

SULAWESI BIRD REPORT

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Summary

All notable records of Sulawesi birds collected by various observers over the period from 1976 to 1990 are summarized in a single compilation, In a format that will become standard for each of Indonesia's seven faunal regions.

Ringkasan

Seluruh catatan tentang burung di Sulawesi yang dikumpulkan oleh beberapa peneliti selama kurun waktu tahun 1976 sampai 1990 diringkaskan dalam sebuah kumpulan, dalam bentuk yang kemudian akan menjadi acuan untuk setiap wilayah dari tujuh wilayah satwa di Indonesia.

Introduction

This is the first of a series of bird reports on Indonesia. It covers the period 1976 to May 1990. Records supplement or contradict information given in White and Bruce 1986 (**W&B 1986**). The majority of records are previously unpublished, though reference is made to pertinent recent publications, particularly Rozendaal and Dekker 1989 (**R&D 1989**).

The island has been divided into four' faunal regions and localities are referred to **N**, **C**, **SE**, and **S**. This is after Stresemann (1936) and White and Bruce (1986).

N: the northern peninsula south to the equator

C: the central mass from the equator south to the Latimodjong Mts. in the SW [c. 3p°00S] Danau Towuti in the **SE** [c. 2°50S].

SE: the **SE** peninsula north to Danau Towuti.

S: the SW peninsula north to the Latimodjong Mts.

Records in this report should be referred to the contributor and *Kukila* Bird Report, not the compiler. We suggest citing this and subsequent bird reports in *Kukila* in the following format:

1. In text: J.P. Gee in *Kukila* (5: 5).
2. In bibliography: *Kukila* (1990) Sulawesi Bird Report *Kukila* (5:4-26).

Appendix 1 is a gazetteer of principal localities referred to in the systematic list. The nomenclature and sequence of species follows White and Bruce (1986). The following abbreviations and Indonesian words are used in the text:

Teluk (Bay)	C.A. = Cagar Alam (Protected Area)
Danau (Lake)	T.N. = Taman Nasional (National Park)
Sungai (River)	nr. = near
Tanjung (Cape, Headland)	c. = approximately
Gn. = Gunung (Mount)	

Systematic List.

BULWER'S PETREL *Bulweria bulwerii*

One found under a deck-chair on-board a cruise ship on 30 Nov 1983 landed during a storm on the previous night on approach to Manado (N) (JPG), and is the first record from Sulawesi and probably only the second from Wallacea (see W&B 1986). Several other petrels seen in the period 26 Nov to 2 Dec offshore between Ujung Pandang (S) and Zamboanga (Philippines) were assumed to be *Bulweria*.

GREAT FRIGATEBIRD *Fregata minor*

Observed on 11 occasions on the coast of S in the years 1976 to 1979, with records from every month except Apr, Jul, Aug and Nov; the Lesser Frigatebird *F. ariel* was noted only twice in the same period (CJE). The concentrations of *oriel* at Ujung Pandang (S) reported to occur from Sep to Dec (in W&B 1986) were not evident.

LITTLE BLACK CORMORANT *Phalacrocorax sulcirostris*

Noted as quite common near Bulukumba (S) (Escott and Holmes 1980); the largest count was c. 30 on 21 Oct 1978 (CJE, DAH).

LITTLE PIED CORMORANT *Phalacrocorax melanoleucos*

Peak numbers are 50 on 16 Mar 1979 at Polewali (CJE) and c. 25 on 21 Oct 1978 at Bulukumba (CJE, DAH) (S) (see Escott and Holmes 1980).

GREAT-BILLED HERON *Ardea sumatrana*

One to three birds seen regularly along the coast at Parey (C.A. Tangkoko-Batuangus) (N), seen in each year from 1981 (KDB, FGR, GW). Two birds on 19 Nov and one 21 Nov 1985 at Molibagu (RWD), and one on 27 Jul 1988 in mangrove at Malala, nr. Tolitoli (N) (DAH). One on 20 Jan 1979 on a sand-spit at the mouth of the Sungai Ula, nr. Morowali (DAH), and three on 12 to 15 Mar 1986 near Palopo (C) (Uttley 1987).

GREAT EGRET *Egretta alba*

Known from all four faunal provinces but not known to breed and the birds are of uncertain origin (see W&B 1986). Several records of between one and six birds in S between 22 Oct 1978 and 7 Apr 1979 (CJE) (see Escott and Holmes 1980) are dates consistent with northern migrants. See, however, R&D (1989) who recorded *alba* year round in T.N. Dumoga Bone (N), and Baltzer (1990).

SHORT-BILLED EGRET *Egretta intermedia*

The status of this species in Wallacea is enigmatic (see W&B 1986). In the years 1976 to 1979 it was recorded rather commonly (in parties of up to 25 birds) in S, but all records fall between 21 Sep and 29 May (CJE) indicating northern migrants. Five at Danau Tondano (N) on 29 Jun 1979 (CJE).

LITTLE EGRET *Egretta garzetta*

Found nesting amongst a colony of Nankeen Night-Heron *Nycticorax caledonicus* (q.v.) near Palima (S), in late Mar 1986 (Uttley 1987) (also see R&D 1989 for evidence of breeding in T.N. Dumoga Bone (N)). It is not known whether the breeding birds are referable to black-footed *nigripes*, the yellow-footed nominate *garzetta*, or the Philippine form with blotched feet; *nigripes* is best represented in collections but White (1974) assumed it to be a migrant. Parties of Little Egret seen amongst Cattle Egret *Bubulcus ibis* at Parigi (C), between 20 and 22 Sep 1978, had yellow or blotched feet (DAH). A few feeding in fields around Danau Tondano (N) on 19 Jun 1989 had dull yellow feet (KDB).

CHINESE EGRET *Egretta eulophotes*

One at Bulurokeng (S), on 15 Feb 1979, and the same or a second bird noted at the same locality on 28 Apr 1979 (CJE).

PACIFIC REEF-EGRET *Egretta sacra*

Dark morphs were regularly observed between 1981 and 1989 along the coast in C.A. Tangkoko-Batuangus (N), and one white morph was noted in the same area through Aug 1985 (FRG, RWD, KDB). Four dark morphs on 13 May 1985 and 3 from 11 to 14 Mar 1986 on Pulau Molossing, nr. Lolak, and one on 17 and 18 Dec 1985 at Buntalo, nr. Lolak (N) (RWD). (But see Baltzer 1990 who recorded mostly white morphs).

CATTLE EGRET *Bubulcus ibis*

Evidently rather common and widespread with reported roosts of N: c. 500 on 30 Mar 1988 at Danau Tondano (JH, SJR) and c. 400 on 18 Jul 1987 at Doloduo (T.N. Dumoga Bone) (FRL) (also see R&D 1989), C: c. 100 on 31 Jul 1988 near Tawaeli (DAH), and S: c. 200 on 13 Oct 1976 at Parepare and c. 100 on 1 Feb 1978 near Jenepono (CJE). Encountered everywhere in wet ricefields during a journey through the south in mid-May 1990, and in breeding plumage (DAH).

JAVAN POND-HERON *Ardeola speciosa*

S: Encountered everywhere in wet ricefields during a journey through the province in mid-May 1990, and in breeding plumage (DAH).

