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NOTES ON SOME BIRDS FROM THE ISLAND OF FORMOSA (TAIWAN)

by

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Knowledge of the avifauna of Formosa or Taiwan has been summarised excellently by Hachisuka & Udagawa (1950, 1951), who included references to many publications by Japanese authors, not readily available in Europe. As far as published evidence goes, not much ornithological work has been done in Formosa since 1951: I have found only a few more recent papers, each dealing with a single species (Deignan, 1958, 1964; Ripley, 1962; Wayre, 1968). Barnes & McLure (1966) recorded that bird-ringing has begun on the island.

Over the past few years (1967-1969) the Rijksmuseum van Natuurlijke Historie has acquired from Mr. K. H. Chen of Taipei a large collection of Formosan birds. Whereas, obviously, the majority belong to species well known from Formosa, two species, both migrants, are new to the island, and several others have rarely been recorded or are little known. In this paper only the rare, or for some other reason interesting, species are discussed.

As a by-product of the work on Formosan birds, a first record of *Gallinago stenura* from the Moluccas came to light, and some revisional notes on *Halcyon coromanda* are given, with a description of a new race from the Soela Islands.

For the loan of material of *Accipiter virgatus* and *Porzana fusca* I am under obligation to authorities of the British Museum (Natural History), United States National Museum, American Museum of Natural History, and Field Museum, Chicago. In discussions and lists of material, these names have been abbreviated to BM, USNM, AMNH, and FM.

Accipiter soloënsis (Horsfield)

♂ im., Homei, 12 September 1967 (no. 51409).

This species has been listed as a resident of Formosa by Hachisuka & Udagawa (1951: 97) and other authors, but I agree with Wattel (in prep.) that until proof of breeding is produced, it must be regarded as a passage migrant only.

Accipiter nisus nisosimilis (Tickell)

♂, Puli, 9 January 1968 (no. 52758), weight 138 g, wing 210 mm; ♀, Chang Hwa, 8 December 1967 (no. 52757), weight 202 g, wing 253 mm.

The species had not previously been recorded from Formosa though its appearance as a migrant is not unexpected as it was already known, as a migrant, from South China (not uncommon in Hong Kong: Macfarlane & Macdonald, 1966; Herklots, 1967) and the Riu Kiu Islands (Ishigaki: Hachisuka & Udagawa, 1953). The large wing-size places these specimens definitely in the race *nisosimilis* as was to be expected on geographical grounds.

Accipiter virgatus fuscipectus subspecies nova

Fifteen specimens, of which data are given in Table I. These specimens, together with material borrowed from other institutions, enable me to describe the Formosan population of this sparrow-hawk as a new subspecies.

Diagnosis. Adult males differ from adult males of *A. v. affinis* Hodgson to which the Formosan population had hitherto been assigned, by having breast and barring on the underparts browner, not so rufous or even brick-red, on the upperparts by being brownish-grey rather than pure grey. Adult females differ on the underparts in the same way as the males, by being slightly browner, on the upperparts, however, by being greyer, less brown. In the subspecies *affinis*, there is viewed in series a clear difference in the upperparts between the almost pure grey males, and the definitely brown females. The females show a strong contrast between the blackish crown and nape and the brown mantle. In the subspecies *fuscipectus*, the males are browner, the females greyer, with a result that viewed from above there is hardly any difference between the sexes. Finally there is a difference in size, as shown in the tables of measurements (Tables I and II). *A. v. affinis*, wing 25 ♂, 159-171; 31 ♀, 190-207; *A. v. fuscipectus*, wing 12 ♂, 167-176; 9 ♀, 201-216¹⁾. The difference in wing-size can also be expressed as fol-

1) Hachisuka & Udagawa (1951: 98) give for Formosan birds: wing ♂ 175-178, ♀ 204-208, thus confirming their large size; see also Swann (1926: 324).

lows: of 12 ♂ of *A. v. fuscipectus*, only two have a wing shorter than 170 mm; of 25 ♂ of *A. v. affinis*, only one has a wing of over 169 mm. The females show more overlap in measurements, but even there, five out of nine Formosan specimens are larger than the largest of 31 specimens of *affinis*.

Discussion. A difficulty in the study of this species is the great individual variation in coloration of the underparts, particularly in the adult males. In both series (Formosa and mainland) there are males with very dark breast-shield and cross-bars, and others which have them very pale, as well as all possible intermediates. Even in the larger series, hardly any two males are identical in this respect. This variability makes comparison very difficult, but the differences between the two subspecies as described above, hold true for dark as well as for pale birds. The females are much more uniform in appearance.

The comparative material here included for practical reasons under the

TABLE I

Accipiter virgatus fuscipectus

reg. no.	sex	locality	date	wing	tail	tarsus	bill from cere	weight (g)
49281	♂ ad.	Wu She	11.VI.1967	167	129	53	11¾	116
49282	♂ ad.	"	"	170	128	57	12	118
58873	♂ ad.	Chung Yuen	9.II.1969	168	127	55	11	120
59023	♂ ad.	Wanta	4.III.1969	176	134	55	12½	130 ¹⁾
AMNH 533851	♂ ad.	Bankoro	3.V.1907	174	136	52½	11¾	—
BM 86.3.25.75	♂ ad.	Formosa	March 1866	174	133	58	12	—
52756	♂ im.	Wu She	9.I.1968	173	143	56	12½	153
52885	♂ im.	"	24.II.1967	176	138	55	12	135
53049	♂ im.	"	18.I.1968	175	142	54	12¾	120
53197	♂ im.	"	11.II.1968	172	136	55	12	127
59024	♂ im.	Wanta	9.I.1968	173	143	56	12½	153
BM 1910.12.25.27	♂ im.	Kanshirei	21.VII.1908	171	130	57	11	—
49280	♀ ad.	Wu She	7.VI.1967	213	174	61	16	225
AMNH 533853	♀ ad.	Bankoro	5.V.1907	215	165	60	15	—
BM 97.10.30.201	♀ ad.	Baksa	13.V.1893	201	157	62½	15½	—
52698	♀ im.	Jinai village	31.X.1967	212	174	64	15	243
52755	♀ im.	Mei Shi	7.I.1968	208	168	61	15½	255
53405	♀ im.	Puli	28.III.1968	205	166	63	14½	243
54089	♀ im.	Mei Shi	17.VI.1968	210	173	61	15	180
59025	♀ im.	Jinai village	20.III.1969	203	167	63½	13	200
BM 1907 12.12.121	♀ im.	Racu Racu Mts.	Feb. 1906	203	160	60	13¾	—

1) Holotype of *Accipiter virgatus fuscipectus*.

