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On the civet of India. Ibid., II, 47 (V. Zibetha).


The hispid hare of the sal forest. Ibid., XVI., 572 (Lupus hispidus).

The common hare of the plains and Sub Himalaya. Ibid., IX., 1183 (L. ruficunis).

A new form of hog. Ibid., XVI., 423 (Jerdon, 241).

The pigmy hog of the Tarai. Ibid., XVI., 593 (Jerdon, 244).

Anatomy of Ailurus, Vormia and Sylvictus. Ibid., XVII., ii., 475, 573.

On a new species of Cervus, IV., 648; XII., 897.

Cervus elaphus of the sal forests. X., 721 (Jerdon, 251).

Cervus duvaucelli. V., 240 (Jerdon, 254).

On the genus Moschus. VII., 202, X., 795 (Jerdon, 266).

On the Shon or Tibetan stag. XI., 466, 578; XX., 388 (Jerdon, 251).

The Jarsal. I., 66, 115 (Jerdon, 256).

On the Bibos, Gaur or gau of the Indian forests. VI., 745; X., 449.

On a new Tibetan antelope. XV., 394.

On the Chera antelope. III., 134.

On various genera of Ruminants. XVI., 685.

Antilope Hodgsoni. I., 59.

Synopsis of the Ther and Goral antelopes. IV., 407 (Jerdon, 284-5).

The wild goat and wild sheep of the Himalaya. IV., 490, 710; V., 284; X., 230: XII., 447; XVI., 490, 1003.


Cope, E. D.—On the genera of Felidæ and Canine. Ibid., 5th Ser., V., 56, 92.

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On the different species of Orang-utan. J. A. S. Ben., XXII., 369; XXIII., 210; XXIV., 518.

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On the genus Megaderma. Ibid., XI., 255.

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A new species of mole (*Talpa iracura*). *Ibid.*, XVIII., 600; XVI., 363; XXIV., 469; XXVIII., 271 (note); XXXI., 351.

On the different animals known as wild asses. *Ibid.*, XXVIII., 229; XXXI., 383.


**DOBSON'S PAPERS ON BATS.**


OF THE NORTH-WESTERN PROVINCES.

Conspicuous of the sub-orders, families and genera of Chiroptera by the same. An. Mag., N. H., 4th Ser., XVI., 345 : XVIII. 345.


Tyler.—A new species of Paradaxurus. Ibid., XXXIII., 188.

Tickell.—Note on the Gibbon. Ibid., XXXIII., 196.


TIBETAN FAUNA.


Hume, A. O.—On a supposed new sheep. Ibid., XLVI., ii., 327.


Severinsch, H.—Mammals of Turkestan. Ibid., XVIII., 40, 130, 158, 208, 325, 377.

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BIRDS. ¹

The hill districts of the North-Western Provinces are about equally distant from the Brahmaputra on the one hand and the Indus on the other, and occupy the central portion of the Himálayan range proper. The birds of the Eastern Himálaya approximate to the Indo-Malayan forms in the lower hills; and in Nepál, especially to the north, the fauna is characterised by many peculiar and striking forms, but few of which are as yet known to cross the Káli into Kumaun. In the Western Himálaya, the fauna approaches to that of the western palaearctic region, and stragglers from among some of the more typical forms find their way as far as Garhwl. On the north the mountain-haunting species of the Eastern palaearctic region are found, while to the south is the Indian region proper, with its fairly distinctive fauna. The commoner birds of this tract are those which are found throughout the Himálayan range, but situated as it is, many stragglers from the surrounding regions are found among the rarer birds. On the west such species as Coracias garrula, Calacanthus burtoni, and others, extend into Garhwl; on the north stragglers from Tibet, such as Corvus tibetanus, Sryrhaptes tibetanus, Perdix hodgsonia, &c., are occasionally met with; on the east, Nepálese forms, such as Palæornis javanicus, Oriolus traillii, Cissa sinensis, Henicurus schistaceus, Yuhina occipitalis, &c., are found in Kumaun. Stragglers from the lower Bengal and Indo-Malayan forms, such as Eurystomus orientalis, Pearisomus dalhousiae, &c., are found in the lower hills and sub-Himálayan tracts; while many of the species inhabiting the plains of Northern India extend into the Duns and outer ranges.

