

## MONITORING THE BIRD COMMUNITY AT G. KENDENG-GUNUNG HALIMUN NATIONAL PARK

[Pemantauan Komunitas Burung di G. Kendeng-Taman Nasional Halimun]

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### ABSTRAK

Untuk mengetahui dinamika komunitas burung di Taman Nasional Gunung Halimun dilakukan pemantauan setiap bulan mulai bulan Januari 2000 sampai Desember 2001. Pemantauan dilakukan di kaki G. Kendeng menggunakan metode tangkap lepas dengan jaring kabut yang dipasang di atas tanah dan pada tajuk pohon. Dalam makalah ini disampaikan hasil pengamatan dari periode kedua yang dilakukan mulai Januari sampai Desember 2001. Hasil pengamatan menunjukkan bahwa keragaman jenis burung di tajuk pohon (26 jenis) hampir sama dengan pada permukaan tanah (25 jenis). Sedangkan 12 jenis tercatat dapat dijumpai di tajuk pohon dan pada permukaan tanah. Burung yang sangat umum dijumpai adalah *Cinclidium diana* dan *Ficedula dumetoria* diikuti *Arachnothera longirostra*. Burung yang sangat jarang dijumpai adalah *Accipiter trivirgatus*, *Macropygia unchall*, *Batrachostomus cornutus*, *Lacedo pulcheila*, *Iole virescens*, *Enicurus leschenaulti*, *Tesia supercilialis*, *Phylloscopus trivirgatus*, *Abrscopus supercilialis*, *Seicercus grammiceps*, *Muscicapa daurica*, *Muscicapaferruginea*, *Arachnothera ajfinis*, *Anthreptes singalensis*, *Zosterops montanus* dan *Lophozoplerops javanicus*.

Keywords: Komunitas, keragaman, burung, G. Kendeng.

### INTRODUCTION

Gunung Halimun National Park is the largest montane forest in Java and a home of at least 15 endemic bird species which have restricted distribution range (Sujatnika *et al.*, 1995). Early study in the area documented the occurrences and general distribution of birds (MacKinnon 1988; UEA 1994). The following study focused on altitudinal distribution of birds using mist-net method (Adhikerana *et al.*, 1998) and mostly recorded forest floor species. Current study attempts to complete available data by monitoring canopy species as well as forest floor species for two years. This paper presents data from the secondary year of the study.

### OBJECTIVES

1. To assess the diversity of birds on the forest floor and canopy using mistnets
2. To observe seasonal variation in the presence of each species
3. To estimate relative abundance of each species based on mist-netted individuals

### METHODS

#### Study site

The study site was located at Cikaniki, Gunung (Mount) Kendeng-Gunung Halimun NP at 1,000 m altitude (6°45'05" S; 106°32'08" E). Three sites were selected for putting a series of mistnets. The first site (A) was on the canopy trail at 25 m high from the forest floor; the second site (B) was on the forest floor with a distant of 150 m to the west of canopy trail and the third site (C) was located on the forest floor nearby the canopy trail with a distant about 25 m.

#### Data collection

A series of mistnets up to six nets in the first site (A) and five nets in the second (B) and third (C) sites were settled. All nets used are 2.6 m high, 30 mm mesh size and 12 m long. Mistnets were put for 12 hour period each day during daylight hours

and checked every hour. Data were collected for five days every month from January to December 2001 with a total of 552 mistnet hours.

The captured birds from mistnets were identified, measured, ringed and bled if necessary before they were being released back to the forest. The measurements taken were total body length, natural wing length, wing span, culmen length, tarsus length, tail length and body weight. Moulting stage or brood patch was also observed for individual captured bird. However, the morphological measurements of individual birds will not be presented in this paper.

#### Data analysis

The captured species were listed following the Peters' Checklist as has been used in Indonesian Bird Checklist (Andrew, 1992). The relative abundance of each species was calculated by converting the total number of individuals caught for 552 mistnet hours to 1000 mistnet hours. Rarity was defined when the number of captured individuals of a species was < 2 individuals/1000 mistnet hours (Sodhi in preparation).

## RESULTS

### Arboreal and ground species

A total of 63 species were recorded from the study area (Tables 1 and 2). From those species, 26 species were caught only from the canopy (site A); 12 species were found in both canopy and ground (sites A, B and C) and 25 species were only found on the forest floor (sites B and C) (Table 1).