TABLE II

Accipiter virgatus affinis

reg. no.	sex	locality	date	wing	tail	tarsus	bill from cere
BM 1949.Whi.I.167	♂ ad.	Pravlam, Kashmir	9.VII.1938	160	125	52	11
BM 1949.Whi.I.165	♂ ad.	Gahri', 2600' Jhelum Valley, Kashmir	8.IV.1938	165	124	52	10½
AMNH 776669	♂ ad.	Sumdun, Kumaon	5.VII.1948	169	124	51	10
BM 85.8.19.646	♂ ad.	Mokan, Kumaon	2.III.1871	167	127	51	10½
BM 1938.7.15.120	♂ ad.	Puma, W. Nepal	16.VI.1936	168	127	53	11½
FM 210977	♂ ad.	Kaski, Pokhara Dist., W. Nepal	23.XII.1949	169	128	52½	10
FM 228728	♂ ad.	Nichlaur, U.P.	11.II.1947	169	126	51	11½
BM 1955.6.N.20.2800	♂ ad.	"Nepal"	—	168	129	52	10½
RMNH cat. 1	♂ ad.	"Nipaul"	—	164	123	54	11
BM 77.2.20.6	♂ ad.	Darjiling	—	171	126	54	11¼
BM 85.8.19.672	♂ ad.	Sikkim	Jan.1879	167	124	51	11½
BM 1949.Whi.I.155	♂ ad.	Mangpu, Bengal	21.X.1936	167	128	55	10¾
BM 1949.Whi.I.160	♂ ad.	Duars, Bengal	30.I.1935	164	131	51	11
BM 1949.Whi.I.157	♂ ad.	Jalpaiguri Dist., Bengal	22.II.1931	167½	133	55	11
USNM 306095	♂ ad.	Shin Hai Si, Mt. Omei, Szechwan	25.VIII.1925	168	132	53	11¼
BM 1922.12.7.39	♂ ad.	Mekong Valley, Yunnan, 7-8000'	22.VI.1921	168	128	56	10¾
BM 84.1.30.22	♂ ad.	Pegu	16.II.1875	166	128	51	11
USNM 349925	♂ ad.	Chiengmai, Siam	29.II.1936	167	130	54	10½
USNM 452454	♂ ad.	Phu Lom Lo, Loei, Siam	4.II.1955	165	124	52	10½
BM 1915.10.14.36	♂ ad.	Klong Yai, S. E. Siam	4.I.1915	168	124	54	10¾
FM 89892	♂ ad.	Tha Teng, Laos	21.XI.1931	160	115	51½	11½
BM 1927.6.5.1542	♂ ad.	Djiring, S. Annam	18.III.1927	159	123	49	11
USNM 335452	♂ im.	Chiengmai, Siam	25.XI.1935	166	134	50½	11½ ¹⁾
USNM 306736	♂ im.	Pak Chong, Siam	5.VI.1925	163	124	52½	11½
USNM 475355	♂ im.	Fyan, Vietnam	1.VIII.1961	164	132	50	13
BM 1949.Whi.I.166	♀ ad.	Lalpur, 6000', Kashmir	24.IV.1928	198	154	57	13
BM 1949.Whi.I.164	♀ ad.	Mauati, Kulu, 6000', Punjab	4.VIII.1923	195	158	59	—
FM 228681	♀ ad.	Chitona, Tehri	28.IX.1948	200	146	60	14
BM 85.8.19.644	♀ ad.	Mussoorie	—	202	148	61	13¾
FM 228719	♀ ad.	Chitlang, Nepal	28.VI.1947	206	157	59	15
AMNH 776690	♀ ad.	Hankot, Nepal	11.IV.1947	195	164	58	—

1) Moulting into adult plumage. The tail has one almost fullgrown "adult" grey rectrix, the other feathers of the tail, as well as the mantle are brown.

reg. no.	sex	locality	date	wing	tail	tarsus	bill from cere
BM 85.8.19.667	♀ ad.	Native Sikkim	June 1875	199	149	59½	14
BM 82.1.13.1	♀ ad.	Native Sikkim	March 1875	207	161	62	14½
BM 85.8.19.665	♀ ad.	Native Sikkim	June 1876	197	156	58	14½
BM 85.8.19.681	♀ ad.	Darjiling	—	200	162	63	14¾
BM 1921.7.12.31	♀ ad.	Sukna, Darjeeling	Dec. 1910	197	151	59	13¾
BM 1949.Whi.1.158	♀ ad.	Jalpaiguri Dist., Bengal	19.II.1930	203	158	62	15
FM 228721	♀ ad.	Umran, Khasi Hills	3.IV.1955	197	148	61	14½
BM 1923.II.11.67	♀ ad.	Tenggueh, 8000', N.W. Yunnan	April 1922	198	155	60	13½
USNM 358619	♀ ad.	Langbian Peaks, 2160 m, S. Annam	June 1939	205	163	58	13½
USNM 333090	♀ ad.	Bla0, Haut Donai, Annam	17.II.1930	190	147	58½	—
BM 1905.12.24.953	♀ ad.	Fuh-an, Fuh-Kien, China	March 1903	206	169	63	14½
BM 1900.1.2.148	♀ ad.	Five Finger Mts., Hainan	18.V.1899	201	164	58	15
BM 1900.1.2.1	♀ ad.	Five Finger Mts., Hainan	21.V.1899	203	159	61	15¾
BM 85.8.19.690	♀ ad.	Aberdeen, S. Andaman	24.IV.1873	183	139	54	14¾
FM 228717	♀ im.	Shigar, Baltistan	20.VIII.1936	191	161	64	13
FM 228718	♀ im.	Girgaon, Kumaon	6.VI.1948	197	152	60	13
BM 85.8.19.656	♀ im.	Sikkim	Feb. 1875	199	156	58½	12¾
BM 1938.12.13.99	♀ im.	Chungkar, 6500', S. E. Bhutan	16.XI.1938	197	156	58½	13
FM 228722	♀ im.	Nongkho, Khasi Hills	3.XI.1954	196	147	61	14
USNM 305093	♀ im.	Suizu, Szechwan	5.IX.1924	199	163	64	14½
USNM 306094	♀ im.	Shin Kai Si, Mt. Omei, 4000 ft., Szechwan	24.VIII.1925	203	155	61	14
USNM 303565	♀ im.	Nenlekuan, Szechwan	15.VIII.1924	202	160	60	13½
USNM 356728	♀ im.	Chin-po-shih, at Tsao-pó-men-chuan, 6300 ft.	16.VIII.1938	204	163	61	14
RMNH 12585	♀ im.	Nikke, Siam					
FM 76458	♀ im.	Chapa, Tonkin	30.V.1946	199	149	62½	13½
USNM 475358	♀ im.	Dalat, Viet Nam	13.XI.1929	202	158	61	14½
			20.VI.1961	192	143	61	13½

name *affinis*, contains six males from Kashmir and western Nepal. Five of these are remarkably pale underneath, thus supporting (not unexpectedly, as two of them are from the Whistler collection and must be paratypes of that race) the validity of *A. v. kashmiriensis* Whistler & Kinnear (1936). The authors of *kashmiriensis* also recorded the more dove-grey tint on the

upper parts of their new race, but in this respect I see no difference from specimens from even the extreme east of the range of *affinis* (Laos, Annam, Yunnan). The subspecies *A. v. kashmiriensis* has, since its introduction, been variously accepted and rejected. In the most recent standard works it has been accepted (Ripley, 1961: 47; Ali & Ripley, 1968: 246), and the material examined by me, although inconclusive, does certainly not contradict this opinion. Incidentally, Ali & Ripley (l.c.) record for *A. v. affinis* the following wing-measurements ♂ 165-173.5, ♀ 199-210 mm. If these measurements were taken from Indian specimens, the difference between Indian and Formosan birds as established by me would be imaginary. These measurements, however, were clearly copied from Whistler & Kinnear (1936: 436), and therefore taken from the series in the British Museum, which included specimens from Formosa. None of the authors mentioned had, of course, any reason to exclude Formosan specimens from their series of *A. v. affinis*.