¹ This list of the birds found in the Himálaya between the Káli and the Tons has been kindly prepared by Captain G. Marshall, R.Z.
OF THE NORTH-WESTERN PROVINCES.

But little has as yet been recorded of natural history researches in this tract, and further observations would probably greatly extend the list of birds now given. Probably some fifty more of the eastern forms among the vultures, eagles, owls, kingfishers, hornbills, piculets, barbets, cuckoos, sunbirds, treecreepers, wood-shrikes, minivets, flycatchers, wrens, shortwings, ant thrushes, tima-line birds, bulbuls, chats, warblers, pipits, hilltits, &c., will be found to extend into Kumaun. In the Đûas *Megalurus palustris, Chætorhynus striatus*, several *Locustellas, Burnesia gracilis, Acridertheris gingi-mianus, Porsana marueta; Rallus striatus* and *Rallus indicus* may almost certainly be found, though their occurrence has not as yet been recorded. Similarly, on the northern limits, *Grandala caerulea; Accentor alpica, A. strophius, A. rubeculoides; Pica huttonensis, Pyrrhocorax alpinus*; and *Tetraogallus tibetanus*, though not yet recorded, will probably be found; several species of *Dume-eticola* and *Proparus viniceps* have been found both east and west of this tract, but not as yet within its limits. A large number of the birds included in this list among the harriers, reedwarblers, rubythroats, warblers, willow-wrens, wagtails, pipits, pigeons, quail, snipe, sandpipers, and others, are regular migrants, to be found in spring and autumn, and probably other birds of these classes will be found from time to time; and many of the permanent residents, which pass the summer in the higher ranges, are found in winter in the glens and warm valleys.

**AVES.**

*(Note.—The numbers prefixed are those of Jerdon's "Birds of India"; for birds not included in Jerdon's book the number of the most nearly allied species is given, with the addition of "bis," "ter," &c., as the case may be. The references in brackets following the English name are to detailed descriptions of the species).*

