



## Survey on distribution of pheasants (Galliformes) in Mizoram, India

Lalawmawia Sailo<sup>1</sup>, G.S. Solanki<sup>2</sup>, S.N. Ramanujam<sup>3</sup> and H. Lalthanzara<sup>1\*</sup>

<sup>1</sup>Department of Zoology, Pachhunga University College, Aizawl 796001, India

<sup>2</sup>Department of Zoology, Mizoram University, Tanhril, Aizawl 796001, India

<sup>3</sup>Department of Zoology, North Eastern Hill University, Shillong 793022, India

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### ABSTRACT

Reconnaissance on spatial distribution of pheasants in eight districts of Mizoram was done during September 2012 to March 2013. The study shows that six species inhabit the study areas. Red Junglefowl (*Gallus gallus*) and Kalij Pheasants (*Lophura Leucomelanos lathamii*) are most versatile in distribution and are present in all sites ( $n=235$ ). Grey Peacock Pheasant (*Polyplectron bicalcaratum*) is recorded in 103 sites and is more abundant in middle and eastern parts of the state. Mrs. Hume's Pheasant (*Syrmaticus humiae*) is recorded at 10 sites and Blyth's Tragopan (*Tragopan blythii*) at 4 sites, both in eastern higher elevation ranges. A lone record of Green Peafowl (*Pavo muticus*) is from Tarpho village, Lunglei district, near Myanmar boundary. Comparison of the present data with previous records and possible sites for endangered pheasants has been discussed.

**Key words:** Pheasants; Mizoram; distribution; galliformes; northeast India.

### INTRODUCTION

Mizoram, lying within Indo-Myanmar biodiversity hotspots, is believed to harbor a rich avifaunal diversity. Pheasants are large-bodied, brightly coloured, ground-dwelling birds, which belong to the family Phasianidae in the order Galliformes. In particular, the word pheasants is used to refer to those members of subfamily 'Phasianinae'. They exhibit great sexual dimor-

phism in both size and plumage. Fifty one species belonging to 16 genera have been recognized so far in the world. Interestingly, 50 of them are Asian in origin, the lone exception being Congo Peafowl (*Afropavo congensis*), confined to a small area in the virgin forest of east Central Congo basin.<sup>1</sup> In India 17 species of pheasants have been reported.<sup>2</sup> Ramesh *et al.* reported that the Indian Himalayas is represented by 16 species which occupy various vegetation and altitude. Pheasants serve as useful indicator for environmental quality as a major prey base for predatory birds and mammals and indicators of

Corresponding author: Lalthanzara

Phone:

E-mail: [hzara.puc@gmail.com](mailto:hzara.puc@gmail.com)

adverse human impact on high altitude ecosystem.<sup>1,3</sup> They are predominantly adapted to ground scratching and are nonmigratory.<sup>4</sup> Red Junglefowl, Kalij pheasants and Grey Peacock Pheasants are commonly distributed in the Indian subcontinent, but some pheasant species are reported to restrict in the Himalayan and north-eastern states. Blyth's Tragopan and Hume's Pheasants are known to inhabit parts of Nagaland, Manipur and Mizoram. In Mizoram, study on pheasants have been done solely on Mrs. Hume's Pheasant by Choudhury<sup>5,6</sup> and Ghose<sup>8-10</sup> and on Blyth's Tragopan by Ghose *et al.*<sup>9,10</sup> and Lalthanzara *et al.*<sup>11</sup> and little is known about their ecology. Therefore a survey was taken up to add information on spatial distribution of pheasants in Mizoram, north-east India.

## MATERIALS AND METHODS

### *Study site*

Mizoram (21087 sq. km, 21°58'N to 24°35'N latitude and 92°15' to 93°29'E longitude) is located in north-east India. It has a state boundary in the north with Manipur, Assam and Tripura and an international boundary with Bangladesh in the west and south (318 kms) and Myanmar in the east and south (404 kms). It lies in the Indo-Myanmar Biodiversity Hotspot area. Mizoram is rich in wild flora and fauna, both in variety and abundance. The dense natural forest covers 3158.57 sq. km which is 14.98% of the total area and this is divided into tropical wet evergreen, tropical semi-evergreen and montane subtropical pine forests. The medium dense forest accounts for 2628.08 sq. km (12.46%), less dense forest 3738.57 sq. km (17.73%) and bamboo forest accounts for 6707.37 sq. km (31.81%).<sup>12</sup>

### *Species distribution*

Secondary information on the spatial distribution of pheasants was collected from all over the state, covering 235 villages by interviews

with local people, particularly hunters, identification from trophies, departmental records and historical data.

