136. Tanysiptera sylvia, Gould. H. B. A. i. p. 137.
Only one seen.

137. Sphenœacus galactodes (Temminck). H. B. A. i. p. 399.

138. Cisticola isura, Gould. H. B. A. i. p. 352.
I have no doubt, when Mr. Rainbird has time to pay more attention to the less gaudy birds, many more of our New South Wales species will be found in Queensland.

XXIX.—*The Ornithology of India.—A Commentary on* Dr. Jerdon's '*Birds of India*.' By Edward Blyth, late Curator of the Museum of the Asiatic Society at Calcutta, Hon. Mem. As. Soc.

[Continued from p. 258.]

82. Hirundo rustica, L.; *H. gutturalis*, Scop.; *H. panayana*, Gm.; *H. jewan*, Sykes.

The average of adult Swallows from the Indian region and China are smaller than the average of European examples, to the extent sometimes of an inch in length of wing; but some Indian are undistinguishable from European specimens. Thus Dr. Jerdon remarks, "On carefully comparing specimens from England and Algiers in the Museum at Calcutta with Indian specimens from various parts of the country, I can detect no difference." Mr. Gould has lately described a *H. fretensis* (Handb. B. Austral. i. p. 110) from North Australia and Java; and this seems to be the same Swallow that Dr. Jerdon indicates as exemplified by one specimen from Java and another from Southern India (p. 157), in which case *H. frenata* has to be added to the 'Fauna Indica.' The *H. tytleri*, Jerdon (Appendix, p. 870), comes very near to *H. cahirica* of Palestine and Egypt, but is rather smaller and has much less of the black gorget. It may be said to hold that relationship to *H. gutturalis* which *H. cahirica* does to *H. rustica*; and *H. hyperythra* of Ceylon is an analogous rufous-bellied race of *H. erythropygia*.

83. Hirundo domicola.
Mr. Mottley obtained it in Borneo (P. Z. S. 1863, p. 217).

84. Hirundo ruficeps, Licht.; Gould, B. As. part xviii. pl.

Abyssinia (Rüppell), and Khartum (Antinori). Mr. Gould, however, doubts the identity of the Indian and African birds, remarking that "fine examples of both now before me appear to differ too much to admit of their being considered examples of one and the same species. The Gambian specimens are much smaller, have a less amount of rufous colouring on the head, and shorter tails."

85. Hirundo erythropygia, Sykes.

This is considerably smaller than *H. daurica*, Pallas, of China; the wings are respectively 5 in. and 4·25 in. to 4·75 in. in length. Both races, however, may prove to occur in India. Dr. Bree erroneously identifies *H. rufula*, Temm., with *H. daurica*. The true *H. rufula* (which Mr. Tristram observed to be so abundant in Palestine) is figured by MM. Jaubert and Barthélemy-Lapommeraye (Rich. Orn. du Midi de la France, p. 308). Mr. Gould's figure in the 'Birds of Europe' of his supposed *H. rufula* represents, as is well known, *H. senegalensis*. In the British Museum I saw a specimen of true *rufula* from Afghánistân. According to Mr. Swinhoe, *H. daurica* is "represented in Japan and Formosa by larger varieties." *H. alpestris japonica* is figured in the 'Fauna Japonica' (Aves, tab. xi.). Comparing a specimen of *H. striolata*, T. and Schl. (*nec* Rüppell), from the island of Flores, which Mr. Wallace kindly lent me for the purpose, with the figure cited, I could perceive no difference whatever. On the label of that specimen was written—"This species was seen in East Java, flying along the roads."

86. Hirundo fluvicola.

The Swallow referred to, as described by Dr. A. Leith Adams (P. Z. S. 1859, p. 176), is distinct. Mr. Gould possesses a specimen, and designates it *Lagenoplastes empusa*. It certainly accords nearly with the description of *H. fluvicola*; but there is no white on the tail-feathers, and the crown can scarcely be called "dark rufous." It closely resembles the Australian *L. ariel*, Gould (Handb. B. Austral. i. p. 113); but differs in the rump being brown instead of white, and in the striation of the fore-neck and breast being much more developed, the black

increasing on the throat. In other respects it is like *L. ariel.* Dr. Adams states that this Swallow is "common on the lakes and streams in the valley of Kashmir, and likewise in the Punjâb at certain seasons."

88. Cotyle subsoccata.

Dr. Jerdon considers this a doubtful species, in his 'Appendix,' p. 875. The specimens which Mr. Hodgson sent under this name to the Museum of the Asiatic Society at Calcutta, were decidedly identical with *C. sinensis*; and Mr. G. R. Gray assigns both *C. subsoccata* and *C. minuta* (Hodgs.) to *C. sinensis*, in the second edition of his 'Catalogue of the Birds of Nipâl.'

89. Cotyle sinensis.

This bird breeds in the cold season, burrowing into the banks of the Hugli in the same manner as *C. riparia* elsewhere; for this I can vouch, having taken the eggs and young (*cf.* Tytler, Ann. Mag. N. H. 1854, xiii. p. 371). The allied *C. riparia* does the same in Egypt (P. Z. S. 1863, p. 288), a most remarkable fact, as the latter species breeds also in its summer haunts, and the former likewise, as in Formosa (*vide supra*, p. 134)*. Dr. Jerdon merely discriminates the "Crag-Martins" from the "Sand-Martins"; but I think them better worthy of separation than several named divisions among the *Hirundinidæ*, and adopt therefore for the former subgroup the name *Ptionoprogne* of Reichenbach. The two species, *P. rupestris* and *P. concolor*, differ in size only, though in this considerably. Mr. Gould (Handb. B. Austral. i. p. 114) adopts Dr. Cabanis's genus *Cheramœca* for another burrowing Swallow, which he formerly styled *Atticora leucosternon.*

92. Chelidon urbica.

Stated by Captain Irby to be common in the cold season in Oudh (Ibis, 1861, p. 233). Col. Tickell writes—"There are great numbers here" (at Moulmein) "in the season; and I have also seen large flocks of them in India; but they appear

* Of the permanently resident *Cypselus affinis*, also, Mr. Burgess remarks, "This Swift builds [? produces] twice in the year; I obtained a nest and eggs in September, and found a nest with young birds in April" (P. Z. S. 1855, p. 28).

from time to time, not constantly, as does *H. rustica*" (J. A. S. B. xxiv. p. 277.)

95. Acanthylis sylvatica.

The *A. leucopygialis*, nobis (J. A. S. B. xviii. p. 809), from Pinang (referred to), is, in all probability, identical with *A. coracina*, Müller, from Borneo.

97. Acanthylis ciris; *Hirundo ciris*, Pallas; *H. caudacuta*, Lath. Other synonyms are given in Gould's 'Handbook of the Birds of Australia,' i. p. 103.

Referring to Pallas's description, I see no reason to hesitate about assigning this bird as above. Examples from the Himálaya, China, and Australia are specifically identical; but Mr. Layard's supposed *A. caudacuta* from Ceylon is *A. gigantea*.

99. Cypselus apus.

An Indian specimen received from Dr. Jerdon (I presume from the N.W.); and the India Museum has it from Afghánistân.

Cypselus acuticauda, nobis (Jerdon Supplement, p. 870, and 'Ibis,' 1865, p. 45), must be added. A single specimen, obtained in Nipâl, is now in the Derby Museum of Liverpool. It is probable that both this and *C. leuconyx* are often mistaken on the wing for *C. apus*.

100. Cypselus affinis, J. E. Gray; *C. abyssinicus*, Streubel; *C. galilæensis*, Antinori (*cf.* Ibis, 1865, p. 234).

This non-migratory Swift is probably diffused over all suitable parts of Arabia, which would connect its Indian range with its distribution in Africa and in Palestine. I have not seen it from the eastern side of the Bay of Bengal; but in the Malayan peninsula (at Pinang) it is replaced by *C. subfurcatus*, nobis (J.A.S.B. xviii. p. 807), which also occurs in South China, and therefore doubtless in the intervening countries of Siam, Cambogia, Cochin China and Anam. According to Mr. Swinhoe *C. subfurcatus* is "resident on the Chinese coast, not much higher than Amoy" (P. Z. S. 1863, p. 264). I believe that it is also resident at Pinang; but Mr. Layard asserts that *C. affinis* is migratory in Ceylon, a fact which has nowhere been observed on the mainland of India; and Mr. Tristram records that it is

"a permanent resident in the Jordan valley." This non-migratory character is in favour of Dr. Sclater's opinion that these two Swifts form a peculiar section of the genus (P. Z. S. 1865, p. 602). I have known *C. affinis* to construct its continuous mass of nests in a low porch, so near the ground as to be reached by the hand; and I have also seen a huge cluster of the nests attached to the roofing of one of the lofty minarets of the mosque of Aurungzebe at Benáres, and have noticed the species resorting to other elevated sites; but it very commonly breeds in the porticos of houses, and sometimes within reach of the hand in a crowded bazaar.

101. Cypselus leuconyx, Blyth, J. A. S. B. xi. p. 886, xiv. p. 212 (not p. 218).

This is a considerably less robust species than *C. pacificus* (Latham), to which Mr. Gould now adds as synonyms *C. vittatus*, J. & S., *C. australis*, Gould, and "*Hirundo apus* var *β*," of Pallas, who expressly states that it has black claws; and therefore his description will not apply to *C. leuconyx*. *C. pacificus* inhabits the Tenasserim provinces and Pinang. I observed it at Moulmein.

102. Cpselus batassiensis.

This and its African representative, *C. ambrosiacus**, form another distinct section of non-migratory Swifts. The range of the Indian bird is probably coextensive with that of the Borassus-palm, extending over the whole Indian region. It attaches its remarkable nest to the under surface of a plait of the large fan-like frond, and may also resort to other high "fan-palms," as the *Coryphæ*. Not unfrequently I have observed two or three pairs of this Swift resorting to a particular palm that was also tenanted by a colony of *Ploceus baya*†. The natives of Bengal

* Dr. Sclater (P. Z. S. 1865, p. 601) identifies this with *C. parvus*; but see Dr. Pucheran's remarks (R. Z. 1853, p. 443).

† The *Borassus flabelliformis* is the most generally diffused palm of the Indian region, and it is the "palm," *par excellence*, of Anglo-Indians. Sometimes, though very rarely, its stem divides. At the Artillery Station of Dumdum, near Calcutta, there is one of which the stem divides, and each branch divides again dichotomously, showing four contiguous "heads" or crowns of fronds. Among the drawings from the

commonly apply the name *Chámchiki* to this Swift, by which they also designate the smaller Bats.

103. Collocalia fuciphaga (Thunb.); Wallace, P. Z. S. 1863, p. 384 (*cf.* Ibis, 1863, p. 323).

Capt. Beavan informs me of the interesting fact that already in the Andaman Islands this Swiftlet "takes to breeding inside houses, preferring inner rooms, both on Ross and Chatham islands*. A large *Acanthylis* was observed on Ross." This was doubtless *A. gigantea*.