As Formosa is geographically near to Luzon, comparison with the Philippine subspecies *A. v. confusus* Hartert appeared also desirable. Unfortunately only a single adult male of this subspecies was available, but it has a rich rufous breast, hardly any cross-bars on the under parts, and its wing measures only 152 mm. As these characters agree with those ascribed to the subspecies in literature, it is clear that *confusus* and *fuscipectus* are not closely related, and that the affinity of the latter lies with *A. v. affinis*.

Naturally, I have investigated if fading plays any role in the species, and if this might be partly responsible for the differences seen. The variation in colour of the underparts is so great that for that reason fading is difficult to ascertain. In colour of the upperparts, there is no evidence of any discoloration with age of skin. Of the adult females of *A. v. fuscipectus*, the one collected in 1893 and the one taken in 1967 are almost identical. Similarly, a male of *A. v. fuscipectus* collected in 1866 does not differ from recent material. The series of *A. v. affinis* collected over a period of about a century, are nevertheless in both sexes uniform.

Immature birds of both subspecies differ clearly from the adults; the upperparts are browner, and the feathers usually have narrow pale edges. On the underparts, there is a pattern of longitudinal dropshaped spots and short stripes, instead of cross-bars. Except by size, I am unable to separate immature individuals of *A. v. fuscipectus* and *A. v. affinis*.

A few juvenile birds of *A. v. affinis* have been available: they have all feathers of the upper parts with rufous-cinnamon edges; such birds have a strongly rufous appearance.

The material studied contained two adult females from Hainan. In view

of the close affinity that exists between a number of forms from Formosa and Hainan, I have paid special attention to these birds. In colour of the underparts they are not clearly separable from Formosan females, but on their upperparts they are brown, thus agreeing with continental birds, and for that reason I believe that they must be kept in *A. v. affinis*. A female from Fuh-an, Foh-Kien (= Fuan, Fukien), on the Chinese mainland opposite Formosa, is also referable to *affinis*.

The single female from the Andaman Islands is smaller than any continental specimen examined. It is rather more rufous on breast and flanks than any other female except one from Tehri (FM no. 228681), which is very similar in colour (but larger). The bird probably represents an undescribed subspecies, characterized by small size. The breeding-records quoted by Abdulali (1965: 507) would refer to this form and certainly not to *A. v. gularis*, under which name he lists them.

***Accipiter (virgatus) gularis* Temminck & Schlegel**

♂, Wu She, 16 January 1968 (no. 53048).

Hachisuka & Udagawa (1951: 98) regarded *gularis* as a resident in Formosa, and as they treated *gularis* as a subspecies of *virgatus*, this means that they assumed two subspecies of *A. virgatus* to co-exist as breeding-birds on the island, a situation that in the absence of ecological data appears unlikely. Vaurie (1965: 165) and Brown & Amadon (1968: 468) also included Formosa in the breeding-range of *gularis*. It is likely that the supposed co-existence with a race of *A. virgatus* was one of their reasons for giving *A. gularis* specific rank. Wattel (in prep.), on the other hand, believes that all records from Formosa concern migrants. The fact that the single specimen of *gularis* received from Mr. Chen was taken in winter, and that no evidence of its occurrence in the breeding-season was produced, supports Wattel's opinion although I realise that satisfactory negative evidence of breeding is almost impossible to provide. When Formosa is eliminated from the breeding-range of *gularis*, there is no longer any overlap in breeding-range between this form and *A. virgatus* and the status of the former (separate species, or subspecies of *A. virgatus*) becomes once more discutable.

***Butastur indicus* (Gmelin)**

4 ♂, 2 ♀, Pakua Mt., Chang Hwa, 9 and 11 April 1968 (nos. 54092-54095, 54101, 54105); 6 ♂, 6 ♀, Lokong, Chang Hwa Hsien, 9, 11 and 13 April 1968 (nos. 54096-54100, 54102-54104, 54106-54109).

Hachisuka & Udagawa (1951: 100) could record only three specimens from Formosa within the seventy years preceding their publication. There-

fore the fact that I received 18 specimens is surprising. It is possible that Formosa is only occasionally visited by large flocks of this migrant. It should be noted that all my specimens were taken within the short period of five days (9-13 April 1968), and that all three of the birds listed by Hachisuka & Udagawa were collected in March 1933.

***Porzana fusca phaeopyga* Stejneger**

Six specimens.					
reg. no.	sex	locality	date	wing (mm).	weight (g)
52746	♂	Puli	7.I.1968	104	86
53055	♂	"	17.I.1968	103	63
53056	♂	"	25.I.1968	104	86
58794	♂	"	11.IX.1968	100	47
49292	♀	"	27.VII.1967	97	60
53398	♀	Homei	9.IV.1968	100	67

Hachisuka & Udagawa (1951: 167), Cheng (1964), and Taka-Tsukasa (1967) ascribe the Formosan population of *Porzana fusca* to the nominate race, originally described from the Philippines, but comparison shows that in plumage characters, particularly in extent of the dark olive colour of the back on crown and nape, Formosan birds agree with birds from Japan, and are clearly different from the nominate race which has crown and nape almost entirely rufous brown. From Japanese *P. fusca erythrothorax* Temminck & Schlegel, Formosan birds differ, however, by smaller size. None of seven Japanese birds measured has a wing of under 110 mm. It is evident therefore that birds from Formosa cannot be assigned to either race.

