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THE STATUS OF TWO SPECIES OF MIGRANT SWIFTS IN JAVA AND SUMATRA (AVES, APODIDAE)

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With 1 plate

Apus pacificus pacificus (Latham)

The occurrence of *Apus pacificus* in Java, as a migrant from the north, was established by Vorderman (1900), who collected a specimen in 1896: "in de Preanger, bezuiden de Salak". Soon afterwards, the species was also recorded by Bartels (1902, 1906).

In later years specimens from Java were generally listed as belonging to the nominate race (Bartels Jr. & Stresemann, 1929; Chasen, 1935; Kuroda, 1936; Hoogerwerf, 1948).

Deignan (1956) identified a specimen from the Semangko Pass, Malaya, as belonging to the race *Apus pacificus kanoi* Yamashina, and subsequently Vaurie (1965: 654, 655) expressed the opinion that birds reported from the southern Malay Peninsula, Sumatra and Java are "probably" referable to this subspecies, which was described in 1942 and therefore had not been considered previously. It is apparent that Vaurie had not examined material from Java, so that the subspecific identity of birds from Java remained in doubt. Vaurie's surmise that the birds visiting Java belonged to the race *kanoi* may well have been partly based on the assumption that this more southern race would have its winter-quarters less far south than the nominate race.

The need to incorporate the series of *A. pacificus* from the Bartels collection in our main collection, gave me an opportunity to investigate this problem. Altogether we have 37 specimens from Java, and without exception they are referable to the nominate race, *Apus p. pacificus*. For comparison I had a series from eastern Siberia and Japan (including six from Vladivostok, regarded as typical of the nominate race), and two recent specimens of *A. p. kanoi* from Formosa.

It appeared of interest to investigate whether *A. p. pacificus* winters in Java, or occurs as a passage migrant only. Therefore, I have listed all our Javanese specimens, which must represent a very large proportion of the material known from the island. Broken down to month of collecting we get:

TABLE I

Apus pacificus pacificus

cat. no.	sex	date	locality	collector
3	-	1896	Preanger	Vorderman
16	♂	11.X.1900	TjiOdeng, Preanger	M. Bartels Sr.
17	♀	"	"	"
18	♂	20.X.1900	Pangerango	"
19	♀	24.X.1901	TjiOdeng	"
20	♂	"	"	"
21	♀	26.X.1901	Pangerango	"
22	♀	"	"	"
23	♀	5.X.1910	"	"
24	♀	"	"	"
25	♂	4.XI.1911	Slindoe, Bagelen	"
26	♂	"	"	"
27	♀	"	"	"
28	♂	6.X.1914	Pangerango	"
29	♂	28.IX.1915	Moeara Wettan, Krawang	"
30	♀	29.X.1915	Pangerango	"
31	♀	30.X.1915	Tjibogoh	"
32	♀	"	"	"
33	♂	24.XII.1915	Pangerango	"
34	♂	5.X.1918	Karang Tengah	"
35	♂	28.IX.1919	Pangerango	"
36	♂	8.X.1920	harbour of Batavia	"
37	♂	15.V.1922	Moeara Boengin, Krawang	"
38	♀	18.V.1922	"	"
39	♂	6.X.1922	Goenoeng Walat, Preanger	"
40	♂	21.X.1922	Moeara Gembong, Krawang	"
41	♀	6.XI.1922	Pangerango	"
42	♂	"	"	"
43	♂	13.X.1923	Tjimijang, Preanger	"
44	♀	"	near Kadoedampit	"
45	♀	14.X.1923	Karang Tengah	"
46	♂	28.X.1923	Ongkrak	"
47	♀	1.XI.1925	Tjigaroe	"
48	♂	3.XII.1925	Goeha Tjandi	"
49	♀	"	"	"
11	♂	23.X.1941	Klatakan, E. Java	Kooiman
12	♀	"	"	"

September (2), October (23), November (6), December (3) and May (2). Although there are probably various kinds of bias in the sample, there is a strong suggestion that the birds are passage migrants. The first migrants appear towards the end of September; migration is strong during October and the first week of November, and stragglers follow until the end of December. After that there are no records until May: these probably pertain to passage migrants on their way back to the breeding-grounds. In Bartels's manuscript notes mention is made of a few individuals seen over the island of Edam on 13 April 1914; his earliest date in autumn is 16 September 1906.