I may here remark that the genus *Podargus* (vol. i. p. 191) reverses the outer toe in perching, as is likewise observable in the Owls. The supposed genus *Otothrix* is merely the adult phase of certain *Batrachostomi*. Dr. Cabanis (Mus. Hein. ii. pp. 121, 123) refers the *Podarginæ* (and also the *Passerine* family *Eurylæminæ*!) to his family *Coraciidæ*! (*vide* Mr. Wallace's remarks on *Eurylæmus*, Ibis, 1864, p. 41).

109. Caprimulgus albonotatus.

Colonel Tytler endeavours to express the voice of this species in writing (Ann. Mag. N. H. 1854, xiv. p. 174).

110. Caprimulgus macrurus.

Mr. Gould states that this bird is found in "Southern India" (Handb. B. Austral. i. p. 100),—meaning the Indo-Chinese and

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collection of the Danish Missionary John, now in the Library of the Asiatic Society, Calcutta, there is one of a very remarkable palm of this species in Southern India, wherein the stem divides irregularly into numerous heads, some ten or twelve in number, much in the manner of a *Pandanus*. The African genus *Hyphæne* (comprising the Doum-palm of Upper Egypt and Nubia) is a well-known branching form; and a common ramifying palm in India and Burma is the *Phœnix paludosa* (figured in Griffith's 'Palms'), inhabiting the Bengal Sundarbans, and especially places covered by high tides, being only found near brackish water: a few others are known. In the garden of a native gentleman, near Calcutta, I saw a cocoa-nut palm which threw off many shoots or pseudo-branches from the stem (like those of the South African date-palms, but never the *Phœnix sylvestris* of India). I called the late Dr. Falconer's attention to the cocoa-nut palm here mentioned, and he had a figure taken of it.

* A more decided case of a like change of habit in the West-Indian *Tachornis phœnicobia* is noticed by Mr. March (*cf.* Ibis, 1864, p. 405).

Indo-Malayan provinces; for in Southern India and Ceylon *C. macrurus* is replaced by *C. nigripennis*.

112. Caprimulgus asiaticus.

Noticed by Mr. Swinhoe at sea not far from Aden! (Ibis, 1864, p. 414. Quære, *C. mahrattensis*?). Of *C. europæus* Mr. Gould writes—"I believe it frequents the whole of Africa, and ranges as far east as Afghánistân" (Birds of Great Britain, pt. iii.).

114. Caprimulgus monticolus.

I observed (and shot) this species in Upper Martaban, flying in company with the grand *Lyncornis cerviniceps*, the latter being by far the more abundant. On their first appearance towards evening, those superb birds would seek their food high in the air, descending gradually within gunshot, and finally sweeping about close to the ground. This habit I noticed for many successive evenings. A wounded bird would set up its aigrettes in fine style*.

Respecting the use of the pectinated claw of these and certain other birds, I agree with Dr. Jerdon that both the hypotheses to which he refers (vol. i. p. 192) are alike untenable,—but not so the opinion that it is employed to detach beetle-claws, and the like, from the *gape*.

115. Harpactes fasciatus; Gould, B. As. pt. vi. pl.

116. Harpactes hodgsoni; Gould, B. As. pt. xvii. pl.

In the first edition of his monograph of *Trogonidæ*, Mr. Gould separated the Red-headed Trogon of the Indo-Chinese province (as also of Sumatra) from that of the South Eastern Himálaya, distinguishing the former as *H. erythrocephalus*. In the 'Birds of Asia' he still regards them as distinct:—"The *H. hodgsoni*," he remarks, "differs from *H. erythrocephalus* in being considerably larger in all its proportions, particularly in the size and length of the tail, while at the same time it possesses a smaller and more compressed bill. The colours also, in all

* Mr. Gould (Handb. B. Austral. i. p. 95) refers to the species of *Lyncornis* as if inhabiting only "the Indian islands." *L. cerviniceps* is, I believe, peculiar to the Indo-Chinese countries; and *L. temmincki* is common in the Malayan peninsula.

the specimens I have seen," he continues, "were less vivid, particularly the blood-red, which is much duller on the head and chest; in several specimens the scarlet had entirely given way to a dull grey colouring, which would appear to have been the consequence of the bird having just performed the task of incubation." (Does the male bird take his turn on the eggs?) "*H. hodgsoni* has the total length 13½ in.; wing 5½ in.; tail 8 in.: *H. erythrocephalus*, total length 11½ in.; wing 5 in.; and tail 6 in."

Dr. Jerdon states (vol. i. p. 200) that the *Trogonidæ* are "without cæca." My decided impression is that they possess them. In all the passerine *Insessores* which I have examined, the cæca are invariably present but minute. In all the non-passerine *Insessores* they are either absent or else considerably developed (precisely to the same extent as in the Owls). They are absent in the *Trochilidæ*, *Cypselidæ*, *Halcyonidæ*, *Bucerotidæ*, *Promeropidæ* (? *veræ*), *Picidæ* (inclusive of *Indicator*?), *Rhamphastidæ*, *Capitonidæ*, and *Musophagidæ* (including *Colius*?). They are present in *Leptosomus* (?), *Coracias**, *Eurystomus*, *Merops*, *Nyctiornis*, *Galbula*, *Momotus*, *Todus*, *Bucconidæ*, *Trogonidæ* (?), *Caprimulgidæ*, and all the various forms of *Cuculidæ*.

The peculiar disposition of the toes in *Trogonidæ* is duly mentioned by Dr. Jerdon, and was first made known by myself (P. Z. S. 1838, p. 20).

117. Merops viridis; Gould, B. As. pt. vii. pl.

"Observed in the Jordan Valley by Mr. Herschell" (Tristram, P. Z. S. 1864, p. 433). The African race of this bird (*M. lamarcki*, Cuv.; *M. viridis*, Rüppell; *M. viridissimus*, Swains.; *M. ægyptiacus*, Kittlitz, and Lichtenstein, according to Cabanis) hardly differs more than do the two slight Indian varieties named by Mr. Hodgson. It has "much more ferruginous on the wings, extending across both webs of the primaries and secondaries; and the throat is yellowish-green, tinged with ferruginous, having scarcely a trace of verditer except on its extreme lateral margin bordering the black eye-streak, and very little of it even there" (J. A. S. B. xxiv. p. 254). Those which

* To *Coraciidæ* must, I suspect, be referred the *Pseudochelidon eurystomina*, Hartlaub (Ibis, 1861, p. 322, misnamed *Psalidoprogne cypselina* in pl. xi.); but the tail-feathers would be an anomaly in the group.

I observed breeding in the vicinity of Moulmein were of the variety *M. ferrugeiceps*, Hodgson. About Calcutta *M. viridis* abounds during the cold season, and is generally known to Europeans as the "Green Flycatcher." A very few remain to breed in Lower Bengal.

118. Merops philippensis; Gould, B. As. pt. vii. pl.; *M. cyanopygius*, Lesson.

Noticed from China (Ibis, 1865, p. 30) and in Formosa by Mr. Swinhoe (*tom. cit.* p. 348).

119. Merops quinticolor; Gould, B. As. pt. vii. pl.

The mode of breeding in this bird has been described by Mr. Layard (Ann. Mag. N. H. 1853, xii. p. 174). It should be remarked that the common mode of figuring Bee-eaters and Rollers (as in Mr. Gould's 'Birds of Asia') gives altogether a false notion of the birds as seen alive. They sit much more erect, with the body-feathers compressed, those of the head and neck puffed out (the neck being undistinguishable), and the bill not in a line with the back, or nearly so—in fact much like the *Halcyonidæ* and *Bucerotidæ* (*cf.* Mr. Wallace's notice of *Coracias temmincki* in Ibis, 1864, p. 41). The living Motmot in the Zoological Gardens offers a suitable study to an artist who would correctly represent a Bee-eater or Roller in a sitting attitude.

120. Merops ægyptius, Forsk.; *M. chrysocercus*, Cabanis.

Capt. T. Hutton describes this species and *M. apiaster* as arriving at Kandahar in the beginning of April, and leaving it in the beginning of autumn (J. A. S. B. xvi. pt. ii. p. 777)*.

* In all Europe and Asia, the Asiatic islands, and Australia, there are seven species of true *Merops*. Two of them are western, *M. apiaster* and *M. ægyptius*, which just fall within the extreme north-west limit of the Indian region. *M. philippensis* inhabits the whole Indian region, with Southern China and Formosa, also Flores and Timor, being the eastern representative of the preceding. *M. bicolor*, Bodd. (*M. badius*, Gm.; *M. castaneus*, Latham; *M. sumatranus*, Raffles; *M. latreillii*, Bonap.; *M. hypoglaucus*, Reich.) is peculiar to the Malayan province of the Indian region, or just spreads into Siam (P. Z. S. 1859, p. 151). *M. quinticolor* inhabits the Indo-Chinese and Malayan provinces, with Southern India and Ceylon; it was obtained by the late M. Mouhot in Cambogia. *M. ornatus*, Lath. (*M. melanurus*, V. and H.) belongs to the Australian and Papuan pro-

122. Nyctiornis athertoni.

In the Southern Tenasserim provinces (Tavai and Mergui) this species occurs together with *N. amictus*. But Dr. Cabanis divides the latter into *N. amictus* from Sumatra and Borneo and *N. malaccensis* from Malacca. If this distinction be admitted, the South Tenasserim species is *N. malaccensis*; and all that I have seen from the Malayan peninsula are referable to *A. amictus*!

123. Coracias indicus.

Dr. Cabanis (Mus. Hein. ii. p. 118) gives *C. indicus*, L., from Ceylon, as distinct from *C. bengalensis*, L., from Nipâl, and also *C. affinis* from Tenasserim. Wherein the former differ I am not aware. Can one of them be the bird in the plumage of immaturity, with narrow terminal tail-band? or can the Nipalese specimen be a hybrid as Dr. Jerdon suggests? In the Malayan province there is no *Coracias*, but the genus reappears in the fine *C. temmincki* of Celebes (*not* New Guinea). Since the electric telegraph has been established in India, *C. indicus* has especially taken to the wires as a post of observation, as also has *Dicrurus macrocercus*.

125. Coracias garrula.

In Afghánistân, remarks Capt. T. Hutton, "this bird is very common during the summer months, but departs by the end of autumn: it arrives at Kandahar in the middle of April" (J. A. S. B. xvi. pt. ii. p. 777).

126. Eurystomus orientalis (L.).

The Chinese species would appear to be *E. pacificus* (*E. australis*, Swains.) (Ibis, 1865, p. 30), which was obtained by Mr. Wallace in "Borneo and the islands eastward." Mr. G. R.

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vinces of the Australian region, inhabiting Australia to lat. 14° S.; and it was observed by Mr. Wallace in Sumbawa, Lombok, Flores, Celebes, the Sula Islands, Ternate, Timor, Mysol, and New Guinea: the specimens from the Sula Islands, he remarks, "agree with those of Ternate in having more brown on the head, and less blue on the breast, than the Timor and Lombok specimens" (P. Z. S. 1862, p. 338). *M. viridis*, though common in Burma and Siam, does not appear to extend to the Malayan province, and is represented by a barely distinguishable race in Africa, the Sula specimens of *M. ornatus* exhibiting an analogous tendency to local variation in that species.