A third race, not hitherto associated with Formosa has to be considered: it is *P. fusca phaeopyga* from the Riu Kiu Islands. This form was based on a single individual from Yayeyama Island; its plumage was apparently aberrant (Hartert, 1921: 1836), but the recorded wing-length of 105 mm agrees well enough with the measurements of Formosan birds (Stejneger, 1887). More information about this race was given by Kuroda (1925), Hachisuka & Udagawa (1953) and Vaurie (1965). When looking through the wing-measurements as given in these publications, I cannot help feeling that they may have included migrants of the race *erythrothorax* in their series. Kuroda for example gave a range of variation in wing-length of 99-119.5 mm (7 ♂, 5 ♀). The individual measurements of these specimens were as follows: 97, 99, 100, 100, 101, 101, 101, 102, 102.5, 104, 104.5, 117, 119.5. The large size-gap strongly suggests that this series contained ten specimens of resident *phaeopyga* and two migrant *erythrothorax*. The date of collecting of one of these large birds was 9 November 1921, that of the

other cannot, from the information given, be reconstructed with certainty, it was either April or December, both months in which migrants might conceivably be expected to occur. Vaurie (1965: 351) gives for seven males ascribed to *phaeopyga* a wing length of 97-114 (average 104) mm, for twenty males of *erythrothorax* one of 109-120 (115) mm. Here again it strikes me that the smaller series has the greater variation, whereas the low average suggests that there were several small birds, and one or two much bigger birds. Vaurie made no mention of the resident population of this species on Formosa.

The only place in literature where I have found an indication of differences between birds from the Riu Kiu Islands and Formosa, is Taka-Tsukasa (1967), who mentions that Formosan specimens, called *P. fusca fusca* by him, are: "Similar to *Porzana fusca phaeopyga* (Stejneger), but slightly darker in coloration and smaller in size". On another page he states that *phaeopyga* differs from both other subspecies (*erythrothorax* and "*fusca*" from Formosa) by its much thicker bill.

Compared with three specimens of *P. f. phaeopyga* from the Riu Kiu Islands, collected in 1914 (FM nos. 6975, 7735, 7736), my Formosan birds are slightly darker, greener above, and perhaps a trifle deeper coloured below, differences probably due to a slight fading in the older material. Viewed from above, the bills of Formosan birds are perhaps more slender, with the ridge of the culmen sharper, but even if proved constant in adequate series, such as are not available to me, this difference would be too slight for expression in nomenclature. Wing-measurements of the Riu Kiu birds are: ♂ 107, ♀ 108, 108 mm: these measurements are slightly larger than those of the Formosan birds, although not supported by measurements published by others. Geographically it is not unlikely that the Riu Kiu birds would show an approach to the larger race of Japan, but on the basis of present evidence, birds from the Riu Kiu Islands and Formosa must be united under the name *P. f. phaeopyga*.

Gallinago megala Swinhoe

♂, Hsien Shi, 23 February 1968 (no. 53194), weight 82 g; 2 ♂, Chang Hwa, 9 April 1968 (nos. 53399, 53400), weight 82, 86 g; 2 ♂, Lokong, Chang Hwa Hsien, 9 April 1968 (nos. 53569, 53570), weight 130, 130 g; ♀, Mei Chi, 29 September 1967 (no. 51406), weight 75 g; ♀, Lokong, Chang Hwa Hsien, 9 April 1968 (no. 53571), weight 131 g.

Hachisuka & Udagawa (1951: 146-148) list *Gallinago gallinago* and *G. stenura* as common winter visitors to Formosa, but of *G. megala* the specimen procured on 10 September 1861, and described by Swinhoe (1863), remained the only record known to them. Surprisingly, the material received

from Mr. Chen contains: *G. mekala* seven as listed above, *G. stenura* two, *G. gallinago* none. This shows that much remains to be learned about the migrations of these snipe and about their relative abundance in Formosa.

Our museum contains one specimen of *G. gallinago* from Formosa, March 1862, leg. Swinhoe (cat. no. 39), and one specimen of *G. stenura*, April 1862, leg. Swinhoe (cat. no. 7). These specimens have previously been recorded by Schlegel (1864).

It is not only in Formosa that migration and winter quarters of snipe are insufficiently known. Our collection contains a female of *G. stenura* from Siao, Sanghir, 1 November 1865, leg. Hoedt (cat. no. 21) and a male from Boeroe, 18 November 1864, leg. Hoedt (cat. no. 28). The species was not hitherto known from the Moluccas.

Scolopax rusticola Linnaeus

♂, Puli, 23 December 1968 (no. 58796); ♀, Puli, 2 January 1968 (no. 52751); ♀, Puli, 25 January 1968 (no. 53063).

The only previous records of the woodcock from Formosa are one specimen procured by Swinhoe, in the British Museum (Sharpe, 1896: 677; Ogilvie-Grant & La Touche, 1907: 269), and one specimen without date and locality preserved in the Taipei Museum (Hachisuka & Udagawa, 1951: 145). The three specimens now received indicate that this species is perhaps less uncommon than it had hitherto appeared to be.

Crocethia alba (Pallas)

♂, ♀, Hsi Hsien, 8 November 1968 (nos. 54484, 54485).

Swinhoe (1863) found this migrant not uncommon on the shores of Formosa, but the only subsequent record is of four specimens shot at Tainan in December 1932.

Phalaropus fulicarius (Linnaeus)

♀, Hsien Shi, 23 February 1968 (no. 53192), weight 37.5 g.

Whereas *Phalaropus lobatus* (of which several specimens were received from Mr. Chen) is well-known as a migrant to Formosa, the present species, *P. fulicarius*, had not previously been recorded. Normally this phalarope does not occur south of Japan. It is unknown from the Riu Kiu Islands, and there is but one record from the Chinese coast (Chihli). Evidently therefore, Formosa is outside the normal winter range of the species.

Ninox scutulata japonica (Temminck & Schlegel)

Nine specimens.

reg. no.	sex	locality	date	wing	wing-formula ¹⁾
52445	♂	Wu She	7.XI.1967	209	3=4, 2>5
53081	♂	"	17.I.1968	214	3=4, 2≤5
53080	♂	"	18.I.1968	216	3=4, 2=5
53082	♂	"	25.I.1968	219	3=4, 2=5
58787	♂	Jinai village	5.XII.1968	213	3=4, 2≤5
47042	♀	Puli	15.III.1967	210	3=4, 2≤5
49284	♀	Wu She	27.VI.1967	213	3=4, 2<5
54114	♀	Ho Cho village	15.VII.1968	218	3=4, 2<5
59026	♀	Jinai village	26.III.1969	215	3=4, 2=5

In the latest lists (Hachisuka et al., 1958; Cheng, 1964; Vaurie, 1965), birds from the Riu Kiu Islands, Formosa and Botel Tobago are united under the name *N. s. totego* Momiyama (type locality Botel Tobago), with *N. s. yamashinae* Ripley (type locality Amami) as a synonym.

The characters listed for this race as opposed to *japonica* are an average difference in colour (slightly darker), and mainly its smaller size. In the material available I am unable to verify the difference in colour, as the material from Japan (which includes the types of *Strix hirsuta japonica* Temminck & Schlegel) is old, and "foxing" evidently occurs to some degree in the species. As Ripley (1953) described the difference in colour only as a "tendency", I regard it as justified not to pay too much attention to it. From the unpublished work of Miss de Heer (1965) I take that there is some individual variation from more greyish to more rufous.