In south-western Australia the earliest date is 7 October 1925 at Geraldton and the birds are commonest in January and February (Serventy & Whittell, 1967: 288-289), months for which there are no records from Java. On present evidence *Apus p. pacificus* visits Java only on its passage to Australia, and less commonly on its return voyage to the north. There is no evidence that it winters in Java.

Sumatra has also been included in the range of *A. pacificus*. The first connection between the species and Sumatra was made by Vorderman (1890: 396), who listed it with a query, not numbered, with the following comment: "En ce qui concerne les martinets, il faut remarquer que le *Cypselus infumatus* et le *C. pacificus* n'ont pas encore été découverts à *Sumatra*, mais il est probable qu'on les y trouvera, étant donnée leur distribution géographique". In the next list of Sumatran birds (Robinson & Kloss, 1918: 271), *A. pacificus* has been included without comment. I have been unable to trace any published record of *A. pacificus* from Sumatra between 1890 when Vorderman's list was published, and 1918, and certainly none is contained in the publications listed by Robinson & Kloss, so that it looks as if their inclusion of the species in the avifauna of Sumatra was based on careless reading of Vorderman. Once the species had thus become definitely (but mistakenly) accepted as a member of the Sumatran avifauna, it was carried on from list to list: Robinson & Kloss (1923: 334), Chasen (1935: 118) and Vaurie (1965: 654, 655).

The actual position is therefore still exactly as it was described by Vorderman over eighty years ago: *A. pacificus* is bound to be found in Sumatra sooner or later, but at present there are no records.

Chaetura cochinchinensis Oustalet

In Sumatra this species is known from two individuals collected by C. Klaesi in 1885; they became the types of *Hirundinapus Klaesii* Büttikofer (1887), a name placed in the synonymy of *Chaetura cochinchinensis* by Hartert (1897: 73). The first record from Java was by Bartels (1923), who men-

tioned that he had two males in his collection, without giving any further particulars of localities or dates.

In later years the question whether the species was a breeding-bird on Java (and Sumatra) or only a visitor remained unanswered. Bartels Jr. (in Bartels & Stresemann, 1929: 114) wrote: "Unbekannt ob Brutvogel oder nicht", and at this the matter was left by subsequent authors (Kuroda, 1936; Lonsain, 1941; Hoogerwerf, 1948), until Hoogerwerf (1949) listed the species as very probably ("hoogstwaarschijnlijk") breeding in Western Java. Recently Hellebrekers & Hoogerwerf (1967) included *C. cochinchinensis* without comment in their list of Javanese breeding-birds.

Our collection contains 12 specimens of *C. cochinchinensis* from Java (cf. Mees, 1971) and two from Sumatra, and I believe these to represent the total of specimens known from these islands. One specimen lacks a label, the others were collected in the months November (1), January (5), February (4), and March (3), the extreme dates being 27 November and 5 March.

From this it appears a reasonable deduction that *C. cochinchinensis* is a winter-visitor to Java and Sumatra and not a breeding-bird; anyway the former is much more likely than the latter. The fact that in Java the species was collected in seven different years (see table II), suggests a regular migration rather than vagrancy.

In the Malay Peninsula the species is known as a passage migrant and winter visitor (Robinson, 1928; Gibson-Hill, 1949; Medway, Nisbet & Wells, 1968; Medway & Wells, 1970), which supports the view on its status in Java and Sumatra expressed above. Records in the Malay Peninsula are from the end of October till February. Gibson-Hill's remark: "Known in our area only from a few specimens taken in hill country between February and November", should read: "between November and February", as four lines farther down he mentions that the only specimens in the Raffles Museum collection are from January and February. Even in much of Thailand *C. cochinchinensis* appears to be no more than a winter visitor¹⁾. The sub-specific identity of the birds from Java and Sumatra remains a problem.