1. *Vultur monachus*, the great brown vulture (Jerdon I., 6). 5,000 to 10,000 feet; rare.
2. *Otoctypa calvus*, the black king vulture (Jerdon I., 7). Common up to about 3,000 feet.
3. *(ter).* *Gyps himalayensis*, the griffon vulture (S. F. VII., 323). From 4,000 to 10,000 feet; common.
4. *Gyps indicus*, the long-billed vulture (S. F. VII., 165). In the Đûas and sub-Himàlayan tracts.
5. *Gyps bengalensis*, the white-backed vulture (Jerdon I., 10). Common up to about 5,000 feet.
6. Neophron ginginianus, the white scavenger vulture (Jerdon I, 12). Common up to 5,000 feet.
7. Gypaetus barbatus, the Lammergeyer, or bearded vulture. (Jerdon I., 18). 5,000 to 10,000 feet.
8. Falco peregrinus, the peregrine falcon (Jerdon I., 21). In the Dán, rare; a cold weather migrant.
9. Falco peregrinator, the abábin falcon (Jerdon I., 28). From 3,000 to 10,000 feet; a permanent resident.
10. Falco jugger, the laggar falcon (Jerdon I., 30). The Dán, Kumaun, at low elevations; rare.
11. Falco subbuteo, the hobby (Jerdon I., 33). A cold-weather visitant; rare at all elevations.
12. Falco severus, the Indian hobby (Jerdon I., 34). Kumaun and East Garhwal; at low elevations; rare.
13. Falco chiquera; the red-headed merlin (Jerdon I., 36). The Dán and warm valleys; not uncommon.
14. Cerchnia tinnunculus, the kestril (Jerdon I., 38). Common at all elevations in winter; breeds at 5,000 feet.
15. (b) Cerchnia amurensis, the eastern red-footed kestril (S. F. II., 597). Rare.
16. Microhierax cœruleus, the white-naped pigmy falcon (Jerdon I., 42). Kumaun; 4,000 feet. Rare.
17. Asio palumbarius, the goshawk (Jerdon I., 45). 9,000 to 15,000 feet; permanent resident.
18. Asio edulis, the shikra (Jerdon I., 48). Not uncommon at low elevations.
19. Accipiter minuus, the sparrowhawk (Jerdon I., 51). Common at all elevations; breeds at 5,000 to 10,000.
20. Accipiter virgatus, the Beera sparrowhawk (Jerdon I., 52). Rare.
21. Aquila chrysaetos, the golden eagle (Jerdon I., 55). Rare; at great elevations near the snows.
22. Aquila mogilalk, the imperial eagle (S. F. I., 280). The Dán in the cold weather; rare.
23. Aquila clanga, the spotted eagle (Jerdon I., 59). The Dán; permanent resident; not uncommon.
24. Aquila vindhyana, the Indian tawny eagle (Jerdon I., 60). The Dán; permanent resident; not uncommon.
25. Aquila hastata, the long-legged eagle (Jerdon I., 63). The Dán; permanent resident; not uncommon.
26. Hieracetus pennatus, the booted eagle (Jerdon I., 63). In the Dán and warm valleys; very rare.
27. Neopus malaiensis, the black eagle (Jerdon I., 65). 5,000 to 10,000 feet; rare.
28. Nisaetus fasciatus, Bonelli's eagle (Jerdon I., 67). At all elevations, but rare.
29. Linnetus salicatus, the changeable hawk-eagle (Jerdon I., 70). The Dán and warm valleys.
36. Limnaestus nipalensis, the Nepal hawk-eagle (Jerdon I., 78). 5,000 to 8,000 feet; rare.
37. Circetetus gallicus, the short-toed eagle (Jerdon I., 76). The Dün and warm valleys; rare.
38. Spilornis cheela, the crested-serpent eagle (Jerdon I., 77). The Dün and lower hills; not uncommon.
40. Pandion halliastus, the osprey (Jerdon I., 80). The Dün and valleys of big rivers.
41. (bis) Polioestus plumbeus, the Himalayan fishing eagle (S. F. Ill. 385). The Dün and valleys of big rivers.
42. Hallastus leucocephalus, the ring-tailed fishing eagle (Jerdon I., 82). The Düns only.
45. Buteo ferox, the long-legged buzzard (Jerdon I., 88). The Dün in winter; not very common.
46. Buteo leucocephalus, the upland buzzard (Jerdon I., 90). At great elevations; extremely rare.
47. Buteo plumpipes, the harrier buzzard (Jerdon I., 91). Not uncommon from 5,000 to 8,000 feet.
48. Butastur teesa, the white-eyed buzzard (Jerdon I., 92). The Düns only; rather rare.
50. Circus cyaneus, the hen harrier (Jerdon I., 95). The lower hills in winter only; rare.
51. Circus macrurus, the pale harrier (Jerdon I., 96). The Düns; common in winter only.