As far as size is concerned, de Heer (1965) found in 14 specimens from Korea a wing length of 212-228½ mm, average 220.8 mm, in 29 specimens from Japan, 207-235 mm, average 219.9 mm. This shows that, though all Formosan specimens fall below the mean of Japanese birds, not a single one is below their range of variation. Although the difference in average size is real, there appears to be no point in expressing it in nomenclature.

Of the nine Formosan birds, only two females have been collected in summer, and all others might be regarded as migrants from the North. The reasons that I do not believe this to be the case are twofold. The first is that if these birds were migrants, one would expect some of them to be larger; the second is that, as the northern races pass the winter as far south as Sumatra, Java, Flores, and Wettar, one would expect them in Formosa as passage migrants, in autumn and spring, rather than in mid-winter.

The two females collected in summer are slightly browner than the other

1) The sign (\leq) means: "very little shorter than".

birds, a difference evidently caused by the more worn condition of their plumage, and therefore seasonal. They differ also in wing-formula, in that the 5th primary is longer than the 2nd. This can, however, also occur in birds from north-east Asia and Japan. Neither Ripley (1953), nor Vaurie (1960, 1965) have mentioned a difference in wing-shape, and therefore I regard it for the moment as justified to include Formosa in the range of *japonica*, though more certain breeding-birds are required.

Uncertainty about the subspecific identity of *Ninox scutulata* (Raffles) has caused much confusion. In Sumatra, the type-locality of the species, two races are known to occur: the long-winged northern race (as a migrant), and a smaller resident subspecies. The latest nomenclatorial discussion is by Vaurie (1960), who came with a seemingly strong argument:

The nomenclature of this species, which had been stable since the revision of Hartert (1913, pp. 992-995) who was the first reviser, became badly confused when Delacour and Mayr (1946), Delacour (1947), and Dementiev (1951), introduced several very ill-advised changes in it. Delacour and Mayr, and Delacour substituted *japonica* Temminck and Schlegel, 1847, type locality, Japan, for *scutulata* Raffles, and allocated the latter to the resident race of the southern Malay Peninsula and Sumatra which had been called *malaccensis* Eyton, 1845, type locality, Malacca. They were, unfortunately, followed by Deignan (*loc. cit.*) and by the "Hand-list of the Japanese birds" (*loc. cit.*), the latter citing Delacour and Mayr, and Delacour, as its authorities for this change. Dementiev substituted *macroptera* Blasius, 1888, type locality, Great Sangihe Island, north of Celebes, for *ussuriensis* Buturlin and was followed by the "Hand-list," Dementiev confusing matters further by inadvertently renaming *malaccensis*, calling it *moluccensis*. This last change was an error and need not be considered, but all the other changes are equally invalid, as they are not supported by documentation, or any reason whatever, and ignored the first reviser principle.

The description given by Raffles for his *scutulata* is not diagnostic, as it applies equally well to the birds that visit Sumatra or the residents on that island, but the nomenclatorial question was settled by Hartert (*loc. cit.*) who was the first reviser to allocate *scutulata* Raffles to the race which breeds in Japan and visits Sumatra in the winter, synonymizing *japonica* Temminck and Schlegel with *scutulata* Raffles, and maintaining *malaccensis* Eyton for the birds of the southern Malay Peninsula [and Sumatra]. Hartert had been followed universally prior to Delacour and Mayr (1946) and Delacour (1947), including the foremost authors on the birds of Malaysia such as Kloss (1931) and Chasen (1935).

Unfortunately Vaurie erred in several respects. The "substitution" of *japonica* for *scutulata* about which he complains, was not an invention of Delacour & Mayr (1946) and Delacour (1947), but was made much earlier (Siebers, 1930: 250; Stresemann, 1941: 82). Vaurie's statement that Hartert (1913) was the first reviser is incorrect, for previously Ogilvie-Grant (1896: 111) and Sharpe (1899: 290) had listed the various forms, and explicitly accepted *scutulata* as the resident form of Sumatra, *japonica* as the form breeding in Japan; see also Meyer & Wiglesworth (1898: 95-100) and McGregor (1909: 262-263).

More important than these theoretical considerations is the fact that, as has repeatedly been stated in literature, the type of *Ninox scutulata* (Raffles) still exists; it was in the collection of the East-India Company (Horsfield, 1854: 68-69), from where it was transferred to the British Museum (Sharpe, 1906: 397). Mr. Galbraith has informed me that the type, "a very disreputable specimen", reg. no. 1880.I.I.4760, has the left wing 195 mm, the right wing 190+ mm (tips of primaries damaged). The measurement of the undamaged left wing places the specimen definitely in the smaller resident race. In agreement with recent literature (except Vaurie), the name of the Japanese race is *Ninox scutulata japonica* (Temminck & Schlegel). In ornithological literature this name has been dated as 1847, but it dates from 1844 (Sherborn & Jentink, 1895).

***Strix aluco yamadae* Yamashina**

♂, Wanta, 5 December 1968 (no. 58785), weight 380 g, wing 280 mm.

This species is very rare in Formosa, and only three specimens of the endemic subspecies appear to have been recorded in literature. The size of this specimen further confirms the validity of *yamadae*, as according to Vaurie (1965: 623), *S. aluco nivicola*, to which *yamadae* is nearest, has wing-measurements as follows: 10 ♂ 290-305, 10 ♀ 304-320 mm.

***Strix leptogrammica caligata* (Swinhoe)**

♂, Lishing, 20 May 1969 (no. 59289), weight 970 g, wing 384 mm.

Another rare owl, known from but very few specimens.

***Halcyon coromanda major* (Temminck & Schlegel)**

♂, Fuatan, Chang Hwa, 12 May 1969 (no. 59412), weight 80 g.

Hachisuka & Udagawa (1951) knew of only two previous records of this kingfisher from Formosa, one from 1863 (Swinhoe) the other from 1906 (Taipei Museum). Actually, however, Swinhoe appears to have obtained at least two specimens (cf. Sharpe, 1892: 220).