1) I have been unable to find on what Deignan's (1963) inclusion of *C. cochinchinensis* in the avifauna of Thailand was based. There are certainly no previous published records. Mr. Kitti Thonglongya has informed me (in litt., 24.IX.1971) that he has no idea where Deignan got his information from. I have not much confidence in recent field-observations not supported by any information of how the species was identified (cf. Dickinson & Tubb, 1964: 271; Pantuwatana, Imlarp & Marshall, 1969: 174). Thus, the first irrefutable evidence is provided by two specimens from Chanthaburi Province, collected as recently as 1966 (see table II); as far as I know this record had not yet been published. The proximity of Chanthaburi to Cambodia, where the species is presumed to breed, makes it likely that *C. cochinchinensis* is a breeding-bird in Chanthaburi.

Many authors have treated *C. cochinchinensis* as a race of *C. caudacuta*, but Biswas (1951) and others have presented evidence that they are different species. If considered a separate species, *C. cochinchinensis* was monotypic until Biswas (1951) described *C. c. rupchandi* from the western part of its range.

No material from the known or presumed breeding range of either subspecies being present in our collection, I borrowed specimens of both. This material included four of the six known specimens of *rupchandi*, paratypes of this race, three specimens from Assam, two from Thailand, and four from Cochinchina and Cambodia (table II).

A discussion of the characters of *C. c. rupchandi* is first required. This subspecies was originally diagnosed as: "Similar to *cochinchinensis* from Cambodia, Siam, Malaya and Assam, but the brown on the underside much paler; throat dirty smoky; and the upperparts less glossy". Ali & Ripley (1970: 33) appear to have reversed one of the characters, ascribing to *cochinchinensis* a "smoky grey" throat and to *rupchandi* a "dark smoky" throat; at least I assume that dark smoky is darker than smoky grey.

Without, for the moment, paying attention to locality and subspecies, the colour variation I found in the available series is as follows: back smoky brown, in the middle varying from a little paler to distinctly paler; remainder of upperparts glossy greenish black, glossy bluish black, or dull blackish almost without gloss; chin and throat varying from smoky brown to almost white; remainder of underparts (except for the white or almost white under tail coverts), varying from blackish brown with a strong greenish gloss to a clearly lighter smoky brown, almost without gloss.

As the available material had been collected in different months it became at once evident that the differences in colour of the upperparts are entirely due to differences in wear: the middle of the back becomes paler with wear; the other feathers of the upperparts when very fresh have a strong greenish gloss, when somewhat worn this changes to a rather less strong bluish gloss, and finally, in an extremely worn condition, much of the gloss disappears.

The paratypes of *C. c. rupchandi*, collected in June and July, are in extremely worn plumage, and this accounts for the less glossy upperparts, as proven by two of the specimens (FM nos. 230550, 230552), which have just started their primary-moult: the fresh innermost primaries have a strong green gloss, contrasting with the dull and worn other primaries. In this connection it has to be mentioned that none of the specimens from Java and Sumatra shows evidence of moult; the major moult at least (of the primaries) appears to be completed by the end of November. Witherby (1938) believed that *C. caudacuta* undergoes two full moults a year, one in August-November

TABLE II
Chaetura cochinchinensis

cat. no.	sex	date	locality	collector	wing-length
Specimens from Sumatra					
1	♂	18.II.1885	Loeboe Gedang, Padang	Klaesi	189 1)
2	♀	"	"	"	177 1)
Specimens from Java					
3	♂	3.III.1910	Tjimadja, W. Java	M.Bartels Sr.	186
4	♂	23.I.1921	Radjamandala, W. Java	"	191
6	♂	27.XI.1925	Halimoen, W. Java	E.Bartels	195 2)
5	♂	9.I.1926	Tjikea, W. Java	"	178
7	♂	18.I.1937	W. Java	M.Bartels Jr.	188
8	♀	19.I.1937	"	"	189
9	♀	30.I.1937	"	"	188
10	♂	4.II.1938	"	"	190
11	♂	"	"	"	185
12	♀	5.III.1938	"	"	186
13	♂	"	"	"	189
14	-	-	"	"	175
Specimens from Nepal					
reg. no.					
FM 230548	♀	24.VI.1947	Hitaura	Koelz	180 3)
FM 230549	♂	"	"	"	182 3)
FM 230550	♂	6.VII.1947	"	"	180 3)
FM 230552	♂	"	"	"	193 3)
Specimens from Assam					
AMNH 635960	♀	17.VI.1902	Margherita	H.N.Coltart	195
AMNH 635958	♀	12.VII.1902	"	"	190
AMNH 635957	♂	30.IV.1905	"	Stuart Baker	184
Specimens from Thailand					
USNM 534621	♂	14.IV.1966	Khao Soi Dao Tai, Chanthaburi	B. King	180
USNM 534620	♀	"	"	"	173
Specimens from Cambodia and Cochinchina					
CG 1939-967	♀	26.IV.1927	Phu-Rieng	Delacour & Jabouille	179
CG 1929-1010	♂	7.XII.1927	Le Bokor	"	180
CG 1929-1011	♂	10.XII.1927	"	"	193
CG 1929-1012	♂	"	"	"	189

1) Syntype of Hirundinapus Klaesii.