52. Circus cineraceus, Montague's harrier (Jerdon I., 97). The Düns and lower hills, in winter only.
53. Circus melanoleucus, the pied harrier (Jerdon I., 98). The Düns and lower hills in winter only; very rare.
54. Circus aeruginosus, the marsh harrier (Jerdon I., 99). The Düns only; common in winter.
55. Hallastur indicus, the brahminy kite (Jerdon I., 101). The Düns; only permanent; not common.
56. Milvus affinis, the common parish kite (Jerdon I., 104). Common up to 7,000 feet.
58. (bis) Milvus gosinda, the larger Indian kite (Hume's rough notes, I., p. 226). Not uncommon at all elevations.
59. Pternis phororhynchos, the crested honey buzzard (Jerdon I., 106). The Düns and warm valleys.
60. Elanus corvus, the black-winged kite (Jerdon I., 112). The Düns and warm valleys.
61. Strix candida, the grass owl (Jerdon I., 118). The Düns and outer hills; not uncommon.
62. Symius newzensis, the Nepal brown wood owl (Jerdon I., 122). About 5,000 to 8,000 feet; rare.
65. Symius ocellatum, the mottled wood owl (Jerdon I., 123). The Düns and warm valleys.
68. Syrnium nivicolum, the Himalayan wood owl (Jerdon L., 184). 5,000 feet and upwards; rare.
67. Asio otus, the long-eared owl (Jerdon L., 125). At all elevations in the winter; rare.
66. Asio accentuatus, the short-eared owl (Jerdon L., 126). At all elevations in the winter; rare.
65. Bubo bengalensis, the rock horned owl (Jerdon L., 128). The Düns and warm valleys only.
64. Bubo coromandus, the dusky horned owl (Jerdon L., 130). The Düns and warm valleys.
63. Ketupa ceylonensis, the brown fish owl (Jerdon L., 133). The Düns and warm valleys.
62. Scopus pennatus, the Indian scops owl (Jerdon L., 136). At moderate elevations; not common.
61. (bis) Scopus satius, the Indian red scops owl (Jerdon L., 137). At moderate elevations; not common.
60. (ter) Scops spiloleophanes, the bare-foot scops owl (S. F. VII, 358). 5,000 to 8,000 feet; common.
59. Scopus leuca, the Nepal scops owl (Jerdon L., 139). Kamaun only; 5,000 feet; rare.
58. (bis) Scopus plumipes, the plume-foot scops owl (S. F. VII, 357). Garhwal only; rare.
56. Carine brama, the spotted owlet (Jerdon L., 141). The Düns only; not common.
55. Glanidium radiatum, the jungle owlet (Jerdon L., 143). The Düns; common.
54. Glanidium cuniculoides, the large barred owl (Jerdon L., 145). The lower hills up to 6,000 feet.
53. Glanidium brodiei, the collared pigmy owlet (Jerdon L., 146). From 4,000 to 10,000 feet; tolerably common.
52. Ninox lugubris, the dusky hawk owl (Jerdon L., 147, in p. S. F. IV., 285). The Düns and warm valleys; very rare.
51. Hirundo rustica, the common swallow (Jerdon L., 267). Not uncommon at 5,000 to 10,000 feet.
50. Hirundo striata, the wire-tailed swallow (Jerdon L., 159). The Düns only; common.
49. (bis). Hirundo nipalensis, the Himalayan mosque swallow (S. F. V. 253). Common up to 5,000 feet.
48. Hirundo sylvicola, the Indian cliff swallow (Jerdon L., 161). The Düns only; very local.
47. Cotyle cinnama, the Chinese sand martin (Jerdon L., 164). The Düns only; common.
46. Pigionoprogne rupestris, the crag martin (Jerdon L., 166). From 7,000 to 10,000 feet; rare.
93. Chelidon kashmirensis, the Kashmir martin (Jerdon I., 167). From 7,000 to 10,000 feet; not common.
94. Cypselus melba, the alpine swift (Jerdon I., 175). Common at 3,000 to 6,000 feet.
95. Cypselus apus, the European swift (Jerdon I., 177). At 6,000 to 10,000 feet; very rare.
96. Cypselus affinis, the common Indian swift (Jerdon I., 177). Very common up to 5,000 feet.
97. Collocalia unicolor, the Indian swiftlet (Jerdon I., 182). At 5,000 to 9,000 feet; not uncommon.
98. Dendrocopelidson coronatus, the Indian crested swift (Jerdon I., 185). The Dán only; very rare.
99. Caprimulgus indicus. The jungle nightjar (Jerdon I., 192). Up to about 4,000 feet; not common.
100. Caprimulgus albonotatus, the large Bengal nightjar (Jerdon I., 194). Up to about 4,000 feet; common.