Gray, however, gives *E. orientalis* from Batchian and Ternate, which is a mistake, also *E. azureus*, G. R. Gray, from Batchian, and indicates *E. pileatus*, Reinw., from the Moluccas (P. Z. S. 1860, pp. 345–6). But is not the latter a synonym of *Coracias temmincki* of Celebes? In a collection received from the Batavian Society by the Asiatic Society, Calcutta, a specimen of *C. temmincki* was labelled *C. pileata*. In the British Museum catalogue of mammalia and birds inhabiting New Guinea, Mr. G. R. Gray further gives *E. gularis*, Vieillot, from that vast island. Are there more than three (very slightly differing) Oriental races—*orientalis*, *azureus*, and *pacificus*? Radde's figure (Reisen &c. ii. taf. ii. fig. 2) would seem to show that *E. pacificus* is the East Siberian form, to which also belong Mr. Swinhoe's Chinese specimens now with Mr. Tristram. That the Indian species should eat plantains, always appeared to me very remarkable; but one that I long kept in an aviary would devour them eagerly, and would fly to me for one when I had it in my hand*. Besides *Eurystomus pacificus*, certain other species migrate on both sides of the equator, as *Acanthylis ciris*, *Cypselus pacificus*, *Cuculus striatus*, and *Eudynamis mindanensis* (?). According to Messrs. Mottley and Dillwyn, *Eurystomus orientalis* "is a most active and lively bird, haunting very tall jungle in parties of five or six together; these fly

* The "plantain" of Anglo-Indians is the "banana" of the West; and the "plantain" of the West is the "horse-plantain" of Anglo-Indians (on the principle of horse-radish, horse-chestnut, horse-leech, &c.). The cultivated varieties of banana and plantain are endless; and in Burma I found them to be as numerous as in Bengal, but all of them different! At Moulmein I observed a curious variety of the plant, bearing three successive bunches, or rather loads, of fruit on the same stem of the usual size, and each divided from the next by an interval and a coronet of small leaves. The oldest bunch was nearly ripe, the next almost full-grown; and the third had the fruit just set, with the usual great heart-shaped flower-bud beyond it! Plantains are a great resource in hot countries for feeding frugivorous animals; and in Lower Bengal there is also a never-failing abundant supply of prawns and shrimps (four species of *Penæus*, and a dozen or more of *Palæmon* of all sizes, from the great *Palæmon carcinus* downwards), upon the smaller of which not only the smaller wading-birds generally, but sundry land-birds also, prey readily. Again, the effluvium from the shrimps attracts numerous flies, upon which for many months a fine white *Tchitrea paradisi* and other fly-catching species maintained themselves abundantly in my aviary.

rapidly, in large circles, with quick strokes of the wing, like the flight of Woodpeckers, and frequently swooping down upon one another with loud chattering. When perched, their note is a single full deep-toned whistle, or something between that and the sound "you," when uttered with forcible expulsion of the breath." Mr. Gould gives some further particulars of the habits of this genus (Handb. B. Austral. i. p. 120).

127. Halcyon leucocephalus.

I have already noticed (Ibis, 1865, p. 30) the existence of five geographical races of this bird. Dr. Cabanis (Mus. Hein. ii. p. 156) adopts the name *H. gurial*, Pearson, for the Indian race, and *H. javana* (Bodd.) for the Malacca race; though the Javan bird differs from that of the Malayan Peninsula, having a pale brownish cap not well defined, whereas the Malaccan bird has a well-defined dark brown cap, which is slightly glossed with bright colouring. Professor Schlegel, however, states that a Nipalese example is absolutely similar to specimens from Java! One from Timor resembled the ordinary Malayan Peninsula race. Captain Beavan writes to me that that the Andaman race "has the head much whiter than in Bengal," in which case it should be identical with the Burmese race. I have observed no variation in specimens from India and Ceylon.

128. Halcyon amauropterus.

Prof. Schlegel places this bird as a variety of the last! No two species can be more dissimilar in *voice*, as long ago remarked by myself, and duly noticed by Dr. Jerdon.

129. Halcyon fuscus (Bodd.); Gould, B. As. pt. xiii. pl.

With Strickland (Ann. Mag. N. H. ix. p. 442) and Dr. Jerdon (in his "List of Errata") I doubt the propriety of separating this bird from the *H. smyrnensis* (L.) of Asia Minor, Mesopotamia, Persia, and Arabia as I would separate the two preceding species; but at most would regard it as a slight geographical variety analogous to those of *H. leucocephalus*. Mr. Gould remarks—"The only differences which I am able to detect between it and the Smyrna bird are a slight variation in size and in brilliancy of colouring, the Indian being somewhat smaller and more intense and beautiful in colour." Such is the Malayan Peninsula race of *H. leuco-*

cephalus as compared to the Indian race. Dr. Bree, in his 'Birds of Europe,' represents an Indian specimen! Prof. Schlegel adopts the name *Alcedo fusca*, Bodd., with *A. smyrnensis*, L., as a synonym; but he also adds *A. gularis*, Kuhl (Gould, B. As. pt. xiii. pl.), from the Philippines, which should at least be noted as a very strongly marked variety. Mr. Swinhoe identifies the Chinese race with the Indian. An individual which I long kept in an aviary would feed readily on cockroaches thrown to it, seizing them from the ground without alighting, and carrying them to its perch.

130. Halcyon atricapillus (Gmel.); Gould, B. As. pt. x. pl.

In Mr. Gould's figure of this species the bill should be much deeper and brighter coral-red; and the head in the living bird looks considerably larger, while the body-feathers are more compressed.

131. Halcyon coromandelicus.

Malayan province, Philippines, Formosa, Japan; but the Japanese race is said to be rather smaller and more deeply coloured.

132. Todirhamphus chloris (Bodd.).

T. superciliosus, Gray, is said by Mr. Cassin (Ornith. U. S. Exploring Expedition, p. 203) to be a synonym of this species.

134. Alcedo bengalensis, Gmel. (Faun. Jap., Aves, pl. xxxviii.; Gould, B. As. pt. xiv. pl.); *A. minor*, Schlegel.

Extends to China, Amuria, Japan, the Loochoo Islands, and Formosa; in the Tenasserim provinces and Malayan Peninsula it occurs together with *A. meningting*, Horsf. (*A. asiatica*, Swains.), but the latter keeps to the immediate vicinity of the sea (J. A. S. B. xxxiii. p. 195). M. J. de la Berge figures and describes a fine Kingfisher akin to *A. meningting*, from Borneo, by the name *A. verreauxi* (Rev. Zool. 1851, p. 305, pl. ix). In the Moluccas *A. bengalensis* is represented by *A. moluccensis*, nobis (*A. sondaica*, Cabanis). *A. ispida* of Afghánistân (J. A. S. B. xvi. pt. ii. p. 777) needs confirmation.

135. Alcedo grandis, nobis, J. A. S. B. xiv. p. 190.

The Malayan *A. euryzona*, Temm. (juv.=*A. nigricans*), is

quite distinct. The specimen is still unique, and the species should be looked for in Bután (*cf.* Ibis, 1865, pp. 30, 31).

136. Ceryle rudis.

Common in China, and doubtless the "white-spotted species" noticed in Siam by the late Sir R. H. Schomburgk (Ibis, 1864, p. 247)*.

139. Serilophus rubropygius (Hodgson); Gould, B. As. pt. xxiii. pl.

140. Homraius bicornis.

Referred to *Dichoceros*, Gloger (1842), by Dr. Cabanis (Mus. Hein. ii. p. 173).

The Nipalese name, "Homrai," for this species is derived from its note, which I have repeatedly heard uttered in the Zoological Gardens.

141. Hydrocissa coronata (Bodd.); Pl. Enl. 873; "*Buceros violaceus*, Shaw," nobis, J. A. S. B. xxi. p. 352.

143. Hydrocissa affinis is like *H. albirostris*, but of the considerably larger size of *H. coronata*. The Malayan *H. convexa* has the size and broader casque of *H. albirostris*, combined with the wholly white three outer pairs of rectrices of *H. coronata*. As compared with other races, differing in size only, the disparity between *H. affinis* and *H. albirostris* is less marked than between *Hirundo rupestris* and *H. concolor*, *Phyllornis javensis* and *P. cyanopogon*, Himalayan *Turtur rupicolus* and *T. auritus*, but equivalent to that in many other instances wherein the distinction is currently recognized, and greater than in some, as *Turdus hodgsoni* and *T. viscivorus*, *T. olivaceus* and *T. olivacinus*, Bonap.†

* [Mr. Swinhoe makes the same suggestion, *supra*, p. 292.—Ed.]

† The following additional instances of races differing only in size may here be cited:—*Milvus govinda* and *M. affinis*; *Ephialtes* (various); *Alcedo ispida* and *A. bengalensis*; *Megalæma philippensis* and *M. indica*; *Chrysocolaptes sultaneus* and *C. delesserti*; *Hemicercus canente* and *H. cordatus*; *Hierococcyx sparverioides* and *H. nisoides*; *Cuculus affinis* and *C. micropterus*; *C. canorus*, *C. himalayanus*, and *C. poliocephalus*; *C. tenuirostris* and *C. flavus*; *C. dicruroides* and *C. lugubris*; *Caprimulgus indicus* and *C. kelaarti*; *C. monticolus* and *C. affinis*; *Fregilus himalayanus* and *F. graculus*; *Pyrrhula coccinea* and *P. vulgaris*; *Crithagra butyracea* and *C. chrysopogon*; *Estrelda amandava* and *E. punicea*; *Pratincola bicolor* and

144. Meniceros bicornis (Scop.); *Penelopides ginginianus* (Lath.); Cabanis (Mus. Hein.).

The last author refers this bird to the same minimum division as the Philippine *P. panini* (Bodd.) (*Buceros panayensis*, Scopoli), to which it surely is not very nearly akin, *Meniceros* of Gloger being assigned to the *B. rhinoceros* type, or typical *Buceros*, according to Dr. Cabanis. The adoption of Scopoli's specific name for this species involves some inconvenience, the same name being also applied to the great Homrai.

145. Toccus gingalensis.

This should be *T. griseus* (*Buceros griseus*, Latham; *B. cineraceus*, Temm.), as distinguished from the true *T. gingalensis* of Ceylon, which, together with the present species, inhabits that island. The two were discriminated by Mr. E. L. Layard (Ann. Mag. N. H. 1854, xiii. p. 260), though he describes both under the name *gingalensis*. Mr. Layard also indicates a second *Hydrocissa*, akin to *H. albirostris* and *H. convexa*, as inhabiting the mountains of Ceylon. I have only seen *T. cineraceus* from Malabar and Ceylon; but Prof. Schlegel gives it from Nipâl (Franks).