### Seasonal variation

The number of bird species caught every month varied and ranged from 11 to 26 species (Figure 1). The highest number of additional species occurred in February and March. No additional species was caught in September and October.

Table 2 indicates that *Cinclidium diana*, *Ficedula dumetoria* and *Arachnothera longirostra* were often captured. However, *Accipiter trivirgatus*,

*Macropygia unchall*, *Batrachostomus cornutus*, *Lacedo pulchella*, *Me virescens*, *Enicurus leschenaulti*, *Tesia superviliaris*, *Phylloscopus trivirgatus*, *Abroscopus superciliaris*, *Seicercus grammiceps*, *Rhinomyias brunneata*, *Muscicapa daurica*, *Muscicapa ferruginea*, *Arachnothera affinis*, *Anthreptes singalensis*, *Zosterops montanus* and *Lophozopterops javanicus* were caught only once in a year. Although *Megalaima armillaris*, *Chloropsis cochinchinensis*, *Zosterops palpebrosus* and *Erythrura hyperythra* were caught only once in a year but the number of captured individuals were more than one.

### Population abundance

Table 3 indicates that the population of *Arachnothera longirostra* has the highest relative abundance (83 individuals/1000 mistnet hours) followed by *Cinclidium diana* (65 individuals/1000 mistnet hours), *Rhinomyias olivacea* (49 individuals/1000 mistnet hours), and *Malacocincla sepiarium* (32 individuals/1000 mistnet hours). However, the populations of other species have lower relative abundance. Even the populations of *Accipiter trivirgatus*, *Macropygia unchall*, *Batrachostomus cornutus*, *Lacedo pulchella*, *Iole virescens*, *Enicurus leschenaulti*, *Tesia superciliaris*, *Phylloscopus trivirgatus*, *Abroscopus superciliaris*, *Seicercus grammiceps*, *Muscicapa daurica*, *Muscicapa ferruginea*, *Arachnothera affinis*, *Anthreptes singalensis*, *Zosterops montanus* and of *Lophozopterops javanicus* were very small (less than 2 individuals/1000 mistnet hours)

## DISCUSSION

### Diversity of birds

During year 2001, the study captured 63 bird species which was 30 % of the total bird species at Gunung Halimun National Park (Prawiradilaga in prep.). Among those species, seven species: *Arborophila javanica*, *Harpactes reinwardtii*, *Tesia superciliaris*, *Stachyris grammiceps*, *Stachyris thoracica*, *Rhipidura euryura* and

*Aethopyga eximia* are Javan endemics with restricted range of distribution (Sujatnika *et al.*, 1995), three species: *Megalaima armillaris*, *Stachyris melanothorax* and *Lophozopterops javanicus* are endemic to Java and Bali, three species: *Batrachostomus conmtus*, *Myophonus glaucinus* and *Eumyias indigo* are endemic to Sunda Besar, three species: *Pericrocotus miniatus*, *Cinclidium diana* and *Enicurus velatus* are endemic to Java and Sumatera (Andrew 1992, MacKinnon 1988, MacKinnon *et al.* 1992). Also, seven species: *Batrachostomus cornutus*, *Alcedo euryzona*, *Rhinomyias brunneata*, *Muscicapa dauurica*, *Muscicapa ferrugenea*, *Zosterops montanus* and *Lophozopterops javanicus* are new records for the Gunung Halimun area (Prawiradilaga *et al.* In preparation).

Table 1 indicates that the diversity of captured arboreal species was similar with the ground species. This could be caused by the similarity of food availability in the canopy and on the forest floor. However, further study on food availability is important to prove the hypothesis.

There are 12 species: *Harpactes reinwardtii*, *Sasia abnormis*, *Alophoixus bres*, *Cinclidium diana*, *Enicurus velatus*, *Pellorneum pyrrogenys*, *Stachyris grammiceps*, *Rhinomyias olivacea*, *Dicaeum trochileum*, *Prionochilus percussus*, *Arachnothera longirostra* and *Aethopyga mystacallis* which were captured both in the canopy and on the forest floor. Possibly, these species may not have specific height for their foraging activity. However, further study on the foraging guild of each species is needed.

#### Seasonal variation

*dhciYaiim aiimir, /lueubilr ahtmaVriü; smf* *Arachnothera longirostra* seem to be present at any time since they were often captured (Table 2). However, *Muscicapa daurica* is migrant (Andrew 1992, MacKinnon 1988, MacKinnon *et al.* 1992).

