Understorey birds of Cikaniki Research Station, Gunung Halimun-Salak National Park, West Java: Report of the Indonesian Bird Banding Scheme Training Programme

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Summary. This report summarises findings from the first Training of Trainers (ToT) programme of the Indonesian Bird Banding Scheme (IBBS), which took place at Cikaniki Research Station (1000-1100 m asl), Gunung Halimun-Salak National Park, during July 2009, and compares them with the results of previous banding studies conducted at the site by PPB-LIPI staff since 1996. Over the seven days from 13 to 19 July 2009, a total of 97 individuals representing 29 species were captured, and in most cases, banded. Juvenile birds belonging to 13 species comprised 28% of all individuals captured, and early primary moult was found on 32% of adults captured, suggesting that many species had recently completed breeding. The two most frequently captured species were the Little Spiderhunter *Arachnothera longirostra* and the Javan Fulvetta *Alcippe pyrrhoptera*. A comparison with previous banding studies between 1996 and 2002 at the same site shows that the latter species was repeatedly misidentified as the Fulvous-chested Jungle Flycatcher *Rhinomyias olivacea*, a species otherwise unknown for the park. This finding negates the conclusions of previous reports that *R. olivacea* is an important

Ringkasan. Laporan ini meringkas temuan dari kegiatan Pelatihan untuk Pelatih yang pertama yang dilaksanakan oleh Skema Pencincinan Burung Indonesia di Stasiun Penelitian Cikaniki (1000-1100 m asl), Taman Nasional Gunung Halimun-Salak selama Juli 2009, dan membandingkannya dengan hasil studi pencincinan sebelumnya yang dilaksanakan di lokasi yang sama oleh staf PPB-LIPI sejak 1996. Lebih dari tujuh hari, dari 13 – 19 Juli 2009, sebanyak 97 individu burung yang mewakili 29 spesies tertangkap dan kebanyakan dari burung itu dicincin. Burung muda dari 13 spesies meliputi 28% dari semua individu burung yang tertangkap, dan kondisi awal gugur bulu primer ditemukan pada 32% individu burung dewasa mengindikasikan banyaknya spesies di kawasan itu baru saja melalui masa berbiak. Dua spesies yang paling sering tertangkap adalah burung Pijantung Kecil *Arachnothera longirostra* dan Wergan Jawa *Alcippe pyrrhoptera*. Perbandingan dengan studi sebelumnya antara 1996 dan 2002 pada lokasi yang sama menunjukkan bahwa spesies yang disebutkan terakhir telah salah diidentifikasi sebagai burung jenis Sikatanrimba dada-coklat *Rhinomyias olivacea* yang tidak dikenal di taman nasional. Temuan ini berpengaruh pada kesimpulan laporan

component of the understorey avifauna of the park at this altitude. Nine individuals, representing six species, were recaptured during the IBBS programme, including a Sunda Forktail *Enicurus velatus* that was at least 9 years old when re-trapped, and a Horsfield's Babbler *Malacocincla sepiaria* that was at least 8.75 years old.

sebelumnya yang menyatakan bahwa *R. olivacea* merupakan komponen penting avifauna tumbuhan bawah vegetasi taman nasional pada ketinggian ini. Sembilan individu yang mewakili enam spesies ditangkap selama program IBBS, termasuk satu individu Meninting Kecil *Enicurus velatus* berumur sekitar 9 tahun ketika ditangkap kembali, dan satu Pelanduk Semak *Malacocincla sepiaria* berumur setidaknya 8.75 tahun.

Background

In July 2009 the Indonesian Bird Banding Scheme (IBBS) was launched to provide a nationally and centrally coordinated bird banding scheme in Indonesia. Project funds for the establishment of IBBS were secured by the Australian Bird and Bat Banding Scheme (ABBBS) of the Australian Government's Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) through the AusAID Public Sector Linkages Programme in 2008. The aims of the project were to provide field training for up to 50 bird-banding trainees from around Indonesia, and to establish a stock of bands and banding equipment for use in Indonesia, together with a centralised relational database to store all data collected under the auspices of IBBS. Vital to the success of IBBS is the administrative partner organisation - Pusat Penelitian Biologi (PPB, Research Centre for Biology), Lembaga Ilmu Pengetahuan Indonesia (LIPI, Indonesian Institute of Sciences. The co-operative project of setting up the IBBS and the training of Indonesian banders commenced in July 2009 and is due for completion on 30 June 2011.