146. Aceros nipalensis, Hodgs.; Gray and Mitchell, Ill. Gen. Birds, pl. 99.

The range of this species extends to the Tenasserim provinces (Ibis, 1864, p. 182). Dr. Jerdon refers to three species of *Rhyticeros* as inhabiting Burma and Malacca, by the names *R. ruficollis*, *subruficollis*, and *plicatus*. I know of two only, viz., *R. plicatus* (Lath., Schl.) = *Rhytidoceros obscurus* (Gm.), Cabanis = *Buceros pasuran*, Raffles = *B. ruficollis*, nobis (*olim*); and *R. subruficollis*, nobis (adopted by Cabanis), which hardly differs

P. caprata; *Sylvia affinis* and *S. curruca*; *Regulus himalayensis* and *R. cristatus*; *Dicrurus macrocercus* and *D. minor*; *Graculus macii* and *G. javensis*; *Arachnothera longirostra* and *A. pusilla*; *Henicurus speciosus* and *H. frontalis*; *Turnix andalusica* and *T. dussumieri* (*vera*); *Nettapus albipennis* and *N. coromandelianus*; *Larus glaucus* and *L. islandicus*, &c. &c. The *Loxiæ* are robust in proportion to their size, as *L. pityopsittacus*, *L. curvirostra*, and *L. himalayana*; so, indeed, are *Larus glaucus* and *L. islandicus*; and if a species were to occur just intermediate to *Totanus glottis* and *T. stagnatilis*, there would be a corresponding series to that of *Loxia* in a genus of Waders.

from the Papuan *R. ruficollis* (Vieillot): the *sole distinction of plumage*, and that in the male sex only, being that in the Tenasserim race the dark colour of the cap contrasts strongly with the yellowish-white of the cheeks (as also in *R. plicatus*), whilst in the Papuan race these colours are more or less blended. The cheeks and gular skin are, however, *clear pale yellow* in the male of the Tenasserim bird; whereas Mr. Wallace informs me that the males of the Papuan race have the bare skin of the throat bluish-white, while in the females it is milk-white, with the margins merely tinged with bluish. Irides salmon-coloured in the Papuan race, crimson in the Tenasserim race. This latter, and the mode of growth of its casque, is noticed in the 'Catalogue of the Birds of the India Museum,' ii. 600 (also P. Z. S. 1839, p. 452). The very slight differences between the two would never be recognized as of specific import by Prof. Schlegel, while the identification of them as one species involves a remarkable anomaly in geographical distribution, since no corresponding form has been obtained from the intervening countries. I have only seen *R. subruficollis* from the Tenasserim provinces, whereas *R. plicatus* ranges northward to the hills bordering on Sylhet, and southward into the Malayan Peninsula, Sumatra, and Java. In the India Museum is a drawing of a fresh specimen of *R. subruficollis*, taken under the superintendence of the late Dr. Wallich*.

Prof. Schlegel gives certain species of Hornbill as inhabitants of "Hindustan," which have never occurred to British observers in that country†.

* The Burmese Hornbills are as follows:—

1. *Dichoceros bicornis.* Indo-Chinese countries, Malayan Peninsula, and Sumatra. In Burma much more numerous, and far less shy than in India.

2. *Hydrocissa albirostris.* Bengal, Nipâl, Asâm, Indo-Chinese countries (Sumatra, Java, and Borneo, *teste* Schlegel. Qu. *H. convexa*?).

3. *Anorrhinus tickelli*, nobis (Ibis, 1864, p. 173; J. A. S. B. xxiv. p. 266, xxviii. p. 412). Tenasserim provinces.

4. *Rhyticeros plicatus.*

5. *R. subruficollis.*

6. *Aceros nipalensis.* S. E. Himálaya, Munipur, Tenasserim provinces.

† In India it should be borne in mind that the name *Hindustân* refers

Of *B. rhinoceros* he remarks—"Individuals from Hindustân and Ceylon resemble those from Java, but it appears that their caudal band is considerably narrower" (Mus. P.-B. *Buceros*, p. 4). *B. rhinoceros lunatus* is also given from Hindustân and Ceylon.

B. coronatus (Bodd. *nec* Temm.) is given from Hindustân and Sumatra. (Surely the Sumatran individuals—if veritably Sumatran—should be referred to *B. convexus*, which has the casque smaller and much broader than it is in the common species of South India and Ceylon, nearly resembling, in coloration as in form, that of *B. albirostris*.)

B. malayanus. "Observed in Hindustân."

Most assuredly no assertion regarding the fauna of "Hindustân" can be made with more implicit confidence, than that the list of Hornbills admitted into Dr. Jerdon's work is a complete one, unless, indeed, the *Toccus gingalensis* (*verus*) should yet prove to inhabit Southern Malabar. Such very conspicuous birds could not escape the notice of British ornithologists in India, and moreover they would be familiarly known to the natives—*B. rhinoceros* beyond all question. The heads of Hornbills are commonly enough preserved and kept when ordinary birds pass unnoticed. Even a single additional species would need very positive evidence for its acceptation; but *B. rhinoceros* and *B. lunatus* (which are not elsewhere found together), and *B. malayanus* in addition! it can only be a mistake. Heads or even skins might have been obtained from natives, but they had been originally imported.

In associating the Parrots with "other *Scansores*" Dr. Jerdon writes—"I agree with Gray, Horsfield, Wallace, and indeed most naturalists, that their true place is among the Scansorial division of the *Insessores*." Mr. Wallace, however, has since expressed an opposite opinion (P. Z. S. 1864, p. 278). Dr. Jerdon further adduces as one reason for thus classing the *Psittaci* "their very great development in Australia, to the total

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exclusively to the Upper provinces of the Bengal Presidency, as distinguished alike from Bengal and from the Dukhun or tableland of the peninsula, which is the southern home of the Hindus proper.

exclusion of Woodpeckers." Now not only are Woodpeckers excluded from Australia, but all of the non-*Psittacine* zygodactyle birds, excepting parasitic *Cuculinæ*, and one or more allied species of *Centropus*—in fact, all of those which have a doubly emarginated sternum, no cæca, and agree in laying pure white eggs in holes of trees: such are the *Megalæmidæ* (*Capitonidæ*) of the Indian region, Africa, and South America, the nearly allied *Rhamphastidæ* of South America, and the *Musophagidæ* of Africa—those birds which, among the zygodactyle *Insessores*, might be thought to approximate to the Parrots more nearly than any others. Indeed the exclusion of that group extends to the whole Australian region, with the exception of three Woodpeckers in Celebes and one in Lombok, its extreme western boundary, so that the argument tells rather in the opposite direction. I fail to perceive any special approximation on the part of the Parrots to any true Insessorial bird whatever, and consider that, as an order of birds, they stand quite as distinctly apart as the birds of prey.

147. Palæornis alexandri is found also in the Andaman Islands.

149. Palæornis rosa.

Occurs also near Canton (Swinhoe, P. Z. S. 1863, p. 159). Mr. Louis Fraser possesses a specimen with a green tail; habitat unknown. Is not this the Chinese race?

150 and 151. Palæornis schisticeps and P. columboides; Gould, B. As. pt. x. pls.

152. Palæornis javanicus.

Professor Schlegel adopts the separation of the Javan race from that of North-eastern India and Burma, identifying with the former *P. derbianus*, Fraser (P. Z. S. 1850, p. 245, pl. xxv.; Gould, B. As. pt. x.),—an opinion from which I must dissent, having examined the type-specimen in the Derby Museum of Liverpool. Neither can I agree in the separation of the common Burmese bird from that of Java and Borneo. From an early age (before leaving the nest) the sexes differ in the male having the upper mandible coral-red, while that of the female is black (besides being smaller, as also in *P. alexandri*);

and in many females it perhaps remains permanently black, while in others it changes sooner or later to red. This I have witnessed in a caged specimen, besides having repeatedly obtained them with the bill in every stage of progress in changing from black to red. The name *P. ponticerianus* is founded on error, as the species does not inhabit the Indian Peninsula. I am tolerably well acquainted with it, having spent a month in forests where, together with *P. rosa*, it is most numerous, and where a few of them occasionally contributed to our fare in the shape of a stew.

157. Picus macii.

This, with others, appertains to the division *Dendrotypes*, Cabanis, the rest being *P. analis*, Horsf. (*P. pectoralis*, nobis), from Java, *P. atratus*, nobis (J. A. S. B. xviii. 802, xxviii. 412), from the higher Tenasserim mountains, *P. andamanensis*, nobis (J. A. S. B. xxviii. 412), from the Andaman Islands and also Sumatra, *D. nesiotes*, Cab. & Heine, from Formosa, and (in my opinion) *P. brunneifrons*, Vigors, from the Himálaya. There must surely be a mistake about *P. macii* occurring in Ceylon!

158. Picus scindianus.

This, with *P. medius* and *P. syriacus*, if not also *P. khan* (Ibis, 1864, p. 400), forms the division *Dendrocoptes*, Cabanis.

160. Picus mahrattensis.

This, with the slightly differing *P. blanfordi*, nobis (J. A. S. B. xxxii. 75), from Upper Pegu, constitutes the division *Liopopo*, Cabanis.

164. Yungipicus hardwickii.

Mr. Wallace obtained the true *Y. moluccensis* in Lombok; and Dr. Jerdon's supposed *moluccensis* from the Indo-Malayan province will now stand as *Y. sondaicus*, Wallace.

165. Hemicercus cordatus.

Constantly smaller than *H. canente* of the Indo-Chinese countries. Dr. Jerdon's "pretty little *H. concretus*" divides into *H. concretus* of Java, *H. sordidus* (*H. hartlaubi*, Malherbe), of the Malayan Peninsula, and *H. coccometopus*, Reich., of Borneo.

166. Chrysocolaptes sultaneus.

Two races have been confounded under this name. The first is *Picus sultaneus* (as originally described by Mr. Hodgson), of larger size, rare, and (so far as known) peculiar to Nipâl; Mr. Gould has a specimen (type of *P. strenuus*, Gould), the only one which I have seen; the closed wing (as figured by Malherbe) measures 7·5 in. The other species, *P. delesserti* of Malherbe, is more or less diffused throughout India, Asám, the Indo-Chinese countries, and Malayan Peninsula. I have compared specimens from Asám, Siam, and Southern India which were identical in race, the length of wing not exceeding 6·25 in. in males, and 6 in. in females. This race is the *Picus strenuus* from Asám (P. Z. S. 1839, p. 165), and I have seen it assigned to *P. strictus* from the Malayan Peninsula; but the latter (from Java) is again smaller, with a yellow cap in the female sex as in the following species.

167. Chrysocolaptes festivus (Bodd.); *Picus goensis*, Gm.; *P. humeralis*, Wagler.

Some females have the yellow crest tipped with crimson. The Ceylon species, *C. stricklandi* (Layard) (*Indopicus carlotta*, Malherbe, *vide* Ibis, 1863, p. 267), is distinguished from the very similar *C. hæmatribon* of the Philippines by its whitish bill and blackish auricular plumes. *Chrysocolaptes stricklandi* and *Brachypternus ceylonus* (Forster) (*Picus erythronotus*, Vieillot), bear a remarkable resemblance in colouring, though not in structure; but all the species of the former division have the rump crimson, and those of the latter black, *B. ceylonus* not constituting an exception. Even Dr. Jerdon figured the *Chrysocolaptes* for the *Brachypternus* in his 'Illustrations of Indian Ornithology'!

168. Muelleripicus pulverulentus.

Type of *Lichtensteinipicus* (!), Bonap. (*Alphonerpes*, Cabanis), and the species referred to *P. gutturalis*, Valenciennes. The young bird, perhaps the male only, is remarkable for having the frontal region crimson-tipped. In the European *Picus major*, and probably certain allied species, the young of both sexes have the crown tipped with crimson; while the adults have a black crown, adorned in the male only by a crimson occipital crescent.