Preliminary field investigation was carried out in selected protected areas, *viz.* Murlen National Park and Lengteng Wildlife Sanctuary (Champhai district) during September 2012 – March, 2013. Nine other protected areas were selected for close examination of the pheasant's presence or absence. Call count technique was applied to determine the presence/absence of Blyth's Tragopan, Line transects and encounter rate are also applied as convenient.<sup>13</sup> Survey was conducted using existing test path or footpath to determine the presence/absence and distribution of the pheasants in the field investigation areas. Evidences were also obtained from the Environment and Forest Department, Government of Mizoram.

## RESULTS AND DISCUSSION

The present survey records 6 species of pheasants from Mizoram (Table 1). This is in accordance with the previous record of Lalthanzara *et al.*<sup>14</sup> The district-wise occurrence of pheasants (in percent) is shown in Table 2. Out of these six species, *Gallus gallus* and *Lophura leucomelanos lathami* are the most common pheasant species and were distributed uniformly all over the state; they are recorded in all the surveyed sites (Table 2). They were observed to be widely distributed all over the state irrespective of altitude and vegetation type. The spatial distribution of four species during the survey is presented in Figure 1. *Polyplectron bicalcaratum* is recorded in 103 villages out of 235 villages i.e. 43.8% of the surveyed site. It can be considered as fairly common in their distribution though found in all districts. Local reports state that *P. bicalcaratum* population decreased due to habitat loss. In India, the species has been recorded as commonly distributed in the central and eastern Himalayas from Sikkim through Arunachal Pradesh and north-eastern states of Assam, Meghalaya, Manipur, Mizoram, Nagaland and Tripura.<sup>15</sup> The distribution map from the Na-

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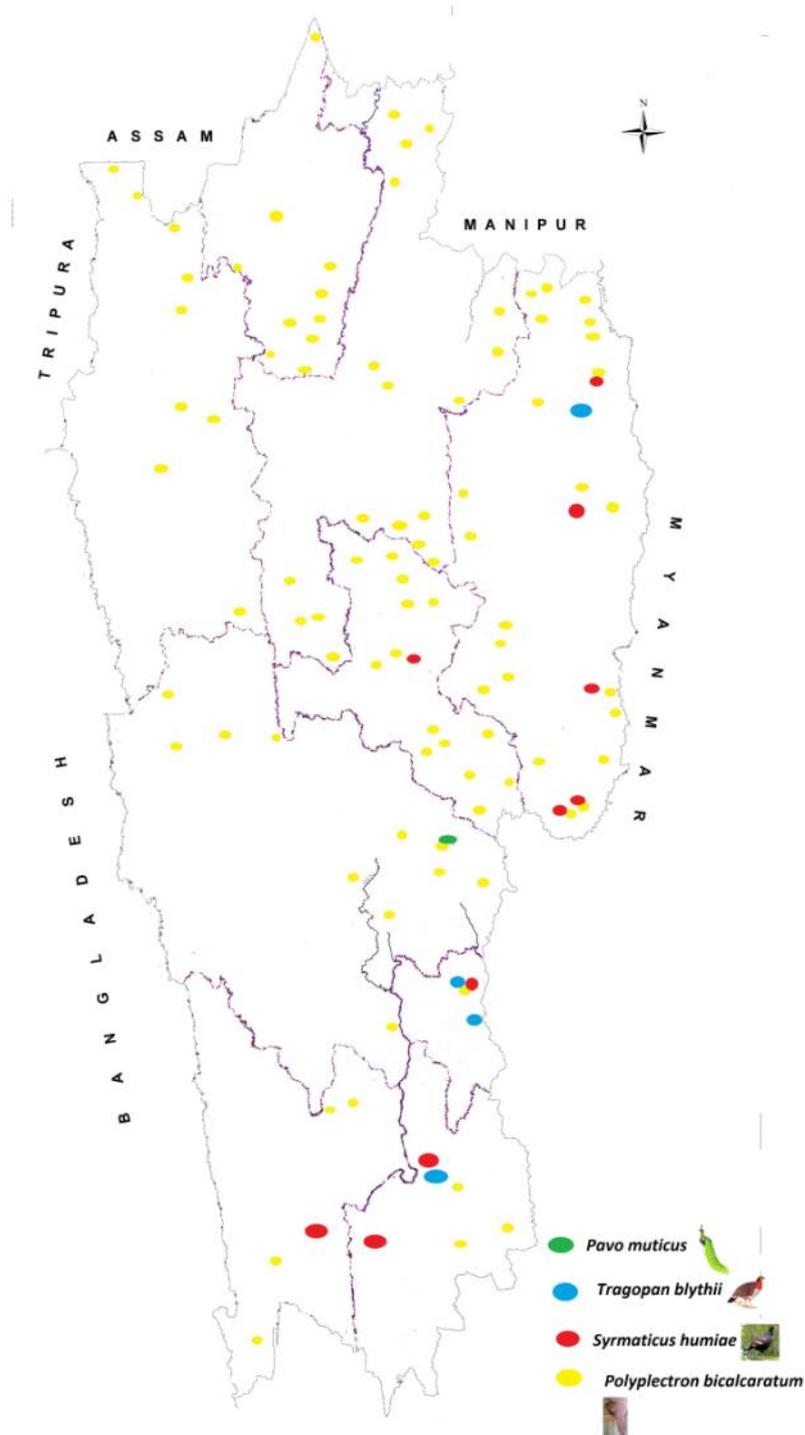