This paper summarises the results of the first official IBBS field training exercise, which took place at Cikaniki Research Station in Gunung Halimun-Salak National Park during July 2009, and compares these with those of previous banding studies at the same site. The first checklist of the birds of Gunung Halimun National Park was that of Wind & Soesilo (1978), on which that of MacKinnon (1988) was largely based.

Results of previous mist-netting (banding) studies at Cikaniki

Since 1996 mist-netting studies have been carried out in the Cikaniki area by staff of Pusat Penelitian Biologi (Research Centre of Biology), LIPI. Adhikerana & Komeda (1997) sampled at four sites, each representing a different altitude (1,000 m, 1,100m, 1,350 m and 1,500 m asl) during May-June and July 1996. Several high-altitude (upper montane) specialist species were caught only at the higher altitudes, but species richness was highest at the two lower altitude sites. Although the authors do not quantify trapping rates, netting times shown in their Table 1 reveal that Sites 1 (Research Station, stated as 1,000 m asl; Plate 1) and 2

(1,100 m) were netted for 81 and 71 h, respectively, after combining the two (May-June and July) sampling periods. Up to 10 nets were operated each day, suggesting an approximate sampling effort of 800 and 700 net-h for these two sites, respectively. A total of 30 species was captured at these lower altitude sites (combined), 27 (90%) of which were captured at 1,100 m, but only 17 (57%) of which were captured at 1,000 m (Appendix 1). Thus, despite the slightly lower sampling effort at Site 2, this site yielded a slightly higher catch rate (106 individuals; 14.9 birds per 100 net-h) than Site 1 (91 individuals; 11.2 birds per 100 net-h). These catch rates are higher than those of subsequent studies (Appendix 1).

Plate 1. Front office of Cinaniki Research Station, Gunung Halimun-Salak NP.

Five species reported by Adhikerana & Komeda (1997) were not captured by subsequent banding studies (see below; Appendix 1) at these sites: Plaintive Cuckoo *Cacomantis merulinus*, Pygmy Bushtit *Psaltria exilis*, Chestnut-backed Scimitar-Babbler *Pomatorhinus montanus*, Mountain Tailorbird *Orthotomus cucullatus*, and Snowy-browed Flycatcher *Ficedula hyperythra*. The last three species were also captured at the higher altitude sites. All are known to occur in the park (MacKinnon 1988; Prawiradilaga *et al.* 2003). The authors carried out further sampling during July-August 1997, and the combined total for the two years was 14 and 12 netting days at 1,000 and 1,100 m asl, respectively (Adhikerana *et al.* 1998a). Adhikerana *et al.* (1998a) present morphometric data for species banded during both 1996 and 1997, but (unfortunately) do not list the species or numbers of individuals banded in 1997. Adhikerana *et al.* (1998b) list eight species that constitute new records for the park, though one of these species seems doubtful (see below).

Five years later, banding was again conducted at Cikaniki over a much longer period to examine seasonality in species diversity and abundance. Prawiradilaga *et al.* (2002a, b) sampled both the forest floor (Sites B and C) and the canopy (Site A; on a 25 m high suspension bridge) along the Canopy Trail

starting at Cikaniki Research Station (6°45'05" S; 106°32'08" E; the same coordinates as Site 1 of Adhikerana & Komeda 1997). Sampling was conducted over five days each month for two years from January 2000 to December 2001, with a total of 552 'net-h' each year, which equates to an of 46 'net-h' per month. They used 10 nets per day at Sites B and C, giving a total effort of c. 5,520 net-h per year for these sites . Capture rates were similar between years (7.9 and 6.8 birds per 100 net-h), substantially lower than those reported by Adhikerana & Komeda (1997) (Appendix 1). A total of 73 species were captured over the two years, nine more in the second year than in the first, despite the constant effort (Appendix 1). While many species were caught both in the canopy and the understorey, 27 species (37%) were captured only on the canopy bridge (Appendix 1), so are not considered further in this report. Further sampling was conducted at two-month intervals during 2002 and three times in 2003 (Prawiradilaga *et al.* 2002c, unpubl. data) and will be reported elsewhere.