2) Holotype of Chaetura ernsti.

3) Paratype of Chaetura cochinchinensis rupchandi.

and another from January to May. The Stresemanns (1966) commented that this was "ganz unglaubhaft". The available material of *C. cochinchinensis* proves conclusively that this species undergoes only one full moult a year.

On the underparts the four paratypes of *C. c. rupchandi* are uniformly pale, as described by Biswas, and differ from birds from more eastern parts of the Asiatic mainland. On the basis of this character I would have no hesitation to recognize the race *rupchandi*. Admittedly, the female from Phu-Rieng, Cochinchina, which is also in an advanced state of wear, comes close to them, but for reasons given below I doubt that the pale underparts are exclusively caused by wear.

In the series from Java, however, the palest specimen (cat. no. 7) is quite as pale below as any specimen of *rupchandi*, and the throat is even whiter. This specimen differs conspicuously from the darkest of this series (cat. no. 11), see plate. Both specimens are males, show no signs of immaturity as far as I can see, were collected in the same time of the year (only a fortnight between them, moreover the pale bird earlier than the dark bird), and show no conspicuous differences in state of wear. If only these two specimens were at hand, I would refer one to *C. c. rupchandi*, the other to the nominate race. Unfortunately, the rest of the series consists of intermediates which form a perfect gradation between the two extremes just described, and make any division into two subspecies impossible. The types of *H. Klaesii* and *C. ernsti* are such intermediate birds.

I conclude that on present evidence the application of trinomials to the birds from Java and Sumatra would be meaningless, and that more material from the breeding-range is required: especially specimens in fresh plumage of *C. c. rupchandi*, as the possibility that the paratypes are only extremely worn individuals of the nominate race cannot be entirely ruled out. Indeed, the perfect gradation in the series from Java causes that in my opinion the validity of *C. c. rupchandi* requires confirmation. The main argument for its recognition would be the uniformity of the specimens. Until the validity of *C. c. rupchandi* has been confirmed, I shall treat *C. cochinchinensis* as a monotypic species.

Two of the specimens from Java (cat. nos. 8 and 9) differ from all others in having the inner webs of the innermost secondaries almost pure white instead of pale smoky brown. In other characters these birds are typical *C. cochinchinensis*, and I do not think that they could be called intergrades with *C. caudacuta nupides*. Incidentally, it looks as if *C. cochinchinensis* has the spines of the tail a bit stronger than *C. caudacuta nupides*, an admittedly subtle character not mentioned by Biswas (1951).

C. cochinchinensis is a rather larger bird than as indicated in much of the

literature. Hartert (1897: 73) gave a wing-length of 72-180 mm (an obvious misprint for 172-180) and in his key: "Flügel unter 185 mm". This measurement has been copied by later authors: Stuart Baker (1927: 340), Cheng (1964: 71) and Ali & Ripley (1970: 33). The range of variation in the material examined by me is 173-195 mm, and only eight out of 23 birds have the wing under 185 mm. This agrees well with the figures published by Delacour & Jabouille (1931: 287): 179-193 mm. The four specimens of *C. c. rupchandi*, with a wing length of 180-193 mm, do not differ.

When Biswas (1951) separated *C. cochinchinensis* specifically from *C. caudacuta*, he retained *C. caudacuta formosana* Yamashina in the last-mentioned species. However, in the original description Yamashina (1936) wrote about this race: "Sie unterscheidet sich von *nupides* und *cochinchinensis* dadurch, dass der Scheitel und andere Teile bläulich-glänzend schwarz und die Innenfahnen der inneren Armschwingen nicht weisslich sind. Ferner unterscheidet sie sich von *nupides* dadurch, dass die Kehle nicht weisslich ist". Add to this a given wing-length of 188 mm for the type, 180 mm for a second specimen, and it looks like a perfect diagnosis of *C. cochinchinensis*. It is reasonable to assume that when Yamashina described *C. c. formosana*, he had not seen an authentic specimen of *C. cochinchinensis*.