BLACK-CROWNED NIGHT-HERON *Nycticorax nycticorax* White (1973) and W&B (1986) discuss the status of *nycticorax* on Sulawesi, where it has long been known only from central N. A colony of Nankeen Night-Heron *N. caledonicus* (q.v.) discovered in late Mar 1986 at Sungai Salowatu, nr. Palopo (C), contained a minimum of 10 *nycticorax* and a number of *nycticorax* x *caledonicus* hybrids, though the density of the vegetation prevented the observation of nests of any species but *Egretta garzetta* (q.v.) (Uttley 1987). An adult and two immatures seen feeding along the edge of mangroves in a small cove at Tanjung Batuangus (C.A. Tangkoko-Batuangus) (N), on 9 Sep 1981 (FGR) also indicate a breeding population on Sulawesi. Additional records are of an adult on 23 Jun 1979 at Danau Tondano (N) (CJE), and an adult seen from a light aircraft on 16 May 1981 at Beteleme, nr. Kolonodale (C) (DAH).

NANKEEN NIGHT-HERON *Nycticorax caledonicus*

The commoner of the *Nycticorax* on Sulawesi with counts of 20 on 16 Mar at Polewali (S) (CJE) and a minimum of 70 on 28 Mar 1986 in the colony (see above) at Sungai Salowatu, nr. Palopo (C), and 35 on 2 and 3 Apr 1986 at Danau Buaya, nr. Danau Tempe (S) (Uttley 1987).

JAPANESE NIGHT-HERON *Gorsachius goisagi*

An adult caught in a stream at Batu Putih (C.A. Tangkoko-Batuangus) (N), in late 1984 or early 1985 and photographed by Tulende Wodi represents only the second record of this rare migrant for Sulawesi (Rozendaal in prep.). A single immature at the edge of a fish pond near Manado airport on 17 Oct 1988 (KDB).

YELLOW BITTERN *Ixobrychus sinensis*

Two on 23 Jun 1979 at Danau Tondano (N), and individuals on 16 May 1979 at Enrekang (C) (CJE) and on 4 Aug 1976 and 8 May 1979 at Moleleng, nr. Maros (S). It occurs throughout Wallacea from Sep to Apr (W&B 1986), and these records appear to be the first outside these months. There is no evidence of breeding.

BLACK BITTERN *Ixobrychus flavicollis*

White (1975) and W&B (1986) discuss the status of this species in Wallacea; it is not known whether records refer to nominate *flavicollis* (a northern migrant), the southern migrant *gouldi*, or a resident population. White (1975) assumed that individuals reaching Sulawesi were northern migrants as the majority of specimens were obtained between Oct and Mar. However, two adults on 23 and 25 Jul 1988 at Basidondo, nr. Tolitoli (N) (DAH), an adult on 4 Aug 1987 near Danau Poso (C) and three adults the same day near Masamba (C) (BvB, BM), and S: individual birds on 18 May 1990 near Pinrang (DAH), on 27 Jun 1977 at Maros and on 3 Jul 1979 at Pangkajene (CJE) are more consistent with migrant *gouldi*. A minimum of 30 at Danau Buaya, nr. Danau Tempe (S), on 2 and 3 Apr 1986 (Uttley 1987); evidence of breeding is required. (See also Baltzer, 1990).

WOOLLY-NECKED STORK *Ciconia episcopus*

Considered rather common in S between 1976 and 1979 though it was not observed in Jun; Aug, Nov or Dec (CJE). Notable concentrations are of S: 20 on 16 Mar 1977 near Jeneponto (CJE) and a minimum of 20 on 27 Oct 1978 at Bulukumba (CJE, DAH) and 12 on 26 to 29 Mar at Palima (Uttley 1987), and C: 17 on 12 to 15 Mar at Palopo (Uttley 1987). However, the only evidence of breeding on Sulawesi remains a bird standing on a nest in a large isolated tree in the hills nr. Libureng (S), on 20 Apr 1988 (PLA); a number of individuals were reported from the same area in the same period but neither eggs nor fledglings were observed.

There are numerous other records in the decade 1978 to 1988 though most are of only one or two birds. The localities noted are N: Marisa, Maelang nr. Lolak (BvB), T.N. Dumoga Bone (FRL, BvB) (and see R&D 1989), Basidondo nr. Tolitoli, Tomini, and C: Parigi, Palu, Danau Poso, Poso, Tomata, Morowali (DAH), Pendolo (BvB), and on the Sungai Lariang (DAH), and SE: Kendari, Tinanggea and Kolaka (DAH).

MILKY STORK *Mycteria cinerea*

Notable concentrations are c. 30 on fish-ponds north of Ujung Pandang (S) on 23 Mar 1986 and a total of 73 along the west coast of Teluk Bone (S+C) in late Mar and early Apr 1986. One group of 33 in mangrove at Palima (S), on 26 to 29 Mar 1986 included four immatures and is the first tentative evidence of breeding on Sulawesi (Uttley 1987).

GLOSSY IBIS *Plegadis falcinellus*

Notable concentrations of N: c. 20 on 27 Jan 1985 on Danau Tondano (FOR) and c. 65 on 14 Aug 1986 on Danau Limboto (BvB, BM), C: a minimum of 100 on 11 Jul 1987 on Danau Lindu (T.N. Lore Lindu) (FRL) and S: 25 on 21 Sep 1978 and 50 on 16 Mar 1979 at Polewali (CJE), a minimum of 170 on the 2 and 3 Apr 1986 on Danau Tempe and Danau Buaya (Uttley 1987), and 40 near Kera on 19 May 1990 (DAH) (See also Baltzer, 1990).

OSPREY *Pandion haliaetus*

A pair at a nest in coastal woodland at Parey (C.A. Tangkoko-Batuangus; (N), in Apr 1985, with two chicks noted in May and seen attempting to leave the nest in Jul (KDB) and a pair at a nest near Wonggarasi (N), on 12 Aug 1987 (BvB, BM). The species would appear to be rather common on Teluk Tomini, where it was noted at five localities between Poso (C) and Moutong (N), on 12 Aug 1987 (BvB, BM).

BARRED HONEY-BUZZARD *Pemis celebensis*

Poorly known (W&B 1986) but apparently not uncommon in some districts. Recorded at seven localities between south of lake Poso and Tinombo (C) between 4 and 11 Aug 1987, including a nuptial display flight on 7 Aug at Kasigunci, in which one bird grasped the other's claws (BvB, BM). For notes on calls see Berg and Bosman (1986) and for separation of *celebensis* and *Spizaetus lanceolatus* see Balen and Meyberg (in prep.).

BLACK-SHOULDERED KITE *Elanus caeruleus*

A pair was observed copulating on 26 Mar 1988 in an isolated tall tree at Kamarora in the Sopa valley (T.N. Lore Lindu) (C) (JH, SJR).

BLACK KITE *Milvus migrans*

The status of this species is uncertain. Noted were S: 38 on 8 Oct 1976 at Barombang, 20 on 7 Apr 1979 at Bulurokeng, and 15 on 29 May 1977 between Ujung Pandang and Pare-pare (CJE). It is also found year round and locally common in the Dumoga valley (T.N. Dumoga Bone) (N) (R&D 1989). However, apart from a few individuals at Ujung Pandang and Rappang (S), it was not found elsewhere on Sulawesi in Jul and Aug 1987 (BvB, BM), being notably unrecorded in the Palu area (C), where it was not uncommon in Sep and Oct 1978 (DAH). Likewise, Watling (1983) found it common at Danau Lindu (T.N. Lore Lindu) (C), but Berg and Bosman (1986) found none there. None seen on a journey through S in May 1990 (DAH).