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Plate 2. Citalahab, Gunung Halimun-Salak NP, showing forest edge, rice paddies and the edge of the extensive tea plantations that surround this part of the park (RN)

IBBS Programme (2009)

A further eight years later participants of the first IBBS Training of the Trainers programme sampled along the Canopy Trail (up to 18 nets) and below the waterfall (four nets) at Cikaniki over five days between 13 and 19 July 2009. The principal aim of the programme was to train banders and as the capture rate was very low inside the forest (5.8 birds per 100 net-h), mist-netting was also conducted over two days (16 and 17 July) near the forest edge, on the river shingles, and in open grassland adjacent to the paddyfields at Citalahab Guesthouse (1,080 m asl) (Plate 2). Here the capture rate improved (12.5 birds per 100 net-h). The total number of individuals captured at the two sites (97) was less than half that captured by Adhikerana & Komeda (1997) at their two lower altitude sites (Appendix 1), despite the comparable total sampling effort, albeit over a much shorter time interval. Only 29 species were captured in total, a very similar total (30) to that of Adhikerana & Komeda (1997), yet surprisingly only 13 species were reported in both studies. Even more surprisingly we caught seven species that were never captured over the 24 months of sampling by Prawiradilaga *et al.*

(2002a, b). Several of these species are typical of paddy fields, forest edge or river shingles (Blue-eared Kingfisher *Alcedo meninting*, Bar-winged Prinia *Prinia familiaris*, Olive-backed Tailorbird *Orthotomus sepium*, Ashy Drongo *Dicrurus leucophaeus*), while others are forest inhabitants (Common Emerald Dove *Chalcophas indica*, Javan Fulvetta *Alcippe pyrrhoptera*, Pale Blue Flycatcher *Cyornis unicolor*).

The species that was most frequently captured by all groups was the Little Spiderhunter *Arachnothera longirostra*, accounting for 28% of all birds captured at sites 1 and 2 by Adhikerana & Komeda (1997), 12% of those captured by Prawiradilaga *et al.* (2002a, b), and 22% of those banded by IBBS during July 2009 (Appendix 1). The Sunda Robin *Cinclidium diana*, Rufous-chested Flycatcher *Ficedula dumetoria*, and Horsfield's Babbler *Malacocincla sepiaria* were among the five most frequently captured species by Adhikerana & Komeda (1997) and Prawiradilaga *et al.* (2002a, b), representing 5-9% of all captures at the site in both studies. These species were also captured by IBBS, but in insignificant numbers (Plates 3 and 4).

The third most frequently captured species by IBBS was the Oriental White-eye *Zosterops palpebrosa* (race *buxtoni*), which was seen in large flocks at both banding sites, but captured only at Citalahab. A pair was found nesting beside the Cikanini Research Station building, the owners apparently incubating eggs (see below, and Around the Archipelago, this issue). Prawiradilaga *et al.* (2002a, b) captured six individuals of this species over their two years of sampling. Adhikerana & Komeda (1997), on the other hand, did not capture the species during 1996 and it was not among the 203 species listed for the Park in their Appendix. Prawiradilaga *et al.* (2002b; 2003: 97) also reported capturing a single Mountain White-eye *Z. montanus* at the site, but in Java, this species occurs from 1600 to 3300 m asl, and is not known to occur west of Mount Papandayan, 70 km south of Bandung (Mees 1957; van Balen 2008). Photographs under the heading of *Z. montanus* in Prawiradilaga *et al.* (2003: 97), especially the one on the left, are clearly of *Z. palpebrosa* (brown iris, thick black loral stripe, and an olive median crown stripe). Although MacKinnon & Phillipps (1993) state that *Z. palpebrosus* shows very little or no yellow above the black lores, Plate 3 and photos of other individuals show that the latter species, caught during the IBBS programme, had a broad yellow stripe above the loral stripe, from the level of, or just above, the eye-ring, to the point where the forehead meets the top of the bill's base; the olive colour on the forehead starts as a narrow median stripe, and broadens posteriorly to cover the crown.