173. Chrysophlegma flavinucha, Gould; Gray and Mitchell, Ill. Gen. Birds, pl. 109.

C. malaccensis of the Malayan Peninsula, Sumatra, and Borneo, differs from *C. miniata* of Java, the latter having "the whole crest and the greater part of the back red" (P. Z. S. 1863, p. 211).

182. Brachypternus dilutus.

The three Indian species of this genus are sufficiently well distinguished. Mr. Gould has good specimens of all of them, as well as of the several races of *Chrysonotus*. *Brachypternus* is quite peculiar to India with Ceylon.

184. Chrysonotus intermedius.

Javan specimens appear to be quite identical with this race, so common in the Indo-Chinese countries. It also extends to Pinang, but at Malacca is replaced by the small *C. tridactylus*.

188. Jynx torquilla.

Mr. Gould remarks (in his 'Birds of Great Britain,' pt. i.)—"While writing this account of the Wryneck, I have before me specimens from Japan, China, India, Asia Minor, and Great Britain, in all of which slight differences are observable; the Japanese and Chinese birds are smaller, redder, and more strongly marked than are those from India, which, again, are more lightly coloured than those of Europe. The bird from Rome differs from all the others in having the whole of the under surface crossed with broad bars, instead of a few arrow-shaped marks as in the English specimens. I cannot, however, consider these as anything more than mere local varieties of one and the same species." *Incipient species* perhaps; though I doubt that, if an adequate series of British and Indian specimens were compared, even the slight difference of shade indicated by Mr. Gould would be found to prevail, or at least to be of constant occurrence, besides that it is a species of migratory habits.

189. Jynx indica.

This species, from Afghánistân and Tibet, according to Dr. Jerdon, "remains to be ascertained as an inhabitant of India," or even of the vast Indian region. But it cannot winter in Middle Asia. Certain Woodpeckers (as *Melanerpes*) feed more

or less on fruit, and others (various pied species) on oleaginous seeds; but *Jynx* I believe to be purely insectivorous, and mainly an ant-devourer. I am rather surprised that this species did not fall under the observation of Herr Radde in Eastern Siberia.

190. Indicator xanthonotus.

This rare bird is beautifully represented in one of Mr. Hodgson's drawings in the British Museum, one of the figures clinging (Woodpecker-like) to the bark of a tree.

Megalæmidæ.—The birds of this family hop from twig to twig, like the ordinary *Passeres*, and should not be habitually represented clinging to the bole of a tree as Mr. Gould figures *Megalæma nuchalis* (B. As. pt. xvi.)—a remnant of the old error of subordinating them to the *Picidæ*. The *Megalæmidæ* (or *Capitonidæ*) have a much nearer affinity to the *Ramphastidæ* than they have to the *Picidæ*. Apart from the anatomical conformity, it may be remarked that if the larger Toucans were unknown, the species of *Aulacorhamphus* and such a bird as *Selenidera langsdorffi* (Gould, Mon. *Rhamphastidæ*, pl. 33) would surely have been unhesitatingly assigned to the group of Barbets, to say nought of such forms as the Malayan *Calorhamphus* and the South American *Tetragonops* (Ibis, 1861, pl. vi., 1864, pl. x.); or compare with the forms brought together under *Cuculidæ* (as *Scythrops, Rhinortha, Phœnicophæus, Centropus, Crotophaga, Saurothera, Cultrides, Coua*, &c.), or those collated under *Caprimulgidæ* (as *Ægotheles, Podargus, Steatornis, Nyctibius*, and *Caprimulgus**)! Skeletons of Toucan and Barbet are figured in Sir William Jardine's 'Contributions to Ornithology' (pls. 53 and 54). I remember once winging a Wryneck, and placing it on the perpendicular trunk of a tree, which it immediately ascended so rapidly, with vigorous springs, and pressing its soft tail against the bark, that I nearly lost it; and I have since

* The anatomy of the genus *Batrachostomus* is very different from that of *Caprimulgus*. The stomach is a highly muscular gizzard, as is that of *Nyctibius*, and there is a small gall-bladder. The sternum is small, subquadrate, with but a slight keel, and *four* deep emarginations behind; the coracoids long and slender, and furcula like that of *Caprimulgus*, but more slender.

shot a Wryneck, in India, in the act of ascending the bole of a tree Woodpecker-fashion. I have tried the same experiment with Barbets, both with a winged old bird and young birds about ready to fly; and they have just as much notion of climbing as a Sparrow has, neither more nor less. It is true that they breed in the holes of trees, and so also do the Toucans; and I have seen one fly direct to its nest-hole, as a Titmouse would do, but never clinging to the bark. Of *Xantholæma indica*, Mr. Layard remarks—"Like the other species, it breeds in holes, and I have seen it in the act of excavating them in decaying portions of living trees" (Ann. Mag. N. H. 1854, xiii. p. 448). Dr. Jerdon remarks—"I never saw any of these Barbets climbing, like a Woodpecker, nor heard them tapping, that I am aware of." They are common birds, sometimes not at all shy, and are at any time under the observation of a naturalist in India as familiarly as a Chaffinch is here; and had they climbing-propensities, such could not escape the notice of habitual observers; moreover they feed on fruit and berries, and not upon insects and wood-boring larvæ, and have therefore no business to traverse the boles and larger branches of trees like a Woodpecker or Nuthatch. They are anything but "omnivorous" as Mr. Gould intimates in his 'Handbook to the Birds of Australia' (i. p. 2). I have kept them for months in captivity, and have invariably found them to refuse insect-food, although, in a captive state, Mr. Layard found one to exhibit a carnivorous and predatory propensity, which I should say was most unusual; but this again is in accordance with their affinity to the Toucans.

A *luteino* variety of *Xantholæma indica* (the *Bucco luteus* of Lesson) is figured by DesMurs (Icon. Orn. pl. 21). I have seen similar *luteino* varieties (corresponding to *albinos*) in various other green birds, as Parrots, Bee-eaters, fruit-eating Pigeons, &c. The yellow cage Canary-bird is a familiar instance of the kind, which has the pink eyes of an ordinary albino.

192. Megalæma hodgsoni, Bonap.

M. lineata, auct., of North-eastern India and the Indo-Chinese countries generally, as far at least as Cambogia, where the species is mistaken by Prof. Schlegel for the Javan *M.*

corvina, which is wholly unknown in those parts. *M. viridis*, Schlegel, of Java, is also quite distinct from *M. viridis* (*vera*) of Southern India, and is probably the true *M. lineata* (*Capito lineatus*, Vieillot), as Prof. Schlegel himself suggests.

197. Xantholæma indica.

To this should be referred Sir R. H. Schomburgk's *Megalæma philippensis*, from Siam (Ibis, 1864, p. 258; *vide* P. Z. S. 1859, p. 151).

199. Cuculus canorus. *C. indicus*, Cabanis.

Mr. Wallace has a specimen from Eastern Timor, which is undistinguishable from the common European bird*.

200. Cuculus striatus, Drapiez†; Gould, B. Austr. iv. pl. 84; "*C. lineatus*, Lesson," Pucheran, Rev. Zool. 1853, p. 70; *C. himalayanus*, Vigors (*nec* Gould, Cent. Him. B.); *C. canoroides*, Müller; *C. canorinus*, Cabanis; *C. saturatus*, Hodgson; *C. optatus*, Gould; *C. horsfieldi*, Moore; and probably *C. libanoticus*, Tristram (P. Z. S. 1864, p. 432). Prof. Schlegel adds *C. teleophonus*, Heine, J. f. O. 1863, p. 352 (from Japan), and *C. swinhoii*, Cabanis and Heine, Mus. Hein. iv.

* Mr. Swinhoe indicates a race as constituting his "second series" of *Cuculus canorus* (?), "of similar form, with fulvescent under parts, banded with much broader bars more widely set, with the axillaries nearly barless. One has a somewhat large bill, and two are almost entirely blackish-brown in the parts which should be grey." (One specimen from Tientsin, and four from Amoy. P. Z. S. 1863, p. 265.) Also, recently, a small species which he designates *C. kelungensis* (Ibis, 1865, p. 107).

In page 323 of Dr. Jerdon's first volume the following words are printed twice over:—"its familiar note until it was separated from female." Erase them where they appear first.

† I follow Prof. Schlegel in adopting the name *striatus*, Drapiez, for this species, although, comparing specimens before me of this and of *C. micropterus*, the latter certainly accord better with the description by M. Drapiez:—"Taille, douze pouces. Parties supérieures d'un *brun cendré*, bleuâtre; remiges brunes, frangées de blanchâtre, les deux premières dentelées de roussâtre; rectrices peu étagées [if we except the outermost pair, this holds good in *C. micropterus*, less so in the other]. * * * Bec noir, roussâtre en dessous à sa base." Both species occur in Java. The size would indicate *C. micropterus* rather than *C. affinis*, to which latter *C. striatus* is assigned by Dr. Jerdon.

p. 37, *note* (from China and Formosa); also *C. tenuirostris* and *C. lepidus* of Müller. *C. monosyllabicus*, Swinhoe, Ibis, 1865, p. 545, is probably yet another synonym.

Mr. Wallace has examples from Java, Batchian, Celebes, Flores, and Timor. Himalayan examples agree exactly with Mr. Gould's figure of an Australian specimen.

201. Cuculus poliocephalus, Lath.; *C. intermedius*, Vahl; "*C. tenuirostris*, Lesson," Cassin; *C. fuscatus*, Peabody (Ornithology of Wilkes's U. S. Exploring Voyage, pl. 21. f. 1).

Specimens from Java, in Mr. Wallace's collection, are perfectly similar to those from the Himálaya, Nilgiris, and mountains of Ceylon.

202. Cuculus sonnerati.

This is a very distinct species (as observed by Dr. Jerdon and myself), which never assumes the grey phase of plumage when adult, and is conspicuously different from the young of *C. poliocephalus*, with which Prof. Schlegel identifies Dr. Jerdon's bird, though recognizing the same species afterwards and noticing it as diffused from India and China to the Indian Archipelago and Australia. I have only seen it from Malabar, Ceylon, the Tenasserim provinces, and Malayan Peninsula, but the young of *C. poliocephalus* often enough from the Himálaya. It may be remarked that adults of *C. poliocephalus*, especially females, assume the hepatic phase of plumage very commonly, those of *C. striatus* much more rarely, and of *C. canorus* very rarely. The *Chok-gallos*, or Hawk-like Cuckoos (*Hierococcyx*), and the *Bhokatáko*-group never assume the hepatic phase of plumage, which again is common in the species of *Polyphasia* (*Cacomantis*) and *Chrysococcyx*.

203. Cuculus micropterus.

Hab. All India, with Ceylon, the Himálaya, Tenasserim provinces, Cambogia, China, and Java.