Notwithstanding the extreme scantiness of material, Peters (1945) and Vaurie (1965) recorded two subspecies of this kingfisher from Formosa, *H. coromanda major*, described from Japan, and *H. coromanda bangsi* (Oberholser), described from Ishigaki, Riu Kiu Islands. In order to make sure of the identity of my specimen, I examined all our material of the species, with results that are of sufficient interest to be recorded here. Besides two specimens of uncertain provenance, which I have not further considered, our

TABLE III

Halcyon coromanda, list of specimens examined (all RMNH)*Halcyon coromanda major*

Sex	Locality	Date	Collector	Wing	Tail	Entire culmen	Culmen width at nostril
♂	Japan	1830-1834	Bürger	117+	68	59	14 ¹⁾
♂	Taiwan	12.V.1969	Chen	124	67	61	13 ^{1/4}
♂	Great Sanghir	22.I.1866	Hoedt	128	68	61	14 ^{1/4}
?ad	Minahassa, Celebes	ca. 1878	v. Musschenbroek	119	64	58 ^{1/2}	13
?juv.	Japan	1830-1834	Bürger	117	64	53	13 ^{1/2} 1)

Halcyon coromanda coromanda

♂	Poeloe Berhala off Palembang coast	1.XI.1919	F. C. v. Heurn	113	62	59	16
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Halcyon coromanda minor

♂	Pontianak, Borneo	1826	Diard	102	60	54	15 ^{1/2} 2)
?	S.E. Borneo	ca. 1851	Croockewit	102	56	58 ^{1/2}	15
♂	Pontianak	19.XII.1894	Moret	104	56	58	15
♀	Longbloe, Mahakkam	7.V.1897	Nieuwenhuis	107	59	57	15 ^{1/2}
?	Rantau, S.E. Borneo	ca. 1916	v. d. Putten	103	55	55	15 ^{1/4}
♂	Bangka	31.I.1873	Vosmaer	103	57	58	14 ^{3/4}
♂	"	18.II.1873	"	101	57	58	15 ^{1/4}
♂ juv.	"	11.VII.1872	"	101	55	52 ^{1/2}	14 ³⁾
♂	Padang, Sumatra		S. Müller	104	60	58	15 ^{3/4}
♂	Boekit Gadang, Palembang	5.V.1920	Batenburg	104	60 ^{1/2}	55 ^{1/2}	14
♂	Res. Palembang	15.V.1920	"	101	58	56	15 ^{1/4}
♂	Talangsimoet, Palembang	10.XII.1919	"	105	57	53 ^{1/2}	15 ^{1/2}
♀	Talangsimoet, Palembang	31.III.1920	"	101	56	53	14 ^{3/4}
♀	Res. Palembang	2.V.1920	"	96	54	51	15 ^{1/2}
♀	Padangsche Bovenlanden	ca. 1885	Kläsi	111	56	56	15

1) Syntype of *Halcyon coromanda major*, also of *Halcyon schlegeli* Bonaparte, 1850.2) Lectotype of *Halcyon coromanda minor* (cf. Oberholser, 1915: 650).

3) Bill evidently unfullgrown.

Sex	Locality	Date	Collector	Wing	Tail	Entire culmen	Culmen width at nostril
♂	Moeara Karang, Batavia, Java	22.IX.1908	Jacobson	104	55	59	15½
♂	Tjilettoe, Preanger	12.VII.1901	Bartels	107	61	59	15¾
♂	"	24.V.1905	"	105	—	60½	17
♂ juv.	Langgen, Preanger	18.II.1907	"	108	53	56	14¾

Halcyon coromanda rufa

♀	Siao, Sanghir	ca. 1866	R. v. Duivenbode	114	64	59	15½
♂	Modelido, Cel.	12.V.1863	Rosenberg	116	63	61	16¾
♂	Negrie Lama	22.IX.1863	"	113	63	62	16¾
♂	Kema	22.VIII.1864	"	116	67	64	16
♂	"	29.IX.1864	"	116	65	62½	15¾
♀ (im?)	"	29.IX.1864	"	109	66	58	15½
♂	Celebes	ca. 1866	R. v. Duivenbode	118	65	63	16¾
♂	"	"	"	113	65	60½	17
♀	"	1865	"	117	66	58	15¾
♀	"	ca. 1866	"	118	67½	63	17
?	Makassar	1877	Teysmann	116	64½	65	16¾
?	"	"	"	117	64	62	16
?	"	"	"	114	62	67½	17½
?	Minahassa	ca. 1878	v. Musschenbroek	115	—	64	16¾
?	Menado	ca. 1883	v. Faber	113	59	59	16
?	"	"	"	113	65	61	16¾
?	N. Celebes	"	"	113	64	59	16

Halcyon coromanda sulana

♂	Soela-Bessi	17.XI.1864	Hoedt	122	81	60	16
♀	"	17.XI.1864	"	119	81	64½	16½ ¹⁾
♂	Soela Mangoli	11.XII.1864	"	118	74	60	15¾
♂	"	Jan. 1864	Bernstein	121	82	62½	17
♀	"	"	"	120	79	63	16¾
?	Soela-Bessi	July 1876	Teysmann	117	75	62	16
?	"	"	"	122	80	64	16¾

collection contains material of five subspecies, which differ in depth of colour of back and especially underparts, colour and extent of rump-patch, length of wing, wing-formula, and size and shape of the bill. On the basis of its characters, the Formosan specimen belongs clearly to the race *major*. Material from the Riu Kiu Islands is not available to me, but the validity of *bangsi* has been confirmed by Rand & Rabor (1960: 422-424), and Vaurie (1965:

1) Holotype of *Halcyon coromanda sulana*.

666-667). The following diagnoses, based on birds in adult plumage, should be consulted in conjunction with the list of measurements (Table III).

1. *Halcyon coromanda major* (Temminck & Schlegel). Upper parts not so deeply tinged with magenta; rump patch light blue, smaller than in all other subspecies; underparts comparatively pale; bill slender, different in shape from all other subspecies, in which the bill has a more swollen appearance: expressed in measurements the difference is slight, but is nevertheless obvious; wing long, pointed, third primary longest, the second only 2-4 mm shorter.

2. *Halcyon coromanda coromanda* (Latham). In plumage close to the preceding race, upperparts perhaps slightly deeper tinged, but anterior part of head free of magenta, rump whitish, the posterior part tinged with azure; underparts as in *major*, hence comparatively light; bill more swollen; wing shorter; second primary about 4 mm shorter than third and 3=4.

3. *Halcyon coromanda minor* (Temminck & Schlegel). Much darker above and below than the preceding races, upperparts including forehead deeply tinged with magenta; rump as in the preceding race; underparts deeper rufous, with magenta on the breast; bill swollen but it tends to be slightly smaller than in the other races; wing short, second primary 5-7 mm shorter than third, and 3=4.

4. *Halcyon coromanda rufa* Wallace. Similar to the preceding race, and equally dark, but larger in all measurements; rump azure blue, somewhat variable, but never whitish as in the other races; wing-formula as in *minor*.

5. *Halcyon coromanda sulana* subspecies nova. Upperparts not so dark as in *rufa*, rump pale as in other races except *rufa*, underparts distinctly less dark than *rufa* and *minor*, similar to *major* and *coromanda*; bill swollen as in other races except *major*; wing long, more rounded than in all other races, second primary 6-10 mm shorter than third, and fourth longest, tail longer than in all other races.