A common species misidentified in previous studies

The second most frequently captured species by the first two groups was allegedly the Fulvous-chested Jungle Flycatcher *Rhinomyias olivacea*, representing 15% and 7% of all bird banded by Adhikerana & Komeda (1997) and Prawiradilaga *et al.* (2002a, b), respectively (Appendix 1). As noted by Adhikerana *et al.* (1998b), however, this species was not listed by MacKinnon

(1988). Nor was it captured by IBBS in 2009. On the other hand, the second most frequently captured species by IBBS was the Javan Fulvetta *A. pyrrhoptera* (Plate 5), which represented 16.5% of all captures at the two sites (Appendix 1). As *A. pyrrhoptera* was not listed in either Adhikerana & Komeda (1997) or Prawiradilaga *et al.* (2002a, b) it seems likely that this species was misidentified as *R. olivacea* by both studies. Indeed the photograph under the name of this species in Prawiradilaga *et al.* (2003) appears to be of *A. pyrrhoptera*. This conclusion is confirmed in Table 1, which compares data for both species collected from various sources. The mean lengths of the wing, tail, tarsus, and culmen, and weight, as given by Adhikerana *et al.* (1998a) for "*R. olivacea*", all fall within one standard deviation of, and in the case of tarsus and tail length are identical (or almost so) to, the means for *A. pyrrhoptera* banded by IBBS (Table 1).

Table 1. Comparison of measurements of *Alcippe pyrrhoptera* and *Rhinomyias olivacea*. #, IBBS data collected during July 2009; *, wing flattened

	A. pyrrhoptera			*"R. olivacea"*	*R. olivacea*	
	IBBS#	Kuroda (1933)	Vorderman (1886)	Adhikerana *et al.* (1998a)	Kuroda (1933)	Vorderman (1884)
Body weight (g)	16.3 ± 1.2 (17)			15.9 ± 0.1 (110)		
Wing length*	62.8 ± 2.0 (17)	61.0	64.0	63.3 ± 0.2 (111)	70.5	70
Wingspan			197.0	194.2 ± 0.9 (109)		227
Culmen length	11.0 ± 1.5 (11)	11.5	11.0	11.9 ± 0.06 (111)	13	13
Tarsus length	21.4 ± 1.2 (11)	21.5	23.0	21.4 ± 0.06 (111)	18.5	17
Tail length	61.9 ± 5.7 (17)			61.76 ± 0.26 (110)	57.0	60.0

These measurements are also very close to those for *A. pyrrhoptera* as given by Kuroda (1933) and Vorderman (1886). Conversely, measurements for *R. olivacea* by Kuroda (1933) and Vorderman (1884) are either consistently longer (wing and culmen) or shorter (tarsus and tail) than those given by Adhikerana *et al.* (1998a) for the alleged "*R. olivacea*".

The misidentification of *A. pyrrhoptera* negates the conclusion of Adhikerana & Komeda (1997) that *R. olivacea* was the second most "important" species at lower altitudes, and of Prawiradilaga *et al.* (2002a), who considered it among the five most abundant species in the area.

Moult and evidence of breeding

Of the 97 individuals captured, 27 (28%) were identified as juveniles, representing 13 (45%) of the 29 species concerned. The species with the highest percentage of juveniles by far (59%) was the Javan Fulvetta (10 of 17 individuals). Only four (17%) of the 23 Little Spiderhunters were considered juvenile. Two of the three Sunda Robins were readily recognisable as juveniles by their spotted plumage (MacKinnon & Phillipps 1993; Plate 4), and both Olive-backed Tailorbirds were tentatively identified as juveniles. In addition, one or two juvenile Pale Blue Flycatchers *C. unicolor* were observed being attended by their parents in the garden adjacent to the Research Station buildings. These captures and observations of juvenile birds suggest that nesting had taken place 1-3 months before our sampling period of mid-July. This is consistent with the peak breeding season of March to June for resident bird species on the island of Java (Sody 1930; Bouma 1936).

Primary moult was found on 31 individuals (32% of the total caught), but in the majority (71%) of these birds, was less than half completed (scores < 25 out of possible 50). Little Spiderhunters had low moult scores (ranging from 3 to 12; n=7), while Javan Fulvettas ranged from 12 to 22 (n=3) and Horsfield's Babblers from 14 to 43 (n=3). Moderately high scores (25-39) were found on species from a wide range of families (Rufous Piculet, Blue Whistling-Thrush, Bar-winged Prinia, Hill Blue Flycatcher and Streak-breasted Spiderhunter). Such moult seems consistent with recent cessation of breeding activities.