WHITE-BELLIED SEA-EAGLE *Haliaeetus leucogaster* An immature was observed hunting fruit bats near Maros (S), on 22 Mar 1978 (CJE). One on a nest on 31 Jul 1988 in a wooded valley inland from Tawaeli (C), c. 10km from the sea (DAH). This species ranges into inland waters, where it was noted as rather common at Danau Lindu (T.N. Lore Lindu) (C) (Watling 1983, Berg and Bosman 1986) and Danau Poso (C) (Aug 1987 BvB, BM). An adult in flight over forest at 1,700m on Gn Rorekatimba (T.N. Lore Lindu) (C), on 24 Mar 1988 (JH, SJR).

LESSER FISH-EAGLE *Ichthyophaga humilis*

An individual seen on 5 Aug 1987 was flying very high NNE near Taripa (C) (BvB, BM).

GREY-HEADED FISH-EAGLE *Ichthyophaga ichthyaetus*

There have been several unconfirmed reports of *ichthyaetus* on Sulawesi (see W&B 1986). For the first well documented record see King *et al.* (1990), and see also Baltzer (1990).

SPOTTED HARRIER *Circus assimilis*

The population on Sulawesi is assumed to be resident though there are no breeding records and little recent data on distribution (W&B 1986). It is apparently widespread with records from N: Danau Tondano (Jun 1979 CJE), C: Palu (Sep 1978, Jan 1979, Jul 1988 DAH) and Morowali (Jan 1979 DAH), SE: Tinanggea and Kolaka (Oct 1980 DAH), and S: a total of 22 observations dated all months except Jul and Nov between 1976 and 1979 (CJE).

SULAWESI GOSHAWK *Accipiter griseiceps*

On 12 Jul 1985 a pair was observed mating at c. 500m on the slopes of Gn Dua Saudara (N). The female perched in a 35m tall leafless tree and invited copulation by fanning her tail until individual retrices were discernible and partially extending her wings. Two minutes later a male flew to her and mounted for about three seconds (KDB).

RUFOUS-WINGED BUZZARD *Butastur liventer*

One on 17 May 1979, nr. Rantepao, and one on 18 May 1979 between Rantepao and Palopo (C) (CJE) are additional records (see W&B 1986). Although Watling (1983) apparently found this species moderately common in T.N. Lore Lindu, none observed during many visits between 1981-1990 (KDB).

BLACK EAGLE *Ictinaetus malayensis*

Records from S: on 14 Jan 1978 (DAH, CJE) at Camba, on 17 Sep 1978 at Malino (DAH, CJE) and on 6 Feb 1978 at Jenepono (CJE), and SE: on 28 Oct 1980 at Mowewe (DAH), are outside the previously known range (see W&B 1986). A record at 2,400m on Gn Rorekatimbu (T.N. Lore Lindu) (C), on 2 Jul 1987 (FRL) also extends its altitudinal distribution.

RUFOUS-BELLIED EAGLE *Hieraaetus kienerii*

The number of recent records from T.N. Lore Lindu (C) (Watling 1983, Berg and Bosman 1986, KDB, FRL, MAE), indicate that this species is more common than previously thought (see also R&D 1989). The observations of an immature at 2,400m on Gn Rorekatimbu (T.N. Lore Lindu) (Berg and Bosman 1986), and display on 23 Mar 1988 in the Sopa valley (T.N. Lore Lindu) (C) (JH, SJR), remain the only evidence indicative of breeding (see W&B 1986). In the display a single adult soared with the wings curved upward until the emarginated feathers appeared almost vertical, an unusual profile for an eagle. It sky-dived with closed wings and looped into repeat dives, shivering its wings on occasion. Single adult, near Batuputih (C.A. Tangkoko-Batuangus, N) in Oct 1988 (KDB).

SPOTTED KESTREL *Falco moluccensis*

On 7 Aug 1987 a pair was observed beside a hole in a tree near Sausu (C), from within which young were heard begging for food (BvB, BM).

ORIENTAL HOBBY *Falco severus*

Scattered records from C: Taripa, (Aug 1987 BvB, BM), Rantepao (May 1979 CJE), and Mangkutana (Aug 1987 BvB, BM), S: Camba (Nov and Dec 1978 CJE), suggest that although sparsely distributed the species has hitherto been overlooked (see W&B, 1986).

PEREGRINE FALCON *Falco peregrinus*

An adult *ernesti* carrying food in limestone hills near Bantimurung, nr. Ujung Pandang (S), on 27 Jun 1987, was apparently breeding (FRL).

SPOTTED TREE-DUCK *Dendrocygna guttata*

Although both *guttata* and *D. arcuata* (q.v.) are known to occur on Sulawesi distributional data are lacking. This species was only noted in wooded riverine swamp at Basidondo, nr. Tolitoli (N), where there were c. 20 on 23 Jul 1988 (DAH).

DIVING TREE-DUCK *Dendrocygna arcuata*

Notable concentrations include approximately 200 on 16 Mar 1979 at Polewali (S) (CJE), and 300-400 on 18 Aug 1986 at Danau Limboto (N) (BvB).

INDONESIAN GREY TEAL *Anas gibberifrons*

As implied by the common name adopted here, the resident populations in Wallacea are now thought to be specifically separable from *A. gracilis* of New Guinea and Australia (Parker *et al.* 1985). However, *gracilis* is known to reach Wallacea as a migrant (see W&B 1986) and notes on distribution, habitat requirements and diagnostic characters of the two species are required. Notable concentrations reported as *gibberifrons* are N: c. 30 birds on 13 Aug 1986 on Danau Limboto (BvB) and c. 100 circling over forest with Diving Tree-duck *Dendrocygna arcuata* on 18 Aug 1986 in T.N. Dumoga Bone (BvB) (and see R&D 1989). A flock of 20 on the river at Toraut (T.N. Dumoga Bone) contained four ducklings on 21 and 22 Jun 1989 (KDB).

PACIFIC BLACK DUCK *Anas superciliosa*

The few records of this uncommon species are S: of individuals on 11 Dec 1977 near Maros, and on 31 Mar 1978 near Jeneponto, pairs on 24 Feb 1979 near Watampone and on 3 Jul 1979 near Parepare (CJE), and 10 on 2 and 3 Apr 1986 on Danau Buaya, nr. Danau Tempe (Uttley 1987). (see also Baltzer, 1990).

GARGANEY *Anas querquedula*

Previously recorded only from N (W&B 1986), a substantial wintering population in the South is indicated, with peaks of C: 60 on 28 Feb 1979 at Enrekang (CJE), S: 50 on 7 Apr 1979 at Bulurokeng (CJE), 1,200 on 26 to 29 Mar 1986 at Palima and 486 on 4 and 5 Apr 1986 nr. Ujung Pandang (Uttley 1987). (see also Baltzer, 1990).

PHILIPPINE SCRUB FOWL *Megapodius cumingii*

In 1981, 1982 and 1983 this species was observed regularly in secondary coastal woodland in C.A. Tangkoko-Batuangus (N), but subsequently only rarely except deep within primary forest on the slopes of Gn Dua Saudara and Gn Tangkoko (C.A. Tangkoko-Batuangus). The decline is attributed to illegal trapping for food by nearby villagers (KDB) (and see R&D 1989). In Mar 1986 eggs laid by two birds were found buried amongst the decaying roots of a tree on Pulau Molossing, nr. Lolak (N), with one bird present daily at one of the burrows (RWD).