204. Cuculus affinis.

From the Himálaya and Malayan Peninsula. This and the preceding race differ only in size; and the larger, *C. affinis*, I have only seen from the localities named, though numerous

specimens of it from those two localities. They correspond in size to *C. canorus* and *C. striatus* respectively, but have a comparatively large bill, pale dusky-brown irides, embrowned grey upper parts and rather widely barred lower parts from the breast, tail but slightly graduated, except its outermost feathers, and a peculiar unbarred nestling-plumage, with much white bordering the feathers above. The smaller race is the familiarly known *Bhokatáko* of India (so designated from its note), which is commonly kept as a cage-bird by the natives. Col. Tytler remarks that the note of the *Bhokatáko* is very like that of the Himalayan *Pomatorhinus erythrogenys*. As he observes, *Bhow kuttah kho* signifies in Bengali, "Daughter-in-law, tell a tale"; and there is quite an Ovidian story of a metamorphosis connected with the name. He further remarks that "the note sounds very like a double 'cuckoo,' thus, '*cuckoo-cuckoo*'" (Ann. Mag. N. H. 1854, xiii. 367). The larger of the two races is evidently that observed in Eastern Siberia by Herr Radde, as noticed in the 'Natural History Review' (Oct. 1865, p. 459). He alludes to its "double note," referring doubtless to its double cuckoo-cry, which would thus be similar to that of the other and smaller race.

205. Hierococcyx varius.

I am not sure that I have seen this species, as recognized by Dr. Jerdon and myself, from "Burmah and Malayana;" but it probably extends over the Indo-Chinese countries, though not passing into the Malayan peninsula. It is common in the Dacca district of Eastern Bengal.

206. Hierococcyx nisicolor.

I have now seen several examples of this bird, all from the South-eastern Himálaya, and am well satisfied that it is a distinct race. The largest adult measured 7 inches in length of wing. Mr. Hodgson figures it with white irides! Horsfield's only specimen of *H. fugax* in the India Museum is in immature plumage, and quite resembles that figured as *Cuculus sparverioides* by Von Schrenck; Mr. Swinhoe showed me a similar specimen from China, and Mr. Wallace has one from Borneo, while Dr. Sclater's supposed *H. varius* from Borneo (P. Z. S. 1863, p. 209)

is sure to be no other; again, it is the Chinese *H. nisicolor* nobis (J. A. S. B. xxx. p. 93); and I consider that *C. flaviventris*, Scopoli (founded on Sonnerat's *Coucou à ventre rayé de l'Isle de Panay*), *C. radiatus*, Gm., *H. pectoralis*, Cabanis, and *H. hyperythrus*, Gould (B. As. pt. viii.), represent the mature plumage of the same species, which should accordingly stand as *H. flaviventris* (Scop.), from China, Philippines, Borneo, and Java, being probably also that noticed from Malacca by Mr. F. Moore (P. Z. S. 1859, p. 459).

207. Hierococcyx sparverioides.

The *H. strenuus*, Gould (B. As. pt. viii.), from the Philippines, may yet prove to be only a remarkably fine specimen of *H. sparverioides*, which I have repeatedly seen in Malacca collections; but I nevertheless suspect that it will turn out a distinct race: the unique skin in the British Museum has unusually broad tail-feathers, but it at least requires to be confirmed as a species (or particular race) by the occurrence of additional specimens. There is also in the British Museum the unmounted skin of an adult received from Nipâl, which is like *H. sparverioides*, but conspicuously smaller, the wing measuring 7·5 inches. This seems to me to exemplify even another distinct race, which I will provisionally call H. nisoides. These various Hawk-like Cuckoos have a nestling-plumage which considerably resembles that of *Accipiter*, being equally distinct from that of the *Bhokatáko*-group, and from that of the group exemplified by *C. canorus**.

* Dr. Jerdon and I went carefully over an extensive series of Indian Cuckoos, and we quite agreed as to the species. I have since examined many other collections, inclusive of those in the British Museum, India Museum, the Derby Museum of Liverpool, the private collection of Mr. Wallace, and others, and find no reason to modify the opinions attained in Calcutta, except as regards the nomenclature in a few instances, which is now sufficiently in accordance with that adopted by Prof. Schlegel.

The different races of *Hierococcyx* appear to me to be quite as distinct as are the different admitted species of *Tetraogallus*, *Satyra*, *Phasianus*, or *Perdix cinerea*, *P. barbata*, and *P. hodgsoniæ*, and therefore to have just the same claim to be separately recognized. Of the considerable number of specimens that I have examined, I do not perceive that the different races of Hawk-like Cuckoos run into each other, and therefore I feel some

208 and 209. Polyphasia nigra and P. tenuirostris.

Barely separable, and included by Prof. Schlegel under *Cuculus passerinus*, Vahl, as distinguished from the Malayan *C. merulinus* (*C. flavus*, &c.). In the Malayan Peninsula *P. tenuirostris* occurs at Pinang, and the smaller *P. merulina* at Malacca.

214. Eudynamis orientalis. (Egg figured in Jard. Contrib. Orn. pl. 52.)

All India with Ceylon, Indo-Chinese countries (including Siam and Cambogia), China, and Malayan Peninsula. In Sumatra (*fide* Bonaparte), Java, Philippines, Lombok, Flores, Timor, and Australia (*vide* Ibis, 1865, p. 32), replaced by *E. mindanensis* (L.) (*E. australis*, Swainson, *E. flindersi*, Gould, B. Austr. iv. pl. 91), which is not the supposed *E. flindersi* of New Zealand referred to by Dr. Jerdon. Prof. Schlegel unites the Indian and Australian Coels, but I have always found them manifestly distinct, the Australian being considerably larger, with a greenish instead of a bluish gloss on the black male, and the nestling-plumage decidedly different. There is a fine series of both races in the Derby Museum at Liverpool. Length

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confidence in the opinion that the single specimen which I have called *H. nisoides* denotes a peculiar race, which should be sought for in Bután (as also *Hierax melanoleucus*, *Alcedo grandis*, *Indicator xanthonotus*, and other Sikhim rarities). There certainly is not that fusion of different races which we observe in the instances of the Indian and Indo-Chinese Rollers and in different specific races of *Gallophasis*.

The *voice* differs exceedingly in *Cuculus canorus*, *C. striatus*, and *C. poliocephalus*. That of *Hierococcyx sparverioides* is "very similar" to that of *H. varius*, and probably also of other specific races of this form. The vehement whistling cry of the *Chok-gallos* or Hawk-Cuckoos is very peculiar among the group. I find that the voice of *H. flaviventris* is described in a note of Mr. Mottley's (P. Z. S. 1863, p. 209):—"A common bird, though rarely seen, from its habit of flying as it were on the upper side of a large branch to utter its monotonous cry. I have repeatedly tried in vain to discover it, when certainly a dozen must have been crying at once all around me! Its note is a loud but soft flute-like whistle, repeated three times, and then once again two notes lower, and is continued for several hours together in the evening." This description certainly does not *exactly* apply to the whistling note of *H. varius* in India.

of wing respectively 8·25 inches and 7·25 inches, and of tail 8·5 inches and 7·5 inches. It is remarkable that various other species of Coel are very locally restricted (but all are within the confines of the great range of distribution mentioned). Thus *E. melanorhynchus* appears to be confined to Celebes; and Mr. Wallace gives *E. punctatus* from Amboyna, Mysol, and New Guinea, *E. ransomi* from Bouru and Ceram, *E. picatus* from Amboyna and Ternate, and *E. facialis* from the Sula Islands, midway between Celebes and the Moluccas. *E. taitensis* of New Zealand (Ibis, 1862, p. 231) is rather of a different type, intermediate between *Eudynamis* and *Cuculus*. It belongs to the Polynesian province of the Australian region, and is noticed from the Fiji Islands in the 'Ornithology of Wilkes's United States' Exploring Expedition' (p. 248 and pl. xxii. f. 2)! I do not think that the birds of this genus are anywhere migratory, or only to a slight extent, if at all so. A pair of the Indian Coel are now living in the Gardens of the Zoological Society.

213. Coccystes coromandus.

The nestling young is figured by Mr. Hodgson, a good deal like that of *C. melanoleucus*, but of course with no white on the tail-feathers.

215. Zanclostomus tristis.

Obtained by the late M. Mouhot in Cambogia. The *Z. javanicus* (Horsf.) (*Cuculus erythrorhynchus* of the Paris Museum), noticed by Dr. Pucheran (Rev. Zool. 1852, p. 475), was most assuredly never obtained in Bengal, though its range extends to the Southern Tenasserim provinces.

223. Arachnothera magna.

Occurs in the Tenasserim provinces (J. A. S. B. xxviii. p. 416), and a beautiful allied species in Pegu, *A. aurata*, nobis (J. A. S. B. xxiv. p. 478).

224. Arachnothera pusilla.

Mr. Wallace has an example of this species from Sumatra; and I have seen it from Malacca.

234 and 235. Arachnechthra currucaria (Linn.), and A. lotenia (Linn.), Gould, B. As. pt. viii. pls.

236. Dicæum coccineum (Scopoli); Gould, B. As. pt. vi. pl.; P. Z. S. 1863, p. 219.

I observed this species in remarkable abundance in the vicinity of Mergui Station. Its nest is described by Messrs. Mottley and Dillwyn in their 'Contributions to the Natural History of Labuan' (p. 18).

240. Piprisoma agile.

This species might very well be referred to *Prionochilus*, bearing the same relationship to the bright-coloured Malayan species that *Dicæum concolor* and *D. minimum* bear to the vividly-coloured species of their genus. Capt. Beavan has lately obtained the nest, which he mentions as a very interesting structure. Apparently a second Indian—or rather Cingalese—species of *Prionochilus* exists in the *Pardalotus pipra*, Lesson (Cent. Zool. pl. 26.) Neither *Prionochilus* nor *Pachysoma*, I think with Mr. Wallace, belong to the *Dicæum* series, but are more akin to the Australian form *Pardalotus*.

241. Myzanthe ignipectus, Hodgs.; Gould, B. As. pt. vi. pl.

245. Certhia discolor.

According to Dr. Jerdon, this species "makes the nearest approach to *C. familiaris* of Europe." I do not concur in this statement. *C. himalayana* is the Eastern representative of *C. familiaris*, while *C. nipalensis* and *C. discolor* have conspicuously shorter bills and longer tails. An American species which comes very near to *C. himalayana* is *C. mexicana*, Gloger (Baird, B. Am. pl. 83. fig. 2). It is remarkable that *C. himalayana* likewise occurs in Afghánistân, from which direction it may have reached and spread over the North-western Himálaya.

246. Salpornis spilonotus (Franklin); Gray and Mitchell, Ill. Gen. Birds, pl. 44. f. 1.

I have given elsewhere a more detailed description (Ibis, 1865, p. 48). Mr. G. R. Gray (Br. Mus. Cat. Nipal) places *Certhia himalayana*, Vigors (*C. asiatica*, Swains.), as synonymous with *C. spilonota*, Franklin, and gives Nipâl as the habitat! Neither of these species is known to inhabit Nipâl; and Mr.

Hodgson obtained his specimens of *Salpornis* from Behar. The latter genus is not distantly allied to the Australian form *Climacteris*, and also shows some approach to the Mexican *Campylorhynchus megalopterus*, Lafresnaye, as figured by M. O. DesMurs (Icon. Orn. pl. 54). It is curious to observe how the combination of Tree-creeper and Nuthatch, as shown in these genera, is reversed in the *Dendrodromus leucosternus*, Gould (figured in 'Zoology of the Voyage of the Beagle,' *Aves*, pl. 27).

