

New information on the distribution of Chestnut-bellied Partridge *Arborophila javanica* in the central parts of Java

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Summary

The Chestnut-bellied Partridge *Arborophila javanica* is confined to the hill and mountain forests of Java. Until recently, its range was thought to be restricted to the western and eastern part of the island. Surveys performed in March–September 1994 in the central part of the island showed it to be present there as well. The species was found in six remnant forest patches where it was not known to occur. Data on habitat preferences and altitudinal distribution are given.

Puyuh-gonggong Jawa *Arborophila javanica* hanya dapat dijumpai di hutan-hutan pegunungan di Pulau Jawa. Dahulu jenis ini diperkirakan hanya tersebar di bagian Barat dan Timur pulau ini saja. Sebuah survey yang dilakukan pada bulan Maret–September 1994 di bagian tengah pulau menunjukkan keberadaan jenis ini. Jenis ini dijumpai di enam lokasi yang merupakan sisa-sisa hutan. Data mengenai habitat dan distribusi berdasarkan ketinggian dipertelakan dalam tulisan ini.

Introduction

The Greater Sunda Islands are the domain of 10 species of partridge, including four single island endemics. One of the latter is the Chestnut-bellied Partridge *Arborophila javanica*, endemic to the island of Java, Indonesia. The species is considered to be rather common within its limited range (Holmes 1989). It is confined to the hill and montane forests and has been recorded at altitudes from 300 to 3000 m (van Balen 1992). The species is not considered to be globally threatened but is considered "Vulnerable" in the Mace-Lande categorization (del Hoyo *et al.* 1994). Based on differences in head pattern three 'subspecies' have been named: nominate *javanica* in the western part, *bartelsi* on Mt Ciremai on the eastern part of West Java (Siebers 1929), and *lawuana* on Mt Lawu on the border between Central and East Java (Bartels 1937). In the easternmost part of East Java it is replaced by the Grey-breasted Partridge *A. orientalis*. The latter species is also present throughout Sumatra (van Marle and Voous 1988).

Surveys by van Balen (1992) showed that the Chestnut-bellied Partridge is still widespread in the western and eastern part of the island. To the best of our knowledge there are no records between the easternmost locality in West (Mt Ciremai) and the westernmost locality in East Java (Mt Semeru-Tengger) other than those from Mt Lawu.

In this paper information is provided on the distribution of the species in the central part of the island and data on altitudinal distribution and habitat preference are presented.

Methods

During ornithological fieldwork in March–September 1994, of which the endemic Javan Hawk-eagle *Spizaetus bartelsi* was the main study object, we became familiar with the vocalizations of Chestnut-bellied Partridge on Mt Pangrango and Mt Gede in West Java. Although the objective of our study was to clarify the distribution of the Javan Hawk-eagle in the central parts of Java, during these surveys we noted the presence of Chestnut-bellied Partridge and other endemics. No attempt was made to gather quantitative data. Surveys were conducted at different times during the day, typically from half an hour after sunrise to half an hour before sunset. Short periods of heavy rainfall prevented observations but as the larger part of the study period was during Java's dry season, weather conditions were usually suitable for surveying. Chestnut-bellied Partridge is rather secretive and difficult to observe, but when one is familiar with the call it is easily detected. The vocalization of Chestnut-bellied Partridge is characteristic although the Grey-breasted Partridge has been reported to have a similar call (van Balen 1992). Van Balen (1992) reports that the species is vocal throughout much of the year and only during December, which falls outside its known breeding season (Hellebreckers and Hoogerwerf 1967), did he not hear the species's vocalizations. All but one of the observations were made by ear. In several of the areas visited we found scrapes in the litter on the forest bottom, but although these were probably made by Chestnut-bellied Partridge, we did not consider them as confirmed records. Additional information was gathered by structured interviews in *bahasa Indonesia* with local people living near the forest and by visiting local birdmarkets.