MALEO *Macrocephalon maleo*

In addition to records from well known breeding sites, three were noted on 8 Oct 1978 in riverine forest beside the Sungai Lariang (C) (and the following day five eggs were offered for sale at nearby Kampong Tikka) (DAH), and a pair were seen along a gravel road through forest nr. Salonsa (C), on 12 May 1981 (DAH); a colony of 10-15 pairs on the S. Karaopa in 1989/90 is reported to have been considerably reduced in size through loss of habitat caused by transmigration settlement, and another colony is reported nearby at Wosu (per DAH). All these sites are threatened by agricultural development. The 48 known nest sites are mapped and the status of the species discussed in Dekker (1990), but see Baltzer (1990) for additional sites.

BLUE-BREASTED QUAIL *Coturnix chinensis*

A female at 1,300m on Gn. Ambang (N) in Aug 1987 exceeds the documented altitudinal limit (see W&B 1986) (BvB, BM).

BARRED BUTTONQUAIL *Tumix suscitator*

Regularly observed in scrub and grassland along a jeep trail through coastal woodland in C.A. Tangkoko-Batuangus, 1981-89, the first records from N (KDB).

SNORING RAIL *Aramidopsis plateni*

C: At c. 08.00 hrs on 18 Aug 1983, one observed with two chicks foraging in lightly disturbed hill forest bordering dense regrowth near Sidaunta on the western boundary of T.N. Lore Lindu, appears to be the first record of breeding of this elusive species (KDB) (see also Lambert, 1989).

ISABELLINE WATERHEN *Amauromis isabellinus*

On 25 and 26 May 1986 one, occasionally two, adults were observed with 5 chicks feeding along a vehicle track in secondary coastal woodland and open areas of alang-alang near Batu Putih (C.A. Tangkoko-Batuangus) (N) (KDB) (see also R&D, 1989).

COMMON MOORHEN *Gallinula chloropus*

A pair with young on 17 May 1987 in a marsh in the centre of a racetrack in Kotamobagu (N) (GW). Birds with and without white on the flanks, presumably *chloropus* and the Dusky Moorhen *G. tenebrosa* respectively, are known to occur together at C: Danau Lindu (T.N. Lore Lindu) (Watling 1983), and the Palu valley (Apr 1981 DAH) and at (S) Polew-ali (Mar 1979 CJE). R&D (1989) found only *chloropus* in T.N. Dumoga Bone (N). The validity of this identification character has been questioned, as has the distinctness of the two species (see White 1976, W&B 1986) and more records documenting sympatry and identification criteria are required (see also Baltzer, 1990, and Indrawan, 1990);

COMB-CRESTED JACANA *Irediparra gallinacea*

There is some doubt as to the status of *gallinacea* in Wallacea (W&B 1986). It is apparently rare as there are few records; four on 21 Sep 1978 and 20 on 16 Mar 1979 at Polewali (S) (CJE), are on dates consistent with Australian migrants. It was noted as present on 2 Apr 1987 at Danau Tempe (S) (Uttley 1987) (see also Baltzer, 1990).[

GREY PLOVER *Pluvialis squatarola*

One on 20 Nov 1985 at Molibagu (RWD) is apparently the first record from N (see Escott and Holmes 1980, and Waiting, 1983).

GREATER SAND-PLOVER *Charadrius leschenaultii* Additional dates (cf W&B 1986): 7 and 27 Mar 1977 at Barombong (S) (CJE).

MONGOLIAN PLOVER *Charadrius mongolis*

Additional dates (cf W&B 1986): 22 Dec 1976, 7 Mar and 11 Dec 1977 at Barombong (S), and 11 and 22 Mar 1978 at Bulurokeng (S) (CJE).

ORIENTAL PLOVER *Charadrius veredus*

Additional dates (cf W&B 1986): singles on 22 Dec 1976 and 27 Mar 1977 at Barombong (S) (CJE).

LITTLE RINGED PLOVER *Charadrius dubius*

Additional dates (cf W&B 1986): one on 9 Jan and 3 on 13 Nov 1977 at Barombong (S), and 5 on 13 Jan 1979 at Bulurokeng (S) (CJE).

MALAY SAND-PLOVER *Charadrius peronii*

A sparsely distributed resident on Sulawesi, two birds were noted on 5 Sep and 17 and 18 Dec 1985 on a beach at Buntalo, nr. Lolak (N) (RWD), and a pair on 12 Aug 1986 at Moutong (N) (BvB).

RUDDY TURNSTONE *Arenaria interpres*

Additional dates (cf W&B 1986): singles on 1 Apr 1979 at Bulurokeng, and 7 Apr 1979 at Pangkep (S) (CJE). Several parties of shorebirds identified as mainly this species flying towards the Sulawesi coast at Pasangkayu (C), in stormy weather on 7 Oct 1978 were coming from the direction of Kalimantan (DAH).

GREAT KNOT *Calidris tenuirostris*

One in non-breeding plumage feeding with a group of other shorebirds on a small pool behind the beach at Palu (C), on 4 Oct 1981 (KDB), is the third record from Sulawesi (see Escott and Holmes 1980). However, 100 at Sungai Baliase, nr. Palopo (C), on 15 Mar 1986 (Uttley 1987) suggest it is a common, but rapid, migrant. Additional dates (cf W&B 1986): seven on 28 Apr 1979 at Bulurokeng (S) (CJE) (but see also Baltzer, 1990).

RUFOUS-NECKED STINT *Calidris ruficollis*

Additional dates (cf W&B 1986): from 1976 to 1979 up to 50 birds in the period Dec to Mar in S (CJE).

LONG-TOED STINT *Calidris subminuta*

Additional dates (cf W&B 1986): from 1976 to 1979 up to 20 birds in S from Aug through to Apr. with the earliest date 4 Aug and the latest 28 Apr (CJE).

BROAD-BILLED SANDPIPER *Limicola falcinellus*

Additional dates (cf W&B 1986): two on 26 Oct and 1 on 5 Nov 1978, and c. 200 on 1 Apr and 50 on 7 Apr 1979, at Bulurokeng (S) (CJE).

RED-NECKED PHALAROPE *Phalaropus lobatus*

Records confirm that Wallacean seas are an important wintering area. Recorded from **N**: several groups of 4 or 5 on 25 Oct 1984 (KDB), several groups of between 3 and 10 from 8 to 11 May 1987 (GW), and c. 100 on 31 Mar 1988 (JH, SJR), in Manado Bay, and a minimum of 20 birds on 13 Mar 1986 off Pulau Molossing, nr. Lolak (RWD). Recorded from **C**: an immature on 18 Oct 1978, 3 birds on 1 May 1981 and 6 on 14 Nov 1981 on the salt pans at Palu (DAH), and singles on 7 Oct 1978 off Pasangkayu (DAH), and two flocks comprising 60 birds offshore between Moahina and Bungku on the eastern coast on 25 Jan 1979, and large flocks in the same area late Jan 1980 (WWF 1980). Only one record from **S**: one on 6 Feb 1978 near Jeneponto (CJE).

COMMON REDSHANK *Tringa totanus*

Additional dates (cf W&B 1986): one on 16 Aug 1985 in C.A. Tangkoko-Batuangus (**N**) (RWD). A common visitor to (**S**) (contra W&B 1986), with records from every month from Sep through to May in the years 1976 to 1979, with the earliest on 4 Sep and the latest on 2 May (CJE).

COMMON GREENSHANK *Tringa nebularia*

Additional dates (cf W&B 1986): approximately 20 on 1 Apr, 10 on 7 Apr and 1 on 28 Apr 1979 at Bulurokeng (**S**) (CJE), four on 1 May 1981 at Palu and one on 18 May 1990 at Mamuju (**C**) (DAH).