251. Sitta cinnamomeiventris.

This species (and not *S. himalayensis*, as averred by Mr. Gould, and after him by Dr. Sclater, Ibis, 1865, p. 309) is "the Himalayan form of *S. europæa*," resembling the latter exactly in size and structure, but in colouring (which differs in the sexes) *S. castaneiventris* (*S. castanea*, Lesson): the last is smaller and less robust, with a considerably more slender bill (much as in the American *S. aculeata*, Cassin, as distinguished from *S. carolinensis*; *vide* Baird's 'Birds of America,' pl. xxxiii.), while *S. himalayensis* is also a smaller bird, with proportionally much shorter bill—that is, wider and more depressed at base. The Palestine Nuthatch, erroneously referred to *S. krueperi* (Ibis, 1865, pl. vii.) by Mr. Tristram (P. Z. S. 1864, p. 433), would seem to correspond with the female of *S. cinnamomeiventris* (*cf.* Mr. Gould's figure, B. As. pt. i.). The last-named species is confined to the Himálaya (unless spreading westward, as to Palestine?), its range not extending "far and wide over the districts of India" as asserted by Mr. Gould—a statement which in this genus will apply only to *S. castaneiventris*. *S. syriaca* is common in Afghánistân.

253. Dendrophila frontalis.

A beautiful second species of this genus exists in the Javan *D. azurea* (Lesson); *D. flavipes*, Swainson; Gray and Mitchell, Ill. Gen. Birds, pl. 45.

255. Upupa ceylonensis, Reichenbach.

Noted from Java by Dr. Cabanis, but doubtless the common Indo-Chinese race (*U. longirostris*, Jerdon), which again is that observed in Siam by the late Sir R. H. Schomburgk (Ibis, 1864, p. 247), and which was referred to *U. nigripennis* by Mr.

Gould (P. Z. S. 1859, p. 151). The Indo-Chinese Hoopoe is merely much deeper-coloured than *U. epops* of Bengal, &c., while that of Southern India and Ceylon is likewise deeper-coloured, but also smaller, though with the same length of bill, and neither of the two rufous races shows any white (or only the merest trace of it) at the extremity of the crest-feathers.

256. Lanius lahtora.

In Dr. Heuglin's list of birds collected in the Red Sea, it is remarked that this Shrike was "observed on the island of Agig (18°–19° N. lat.), on Dahalak, and near Tadjura" (Ibis, 1859, p. 342). It is perhaps not uncommon in the Arabian Peninsula; but may not Dr. Heuglin's bird be *L. algeriensis*, Lesson? (*Cf.* Strickland, P. Z. S. 1850, p. 217.)

259. Lanius nigriceps, Frankl.; Gray and Mitchell, Ill. Gen. Birds, pl. 71.

262. Lanius arenarius.

For the distinction between this race and *L. isabellinus*, Ehrenberg, Mr. Strickland's paper (P. Z. S. 1850, p. 217) should be consulted.

265. Tephrodornis ponticeriana.

Noticed from Singapore in the Ornithological Report accompanying the narrative of Commodore Perry's Expedition to Japan. *T. superciliosa*, Swainson, of Java is admitted as distinct by Dr. Cabanis. Dr. Jerdon mentions *T. gularis*, Raffles, "from Malacca and the isles" (ii. 411). The peninsular species is quite distinct, and may stand as *T. sordida*, Wallace.

266. Tephrodornis grisola.

Dr. Sclater (P. Z. S. 1863, p. 217) refers a Bornean specimen of this bird, which I identified for him, to the genus *Pachycephala*. The only Indian specimen that I ever saw of it was shot by myself in the Calcutta Botanic Garden. Aiming at a *T. ponticeriana*, I brought down both that bird and the present one, which happened to be in the same line of shot*. Specimens were subsequently received from Arakan, the Andamans, and

* I obtained the only Lower Bengal specimen of *Mirafra cantillans* in the same way.

Java. There can be little doubt that this bird is the *Hyloterpe philomela* (Cab.), as suggested by Dr. Sclater (*loc. cit.*).

267. Hemipus picatus.

Under this name two very distinct species are brought together by Dr. Jerdon:—*H. capitalis* (M'Clell., 1839; *H. picæcolor*, Hodgson, 1845) of the Himálaya, which is larger, with proportionally longer tail, and has a brown back; and *H. picatus* (Sykes) of Southern India and Ceylon, which has a black back. Mr. Wallace has good series of both of them.

Hemipus capitalis has accordingly to be added to the birds of India.

268. Campephaga sykesi.

Common in Ceylon. Here it may be remarked that *Ceblepyris cærulescens*, nobis (J. A. S. B. xi. 403, xv. 308), from Luzon, is the female of *C. aterrima*.

270. Graucalus macii, Lesson; "*G. dussumieri*, Vieillot," Pucheran: from Bengal.

Two Indian species of this genus have hitherto been confounded, that inhabiting Southern India and Ceylon being new and undescribed. *G. macii* and *G. javensis* only differ in size, the latter being much smaller. Both have the wings white underneath and the outer tail-feathers broadly tipped with white. G. layardi, nobis (*G. papuensis* of Sykes's and Jerdon's catalogues; *Campephaga macii*, Layard), is of the same small size as *G. javensis*, having the wing 6 inches, and tail 4 inches. In *G. macii* the wing is 7 in., and tail 5·25 inches. *G. layardi* has the anterior surface of wing underneath strongly barred, and the outer tail-feathers are very slightly white-tipped. Another difference is, that in the female (or perhaps the young) of *G. macii* the under parts are throughout faintly barred, while in that of *G. layardi* the abdominal region only is barred, but with much broader and more distinct bars than in the other.

271, 272, 275, 276. Pericrocotus speciosus, P. flammeus, P. roseus, and P. peregrinus. Gould, B. As. pt. ix. pls.

Mr. Gould doubts the identity of *P. speciosus* from the Indo-Chinese countries with that of North-eastern India. I do not

believe that the slightest difference exists, having compared numerous specimens from both localities. The *P. flammeus* of the Western Himálaya, noticed by Dr. A. L. Adams (P. Z. S. 1859, p. 182), must surely be either *P. speciosus* or possibly *P. solaris*, though I doubt if the latter be there met with. In the India Museum are fine specimens of *P. flammeus* from Southern India, and others from Asám illustrative of *P. elegans* (M'Clelland, P. Z. S. 1839, p. 156); but I am quite unable to distinguish them (*cf.* J. A. S. B. xviii. p. 279).

273. Pericrocotus brevirostris.

I doubt if this bird ever visits "Lower Bengal" as Dr. Jerdon, probably by a slip of the pen, asserts*.

278. Dicrurus macrocercus.

Obtained by the late M. Mouhot in Cambogia.

284. Edolius paradiseus.

The races of this bird are most difficult to understand, as they seem to pass into each other, so that *E. malabaricus* can barely be distinguished. I have before noticed the extraordinary mocking-powers of the *Bhimráj* (Ibis, 1860, p. 99). A good one would be a very attractive object in the Zoological Gardens. For *E. rangoonensis* (p. 438) read *E. viridescens*.

286. Chibia hottentota.

Obtained in Cambogia by Mouhot. A living example was lately in the Zoological Gardens. I never before saw it in confinement.

287. Artamus fuscus.

Specimens from Macao are noticed in the Ornithological Report accompanying the narrative of Commodore Perry's

* *Pericrocotus* is one of the genera characteristic of the Indian region. The Malayan species are: *P. xanthogaster*, Raffles (♀ *Ixus flammeus*, Temminck, Pl. Col. 263), of the Malayan Peninsula and Sumatra; *P. miniatus*, Temm. (Pl. Col. 156), of Western Java; *P. exul*, Wallace, of Eastern Java and Lombok; and *P. ardens*, Boie; *P. igneus*, Blyth, and *P. minutus*, Strickland (Contrib. Orn. pl. 31), of Malacca and Sumatra. *P. flagrans*, Boie, of the Malayan Peninsula, Sumatra, and Borneo, is a richly coloured *P. peregrinus*. *P. cinereus* of South China and the Philippines has also been received from Pinang, and should therefore inhabit the more eastern Indo-Chinese countries.

Expedition; but I cannot understand its being termed "a bird of solitary habits"! This is Mr. Heine's observation, as quoted*; but he also states that *Lorius domicella* had been "frequently observed in the woods of the island of Singapore"! Of the great number of Lories brought to Singapore, probably now and then one manages to escape, and may be seen flying about loose, as *Melopsittacus undulatus* is occasionally now seen in England.

288 and 289. Tchitrea paradisi and T. affinis.

In these birds the crest never appears as represented in Mr. Gould's figures (B. As. pt. iv.), but rises abruptly and straight up from the vertex, as in *Otocompsa emeria* (no. 460) and *Rubigula flaviventris* (no. 456); hence the names *Shah Bulbul*, *Sultána Bulbul*, and *Hosseini Bulbul*, applied by the natives, who associate the *Tchitreæ* with the common Crimson-eared Bulbul more especially. The nest is like that of a Bulbul, and the eggs (as figured in one of Mr. Hodgson's drawings) are reddish-white, with some crimson spots at the larger end.

290. Myiagra azurea.

I have known a bird of this species take up its abode for many days together in a spacious verandah attached to a dwelling-house, preying on the house-flies and mosquitos. Occasionally I have met with it very numerously in Lower Bengal. The cobalt-blue bill and erect occipital rudimentary crest, however short, indicate its near affinity to the *Tchitreæ*, which is very obvious in living or freshly killed specimens.

291. Leucocerca fuscoventris (Lesson); "*Muscicapa albogularis* et *Platyrhynchus albicollis*, Vieillot," Pucheran, Arch. du Mus. vii. p. 372.

The nest and eggs are figured in Sir W. Jardine's 'Contributions to Ornithology' (pl. 92).

292. Leucocerca aureola (Vieillot); "*Rhipidura aureola*, Vieillot," Pucheran (*op. cit.* p. 373); *R. albofrontata*, Franklin.

I much suspect that my *L. compressirostris*, from Ceylon, was founded on a mere *individual* variety.

* Mr. Swinhoe doubts its being found about Macao (Ibis, 1862, p. 306).

293. Leucocerca leucogaster (Cuvier); "*Muscicapa leucogaster*, Cuvier," Pucheran; *L. pectoralis*, Jerdon; *Rhipidura fuscoventris*, Sykes, as noticed in Dr. Jerdon's Appendix.

294. Chelidorhynx hypoxantha.

The nest and eggs are figured in one of Mr. Hodgson's drawings in the British Museum,—the former as in the *Leucocercæ*; the latter white, faintly speckled.

295. Cryptolopha cinereocapilla.

Young figured by Mr. Hodgson with mottled plumage (!), dusky above with pale spots, below dull whitish, the head tinged with ferruginous.

296. Hemichelidon fuliginosa.

Col. Tytler mentions having obtained three specimens of this bird in the neighbourhood of Barrackpore, near Calcutta (Ann. Mag. N. H. 1854, xiii. p. 371). The egg is figured by Mr. Hodgson pale greenish, with faint rufous specks.

299. Alseonax ferrugineus.

Nest and eggs figured by Mr. Hodgson,—the former much as in the British *Butalis grisola*, the latter pure buff colour and unspotted.

