is about 1–1.5 mm in size and one on each wing (SHIGETA, 1991; Fig. 3). It was present in all nestling and adult birds that the junior author examined while banding and is not an anomaly. The vestigial claw on the wing is found in a number of avian families and genera, but very few cases are known among the Passeriformes (FISHER, 1940; FRIEDMANN, 1952). Although these anomalous features are of some functional or evolutionary significance, it is not advisable to create a monotypic genus based on such characters alone.

On the other hand, some characteristics of *M. pryeri* are consistent with the proposal that *pryeri* is to be placed in *Locustella* rather than in *Megalurus*. Aside from a few species in *Bradypterus*, the under tail-coverts are characteristically long in *Locustella* spp. and they are also long in *pryeri*; in *Megalurus* these feathers are normal in length.

The tongue-spot of the nestling *pryeri* is normally three in number, two posterior and one anterior spots (Fig. 4). Although *M. punctatus* and *M. gramineus* are re-

ported to possess three spots on the tongue (BOLES, 1985), three tongue spots are characteristic of *Locustella* (INGRAM, 1907; SVENSSON, 1984). We have noted that these spots are only two in Japanese *Acrocephalus* spp. and *Cisticola juncidis*, the same as in European birds.

In conclusion, the available evidence urges that *M. pryeri* should be transferred from the genus *Megalurus* to *Locustella* and called *Locustella pryeri* until its true relationships to other species are better known. The fact that *Megalurus* is essentially a Pupua-Australian genus lends support for placing *pryeri* in a Palearctic genus.

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