101. Caprimulgus asiaticus, the common Indian nightjar (Jerdon I., 197). Up to 6,000 feet; not common.
102. Caprimulgus montisola, Franklin's nightjar (Jerdon I., 198). The Dán and up to 5,000 feet; common.
103. Merops viridis, the common bee-eater (Jerdon I., 205). The Dán only; very common.
104. Merops phillipensis, the blue-tailed bee-eater (Jerdon I., 207). The Dán and warm valleys; local.
105. Merops swainsoni, the chestnut-headed bee-eater (Jerdon I., 208; S. F. II., 168). The Dán; local.
106. Nyctornis athertoni, the blue-ruffed bee-eater (Jerdon I., 211). The Dán; local.
107. Coracias indica, the common roller (Jerdon I., 214). The Dán; common.
108. Coracias garrula, the European roller (Jerdon I., 218). The Bhagirathi valley; a very rare straggler.
109. Erystomus orientalis, the broad-billed roller (Jerdon I., 219). Kumaun Bhábar; very rare.
110. Pelargopsalis gurali, the Indian stork-billed kingfisher (Jerdon I., 223). The Dán; rare.
111. Halcyon smyrnensis, the white-breasted kingfisher (Jerdon I., 224). The Dán; common.
112. Alcedo bengalesis, the little Indian kingfisher (Jerdon I., 230). Common along the big rivers.
113. Ceryle rudis, the pied kingfisher (Jerdon I., 234). The Dán only; common.
114. Ceryle guttata, the large-crested pied kingfisher (Jerdon I., 234). The Dán and warm valleys.
115. Paroixias dalhousia, the yellow-throated broad-bill (Jerdon I., 236). From 3,000 to 6,000 feet.
116. Dicoccorus caudatus, the great hornbill (Jerdon I., 243). The Dán and sub-Himalayan forests.
143. Hydrocissa affinis, the Dehra Dun hornbill (Jerdon I., 247). The Düns only; not uncommon.
144. Ocyerco bicornis, the common grey hornbill (Jerdon I., 248). The Düns only.
147. Palsornis nipalensis, the northern rose-barred paroquet (S. F. I., 335, and II., 19). The Düns only; common.
148. Palsornis torquatus, the rose-winged paroquet (Jerdon I., 257). The Düns and warm valleys; common.
149. Palsornis purpureus, the rose-headed paroquet (S. F. II., 15). The Düns and warm valleys; common.
150. Palsornis schisticeps, the slaty-headed paroquet (Jerdon I., 281). From 4,000 to 8,000 feet; common.
152. Palsornis javanicus, the red-breasted paroquet (Jerdon I., 282). In the warm valleys; not common.
154. Picus himalayensis, the Himalayan pied woodpecker (Jerdon I., 269). From 5,000 to 10,000 feet.
157. Picus maculatus, the Indian spotted woodpecker. (Jerdon I., 273). From the Düns to 6,000 feet.
159. Picus brunnelfrons, the brown-fronted woodpecker (Jerdon I., 278). The Düns to 6,000 feet.
160. Picus mahattensis, the yellow-fronted woodpecker (Jerdon I., 274). The Düns only.
161. Hypopithys hyperythrus, the rufous-bellied pied woodpecker (Jerdon I., 276). From 4,000 to 6,000 feet.
163. Yungipicus pygmaeus, the Himalayan pigmy woodpecker (Jerdon I., 277). From 2,000 to 5,000 feet.
164. Yungipicus nanus, the southern pigmy woodpecker (Jerdon I., 278). The Düns only.
166. Chrysocaptes sultaneus, the golden-backed woodpecker (Jerdon I., 281). From 3,000 to 9,000 feet; rare.
168. Muelleripicus pulverulentus, the large slaty woodpecker (Jerdon I., 284). The Düns only; very rare.
170. Gecinus squamatus, the scaly-bellied green woodpecker (Jerdon I., 286). From 4,000 to 8,000 feet; common.
171. Gecinus striolatus, the lesser Indian green woodpecker (Jerdon I., 287). The Düns only; rare.
172. Gecinus occipitalis, the black-naped green woodpecker (Jerdon I., 287). From 4,000 to 6,000 feet; common.
173. Chrysophlegma flavinucha, the large yellow-naped woodpecker (Jerdon I., 289). From 2,000 to 8,000 feet.
174. Chrysophlegma chlorolepidus, the lesser yellow-naped woodpecker (Jerdon I., 289). The Düns and warm valleys; rare.
175. Micropteropus phaeocetus, the Bengal rufous woodpecker (Jerdon I., 294). The Düns and warm valleys; rare.
180. Brochymyris aurantiaca, the common goldback woodpecker (Jerdon I., 295). The Düns only; very common.
(88.) Tiga shorri, the large three-toed woodpecker (Jerdon I., 333). The Düns and warm valleys; rare.