Figure 1. Distribution of *P. bicalcaratum*, *T. blythii*, *S. humiae* and *P. muticus* in Mizoram.

Table 1. District-wise occurrence of pheasants (in percent) in Mizoram.

Name of District	<i>Gallus gallus</i>	<i>Lophura leucomelanos</i>	<i>Polyplectron bicalcaratum</i>	<i>Syrmaticus humiae</i>	<i>Tragopan blythii</i>	<i>Pavo muticus</i>
Mamit (n=40)	100%	100%	42.5%	-	-	-
Serchhip (n=23)	100%	100%	60.86%	4.34%	-	-
Saiha (n=10)	100%	100%	30%	-	-	-
Lawngtlai (n=22)	100%	100%	23.80%	13.63%	13.63%	-
Aizawl (n=40)	100%	100%	42.5%	-	-	-
Lunglei (n=37)	100%	100%	29.73%	-	-	2.70%
Kolasib (n=23)	100%	100%	41.66%	-	-	-
Champhai (n=40)	100%	100%	47.5%	12.5%	2.5%	-

Table 2. Status of pheasants in Mizoram.

Common name	Vernacular (Mizo) name	Scientific name	Population	IUCN	WPA schedule
Red Junglefowl	Ramâr	<i>Gallus gallus</i>	Common	Others	IV
Kalij Pheasant	Vahrit	<i>Lophura leucomelanos lathami</i>	Common	Others	I
Grey Peacock Pheasant	Varihaw	<i>Polyplectron bicalcaratum</i>	Fairly Common	Others	I
Mrs Humes Pheasant	Vavu	<i>Syrmaticus humiae</i>	Rare	Near Threatened	I
Blyth's Tragopan	Vangâ	<i>Tragopan blythii</i>	Rare	Vulnerable	I
Green Peafowl	Ârâwn hring	<i>Pavo muticus</i>	Very Rare	Endangered	I

Common: <4 individuals seen in 1 day field work;

Fairly Common: 2-3 individuals seen in 1 day field work;

Rare: 0-1 individual seen in 1 day field work;

Very Rare: 0-1 individual seen in 5 days field work.

*tional Studbook of Grey Peacock Pheasant (P. bicalcaratum)* shows the distribution of Grey Peacock Pheasant only in the northern part of Mizoram<sup>15</sup>, but the present survey records *P. bicalcaratum* from all the districts of Mizoram (Figure 1 & Table 2). Thus, the distribution of *P. bicalcaratum* can be said to be uniform all over Mizoram. Earlier works of Choudhury recorded Grey Peacock Pheasants from 13 sites in Mizoram.<sup>6</sup>

The present survey records *Syrmaticus humiae*, a near-threatened species<sup>18</sup> and the state bird of Mizoram from 10 sites *viz.* Kawlbem, Farkawn, E. Khankawn, Vapar and Lianpui (from Champhai district); Lungzarhtum, Ngengpui and Sangau (from Lawngtlai district); Khawbel village (from Serchhip district); and Tongkolong village (from Saiha district), i.e.