Almost all the larger tracts of forest between Mt Ciremai in West Java and Mt Tengger-Semeru in East Java were visited, namely Mts Pembarisan/Segara, Slamet, Besar, Prahu, Sundoro, Merapi, Muria, Lawu and Liman-Wilis. In almost all these areas we spent at least several days in the forest interior and only when an area was found to be severely degraded was it abandoned. Altogether these comprise more than 1200 km², which is over 90% of the remaining natural forest in this part of Java. The areas in which we found Chestnut-bellied Partridge are discussed below in a west to east sequence (Figure 1).

Results

Localities from which Chestnut-bellied Partridge were recorded and habitat characteristics of the forest areas are summarized in Table 1.

Mt Segara

This mountain is situated in the eastern part of Central Java, near the border with West Java, and less than 50 km south-east of Mt Ciremai, the type locality

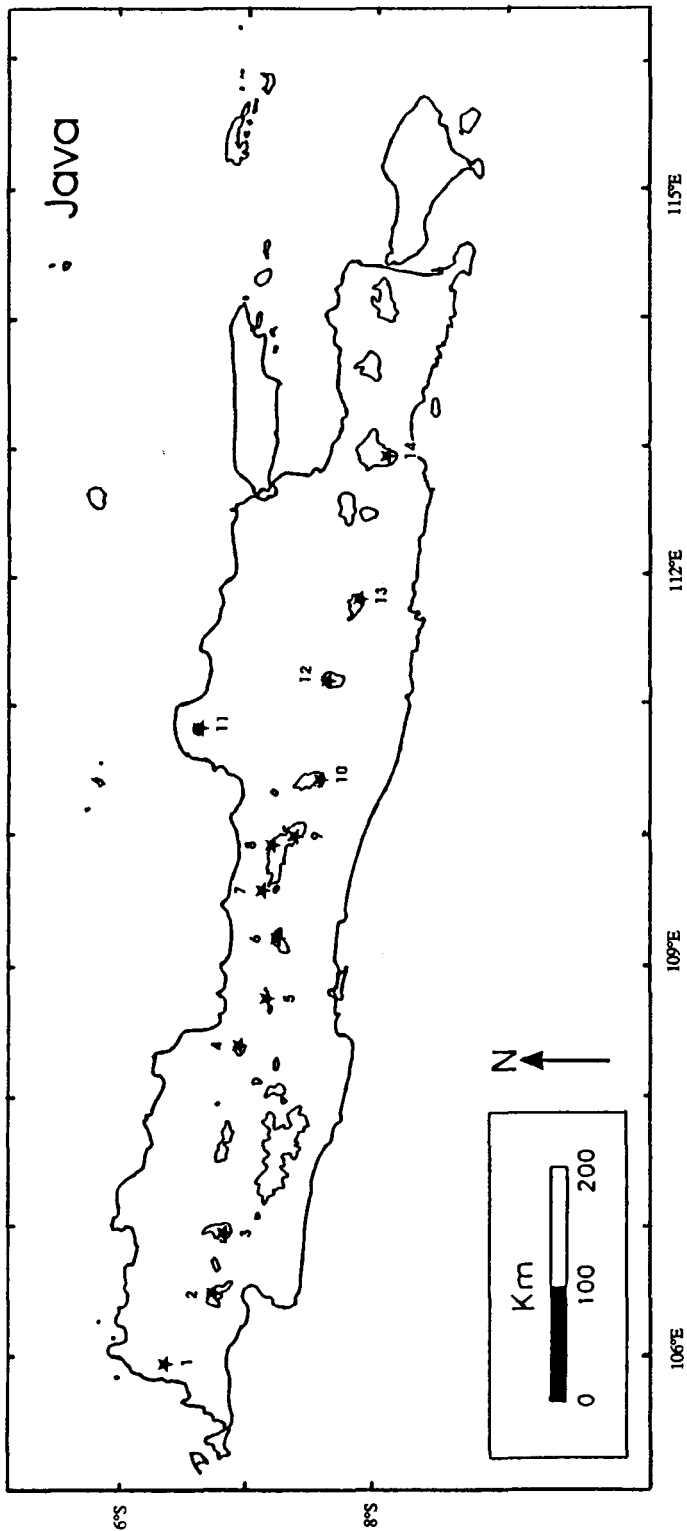


Figure 1. Map of Java with localities mentioned in the text. The contour lines indicate 1000 m. 1. Mt Karang; 2. Mt Halimun; 3. Mt Gedé-Pangrango; 4. Mt Ciremai; 5. Mt Segara; 6. Mt Slamet; 7. Mt Merapi; 8. Mt Prahu; 9. Mt Sundoro; 10. Mt Muria; 11. Mt Merapi; 12. Mt Lawu; 13. Mt Wilis-Liman; 14. Mt Tengger-Semeru.

Table 1. Localities on the island of Java where Chestnut-bellied Partridge *Arborophila javanica* was recorded during March-September 1994

Locality ^a	Position	Forest type ^b	Altitude range ^c
3. Mt Gede-Pangrango	106° 51' E, 6° 41' S	Wet hill-montane	500–3019
5. Mt Segara	108° 48' E, 7° 07' S	Wet lowland-submontane	300–1812
6. Mt Slamet	109° 15' E, 7° 15' S	Wet hill-montane	700–3418
7. Mt Besar	109° 37' E, 7° 05' S	Wet lowland-submontane	250–1579
8. Mt Prahū	109° 55' E, 7° 10' S	Wet montane	1500–2565
13. Mt Wilis-Liman	111° 48' E, 7° 50' S	Moist-wet hill-montane	600–2563

^a Locality numbers refer to Figure 1.

^b After MacKinnon et al. (1982).

^c Numbers in italic represent approximate lower limits of forest.