GREEN SANDPIPER *Tringa ochropus*

One photographed alongside a Wood Sandpiper *T. glareola*, on 4 Apr 1980 on the banks of the Sungai Ranu, nr. Morowali (**C**) (WHT), is the first record for Wallacea (see W&B 1986).

TEREK SANDPIPER *Xenus cinereus*

Additional dates (cf W&B 1986): two on 4 Jun 1976 at Barombong (**S**) (CJE). From 1976 to 1979 small numbers in **S** every month between Sep and Apr except Feb, with the earliest on 12 Sep and the latest on 7 Apr (CJE) indicate a small wintering population on Sulawesi.

GREY-TAILED TATTLER *Heteroscelus brevipes*

Additional dates (cf W&B 1986); three on 25 May 1985 on Pulau Molossing, nr. Lolak (**N**) (RWD).

LITTLE CURLEW *Numenius minutus*

Additional dates (cf W&B 1986): one on 18 Sep 1976 and 2 on 13 Nov 1977 at Barombong (**S**) (CJE).

WHIMBREL *Numenius phaeopus*

Additional dates (cf W&B 1986): two on 1 May 1979 and one on 19 Jul 1988 at Palu (**C**) (DAH), individuals on 17 May 1979 nr. Rantepao (**C**), and on 2 May 1976 and 4 Jun 1979 nr. Ujung Pandang (**S**) (CJE).

FAR EASTERN CURLEW *Numenius madagascariensis*

Additional dates (cf W&B 1986): individuals on 3 Dec 1978, 22 Dec 1976, 9 Jan 1977, 13 Jan 1979, 15 Feb 1979, 22 Mar 1978, 27 Mar 1977 on the west coast of S (CJE).

BAR-TAILED GODWIT *Limosa lapponica*

Additional dates (cf W&B 1986): one on 12 Sep 1976 at Barombong (S) (CJE).

WHITE-HEADED STILT *Himantopus leucocephalus*

Notable concentrations of c. 50 on 14 Nov 1981 on salt pans at Palu (C) (DAH), and 50 on 1 Apr 1979 at Bulurokeng (S) (CJE).

BEACH THICK-KNEE *Esacus magnirostris*

One at Buntalo, nr. Lolak (N), on 18 Dec 1985 (RWD).

ARCTIC SKUA *Stercorarius parasiticus*

One in Manado Bay (N), on 31 Mar 1988 (JH, SJR, Mike Archer) is the first record of this species from Wallacea. It was a light phase adult in breeding plumage and was seen to make a dive at an unidentified small gull or tern. For a review of *Stercorarius* records, see Balen (in prep.).

[BLACK-HEADED GULL *Larus ridibundus*

Recorded in Irian Jaya (Bishop and Diamond 1987) (Erfteimeijer, in litt.) and to be expected in Wallacea (see W&B 1986). There are a number of tentative records from Sulawesi but substantiation is required.]

WHITE-WINGED BLACK TERN *Chlidonias leucopterus*

A common but rapid migrant as inferred by W&B (1986); S: c. 100 on 11 Mar 1978 at Bulurokeng, 5 on 22 Mar 1978 at Maros, 2 on 7 Apr 1979 at Bulurokeng (CJE), 111 on 26 to 29 Mar 1986 between Tanjung Pati and Palima on Teluk Bone, a minimum of 50 on 2 and 3 Apr on Danau Tempe, 11 at Lantebeong on 4 and 5 Apr 1986 (Uttley 1987).

WHISKERED TERN *Chlidonias hybridus*

A common visitor to the coastal areas of S recorded between Feb and Jun and in Sep and Oct, the largest number being c. 100 at Bulurokeng on 7 Apr 1979 (CJE). It is not known whether these should be referred to northern breeding *hybridus* or Australian *javanicus*, though the latter is thought to be much the commoner in Wallacea (see Mees 1977, Andrew 1986 and W&B 1986).

GULL-BILLED TERN *Gelochelidon nilotica*

In addition to those of Escott and Holmes (1980), records are of one on 20 Nov 1985 at Pinolosean (N) (RWD), and 3 on 17 Mar and 4 and 5 Apr 1986 at Lantebeong (S) (Uttley 1987). A total of 128 in Mar 1986 on the coast of Teluk Bone (S+C) (Uttley 1987). These records probably refer to northern breeding *affinis* (W&B 1986) although *macrotarsa* reaches Timor in some numbers (Andrew 1986) and could reach Sulawesi.

[COMMON TERN *Sterna hirundo*

S. h. longipennis winters regularly in Australia and presumably passes through Wallacea though to date there are no confirmed records from Sulawesi (W&B 1986). However, in addition to the one tentative record cited in W&B 1986, there are unconfirmed records of a few on 14 Oct 1978 (DAH) and 3 on 4 Aug 1987 (BvB, BM), on Danau Poso (C), and of c. 20 on 7 Oct 1978 at the mouth of the Sungai Lariang (C) (DAH).]

LITTLE TERN *Sterna albifrons*

The status of this species in Wallacea is unclear; a small resident population is apparently augmented by migrant birds from the Palaearctic and/or Australia (see W&B 1986). A colony of c. 70 pairs was found on shingle banks at the mouth of the Sungai Morowali (C) in Aug 1985 (GD), though no colony was found there in 1980 (WWF 1980). Egg predation by the White-rumped Cuckoo-shrike *Coracina leucopygia* was noted. The local villagers also harvested some eggs. Elsewhere, recorded rather commonly in S with records every month except Feb and May, with estimates of 30 on 27 Mar 1977 at Barombong (CJE), 65 on 26 to 29 Mar 1986 between Patiro and Palima on Teluk Bone, 115 on 12 to 15 Mar nr. Palopo and 62 on 17 Mar and 12 on 4 and 5 Apr 1986 at Lantebeong (Uttley 1987).

RED TURTLE-DOVE *Streptopelia tranquebarica*

First discovered in the area in 1978 (Escott and Holmes 1980), recent records are of one in disturbed mangrove on 7 Aug 1987 near Parigi (C) (BvB, BM), 15 on 8 Aug 1987 (BK), one on 27 Mar 1988 (SJR, JH), and 6 on 5 Aug 1989 at Palu (C) (BK). The population might have originated from escaped cage birds brought by migrants from India around 1930, but the subspecies has not been determined (DAH).

STEPHAN'S PIGEON *Chalcophaps stephani*

Occurs alongside Green-winged Pigeon *C. indica* in dry, secondary coastal woodland near Parey (C.A. Tangkoko-Batuangus) (N) (KDB). *C. stephani* is more usually associated with evergreen forest (W&B 1986) and observations are sought confirming both species in typical *indica* habitat.

GREY-HEADED IMPERIAL PIGEON *Ducula radiata*

One in forest at Toraut (T.N. Dumoga Bone) (N) on 16 Jul 1987 at c. 300m (PRL) is below the usual altitudinal range (W&B 1986) (and see R&D 1989).

WHITE IMPERIAL PIGEON *Ducula luctuosa*

WWF (1980) reported *luctuosa* from lowland areas on the mainland at Morowali (C), and found *bicolor* common on the small islands offshore. Both *luctuosa* and *D. bicolor* were observed on 11 Aug 1986 along the western shore of Teluk Tomini (N+C); five *bicolor* were positively identified on the coast near Tomini and *luctuosa* was noted at several localities between Kasimbar (C) and Moutong (N), in dry, hilly open woodland to c. 475m (BvB, BM). As there is some debate as to the specific standing of members of the *bicolor* group (see W&B 1986) any evidence of habitat segregation in areas of sympatry is noteworthy.