4.25% of the surveyed sites. BirdLife International (2001)<sup>16</sup> listed Murlen National Park and Phawngpui (Blue Mountain) National Park for Hume's Pheasant in Mizoram. Meanwhile, Choudhury recorded Mrs. Humes Pheasant from 7 sites in Mizoram and he assumed that the species is still widely distributed at higher altitude region of Mizoram especially in Champhai and Saiha and possibly in Serchhip and Lunglei districts.<sup>17</sup> Thus the present survey conforms to Choudhury's assumption in the species distribution. Globally the species is believed to be thinly distributed in the hill tracts of north-eastern India, north and west Myanmar, south-west China and north Thailand.<sup>19-21</sup>

*Tragopan blythii* was recorded from 4 sites (Lawngtlai district- Lungzarhtum, Vawmbuk and Sangau; Champhai district - Selam) i.e.

1.70% of the surveyed sites. *T. blythii*, a vulnerable species<sup>18</sup> (IUCN 2012) is reported from Phawngpui National Park (Ghose *et al.* 2003<sup>10</sup>, Choudhury 2006<sup>6</sup> and at Lengteng Wildlife Sanctuary.<sup>11</sup> This result is in line with Singh (2013)<sup>24</sup> who highlighted that the habitat area of Tragopan ranges from 1500 to 3000 meters depending on the season and that they prefer steep, well-wooded terrain. Phawngpui peak (PNP) and Lengteng peak (LWS) are the the highest and second highest peaks in the state with 2157m and 2141m respectively, both are within Tragopan habitat range. The present Tragopan record at Lungzarhtum and Vawmbuk villages had a boundary with PNP. Similarly Selam village, Champhai district also borders with LWS and therefore is not considered to be so significant.

A lone report of *Pavo muticus*, an endangered species<sup>18</sup> (IUCN 2012) from Tarpho village of Lunglei district, is the only record from wild in Mizoram.<sup>14</sup> Lalthanzara *et al.* (2011) reported the presence of *P. muticus* from Khawhri village of Lunglei district.<sup>14</sup> But the present survey came face to face with the farmer who took the shot and confirmed that the place is within Tarpho village area. In the year 2008, one farmer unknowingly shot a female *P. muticus* from his rice field (Tarpho village) bordering Khawhri village area. The previous and present report may talk about the same individual as Tarpho and Khawhri village are nearby and may be by chance mistaken. The majestic Green Peafowl was never sighted again in Mizoram since that time, i.e. 2008. This may be attributed to unavailability of the preferred habitat and hunting pressure inside Mizoram. They are also very shy and hardly emerge on forest clearings and forest edges, so, they are very difficult to detect. The male Green Peafowl was kept captive at Aizawl Zoological Park. Three subspecies of Green Peafowl are described: *P.m. spicifer* of north-east India is believed to be extinct, *P.m. imperator* is found in scattered locations in Yunnan (China), Vietnam, Cambodia, Laos, Myanmar and Thailand, and *P.m. muticus* is found only on Java.<sup>22</sup> Han *et al.* also reported the distribution of Green

Peafowl in Yunnan Province of China.<sup>23</sup>

Analysis of the survey report and preliminary investigation indicates that Lengteng Wildlife Sanctuary and its surroundings is the best site for pheasants as it harbours 5 pheasant species (except *P. muticus*). *S. humiae* and *T. blythii* restrict themselves in the higher altitude region as recorded from the two highest peaks i.e. Phawngpui National Park and Lengteng Wildlife Sanctuary. However, unconfirmed report indicates that *S. humiae* is present in Ngengpui and Tongkolong, which were 615m and 830m high respectively. The altitude of these two villages are too low compared to other record from existing literature, so it need further investigation to confirm their presence. The altitude range recorded from the present survey does not fall under the previous report by Sathyakumar and Kaul.<sup>2</sup>

The number of survey site visited cannot be uniform in all the districts as many villages in some district are not easily accessible by vehicle. But effort is still given to access information from remaining villages to make the number uniform. Habitat destruction due to logging, shifting cultivation, and also poaching for food are the main conservation issues. However, many village councils and NGO's have banned hunting in their respective jurisdictions, and even declared some places as protected areas (e.g. 'Zo-Ngaw' near Mamit and Dampui village) and community reserve. Most people in the surveyed area are unaware of the need for conservation of Galliformes and the Wildlife (Protection) Act 1972. Mass awareness and strict enforcement of the Wildlife (Protection) Act 1972 by the E&F Dept is recommended.

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