Discussion. A revision of this species was given by Oberholser (1915), who in his usual meticulous way described and named even the slightest differences found in small series. This caused some of his conclusions to be unacceptable to later workers. Also I found that although Oberholser paid due attention to colour and general size, neither the differences in shape of the bill, nor in shape of the wing received attention from him or from any other worker I know of. For example, instead of on the basis of size and colour only, migrants of *major* can be distinguished from resident subspecies in the tropics, with which they co-occur periodically, by shape of bill and wing-formula. Oberholser (1915: 642) also mistakenly denied that *H.c.*

major is migratory, an error to which Mayr (in Delacour & Mayr, 1945) has drawn attention.

The type-locality of *H. coromanda rufa* requires some discussion. This form was described by Wallace (1863) from: "Sula Islands and Celebes". As early as 1870, Sharpe, by designating a lectotype from Makassar, Celebes, restricted the name to that place, a selection confirmed, amongst others, by Sharpe (1892), Hartert (1912: 887), Oberholser (1915), Neumann (1939), and Stresemann (1940), and universally accepted until 1945 when Peters, reversing the usage of the preceding 75 years claimed that: "the type in the British Museum was collected by Allen either on Mangoli or Besi, *fide* O. Neumann, *in litt.*". In my opinion this reversal is definitely a mistake: Neumann did not visit Britain after 1939, and therefore could not have examined a type in the British Museum; in his last published work on the species (1939) he definitely accepted the bird from Makassar as type, and his race *pelingensis* was separated from the Celebes population (with which he believed birds from the Soela Islands to be identical).

Therefore I continue to use the name *Halcyon coromanda rufa* for the Celebes population, in which I am in the good company of Vaurie (1965: 666). Having no material from Peling I am unable to state whether *H. c. pelingensis* deserves recognition as distinct from *rufa*, but it is not unlikely to be valid as Peling has a number of endemic races (but see van Bemmelen & Voous, 1951: 62). The measurements given by Neumann (1939) prove that *pelingensis* is not identical with *sulana*.

Kloss (1921) mentioned that: "birds taken on Pulau Jarak, the Aroa Islands and the One-fathom Bank Lighthouse in the Straits of Malacca are *c. coromanda* and it is highly improbable that they were resident on any of these places". Thus, Kloss implied that these birds were migrants, a matter that appears not to have been clearly recognised by subsequent authors. Gibson-Hill (1949: 120), for example, made no mention of migration. Admittely Delacour (1947: 154), followed by Smythies (1957: 660, 1960: 304), described the nominate race as migratory, but their accounts are completely confused, and their reference to the winter range appears to concern *H. c. major*, a subspecies not mentioned by them. The specimen from Poeloe Berhala was collected in November, and Robinson & Kloss (1922a, 1922b) mentioned series taken in the same month on islands in the Straits of Malacca. The comparatively large numbers taken in this area, of a species that is otherwise not very common, suggest that the islands in the Straits of Malacca (with the adjacent shores?) are the main wintering grounds of this subspecies. Additional evidence that *H. c. coromanda* is migratory to some extent is found in the shape of its wing, which is less rounded than that

of the resident subspecies, but not as pointed as that of the highly migratory *H. c. major*.

Finally, a word about the juvenile plumage may be in place. As noted, in adult specimens of *H. c. minor* the rump-patch is whitish, tinged with azure. Of the two juveniles of this race, one (from Bangka) has the rump-patch ultramarine blue (much darker than the adults), with blackish grey cross-bars, glossed over with violet. The other slightly older specimen (from Langgen, Preanger), has the rump-patch ultramarine with whitish cross-bars. The underparts are less dark than in adult birds and the feathers of the breast have very narrow grey edges, giving the breast a faintly scalloped appearance. When juvenile birds are included in a series of *H. c. minor*, it may not be obvious at once that in the adult plumage this subspecies is universally characterized by a very pale rump-patch. The juvenile of *H. c. major* shows on the under parts the same characters as juveniles of *H. c. minor*, but the rump-patch does not differ from that of adult birds of its race. Of the other subspecies no juveniles are available.

Tarsiger cyanurus cyanurus (Pallas)

♂, Wu She, 23 February 1968 (no. 53322).

Only two previous records of the blue-tail are listed by Hachisuka & Udagawa (1951: 66), so that, apparently, it is an uncommon winter visitor to Formosa.

Acrocephalus arundinaceus orientalis (Temminck & Schlegel)

♂, Puli, 1 April 1968 (no. 53441), weight 26 g.

There are very few authentic records of this reed-warbler from Formosa. A century ago Swinhoe (1863: 305) made the much quoted statement that this species: "visits Formosa in summer and may then be found in all wet localities abounding in tall reeds". Ogilvie-Grant & La Touche (1907: 170) commented that there are no examples from Formosa in the British Museum. Amongst the large material from Swinhoe's collection in Leiden are no Formosan specimens of *Acrocephalus arundinaceus* either, but there are two from Amoy. It appears reasonable to assume that when writing about the abundance of reed-warblers in China and Formosa, Swinhoe generalised the situation as it existed in China.

Coccothraustes coccothraustes japonicus Temminck & Schlegel

♂, Puli, 25 January 1968 (no. 53138); ♂, Puli, 20 May 1969 (no. 59348).

These appear to be only the second and third records of this species from Formosa, the first one being from before 1916. I refer these specimens to *japonicus* on geographical grounds only.