YELLOW-CRESTED COCKATOO *Cacatua sulphurea*

The decline in this species has been dramatic; it is now threatened throughout its range (also see Collar and Andrew 1988). In 1981 *sulphurea* was regularly observed in T.N. Lore Lindu (C); it was not located there in Aug 1985 (KDB). Nor was it reported from T.N. Dumoga Bone (N) (R&D 1989). The decline appears to be widespread and the few recent records from mainland Sulawesi are of C: two on 20 to 22 Sep 1978 at Sausu, one or two on 23 Sep 1978, 11 Oct 1978, 30 Jan 1979 and 10 May 1982 in the Palu valley, and a few on 22 Jan 1979 (DAH) and early 1980 (WWF 1980) at Morowali, and S: single birds on 20 Nov 1976 at Toraja, nr. Rantepao, on 28 Sep 1978 at Jeneponte, on 22 Oct 1978 at Bulukumba, and on 18 May 1979 at Rantepao (CJE). The only recent record appears to be of 3-5 individuals near Rantepao on 26 Jun 1989 (KDB). The decline must be attributable to the bird trade; net (legal) export of live birds rose from 3540 in 1981 to a peak of 7884 in 1984 and fell to 5860 in 1985 (IUCN 1988). In fact, it is hard to know where the bird is now trapped in such numbers; trade figures do not specify subspecies. It was still 'more or less regularly recorded' on Buton (SE) 19 Jul to 4 Aug 1981 (Schoorl 1987), but the attention of bird trappers can be expected to shift to the more remote populations.

ORNATE LORIKEET *Trichoglossus ornatus*

Contrary to Heinrich (in W&B 1986), who commented that *ornatus* was seldom found near the coast, it appears to be particularly common in coconut plantations and around villages, along western edge of Teluk Tomini (N+C) (Aug 1987 BvB, BM).

GREEN HANGING-PARROT *Loriculus exilis*

Small numbers of this overlooked or decidedly local species were found feeding on figs alongside the Sulawesi Hanging-parrot L. *stigmatus* in forest near Toraut (T.N. Dumoga Bone) (N), on 16 and 17 Jul 1987 (FRL) (also see R&D 1989). It was also noted in some numbers at Kamarora in the Sopo valley (T.N. Lore Lindu) (C) on 1 Nov 1988 (MAE), though Watling (1983) did not positively identify the species in the same area.

GOULD'S BRONZE-CUCKOO *Chrysococcyx russatus*

A description of the two recognised songs is given in Watling (1983). The species is notably common and heard as readily in tree-lined town streets (eg Palu (C) and Tolitoli (N)) as in forest edge habitat in the hills (DAH). On 31 Jul 1988 the songs of no less than 16 individuals were heard over a two hour period along 7km of the Palu to Parigi road (C), though all voiced only the metallic trill (a call at one pitch lasting for about 2 seconds) and none the tinkling cadence. However, a single bird was observed rendering both songs on 15 Oct 1978 near Pendolo (C) (DAH).

DRONGO CUCKOO *Surniculus lugubris*

Apparently widespread and not as uncommon as indicated in W&B (1986). Noted N: at Toraut (T.N. Dumoga Bone) (Jul 1987 FRL) (and see R&D 1989), Basidondo, nr. Tolitoli (Jul 1988 DAH), C: Palolo (T.N. Lore Lindu) (Jan 1979), Palu (May 1981), and Tomata (Jan 1979) (DAH), SE: Tinanggea (Oct 1980) and Ladongi (Oct 1980) (DAH), and S: Bulukumba (Oct 1978 DAH, CJE). Also reported to be rather common in south C, where it was heard repeatedly in forest to 1,200m (Aug 1987 BvB, BM).

The song typically consists of 7 to 9 notes rather than the 5 to 7 notes usually heard in the Greater Sundas (DAH).

BLACK-BILLED KOEL *Eudynamis melanorhyncha*

A fledgling was seen being fed by a pair of Sulawesi Crested Mynah *Basilornis celebensis* near Kamarora in the Sopo valley (T.N. Lore Lindu) (C), on 26 Mar 1988 (JH, SJR). This appears to be the first identification of a host species (see W&B 1986).

SULAWESI OWL *Tyto rosenbergii*

An adult was observed in vehicle headlights sitting in the middle of a road traversing agricultural land in the south-east corner of the Palu valley, Sulawesi Tengah, on 14 Apr 1985 (KDB). Records of *Tyto* owls in open habitats, with calls not obviously separable from *T. alba* and presumed to be this species, are N: from agricultural land at Basidondo, nr. Tolitoli (Jul 1988) and C: Palu valley (Oct 1978 to Jan 1979 and Apr 1981), the Sopo valley (May 1990), the barren central plain around Tomata (Oct 1978), and young coconut plantations along the Sungai Lariang (Oct 1978) (DAH). A captive bird at Mamuju bus station on 17 May 1990 (DAH).

MINAHASSA OWL *Tyto inexpectata*

One flushed from a perch on 16 Jul 1987 in daylight in disturbed riverine forest with patches of bamboo at Toraut (T.N. Dumoga Bone) (N) (FRL). There are several records of *inexpectata* from T.N. Dumoga Bone (see R&D 1989) but this apparently constitutes the first observation of a bird in the wild (see Bishop 1989).

[EDIBLE-NEST SWIFTLET] *Aerodromus fuciphagus*

A colony of swiftlets building white nests in a house in downtown Ujung Pandang (S) on 22 Oct 1978 are presumed to be this species. The nests were reportedly sold on Java, for Rp 3,000 each (CJE, DAH). If the specific identification is verified these are the first records of *fuciphagus* from Sulawesi (see W&B 1986), but this colony has not subsequently been located.]

WHITE-THROATED NEEDLETAIL *Hirundapus caudacatus*

One at Camba (S) on 12 Nov 1978 (CJE) is additional to those records published in Escott and Holmes (1980). *Hirundapus* assumed to be this species were also seen in small numbers on 24 and 27 Oct 1988 in C.A. Tangkoko-Batuangus (N) (MAE).

PURPLE NEEDLETAIL *Hirundapus celebensis*

C: Watling (1983) reported large flocks of what he presumed were *celebensis* from T.N. Lore Lindu; on 2 Nov 1988 small numbers passing at canopy level at above 2,000m on Gn Rorekatimba were also identified as *celebensis* (MAE), as were several dozens flying N or NE at Mangkutana on 3 Aug 1987 (BvB). The first record from S appears to be a flock of 30, nr. Rantepao on 18 May 1979 (CJE).

FORK-TAILED SWIFT *Apus pacificus*

A. number were observed over open country between Parey and Batu Putih (C.A. Tangkoko-Batuangus) (N) between 1 and 5 Oct 1981 (FGR), and small numbers in the same reserve between 24 and 27 Oct 1988 (MAE). An additional record from S to those given in Escott and Holmes (1980) is of c. 35 near Malino on 11 Mar 1978 (CJE).

HOUSE SWIFT *Apus affinis*

Since Escott and Holmes (1980) confirmed its presence as a local resident in S it has been reported at Kotamobagu (N), where on 17 May 1987 one of five birds was seen attending one of 6 nests visible under the eaves of a church (GW). There are no records from intervening localities although it was searched for at Palu (C) and Tolitoli (N) in Jul 1988 (DAH). However, several small black, white-rumped swifts lacking pronounced forked tails were seen flying south along the coast of C.A. Tangkoko-Batuangus (N) on 15 Aug 1985 (RWD), indicating that migrants might regularly reach Sulawesi. During a journey through S in May 1990, it was encountered only in Ujung Pandang, Parepare, and road bridges near Siwa, Cimpu, Cilalang and Enrekang (DAH).