Data collected during the ToT indicated that brood patches were present in 19 of the 70 adult birds captured, but few of these brood patches were scored, and many were poorly developed, suggesting that brooding had just finished or (less likely) begun. Seven of the 19 birds with apparent brood patches also showed primary moult. Although the annual cycles of Southeast Asian birds are poorly known, moult typically follows breeding and presumably rarely occurs simultaneously with incubation, even in the tropics (Fogden 1972; Wells 1976; Stutchbury & Morton 2001; Wikelski *et al*. 2003). However moult-breeding overlap is known to occur among some tropical birds (Ward 1969; Foster 1974). Two of the seven apparent cases of simultaneous moult and brooding were Oriental White-eyes, with primary scores of 15 and 45 (out of a possible 50). The four remaining cases refer to four species, two being bulbuls and the other two, babblers. In the absence of photographs or scores of these putative brood patches, however, these cases of possible breeding-moult overlap must be discarded.

The 12 birds reported as having brood patches, but no primary moult, involved six species, though the majority belonged to three species: Oriental White-eyes (4), Little Spiderhunters (3) and Javan Fulvettas (2). As noted above a pair of Oriental White-eyes was nesting 5 m from the Research Station buildings, and based on their behaviour they were indeed incubating eggs. Historical data from Java suggest that the race *buxtoni* lays from January through September, apparently more so from June onwards (Sody 1930; Hellebrekers & Hoogerwerf 1967). Clutches of both the Little Spiderhunter and the Java Fulvetta

have been found in all months of the year in Java, but whilst the former shows no obvious peaks, the latter shows peak numbers in April-May and October (Sody 1930; Hellebrekers & Hoogerwerf 1967). Combined with the presence of juveniles, these species might therefore be expected to show signs of recent breeding activity.

Longevity records

Nine individuals, representing six species, that were banded prior to 2009 were recaptured during the IBBS programme. Those with the longest interval between banding and recapture dates were: a Sunda Forktail *Enicurus velatus* (2H58487; re-banded 02A001008) that was at least 9 years and 1 month old when re-trapped, and a Horsfield's Babbler (2H58541) that was at least 8 years and 9 months old. As none of these birds were banded as pulli (nestlings), their age may well have exceeded 10 years. Another Horsfield's Babbler and a Little Spiderhunter were over 6 years old. These birds may well represent the oldest known wild birds in Indonesia.

Conclusions

The establishment of the IBBS heralds a new era of ornithology in Indonesia. The ToT at Gunung Halimun-Salak succeeded in its primary aim of providing initial or additional training for Indonesian banders, but also resulted in the collection of useful data on the annual cycle, moult and longevity of several species found in this part of West Java. Examination of these data, and of published data from previous studies in the park, also revealed a significant error in those past studies – one that will hopefully never re-cur. This case has highlighted the importance of careful scrutiny of past studies, and illustrated one of the many values of morpho-metric data. Such morpho-metric data will form the basis of further ornithological contributions from the ToT programme.

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Plate 3. Top row: *Cinclidium diana* (left, juvenile, DD*; right, adult male, RN). Upper middle row: *Ficedula dumetoria* (left, adult male, WR; right, adult female, RN). Lower middle row: *Cyornis banyumas* (left, adult male, DD*; right, adult female, WR). Bottom, *Zosterops palpebrosa buxtoni* (RN). *Copyright, Commonwealth of Australia.

Plate 4. Top row: *Alcippe pyrrhoptera* (left, juvenile; right, adult; WR). Upper middle row: left, *Stachyris thoracica* (WR); right, *Malacocincla sepiaria* (RN). Lower middle row: left, *Napothera macrodactyla* (WR); right, *Brachypteryx leucophrys* (RN). Bottom row: left, *Stachyris grammiceps* (DD*); right, *Ixos virescens* (RN).

Appendix 1. List of birds mist-netted at Gunung Halimun National Park, West Java

Sources: 1996 data, Adhikerana & Komeda (1997; Table 1, p101; I and II combined; excludes retraps); 2000 data, Prawiradilaga *et al.* (2002a: Table 4); 2001 data, Prawiradilaga *et al.* (2002b: Table 4); 2009, IBBS programme, including retraps from previous studies. Left square bracket and italicised values, Site A of Prawiradilaga *et al.* (2002a, b) only (see text). [1] Sp. no., Sukmantoro et al. (2007); [2] replaces name of Oriental Cuckoo *C. saturatus* (following King 2005).