REFERENCES

- ABDULALI, H., 1965. The birds of the Andaman and Nicobar Islands. — Journ. Bombay Nat. Hist. Soc., 61 (1964): 483-571.
- ALI, S. & S. D. RIPLEY, 1968. Handbook of the birds of India and Pakistan, 1: i-lviii, 1-380.
- BARNES, C. M. & H. E. MCLURE, 1966. Migratory Animal Pathological Survey. Annual Narrative Report, 1965.
- BEMMEL, A. C. V. VAN & K. H. VOOUS, 1951. On the birds of the islands of Muna and Buton, S. E. Celebes. — *Treubia*, 21: 27-104.
- BROWN, L. & D. AMADON, 1968. Eagles, hawks and falcons of the world, 2: 445-945.
- CHENG, T. H., 1964. [Systematic keys to the birds of China]: i-xxvi, 1-374. [in Chinese].
- DEIGNAN, H. G., 1958. Two new birds from eastern Asia. — *Proc. Biol. Soc. Washington*, 71: 161-162.
- , 1964. A new race of the Alpine Accentor, *Prunella collaris*, from Formosa. — *Bull. Brit. Orn. Cl.*, 84: 39-40.
- DELACOUR, J., 1947. Birds of Malaysia: i-xvi, 1-382.
- DELACOUR, J. & E. MAYR, 1945. Notes on the taxonomy of the birds of the Philippines. — *Zoologica, New York*, 30: 105-117.
- , 1946. Birds of the Philippines: i-xv, 1-309.
- GIBSON-HILL, C. A., 1949. An annotated checklist of the birds of Malaya. — *Bull. Raffles Mus.*, 20: 1-299.
- HACHISUKA, M. & T. UDAGAWA, 1950. Contributions to the ornithology of Formosa. Part I. — *Quart. Journ. Taiwan Mus.*, 3: 187-280.
- , 1951. Contribution to the ornithology of Formosa, part II. — *Quart. Journ. Taiwan Mus.*, 4: 1-180.
- , 1953. Contribution to the ornithology of the Ryukyu Islands. — *Quart. Journ. Taiwan Mus.*, 6: 141-279.
- HACHISUKA, M. et al., 1958. A hand-list of Japanese birds, (ed. 4): 1-264.
- HARTERT, E., 1912. Die Vögel der paläarktischen Fauna, 2 (1): 833-960.
- , 1913. Die Vögel der paläarktischen Fauna, 2 (2): 961-1088.
- , 1921. Die Vögel der paläarktischen Fauna, 3 (15): 1765-1892.
- HEER, E. DE, 1965 (unpublished). Revisie van de subspecies van *Ninox scutulata*. Manuscript, archives of the Rijksmuseum van Natuurlijke Historie.
- HERKLOTS, G. A. C., 1967. Hong Kong birds, (ed. 2): i-xiii, 1-333, (i)-(vi).
- HORSFIELD, T., 1854. A catalogue of the birds in the museum of the hon. East-India Company, 1: i-xx, 1-451.
- KLOSS, C. B., 1920. Notes on some oriental birds. — *Journ. Fed. Malay States Mus.*, 10: 214-228.
- KURODA, N., 1925. A contribution to the knowledge of the avifauna of the Riu Kiu Islands and the vicinity: i-vi, 1-293.
- MACFARLANE, A. M. & A. D. MACDONALD, 1966. An annotated check-list of the birds of Hong Kong, (rev. ed.): i-xvi, 1-96.
- MCGREGOR, R. C., 1909. A manual of Philippine birds, 1: i-x, 1-412.
- MEYER A. B. & L. W. WIGLESWORTH, 1898. The birds of Celebes, 1: i-xxx, 1-130, 1-392.
- NEUMANN, O., 1939. Six new races from Peling. — *Bull. Brit. Orn. Cl.*, 59: 104-108.
- OBERHOLSER, H. C., 1915. A review of the subspecies of the ruddy kingfisher, *Entomothera coromanda* (Linnaeus). — *Proc. U.S. Nat. Mus.*, 48: 639-657.
- OGILVIE-GRANT, W. R., 1896. On the birds of the Philippine Islands. — Part VI. The vicinity of Cape Engano, N. E. Luzon, Manila Bay, and Fuga Island, Babuyan Group. — *Ibis*, (7) 2: 101-128.

- OGILVIE-GRANT, W. R. & J. D. D. LA TOUCHE, 1907. On the birds of the island of Formosa. — *Ibis*, (9) 1: 151-198, 254-279.
- PETERS, J. L., 1945. Check-list of birds of the world, 5: i-xi, 1-306.
- RAND, A. L. & R. L. FLEMING, 1957. Birds from Nepal. — *Fieldiana, Zool.*, 41: 1-218.
- RAND, A. L. & D. S. RABOR, 1960. Birds of the Philippine Islands: Siquijor, Mount Malindang, Bohol, and Samar. — *Fieldiana, Zool.*, 35: 225-441.
- RIPLEY, S. D., 1953. A new race and new records for the Riukiu Islands. — *Tori*, 13: 49-50.
- , 1961. A synopsis of the birds of India and Pakistan: i-xxxvi, 1-703.
- , 1962. A new subspecies of the black-chinned fruit pigeon. — *Proc. Biol. Soc. Washington*, 75: 315-316.
- ROBINSON, H. C. & C. B. KLOSS, 1922a. Birds from the one fathom bank lighthouse, Straits of Malacca. — *Journ. Fed. Malay States Mus.*, 10: 253-255.
- , 1922b. List of birds collected on Pulau Jarak, Straits of Malacca. — *Journ. Fed. Malay States Mus.*, 10: 259-260.
- SCHLEGEL, H., 1864. Scolopaces. — *Muséum d'Histoire Naturelle des Pays-Bas*, 5 (mon. 27): 1-112.
- SHARPE, R. B., 1870. A monograph of the Alcedinidae or kingfishers, 9.
- , 1892. Catalogue of birds in the British Museum, 17: i-xi, 1-522.
- , 1896. Catalogue of birds in the British Museum, 24: i-xii, 1-794.
- , 1899. A hand-list of the genera and species of birds, 1: i-xxi, 1-303.
- , 1906. Birds, in: The history of the collections contained in the natural history departments of the British Museum, 2: 79-515.
- SHERBORN, C. D. & F. A. JENTINK, 1895. On the dates of the parts of Siebold's „Fauna Japonica” and Giebel's „Allgemeine Zoologie” (first edition). — *Proc. Zool. Soc. London*: 149-150.
- SIEBERS, H. C., 1930. Fauna Buruana: Aves. — *Treubia*, 7 (suppl.): 165-303.
- SMYTHES, B. E., 1957. An annotated checklist of the birds of Borneo. — *Sarawak Mus. Journ.*, 7: i-xv, 523-818.
- , 1960. The birds of Borneo: i-xvi, 1-562.
- STEJNEGER, L., 1887. Further contributions to the avifauna of the Liu Kiu Islands, Japan, with descriptions of new species. — *Proc. U.S. Nat. Mus.*, 10: 391-415.
- STRESEMANN, E., 1940. Die Vögel von Celebes. Teil III. Systematik und Biologie, Fortsetzung. — *Journ. Orn.*, 88: 389-486.
- , 1941. Die Vögel von Celebes. Teil III. Systematik und Biologie, Schluss. — *Journ. Orn.*, 89: 1-102.
- SWANN, H. K., 1926. A monograph of the birds of prey, 1 (5): 277-364.
- SWINHOE, R., 1863. The ornithology of Formosa, or Taiwan. — *Ibis*, 5: 250-311, 377-435.
- TAKA-TSUKASA, N., 1967. The birds of Nippon: 1-24, 1-701.
- VAURIE, C., 1960. Systematic notes on Palearctic birds. No. 43. Strigidae: the genera *Otus*, *Aegolius*, *Ninox*, and *Tyto*. — *Amer. Mus. Novit.*, 2021: 1-19.
- , 1965. The birds of the Palearctic fauna. Non-Passeriformes: i-xx, 1-763.
- WATTEL, J., in prep. Geographical differentiation in the genus *Accipiter*.
- WAYRE, P., 1968. Swinhoe's Pheasant (*Lophura swinhoiei*). — *Avicult. Mag.*, 74: 77-80.
- WHISTLER, H. & N. B. KINNEAR, 1936. The Vernay scientific survey of the Eastern Ghats (Ornithological Section). Part XIII. — *Journ. Bombay Nat. Hist. Soc.*, 38: 418-437.