Note that the description given by Hachisuka & Udagawa (1951: 76-77) under the name *C. caudacuta formosana*, pertains to *C. caudacuta* ("chin . . . white"), except for the wing-length which was taken from Yamashina. Previous to their being described as a new subspecies, the Formosan birds had been listed as *C. caudacuta nupides* (cf. Hachisuka & al., 1932, etc.).

C. c. formosana is extremely rare in collections, and having been unable to examine a specimen, I must leave open the question whether and how it differs from *C. c. cochinchinensis*, but the fact that it is this species and not *C. caudacuta* which occurs in Formosa, presumably as a breeding-bird (the records are from April and May), is of considerable zoogeographic interest ¹). The nearest locality from which *C. cochinchinensis* was hitherto known is Attopeu in extreme southern Laos: the alleged occurrence on islets off Hainan is evidently due to misidentification as set out in the next paragraph.

In several works, even recent ones, *C. cochinchinensis* has been listed as a breeding-bird of Hainan (Gee, Moffett & Wilder, 1926-27; Cheng, 1940, 1964); this record appears to be solely based on Swinhoe (1870: 90-91), who has under the name "*?Acanthylis caudacuta* (Lath.)" the following infor-

1) Only two specimens from Formosa have ever been recorded: the type (♀), 12 April 1933, Mt. Arisan (Yamashina collection), and a specimen of unknown sex, May 1908, Dojò, Nanto District (Taipei Museum). Hachisuka & Udagawa's (1951: 77) reference to two specimens from Dojò in the last-mentioned institute is a slip.

mation: "A Chinese work on the island of Hainan, in its list of birds, mentions a large species of Swallow, "as big as a dove", which makes its nest in the caves of certain small islands off the southerly coast of Hainan. It adds that, in autumn, when the birds desert their nests, the nests are collected and sold for food, and that epicures esteem them much more highly than those imported from the Straits of Malacca. The builders of such nests must surely be this large Spine-tailed Swift. We passed close to some of these islands, but looked in vain for the birds. They had not yet returned to their breeding-places".

Notwithstanding the alleged size as big as a dove, it is quite obvious that the birds described must have been *Collocalia*, the only genus in which builders of edible nests occur ¹⁾. *C. cochinchinensis* does not build edible nests (Stuart Baker, 1927: 342). This eliminates the only previous record of *C. cochinchinensis* from anywhere in China.

On present evidence the breeding distribution of *C. cochinchinensis* appears to be very patchy. Proof of breeding exists only for North Cachar, but observations in the breeding season are from four widely separated areas: central south Nepal; Assam and the adjacent extreme north-west of Burma; south-eastern Thailand and southern Indo-China north to Attopeu, and Formosa.

Recapitulation of the synonymy. — *Chaetura cochinchinensis* Oustalet, 1878; *Hirundinapus Klaesii* Büttikofer, 1887; *Chaetura ernsti* Bartels Jr., 1931; *Chaetura caudacuta formosana* Yamashina, 1936; *Chaetura cochinchinensis rupchandi* Biswas, 1951. As mentioned above, *formosana* and *rupchandi* may possibly be valid subspecies, but until this has been confirmed *C. cochinchinensis* should be regarded as a monotypic species.

The material listed in table II, as far as it does not belong to the Rijksmuseum van Natuurlijke Historie, was borrowed from the Field Museum of Natural History, Chicago (FM), the American Museum of Natural History, New York (AMNH), U.S. National Museum, Washington, D.C. (USNM), and the Muséum National d'Histoire Naturelle, Paris (CG-numbers).

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1) No species of *Collocalia* is at present known to occur on Hainan; further investigations are required to find out if a member of the genus does or did occur in caves off its south coast. If not, the whole story may be mythical in place and time. The "size as big as a dove" certainly indicates no first hand knowledge.

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Chaetura cochinchinensis Oustalet. The lightest and the darkest specimen of a series from Java. Ca. $\times 0.6$.