ASIAN PALM-SWIFT *Cypsiurus balasiensis*

Although only recently discovered in S (see Escott and Holmes 1980) it is now reported from the palm-dotted grassland at Tinanggea (SE), where it was not uncommon on 25 Oct 1980 (DAH). During a journey through S in May 1990, it was encountered widely up the west coast to approx Malunda (midway between Majene and Mamuju), and up the east coast to Cimpu, hut was not seen in Palopo, Rantepao and Enrekang (DAH).

RUDDY KINGFISHER *Halcyon coromanda*

One identified as the migrant subspecies *major* was observed in secondary coastal woodland along Batu Putih creek (C.A. Tangkoko-Batuangus) (N) on 6 Sep 1982 (KDB) (and see R&D 1989).

GREAT-BILLED KINGFISHER *Halcyon melanorhyncha*

Records from remnant patches of mangrove and coastal scrub around Teluk Tomini at N: Manado (DAH), C.A. Tangkoko-Batuangus (FGR) and nr. Marisa (BvB), C: Tinombo, Kasimbar, Ampibabo (BvB), Parigi (DAH, BvB), Donggala, Lariang and Kolonodale (DAH). It was not recorded in southern S (Apr 1976 to Jul 1979 CJE) and there are no recent records from mainland SE, though it was regularly observed on Buton in 1981 (Schoorl 1987). It is known from inland swamp and sluggish rivers at two sites, at Basidondo, nr. Tolitoli (N) (DAH), and T.N. Dumoga Bone (N) (FRL, DY) (and see R&D 1989).

SACRED KINGFISHER *Halcyon sancta*

Several pairs on the coast at Parey and Batu Putih (C.A. Tangkoko-Batuangus) (N) in early Sep 1981 (FGR), and a single bird in the same area on 13 Aug 1985 (RWD). At least one bird was present in a garden in Manado (N) on 6 May 1985 (FGR). These records are close to the known northern limit of the wintering range (see W&B 1986).

RAINBOW BEE-EATER *Merops ornatus*

A party of c. 250 on 28 Apr 1979 at Bulurokeng (S) (CJE) had presumably just arrived. Two on 12 Nov 1978 at Camba (S) (CJE) are presumably late or over-summering birds.

PURPLE-BEARDED BEE-EATER *Meropogon forsteni*

Occupied nest holes observed in T.N. Lore Lindu (C) at c. 800m on 17 Jul 1985 (KDB) and at c. 2,100m on 3-4 Jul 1987 (FRL).

PURPLE-WINGED ROLLER *Coracias temminckii*

A pair was observed feeding young in an isolated dead tree near Kamarora in the Sopa valley (T.N. Lore Lindu) (C), between 22 and 26 Mar 1988 (JH, SJR). Fledged young are known from Sep and Dec (see W&B 1986)

DOLLARBIRD *Eurystomus orientalis*

One seen on 4 Aug 1987 near Pendolo (C), with brownish head and greenish body, was believed to belong to nominate *orientalis* (BvB, BM), previously recorded only in Dec through Mar on Sulawesi (see W&B 1986).

ASHY WOODPECKER *Mulleripicus fulvus*

To the range of forest habitats stipulated in W&B (1986) can be added mangroves, in which a pair was noted on 23 Oct 1980 at Tinanggea (SE) (DAH), and coconut plantations and agricultural land around villages, where it was found commonly in N (Aug 1987 BvB, BM).

BARN SWALLOW *Hirundo rustica*

Additional dates (cf W&B 1986): five on 29 May 1977 between Ujung Pandang and Parepare (S) (CJE).

PACIFIC SWALLOW *Hirundo tahitica*

Birds visiting nest sites noted on 19 Jan 1979 at Kolonodale (C) (DAH), a nest containing three young close to fledging noted on 5 Aug 1987 at Tentena (C) (BvB, BM), and a pair feeding a fledgling seen on 26 Mar 1988 at Donggola (C) (JH, SJR).

CAERULEAN CUCKOO-SHRIKE *Coracina temminckii*

One recorded on 4 Aug 1987 near Batasposo, nr. Pendolo (C) (BvB, BM). One seen on 18 May 1979 between Rantepao and Palopo (S) (CJE) is south of its previously known range (see W&B 1986).

PYGMY CUCKOO-SHRIKE *Coracina abbotti*

One noted on 4 Aug 1987 foraging in a mixed species flock at c. 1,200m near Batasposo, nr. Pendolo (S) (BvB, BM), is at a lower altitude than usual (see W&B 1986).

SOOTY-HEADED BULBUL *Pycnonotus aurigaster*

Established as a feral bird in S there is some evidence that it is spreading north; on 16 May 1979 it was recorded north to Parepare (S) (CJE) and on 1 Aug 1987 it was noted north to Enrekang (C) (BvB): In May 1990, noted at Pangkajene, Siwa, Mario, Enrekang, and the Allo valley south of Makale (DAH).

PIPING-CROW *Corvus typicus*

One at sea level at foot of hill forest north of Mamuju (C) on 17 May 1998 (DAH).

WHITE-WINGED TRILLER *Lalage sueurii*

Pairs feeding fledglings at nests on 26 Mar 1988 at Donggala (C) (JH, SJR) and on 9 Aug 1987 at Palu (BvB, BM) (C). The latter nest was 6-7m up in a tree in a busy street in the town. Notes are requested on the separation of *sueurii* from the endemic taxon *leucopygialis*.

BLACK-NAPED ORIOLE *Oriolus chinensis*

One noted on 4 Aug 1987 foraging in a mixed species flock at 1,200m near Batasposo, nr. Pendolo (S) (BvB, BM), is at a higher altitude than usual (see W&B 1986).

GREAT SHORTWING *Heinrichia calligyna*

Two seen on 20 Jul 1985 in undisturbed and selectively logged montane forest between 1,550 and 2,200m on the western slopes of Gn Rorekatimbu (T.N. Lore Undu) (C) (KDB, BK), substantiate the records in Watling (1983). The three known populations of *calligyna* are well differentiated (see W&B 1986) and this 'apparently isolated population requires further study.

PIED BUSHCHAT *Saxicola caprata*

A pair was accompanied by a fledgling on 27 Mar 1988 in riverine Marsh nr. Palu (C) (JH, SJR).

BLUE ROCK-THRUSH *Monticola solitarius*

On 25 Sep 1981 a pair frequented buildings, telephone wires and ship's rigging in Bitung harbour (N) (FGR). On 28 Oct 1988 five were counted along 2km of rocky shoreline in CA. Tangkoko-Batuangus (N) (MAE).

GOLDEN-BELLIED FLYEATER *Gerygone sulphurea*

Watling (1983) commented on the broad niche of this species on Sulawesi. It has also been found in mangrove in C.A. Tangkoko-Batuangus (N) (FGR), at Pinolosean (N) (RWD), and at Parigi (C) (BvB).

ZITTING CISTICOLA *Cisticola juncidis*

Both *C. juncidis* and *C. exilis* occur on Sulawesi but the patterns of distribution are not clear. Watling (1983) recorded *juncidis* only in the Palu valley and considered *exilis* the common species in C. However, *juncidis* is apparently common throughout Sulawesi; recorded N: at Tolitoli, C: Parigi (DAH), Danau Poso (DAH, BvB, BM), Tomata and Morowali (DAH), SE: Tinanggea (DAH), Soroako (Holmes and Wood 1980), and Buton (Schoorl 1987), and S: numerous localities (CJE).