Figure 1 indicates that the number of species in February and March was higher than in any other time of the year. This increase could be related to an increase of food availability in the

area during that period. Regular monitoring on the population of insects in the area showed that the breeding season of most insect species occurred between January and June with the peak in March (Kahono personal communication). Therefore, since most of the captured bird species (45 out of 63 species) were primarily insectivores (MacKinnon 1988), an increase in the diversity of captured individuals in February and March was synchronised with an increase in the abundance of insects in the area.

#### Population status

Based on the presence (Table 2) and number of individuals caught (Table 3), *Cinclidium diana* and *Arachnothera longirostra* can be considered as the most common species in the area. These species were caught almost every month at all sites (Table 1) with the highest number of caught individuals per 1000 mistnet hours. The other common species are *Ficedula dumetoria*, *Stachyris thoracica*, *Rhinomyias olivacea*, *Malacocincla separium*, *Alophoixus bres*, *Sitta azurea*, *Brachypteryx leucophris*, *Pellorneum pyrrogenys*, *Stachyris grammiceps* and *Sasia abnormis*. The rarest species are *Otus lempiji*, *Harpactes oreskios*, *Aegithina tiphia*, *Myiophonus caeruleus*, *Enicurus leschenaulti*, *Napothera macrodactyla*, *Erithacus cyane*, *Pteruthius aenobarbus*, *Abroscopus superciliaris*, *Acrocephalus orientalis*, *Ficedula mugimaki*, *Muscicapa daurica* and *Anthreptes singalensis*.

#### CONCLUSIONS

1. The diversity of arboreal species was similar with the ground species.
2. *Cinclidium diana*, *Ficedula dumetoria*, and *Arachnothera longirostra* were found almost at any time.
3. *Arachnothera longirostra* was more abundant than any other species in the area.

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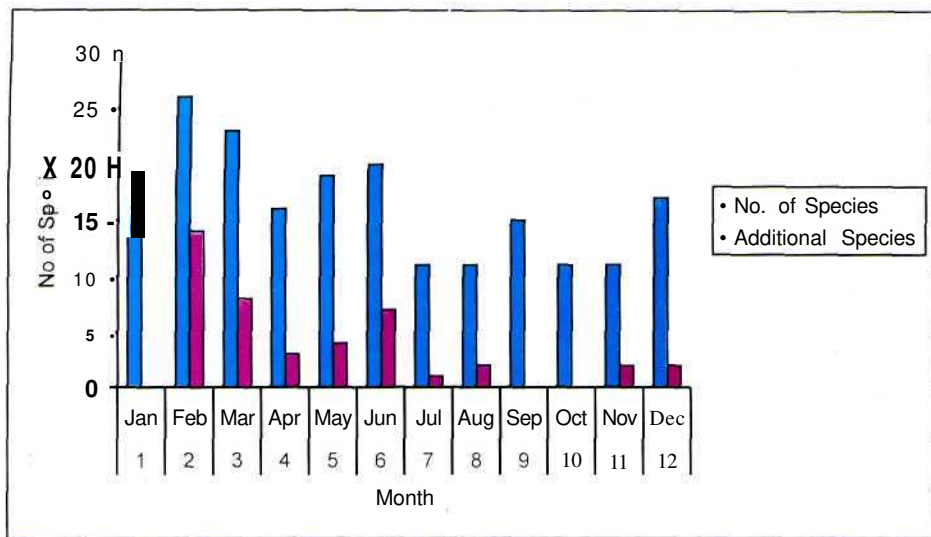


Figure I. The changes in number of bird species caught every month (year 2001)

### Arboreal and ground species

Table 1. The presence of bird species in the study area from January to December 2001