			1996	1996	1996	2000*	2001*	2000/ 01	2009	2009	2009
Sp. No.[1]	English Name	Latin Name	1000 m	1100 m	Total (both sites)			Total (both yrs)	Cikaniki	Citalahab	Total (both sites)
97	Crested Goshawk	*Accipiter trivirgatus*					1	1			
185	Chestnut-bellied Partridge	*Arborophila javanica*				4	2	6			
[403	Barred Cuckoo-dove	*Macropygia unchall*					1	1			
417	Common Emerald Dove	*Chalcophaps indica*							1		1
521	Sunda Cuckoo [2]	*Cuculus lepidus*					2	2			
526	Plaintive Cuckoo	*Cacomantis merulinus*		1	1						
527	Rusty-breasted Cuckoo	*Cacomantis sepulcralis*				3		3			
581	Reddish Scops Owl	*Otus rufescens*		1	1	4	2	6			
594	Collared Scops Owl	*Otus lempiji*		1	1	1	2	3			
622	Javan Frogmouth	*Batrachostomus javensis*				3		3			
623	Sunda Frogmouth	*Batrachostomus cornutus*				5	1	6			
668	Blue-tailed Trogon	*Harpactes reinwardtii*					3	3			
674	Orange-breasted Trogon	*Harpactes oreskios*				1		1			
678	Blue-eared Kingfisher	*Alcedo meninting*								4	4
680	Blue-banded Kingfisher	*Alcedo euryzona*				3	2	5			
689	Banded Kingfisher	*Lacedo pulchella*					1	1			

[756	Flame-fronted Barbet	*Megalaima armillaris*					2	2			
764	Rufous Piculet	*Sasia abnormis*	5	3	8	11	5	16	2		2
790	Banded Broadbill	*Eurylaimus javanicus*				2		2	1		1
[870	Sunda Minivet	*Pericrocotus miniatus*				6	18	24			
[875	Common Iora	*Aegithina tiphia*				1		1			
[879	Blue-winged Leafbird	*Chloropsis conchinchinesis*				7	2	9			
902	Grey-cheeked Bulbul	*Criniger bres*	2	2	4	15	8	23	3	2	5
909	Sunda Bulbul	*Ixos virescens*		1	1		1	1	1	1	2
917	Lesser Shortwing	*Brachypteryx leucophrys*	2	6	8	13	18	31	4		4
919	Siberian Blue Robin	*Luscinia (Erithacus) cyane*				1		1			
924	Sunda Robin	*Cinclidium diana*	2	12	14	23	36	59	3		3
925	Sunda Forktail	*Enicurus velatus*	1		1	8	8	16	2	2	4
927	White-crowned Forktail	*Enichurus leschenaulti*				1	1	2			
930	Sunda (Javan) Whistling-Thrush	*Myophonus glaucinus*				3	2	5	1		1
935	Blue Whistling Thrush	*Myophonus caeruleus*				1		1	1		1
948	Sunda Thrush	*Zoothera andromedae*		1	1	6	6	12			
967	Temminck's Babbler	*Pellorneum pyrrogenys*	3	4	7	13	12	25			
973	Horsfield's Babbler	*Malacocincla sepiarium*	4	5	9	31	18	49	4	2	6
981	Chestnut-backed Scimitar-Babbler	*Pomatorhinus montanus*		1	1						
988	Large Wren-Babbler	*Napothera macrodactyla*				2	4	6	1		1
991	Eye-browed Wren-babbler	*Napothera epilepidota*	1	2	3	12	14	26			
992	Pygmy Wren-babbler	*Pnoepyga pusilla*	3		3	5	2	7			
995	White-breasted Babbler	*Stachyris grammiceps*	4	3	7	13	5	18	1		1
1002	White-bibbed Babbler	*Stachyris thoracica*	1	6	7	33	12	45	3		3
1004	Crescent-chested Babbler	*Stachyris melanothorax*	1	2	3	3	7	10		1	1