COMMON PIPIT *Anthus novaeseelandiae*

An adult with a recently fledged young was seen in cattle pasture near Enrekang (C) on 1 Aug 1987 (BvB, BM).

WHITE-BREASTED WOODSWALLOW *Artamus leucorhynchus*

A pair noted feeding a fledgling on 26 Mar 1988 on the coast nr. Donggala (JH, SJR).

BROWN SHRIKE *Lanius cristatus*

One on 26 Jan and a noisy pair from 17 to 19 Mar 1985 frequented gardens at Wale Ratulangi in Manado (N) (FGR).

WHITE-VENTED MYNA *Acridotheres javanicus*

Record on 17 May 1979 nr. Rantepao (CJE) and in May 1990 at Rantepao, Makale and Polewali (S) (DAH) appear to be at the northern limit of its known range. W&B (1986) treat this population as an endemic form *cinereus* but the possibility that it is derived from introduced Jungle Myna *A. fuscus* needs investigating (DAH).

FINCH-BILLED MYNA *Scissirostrum dubium*

A few shot by youths with airguns at a roost of *Aplonis* sp in a mango tree near the centre of Manado in Sept 1989, and two more shot there on 8 Apr 1990, indicate mixed species roosting and an urban location for this species (HT).

WHITE-NECKED MYNA *Streptocitta albigollis*

A pair was observed on 14 Apr 1985 attending a hole mid-way up an isolated 20m tall dead tree in the Sopa valley (T.N. Lore Linu) (C) (KDB). Wading (1983) recorded nesting in Sep and Oct.

LEMON-BELLIED WHITE-EYE *Zosterops chloris*

At least five birds frequented fruiting trees at Batu Putih (C.A. Tangkoko-Batuangus) on 10 Sep 1981 (Rozendaal in prep.).

LEMON-THROATED WHITE-EYE *Zosterops anomalus*

It is confined to the south-west peninsula and has been treated as potentially threatened on the grounds of a restricted distribution and a shortage of recent data on status (see Collar and Andrew 1988). However, it was considered rather common north to Rantepao (C) in 1987 (BvB, BM).

EURASIAN TREE-SPARROW *Passer montanus*

S: during a journey through the province in May 1990, encountered up the west coast to Mapili (not seen in Majene or Mamuju), up the east coast to slightly beyond Palopo, and in Rantepao and Makale, but uncommon near the limits of this range (DAH).

CHESTNUT MUNIA *Lonchura malacca*

The black-headed form was found as far south as Parepare (S) (Jul 1987 BvB, BM), well inside the range of the brown-headed form given in W&B (1986).

JAVA SPARROW *Padda oryzivora*

The feral population on Sulawesi is extant in S where individuals or pairs were recorded on at least 10 occasions between 1976 and 1979 between Jeneponte and Parepare (CJE).

INDONESIAN SERIN *Serinus estherae*

Further observations of erythristic males (MAE, FRL) in the population known to inhabit Gn Rorekatimbu (T.N. Lore Lindu) (C) (see Bishop and King 1986) lend strength to the proposition that it represents an undescribed subspecies (see W&B 1986).

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Appendix 1.

The localities are grouped under faunal regions (see Introduction).

- N: Ambang (Gunung) [0°46N, 124°22E]
 Bitung [1°11N, 124°34E]
 Dua Saudara (Gunung) [1°29N, 125°09E]
 Dumoga Bone (T.N.): includes Doloduo, the base camp at Toraut and the Dumoga valley (see R & D 1989 for information)
 Gorontalo [0°33N, 123°03E]
 Kotamobagu [0°46N, 124°19E]
 Limboto (Danau) [0°35N, 122°58E]
 Lolak [0°53N, 124°01E]
 Manado [1°29N, 124°51E]
 Marisa [0°28N, 121°56E]
 Molibagu [0°23N, 123°59E]
 Moutong [0°28N, 121°13E]
 Pinolosean [0°23N, 124°07E]
 Tangkoko-Batuangus (C.A.): includes Tanjung Batuangus [1°31N, 125°16E], the volcano Gunung Tangkoko and the coastal villages of Batu Putih and Parey.
 Tolitoli [1°02N, 120°49E]
 Tondano (Danau) [1°14N, 124°54E]
 Wonggarasi [0°33N, 121°36E]
- C: Ampibabo [0°28S, 120°03E]
 Bungku [2°33S, 121°58E]
 Cilalang [3°20S, 120°21E]
 Cimpu [3°26S, 120°23E]
 Donggala [0°40S, 119°44E]
 Enrekang [3°34S, 119°47E]
 Karaopa [2°14S, 121°40E]
 Kasigunci [1°26S, 120°36E]
 Kasimbar [0°09S, 120°02E]
 Kolonodale [2°00S, 121°19E]
 Lariang (Sungei) [1°25S, 119°17E]
 Lore Lindu (T.N.): includes Danau Lindu [1°18S, 120°05E], the Sopo and Palolo valleys and Rorekatimbu [1°16S, 120°18E].
 Luwuk [0°56S, 122°47E]
 Makale [3°07S, 119°51E]
 Malunda [3°00S, 118°51E]
 Mamuju [2°40S, 118°54E]
 Mangkutana [2°28S, 120°02E]
 Mario [3°12S, 120°16E]
 Masamba [2°32S, 120°20E]
 Moahino [2°11S, 121°16E]
 Morowali [1°52S, 121°30E]

Palopo [3°00S, 120°12E]
Palu [0°53S, 119°53E]
Parigi [0°48S, 120°10E]
Pasangkayu [1°10S, 119°20E]
Pendolo [2°05S, 120°42E]
Poso [1°23S, 120°44E]
Poso (Danau) [1°52S, 120°35E]
Rantepao [2°59S, 119°54E]
Salonsa [2°12S, 121°34E]
Sausu [1°00S, 120°30E]
Taripa [1°52S, 120°49E]
Tentena [1°47S, 120°39E]
Tawaeli [0°43S, 119°51E]
Tinombo [0°23N, 120°12E]
Tomata [2°01S, 120°58E]
Wosu [2°13S, 121°44E]

SW: Kendari [3°57S, 122°35E]
Kolaka [4°03S, 121°36E]
Mowewe [3°57S, 121°43E]
Soroako [2°31S, 121°20E]
Tinanggea [4°28S, 122°14E]

S: Barombong [5°10S, 119°23E]
Bulukumba [5°33S, 120°11E]
Bulurokeng [5°04S, 119°29E]
Camba [4°54S, 119°50E]
Jeneponto [5°41S, 119°42E]
Kera [3°50S, 120°19E]
Lantebeong [c. 5°05'S, 119°27'E]
Libureng [4°48S, 120°01E]
Majene [3°33S, 118°58E]
Malino [5°17S, 119°58E]
Mapili [3°24S, 119°10E]
Maros [5°00S, 119°34E]
Palima [4°20S, 120°22E]
Pangkajene [3°50S, 119°32E]
Pangkep [as Pangkajene]
Parepare [4°01S, 119°38E]
Pinrang [3°47S, 119°39E]
Polewali [3°25S, 119°25E]
Rappang [3°50S, 119°48E]
Siwa [3°43S, 120°25E]
Takalar [5°28S, 119°24E]
Tempe (Danau) [4°06S, 119°57E]
Ujung Pandang [5°07S, 119°24E]
Watampone [4°32S, 120°20E]