No.	FAMILY	SPECIES	Site	
			Canopy	Floor
01	ACCIPITRIDAE	<i>Accipiter trivirgatus</i>		V
02	PHASIANIDAE	<i>Arborophila javanica</i>		V
03	COLUMBIDAE	<i>Macropygia unchall</i>	V	
04	CUCULIDAE	<i>Cuculus saturalus</i>	V	
05	STRIGIDAE	<i>Otus rufescens</i>		V
06	STRIGIDAE	<i>Otus lempiji</i>		V
07	PODARGIDAE	<i>Batrachostomus cornutus</i>		V
08	TROGONIDAE	<i>Harpactes reinwardtii</i>	V	V
09	ALCEDINIDAE	<i>Alcedo euryzona</i>		V
10	ALCEDINIDAE	<i>Lacedo pulchella</i>		V
11	CAPITONIDAE	<i>Megalaima armillaris</i>	V	
12	PICIDAE	<i>Sasia abnormis</i>	V	V
13	CAMPEPHAGIDAE	<i>Pericrocotus miniatus</i>	V	
14	PYCNONOTIDAE	<i>Alophoixus bres</i>	V	V
15	PYCNONOTIDAE	<i>Me virescens</i>	V	
16	CHLOROPSEIDAE/ IRENIDAE	<i>Chloropsis cochinchinensis</i>	V	
17	TURDIDAE	<i>Brachypteryx leucophrys</i>		V
18	TURDIDAE	<i>Cinclidium diana</i>	V	V
19	TURDIDAE	<i>Zoothera andromedae</i>		V
20	TURDIDAE	<i>Enicurus velatus</i>	V	V
21	TURDIDAE	<i>Enicurus leschenaulti</i>		V
22	TURDIDAE	<i>Myiophonus glaucinus</i>		V
23	TIMALIIDAE	<i>Malaccocincla sepiarium</i>		V
24	TIMALIIDAE	<i>Pellorneum pyrogenys</i>	V	V
25	TIMALIIDAE	<i>Stachyris grammiceps</i>	V	V
26	TIMALIIDAE	<i>Stachyris thoracica</i>		V
27	TIMALIIDAE	<i>Stachyris melanothorax</i>		V
28	TIMALIIDAE	<i>Napothera epilepidota</i>		V

Continued Table 1. ...

29	TIMALIIDAE	<i>Napothera macrodactyla</i>		V
30	TIMALIIDAE	<i>Pnoepyga pusilla</i>		V
31	TIMALIIDAE	<i>Pteruthius aenobarbus</i>	V	
32	SYLVIIDAE	<i>Seicercus grammiceps</i>	V	
33	SYLVIIDAE	<i>Tesia superciliaris</i>		V
34	SYLVIIDAE	<i>Phylloscopus trivirgatus</i>	V	
35	SYLVIIDAE	<i>Abroscopus superciliaris</i>	V	
36	MUSCICAPIDAE	<i>Rhinomyias olivacea</i>	V	V
37	MUSCICAPIDAE	<i>Rhinomyias brunneata</i>		V
38	MUSCICAPIDAE	<i>Ficedula dumetoria</i>		V
39	MUSCICAPIDAE	<i>Ficedula mugimaki</i>	V	
40	MUSCICAPIDAE	<i>Ficedula westermanni</i>		V
41	MUSCICAPIDAE	<i>Culicicapa ceylonensis</i>	V	
42	MUSCICAPIDAE	<i>Muscicapa dauurica</i>		V
43	MUSCICAPIDAE	<i>Muscicapa ferrugenea</i>	V	
44	MUSCICAPIDAE	<i>Eumyias indigo</i>	V	
45	MUSCICAPIDAE	<i>Cyornis banyumas</i>		V
46	RHIPIDURIDAE	<i>Rhipidura euryura</i>		V
47	SITTIDAE	<i>Sitta azurea</i>	V	
48	DICAEIDAE	<i>Dicaeum irigonostigma</i>	V	
49	DICAEIDAE	<i>Dicaeum sanguinolentum</i>	V	
50	DICAEIDAE	<i>Dicaeum trochileum</i>	V	V
51	DICAEIDAE	<i>Prionochilus percussus</i>	V	V
52	NECTARINIIDAE	<i>Arachnothera longirostra</i>	V	V
53	NECTARINIIDAE	<i>Arachnothera affinis</i>		V
54	NECTARINIIDAE	<i>Aethopyga eximia</i>	V	
55	NECTARINIIDAE	<i>Aethopyga mystacallis</i>	V	V
56	NECTARINIIDAE	<i>Anthreptes singalensis</i>	V	
57	ZOSTEROPIDAE	<i>Zosterop palpebrosus</i>	V	
58	ZOSTEROPIDAE	<i>Zosterops montanus</i>	V	
59	ESTRILDIDAE	<i>Lophozopteros javanicus</i>	V	
60	ESTRILDIDAE	<i>Erythrura prasina</i>	V	
61	ESTRILDIDAE	<i>Erythrura hyperythra</i>	V	
62	ESTRILDIDAE	<i>Lonchura leucogastroides</i>	V	
63	DICRURIDAE	<i>Dicrurus remifer</i>	V	