1016	Chestnut-fronted Shrike-Babbler	*Pteruthius aenobarbus*				2	9	11	1			1
1018	Javan Fulvetta	*Alcippe pyrrhoptera*							10	7		17
1024	Javan Tesia	*Tesia superciliaris*		1	1		1	1				
[1043	Oriental Reed Warbler	*Acrocephalus orientalis*				1		1				
1048	Bar-winged Prinia	*Prinia familiaris*								2		2
1056	Olive-backed Tailorbird	*Orthotomus sepium*								2		2
1051	Mountain Tailorbird	*Orthotomus cucullatus*		1	1							
[1060	Mountain Leaf Warbler	*Phylloscopus trivirgatus*				3	1	4				
1066	Sunda Warbler	*Seicercus grammiceps*		1	1		1	1				
[1067	Yellow-bellied Warbler	*Abroscopus superciliaris*				4	1	5				
1070	Fulvous-chested Jungle Flycatcher	*Rhinomyas olivacea*	17	13	30	33	27	60				
1071	Brown-chested Jungle Flycatcher	*Rhinomyas brunneata*					1	1				
[1081	Asian Brown Flycatcher	*Muscicapa daurica*				1	1	2				
[1082	Ferruginous Flycatcher	*Muscicapa ferruginea*				4	1	5				
[1085	Indigo Flycatcher	*Eumyias indigo*				5	6	11				
[1088	Mugimaki Flycatcher	*Ficedula mugimaki*				1	6	7				
1090	Snowy-browed Flycatcher	*Ficedula hyperythra*		1	1							
1091	Rufous-chested Flycatcher	*Ficedula dumetoria*	11	6	17	35	21	56	2			2
1097	Little Pied Flycatcher	*Ficedula westermanni*					3	3				
1107	Pale Blue Flycatcher	*Cyornis unicolor*							1			1
1108	Hill Blue Flycatcher	*Cyornis banyumas*	2		2	2	3	5	1	1		2
1115	Grey-headed Canary-Flycatcher	*Culicicapa ceylonensis*				5	2	7		1		1
[1139	Golden-bellied Gerygone	*Gerygone sulphurea*				2		2				
1186	White-bellied Fantail	*Rhipidura euryura*		3	3	7	3	10				

1266	Pygmy Bushtit	*Psaltria exilis*		1	1							
1269	Blue Nuthatch	*Sitta azurea*				14	10	24				
1280	Crimson-breasted Flowerpecker	*Prionochilus percussus*				4	4	8				
[1288	Orange-bellied Flowerpecker	*Dicaeum trigonostigma*				7	3	10				
[1297	Blood-breasted Flowerpecker	*Dicaeum sanguinolentum*					2	2				
1303	Scarlet-headed Flowerpecker	*Dicaeum trochileum*					2	2				
[1309	Ruby-cheeked Sunbird	*Anthreptes singalensis*				1	1	2				
1318	White-flanked Sunbird	*Aethopyga eximia*	1	2	3		2	2				
[1319	Crimson Sunbird	*Aethopyga siparaja*				2		2				
1321	Javan Sunbird	*Aethopyga mystacalis*					3	3				
1322	Little Spiderhunter	*Arachnothera longirostra*	31	25	56	55	46	101	15	8	23	
1328	Streaky-breasted Spiderhunter	*Arachnothera affinis*				2	1	3		1	1	
1330	Oriental White-eye	*Zosterops palpebrosus*				4	2	6		9	9	
[1334	Mountain White-eye	*Zosterops montanus*					1	1				
[1357	Grey-throated Ibon (Darkeye)	*Lophozosterops javanicus*					1	1				
1446	Tawny-breasted Parrot-Finch	*Erythrura hyperythra*		1	1		2	2				
[1447	Pin-tailed Parrot-Finch	*Erythrura prasina*					2	2				
1452	Javan Munia	*Lonchura leucogastroides*				4	6	10		1	1	
1522	Ashy Drongo	*Dicrurus leucophaeus*								1	1	
[1525	Lesser Racket-tailed Drongo	*Dicrurus remifer*				6	3	9				
	No. species		17	27	30	54	63	73	20	16	29	
	No. individuals		91	106	197	438	376	814	58	45	103	
	Mistnet-h		810	710		5520	5520		738	324		
	Bird per net-h		0.112	0.149		0.079	0.068		0.079	0.139		
	Birds per 100 net-h		11.2	14.9		7.9	6.8		7.9	13.9		