301. Eumyias melanops.

Mr. Hodgson figures the egg unspotted pinkish-white.

305. Cyornis jerdoni, G. R. Gray.

The Malayan and Philippine race (*C. banyumas*, Horsf.; Pl. Col. 226) is deeper-coloured than the Indian, having the lores, cheeks, and chin blackish (instead of distinctly blue), while the blue of the upper parts and ferruginous of the lower parts are likewise more intense. The same slight difference distinguishes the Malayan *C. elegans* (Pl. Col. 596. f. 1) from the Indian and Tenasserim *C. rubeculoides*. Mr. Wallace, however, has a specimen of true *C. jerdoni* from Pinang. Mr. Swinhoe describes a beautiful allied species from Formosa, *C. vivida* (Ibis, 1864, p. 363). [*Vide infrà*, Pl. XI.]

308. Cyornis magnirostris.

The male of this fine species is figured in one of Mr. Hodgson's drawings. It is much like that of *C. rubeculoides*, but of a

darker blue above, with the lower parts bright ferruginous, except just the middle of the belly and the lower tail-coverts, which are pure white.

309. Cyornis pallipes.

Mr. Wallace has a nearly allied *C. rufifrons* from Borneo.

311. Muscicapula æstigma.

In one of Mr. Hodgson's drawings in the British Museum are beautifully represented, together and contrastingly, four nearly allied species, viz. *M. superciliaris* (*Muscicapa hemileucura*, Hodgson), *M. æstigma*, *M. ciliaris*, and *M. leucoschista*. The two latter have to be added to Dr. Jerdon's list; and the second he regarded as dubious in his Appendix (p. 876). *M. æstigma* is plain blue above, white below, with no white on the tail: one figure in another drawing has a white superciliary line, which the other has not; so that there may yet be a second species here. M. leucoschista is like *M. superciliaris*; but the white on the throat is much broader, there is less of blue on the sides of the breast, and no white on the tail-feathers. M. ciliaris is of a darker and duller blue above, with white superciliaries commencing from nostrils, the greater coverts and outer webs of tertiaries white, as are also the entire under parts.

315. Niltava macgrigoriæ.

Nest figured by Mr. Hodgson in a slight hollow of a tree, with pinkish-white eggs.

321. Siphia superciliaris (Blyth); ♂ *Muscicapa tricolor* and ♀ *M. rupestris*, Müller. (*Cf.* Ibis, 1865, p. 44.)

Specimens in the Derby Museum of Liverpool. The female is ashy above, beneath rufous, paler on the breast and vent; superciliaries pale rufous; wing and tail-feathers pale brown, slightly washed on the outer webs with light rufous. One tail-feather (a new one), in the Timor specimen, bluish as in the male. Mr. Wallace has a *Siphia rufigula* from Northern Celebes.

323. Erythrosterna leucura.

Probably *Muscicapa rufogularis*, Brehm, as distinguished from his *M. parva*. The true E. parva (Bechstein; *Saxicola rubeculoides*, Sykes) I have seen from the Deyra Doon and from the Dukhun, and must therefore be added to the Indian list.

325. Erythrosterna acornaus.

Figured in summer plumage by Mr. Hodgson, with pale rufous lores, throat, and fore-neck, as also in the mottled plumage of immaturity. It is readily distinguished from *E. pusilla* by the colour of the rump-feathers.

326. Erythrosterna maculata.

Female dull slaty-brown above, white beneath, with rufescent tail unmarked with white (Hodgson's drawings). Also from Timor (Ibis, 1865, p. 44)! A specimen received in a Javan and Moluccan collection by the Asiatic Society, Calcutta, from that of Batavia. *Muscicapa solitaria*, Müller, (p. 434) is an *Anthipes* (Ibis, *loc. cit.*).

327 and 328. Tesia castaneocoronata and T. cyaniventer; Gould, B. As. pt. x. pls.

A third species of the genus exists in the *Micrura superciliaris*, Bonap., from the mountains of Java.

333. Troglodytes nipalensis, Hodgs.; Gould, B. As. pt. iv. pl.

Brachypteryx leucophrys (p. 496) is figured as a *Myiothera* by Temminck (Pl. Col. 448. fig. 1). It is evidently the female of a species of which the male would be cyaneous where its mate is brown, and the name implies a special resemblance to *B. montana* and *B. cruralis*. The sexual diversity of colouring in this genus is just that of so many of the *Myiotherinæ* and *Thamnophilinæ* of South America.

339. Callene rufiventris.

Female brown, with the abdominal patch whitish instead of rufous. Not unlike *Muscicapa longipes*, Garnot (Voy. de la Coquille, Atlas, pl. xix. f. 1), assigned to New Zealand! But no such bird is given in Mr. G. R. Gray's list (Ibis, 1862, p. 214).

340. Callene frontalis.

The female is figured together with the male in one of Mr. Hodgson's drawings in the British Museum. Dusky brown above, with pale centres to feathers; below paler, with dull albescent spots. (Immature plumage?) Nest domed and like a Wren's, with clay-coloured eggs.

346. Pitta nigricollis.

Mr. Hodgson figures the egg as reddish-white with rufous specks.

347, 348, and 349. Hydrobata asiatica, H. cashmiriensis, and H. sordida; Gould, B. As. pt. xii. pls.

I have lately seen a fine specimen of *H. cashmiriensis* in a Sikhim collection. May not this be the *Cinclus aquaticus* of Herr Radde from North-eastern Asia?

351. Petrocossyphus cyanus.

The curious fact of a bird of this species attacking and devouring a luckless *Phylloscopus trochilus* has been noticed (Ibis, 1860, p. 139). I suspect that this is not more anomalous than Mr. Layard's instance of a captive *Megalæma zeylanica* which evinced a similar predatory propensity (Ann. Mag. N. H. 1854, xiii. p. 446). The *Turdus* (*Monticola*) *erythroptera*, G. R. Gray (P. Z. S. 1860, p. 350), from Gilolo, is no other than *P. affinis*, a variety of *P. cyanus*!

352. Oreocætes erythrogastra (Vigors); Gould, B. As. pt. xv. pl.

I suspect that the name "Rock-Thrush," applied by Mr. Gould to this species, is not better suited to its habits than Mr. G. R. Gray's generic appellation, the *Oreocætæ* being forest-birds, unlike the *Petrocossyphi*. The egg as figured by Mr. Hodgson is like that of an English Robin.

355. Geocichla citrina (Lath.); "*Turdus albonotatus*, Cuv.," Pucheran.

Temminck gives Java and Sumatra as habitats, but refers to *G. rubecula*, Gould, which has a deeper colouring. I kept a Thrush of this species for a long while in a cage; and it had a plaintive mellow song, somewhat Robin-like and little varied.

356. Geocichla unicolor (Tickell); *Merula unicolor*, Gould, B. As. pt. x. pl.

Mr. Gould states that I do not include this species in my 'Catalogue of the Birds in the Asiatic Society's Museum, Calcutta.' It is no. 954 of that Catalogue! And he calls it the "Afghan Thrush," which is a misnomer, though it may

perhaps sometimes stray into Afghánistân. In Lower Bengal it is not uncommon as a cold-weather visitant.

357. Turdulus wardi.

To this subgroup must also be referred *Turdus interpres*, Temm. (Pl. Col. 432; *T. avensis*, Gray), which is nearly allied to *T. wardi*, but has a chestnut-rufous cap and nape; from Lombok (Wallace), and Sumatra and Java (Temminck). Also *Geocichla erythronota*, Sclater (Ibis, 1859, p. 113), from Celebes, like *T. interpres*, but having the whole back, as well as the head, chestnut-rufous. Also *T. peroni*, Vieillot (Pucheran, Arch. du Muséum, vii. p. 352, pl. xix.); *Geocichla rubiginosa*, Müller, from Timor. Also *T. cardis* (Pl. Col. 518; Faun. Japon., Aves, tab. xxix., xxx.). The remarkable dissimilarity of the sexes in *T. wardi* and *T. cardis* should indicate a corresponding diversity of plumage in those of their immediate congeners.

358. Turdulus chrysolaus (Temm. Pl. Col. 587; Faun. Japon., Aves, tab. xxviii.).

This species, my *Geocichla dissimilis* (olim), is not *T. cardis*. It cannot be placed in a different division from *T. unicolor* and other *Geocichlæ*. I remember sending a coloured drawing of the specimen shot in the Calcutta Botanic Garden to Sir W. Jardine. When Col. Tytler wrote, in his "Fauna of Barrackpoore" (Ann. & Mag. N. H. 1854, xiii. p. 370), of *G. dissimilis* that it is "often found in groves of trees: it is very singular that, out of the numbers shot, a male is seldom or never procured; this latter, when in fine adult plumage, is distinguished from the sombre colour of the female by the bright reddish streaks [colour?] on its flanks," he supposed the female of *G. unicolor* to be that of *G. dissimilis* (*G. chrysolaus*), concerning which latter he wrote from memory of the single specimen he had seen in the Calcutta Museum.

361, 362, 363. Merula boulboul*, M. albocincta, and M. castanea; Gould, B. As. pt. xi. pls.

M. vulgaris is mentioned by Dr. A. L. Adams as "a common

* Mr. Gurney (Ibis, 1864, p. 351) would seem to refer the *Lanius boulboul*, of Latham, to a species of *Laniarius*.

cage-bird in the towns of the Punjab; said to be imported from Afghanistan. Not a native of the Western Himalayas; as far westward as Peshawur, but probably found in the Hindoo Coosh Chain" (P. Z. S. 1858, p. 490; *vide* also J. A. S. B. xvi. 780). Col. Tytler, in his "Fauna of Barrackpoore," remarks that "the *Turdus atrogularis* and *Merula boulboul* sometimes make their appearance, but this is very rarely the case; I only saw one of each species" (Ann. Mag. N. H. 1854, xiii. 370). Not long ago I repeatedly heard a wild English Blackbird give the exact song-note of *M. boulboul*, at least of one which I long kept in a cage; but I have heard no other English Blackbird do so. The song of the Himalayan Blackbird is equally mellow, but much less deep in tone. *M. castanea* occurs in Afghánistân. The *Turdus javanicus*, Horsfield (*T. fumidus*, A. Müller), might range either in *Merula* or *Geocichla*; it is uniform brownish-slaty, with rufous belly.

364. Planesticus ruficollis (Pallas); Radde, Reisen &c. ii. taf. viii.

Occurs in Afghánistân.

365. Planesticus atrogularis (Temm.); *Merula leucogaster*, nobis (olim), founded on a drawing of a very dark specimen of an old male.

366. Planesticus fuscatus.

Herr Radde figures what he considers to be a hybrid between this species and *P. ruficollis* (Reisen &c. ii. taf. vii. *a*) (*vide* N. H. Review, 1865, p. 464).

372. Oreocincla nilgiriensis, Blyth; *Zoothera imbricata*, Layard, Ann. & Mag. N. H. 1854, xiii. p. 212.

Identified from the specimen in the British Museum described by Mr. E. L. Layard. Thus both this species and *Turdulus wardi* have been described as belonging to the genus *Zoothera*, which genus I regard as merely a further developed *Oreocincla*, rather than as appertaining to the oriental division of the *Myiotherine* series.

[To be continued.]