Table 2. The presence of captured species from January to December 2001 (12 months)

No.	Species	Month											
		1	2	3	4	5	6	7	8	9	10	11	12
1	<i>Accipiter trivirgatus</i>			√									
2	<i>Arborophila javanica</i>						√		√				
3	<i>Macropygia unehall</i>		V										
4	<i>Cuculus saturatus</i>			√									
5	<i>Otus rufescens</i>							√					√
6	<i>Otus lempiji</i>					√							√
7	<i>Batrachostomus cornutus</i>											√	
8	<i>Harpactes reinwardtii</i>					√		√		√			
9	<i>Alcedo euryzona</i>					√					√		
10	<i>Lacedo pulchella</i>						V						
11	<i>Megalaima armillaris</i>						V						
12	<i>Sasia abnormis</i>		√		√			√		√			
13	<i>Chloropsis cochinchinensis</i>		√										
14	<i>Pericrocotus miniatus</i>	√	√						√	√			√
15	<i>Alophoixus bres</i>	V	V	V	√							√	
16	<i>hie virescens</i>		√										
17	<i>Brachypteryx leucophrys</i>	V	V	V	√		V				V	√	V
18	<i>Cinclidium diana</i>	V	V	V	√	√	V	√			V	V	V
19	<i>Zoothera andromedae</i>							V	√		V	V	
20	<i>Enicurus velatus</i>					√			√	√			√
21	<i>Enicurus leschenaulti</i>			√									
22	<i>Myiophonus glaucinus</i>							√					
23	<i>Malacocincla sepium</i>		√	<	V	V	V			V	V		√
24	<i>Pellorneum pyrrogenys</i>	√								√			
25	<i>Stachyris grammiceps</i>			√					√				
25	<i>Stachyris thoracica</i>	√			V	√	√	√	√		√		√
27	<i>Stachyris melanothorax</i>	√		√		√	√	√					
28	<i>Napothera epilepidota</i>		√	√	√	√	√	√		√	√		
29	<i>Napothera macrodactyla</i>	√			√								√
30	<i>Pnoepyga pusilla</i>				√							√	
31	<i>Pteruthius aenobarbus</i>	√	√	√			√						
32	<i>Tesia superciliaris</i>												√
33	<i>Phylloscopus trivirgatus</i>	√											
34	<i>Abroscopus superciliaris</i>				√								
35	<i>Seicercus grammiceps</i>	√											
36	<i>Rhinomyias olivacea</i>	√	V	√	V	√		√	√		√		√
37	<i>Rhinomyias brunneata</i>				V								
38	<i>Ficedula dumeloria</i>	V	V		V	√	√	√	√	√	√	√	√
39	<i>Ficedula mugimaki</i>	√	V	<	√								
40	<i>Ficedula westermanni</i>					√			√				
41	<i>Culicicapa ceylonensis</i>						√						√
42	<i>Muscicapa dauwica</i>		√										
43	<i>Muscicapa ferruginea</i>		√		√		√					√	
44	<i>Eumyias indigo</i>					√	√		√			√	

Continued Table 2. ...

45	<i>Cyornis banyumas</i>		√														√	
46	<i>Rhipidura eunura</i>	V	√	V														
47	<i>Sitti azurea</i>	√	√	si				√										
48	<i>Dicacum irigoiwxigma</i>		V					√									√	
49	<i>Dictwum .sangiiinolenliim</i>													√			√	
50	<i>Dictwum trochilcum</i>			V				√										
51	<i>Prionochilus percusxus</i>			V				√						√				
52	<i>Aruchnothera longirostru</i>	√	V	V	V	V	V	√	√	√				√		√	√	
53	<i>Arachnothera a (finis</i>			V														
54	<i>Acthopyga exiin</i>		√															
55	<i>Aalhopyga mystucallis</i>		V	V														
56	<i>Anllireptes xingalen.ti.s</i>		√															
57	<i>Zosterop pulpehrosus</i>																	
58	<i>Zoxteropx montamts</i>	√																
59	<i>Lophozopterops javanicus</i>		√															
60	<i>Erythrura prasina</i>																√	√
61	<i>Erythrura hyperythru</i>																	√
i>2	<i>Lonchwa leucogastroides</i>			√					√									
63	<i>Dicrurus remifer</i>			√		V												√



Table 3. Relative abundance of each species from January to December 2001.