of *bartelsi*. The forests on this mountain are continuous with those of the proposed nature reserve Pembarisan to the northeast (see map 19.2 in Collins *et al.* 1991). Together the forests in this area total c.22,500 ha. On 21 and 22 July we heard calls coming from the dense forest at altitudes between 600 and 700 m.

In the village of Salem, south of Mt Segara, we saw several Chestnut-bellied Partridges kept by a private owner. They were said to have been caught in the forest nearby.

Mt Slamet

On the southern slopes of this mountain the Chestnut-bellied Partridge was heard calling, and scratch marks were seen on a ridge at 950 m altitude. On 23 July we observed a party of six Chestnut-bellied Partridges in an undisturbed patch of montane forest on the north-western slopes, at an altitude of 1730 m. On Mt Slamet c.200 km² of forest remains.

Mt Besar

During a short visit, on 26 August, to the moderately disturbed lowland forest on the northern foot hills of Mt Besar, we frequently heard Chestnut-bellied Partridges calling from the interior of the forest. The forest in this area descends below c.250 m; the calling was heard at altitudes between 600 and 650 m.

Mt Prahū

Chestnut-bellied Partridges were recorded on the southern and eastern slopes of this mountain, all above 1600 m. On 5 July we heard the calls of the species while we were at the summit of the mountain at an altitude of 2565 m. The forests on Mt Prahū are continuous with those on Mt Besar and the area is one of the few on Java that covers the whole range from lowland to upper montane. Mt Besar and Mt Prahū comprise c.275 km².

Mt Wilis-Liman

The twin volcanoes Wilis and Liman are covered with an extensive block of rainforest in the south-east and more deciduous forest to the north-west

(c.450 km²) ranging from hill to montane. They are situated between Mt Lawu and the Mt Tengger-Semeru complex in East Java. We visited the south-eastern slopes of Mt Wilis on 13 and 14 August and Chestnut-bellied Partridge was recorded at altitudes between 700 and 1200 m. There is a slight possibility that our records from these mountains refer to Grey-breasted Partridge. However, present knowledge of the distribution of these species suggests that our records concerned Chestnut-bellied Partridge.