No.	Species	Total No. of captured individuals (552 hours)	No. of Individuals /1000 mistnet hours
1	<i>Accipiter trivirgatus</i>	1	1.8
2	<i>Arborophila javanica</i>	2	3.6
3	<i>Macropygia unchall</i>	1	1.8
4	<i>Cuculus saturatus</i>	2	3.6
5	<i>Otus mfescens</i>	2	3.6
6	<i>Otus lempiji</i>	2	3.6
7	<i>Batrachostomus cornulus</i>	1	1.8
8	<i>Harpactes reinwardtii</i>	3	5.0
9	<i>Alcedo euiyzona</i>	2	3.6
10	<i>Laccco pulchellu</i>	1	1.8
11	<i>Megalaima armillaris</i>	2	3.6
12	<i>Sasia abnormis</i>	5	9.0
13	<i>Chloropsis cochinchinensis</i>	2	3.6
14	<i>Pericrocotus minimus</i>	18	32.6
15	<i>Alophoixus bres</i>	8	14.0
16	<i>lola virescens</i>	1	1.8
17	<i>Brachypteryx leucophrys</i>	18	32.6
18	<i>Cinclidium dianu</i>	36	65.0
19	<i>Zoothera andromedae</i>	6	11.0
20	<i>Enicums velatus</i>	8	14.0
21	<i>Enicums leschenaulti</i>	1	1.8
22	<i>Myophonus glaucinus</i>	2	3.6
23	<i>Malacocincla sepiarium</i>	18	32.6
24	<i>Pellorneum pyrrogenys</i>	12	22.0
25	<i>Stachyris grammiceps</i>	5	9.0
26	<i>Stachyris thoracica</i>	12	22.0
27	<i>Stachyris melanothorax</i>	7	13.0
28	<i>Napothera epilepidota</i>	14	25.0
29	<i>Napothera macrodactyla</i>	4	7.2
30	<i>Pnoepyga pusilla</i>	2	3.6
31	<i>Ptemthius aenobarbus</i>	9	16.0
32	<i>Tesia superciliaris</i> *	1	1.8
33	<i>Phylloscopus trivirgatus</i>	1	1.8
34	<i>A broscopus superciliaris</i>	1	1.8
35	<i>Seicercus grammiceps</i>	1	1.8
36	<i>Rhinomyias olivacea</i>	27	49.0
37	<i>Rhinomyias brunneatu</i>	1	1.8
38	<i>Ficedula dumetoria</i>	21	38.0
39	<i>Ficedula mugimaki</i>	6	11.0
40	<i>Ficedula westennanni</i>	3	5.0
41	<i>Culicicapa ceylonensis</i>	2	3.6
42	<i>Muscicapa dauurica</i>	1	1.8
43	<i>Muscicapa ferrugenea</i>	1	1.8
44	<i>Eumyias indigo</i>	6	11.0
45	<i>Cyornis banyumus</i>	3	5.0
46	<i>Rhipidura euryura</i>	3	5.0
47	<i>Sitta azurea</i>	10	18.0
48	<i>Dicaeum trigonostigma</i>	3	5.0
49	<i>Dicaeum sanguinolentum</i>	2	3.6
50	<i>Dicaeum trochileum</i>	2	3.6
51	<i>Prionochilus percussus</i>	4	7.2
52	<i>Arachnothera longirostra</i>	46	83.0
53	<i>Arachnothera affinis</i>	1	1.8
54	<i>Aethopyga eximia</i>	2	3.6
55	<i>Aethopyga mystacallis</i>	3	5.0

Continued Table 3. ...

56	<i>Anthreptes singalensis</i>	1		1.8
57	<i>Zosterop palpebrosus</i>	2		3.6
58	<i>Zosterops montanus</i>	1		1.8
59	<i>Lophozopteros javanicus</i>	1		1.8
60	<i>Erythrura prasina</i>	2		3.6
61	<i>Erythrura hyperythra</i>	2		3.6
62	<i>Lonchura leucogastroides</i>	6	"	11.0
63	<i>Dicrurus remifer</i>	3		5.0
	TOTAL	376		