During a short survey on Mt Sundoro (3135 m; 110° 00' E, 7° 17' S) we found that there was no suitable forest left for the species and Chestnut-bellied Partridge was not heard in this area. On Mt Merapi (2911 m; 110° 26' E, 7° 32' S) and Mt Muria (1620 m; 110° 52' E, 6° 37' S) rather large areas are still covered with forest but we did not find Chestnut-bellied Partridge in these mountains either. We also paid a visit to the forests between 1000 and 2500 m on Mt Lawu (111° 10' E, 7° 40' S) and although the species is reported from this mountain we did not observe it.

The interviews within the local villages without exception confirmed our findings in the forest areas and also local bird traders were aware of the presence or absence of the species in the forests visited. At almost every bird market visited, small numbers, mostly individuals or couples, of Chestnut-bellied Partridges were offered for sale or were said to be easily obtainable.

Discussion

Most of our observations were made within undisturbed or moderately disturbed forest areas. As lowland and hill forests have become very rare on Java, only a small number of records originate from these areas. However we observed the species at all altitudes from 600 m to almost 2600 m.

Our observations reveal a more or less continuous distribution throughout the island. The three "subspecies" show considerable individual variation in the morphological characteristics on which their separation was based. In view of the new information on distribution it would be interesting to know whether intraspecific variation is geographically disjunct, as suggested by Siebers (1929) and Bartels (1937), or of a clinal nature, in which case recognition of different subspecies would not be warranted. As no specimens are available from the central parts of Java, this question must remain open for the moment.

The Chestnut-bellied Partridge has been found to be more widespread than previously thought, following an increase in ornithological activities during the last decade (van Balen 1992). Ornithologically, Central Java is probably the island's least studied province. Several bird species are thought to be restricted to either the western or the eastern province or to show a disjunct distribution with no records from the central part. Further ornithological research in this part of the island will have to clarify whether this assumption holds. For instance, the Brown-throated Barbet *Megalaima corvina* was thought to be confined to the montane rainforests of West Java (MacKinnon and Phillipps 1993) but we found it to be present not only on Mt Gede-Pangrango but also on Mt Segara, Mt Slamet, Mt Besar and Mt Prahua, the latter locality being 125 km east of the West Javan border. The same accounts for the Javan Tesia *Tesia superciliaris*, said to be endemic to West Java and recorded east to Mt

Ciremai (MacKinnon and Phillipps 1993). We found this species to be present on Mt Prahū. Furthermore, the Sunda Serin *Serinus estherae* and the Javan Hawk-eagle are species known to have a disjunct distribution (MacKinnon and Phillipps 1993). We found both species on several localities in the central part of Java (Sözer and Nijman 1995). These findings suggest that further exploration of the central parts of Java may reveal the occurrence of taxa, other than those mentioned here, currently thought to be restricted to areas to the west and/or east.

Less than 10% of Java's natural forest now remains and lowland and hill rainforests especially are shrinking every year. With an ever increasing human population and infrastructural developments, pressure on the montane forest also becomes more and more severe. The Chestnut-bellied Partridge is highly prized for its meat and, as the mountains become more accessible, hunting pressure may become a serious threat (van Balen 1992; pers obs.). The species is not included in Collar *et al.* (1994).

The Chestnut-bellied Partridge is still to be found in almost all the major forest areas from Mt Tengger-Semeru in the east to Mt Halimum in the west (Holmes 1989, van Balen 1992) and the species might even be present further to the west on Mt Karang near the west coast, as van Balen (1992) reports an unconfirmed record by D. A. Holmes from this mountain. Although the species is not considered to be threatened at present by Collar *et al.* (1994), it is essential for its long term survival to preserve the forest areas in the central part of the island, where no large areas currently have an adequate protection status. This would prevent populations becoming isolated in different small subpopulations. Many other species would equally benefit from such conservation actions. Specific recommendations for the conservation of forest areas in Central Java are made in a species conservation action plan for the Javan Hawk-eagle, presently being prepared by BirdLife International Indonesia Programme, Bogor.

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