186. Vivia incognita, the speckled piculet (Jerdon I., 300). From 2,000 to 5,000 feet; not uncommon.

186. Yunx torquilla, the wryneck (Jerdon I., 303). The Düns only; not uncommon.

191. Megalæma marshallorum, the Marshall’s barbet (Jerdon I., 304). From 4,000 to 8,000 feet; common.

192. Megalæma hodgsoni, Hodgson’s green barbet (Jerdon I., 309). The warm valleys; common.

193. Megalæma caniceps, Franklin’s green barbet (Jerdon I., 310). The Sewaliks and Bhâbar only.

195. Megalæma asiatica, the blue-throated barbet (Jerdon I., 313). The warm valleys only.

197. Xantholeâma hæmacephala, the crimson-breasted barbet (Jerdon I., 316). The Düns only; common.

199. Cuculus canorus, the common cuckoo (Jerdon I., 322). A summer migrant.

200. Cuculus striatus, the Himalayan cuckoo (Jerdon I., 323). Common from 2,000 to 7,000 feet.

201. Cuculus poliocephalus, the hoary-headed cuckoo (Jerdon I., 324). Common up to 6,000 feet.

203. Cuculus micropterus, the Indian cuckoo (Jerdon I., 326). Common up to about 6,000 feet.

205. Hierococcyx varius, the common hawk-cuckoo, (Jerdon I., 329). The Düns only; common.

207. Hierococcyx sparrowioides, the large hawk-cuckoo (Jerdon I., 331). From 5,000 to 5,000 feet; common.

208. Cacomantis passerinus, the Indian plaintive cuckoo (Jerdon I., 333). The Düns and warm valleys; rare.

210. Surniculus lugubris, the Drego cuckoo (Jerdon I., 336). The Düns and warm valleys; rare.

211. Chrysoococcyx maculatus, the emerald cuckoo, (Jerdon L., 338., B. F. VI., 181). From 5,000 to 5,000 feet; rare.

219. Coccystes jacobinus, the pied-crested cuckoo (Jerdon L., 339). Up to 4,000 feet; common in the rains.

214. Eudynamis honora, the koel (Jerdon L., 343). The Düns only; common in the hot weather.

217. Centrococcyx rufipennis, the common coucal (Jerdon L., 346). The Düns only.

220. Tacococcus sitkee, the Bengal sitkee (Jerdon L., 353). The Düns only.

225. Æthopyga miles, the Himalayan red honey-sucker (Jerdon L., 353). The warm valleys only.

227. Æthopyga Gouldi, the purple-tailed red honey-sucker (Jerdon L., 354). The warm valleys only.

228. Æthopyga ignicuuda, the fire-tailed red honey-sucker (Jerdon L., 355). The warm valleys only.
229. \textit{Æthopyga nipalesis}, the maroon-backed honey-sucker (Jerdon I., 366). From 2,000 to 6,000 feet.
230. \textit{Æthopyga horsfieldii}, the green-backed honey-sucker (Jerdon I., 367). The warm valleys only.
231. \textit{Æthopyga saturata}, the black-breasted honey-sucker (Jerdon I., 367). From 2,000 to 5,000 feet.
234. Cinnyris asiatica, the purple honey-sucker (Jerdon I., 370). Up to 2,000 feet; common.
235. Cinnyris lotenii, the large purple honey-sucker (Jerdon I., 376). The Dehra Dün; a rare straggler.
238. Dioscorum erythrorhynchos, Tickell’s flower-pecker (Jerdon I., 374). The Düns only; not common.
240. Piprisoma agile, the thick-billed flower-pecker (Jerdon I., 378). The Düns and warm valleys.
241. Myctans ignitectoris, the fire-breasted flower-pecker (Jerdon I., 377). Rumsar only; very rare.
243. Certhia himalayana, the Himalayan tree-creeper (Jerdon I., 380). From 4,000 to 6,000 feet; common.
246. Salpornis splionota, the spotted grey-creeper (Jerdon I., 381). The Düns only; rare.
247. Tichodroma muriaria, the red-winged wall-creeper (Jerdon I., 383). Not uncommon.
248. Sitta himalayensis, the white-tailed nuthatch (Jerdon I., 385). From 5,000 to 6,000 feet; common.
250. Sitta castaneoventris; the chestnut-bellied nuthatch (Jerdon I., 386). The Düns only.
251. Sitta cinnamomeoventris, the cinnamon-bellied nuthatch (Jerdon I., 387). From 2,000 to 4,000 feet.
253. Dendrophila frontalis, the velvet-fronted blue nuthatch (Jerdon I., 388). From 2,000 to 5,000 feet.
254. Upupa epops, the European hoopoe (Jerdon I., 390). Not very common.
255. Upupa ceylonensis, the Indian hoopoe (Jerdon I., 392). The Düns and warm valleys; common.
256. Lantus lahtora, the Indian grey shrike (Jerdon I., 400). The Düns only; rare.
257. Lantus erythronotus, the rufous-backed shrike (Jerdon I., 402). Up to 4,000 feet; common.
257. Lantus caniceps, the pale rufous-backed shrike (B. F. VII., 371). The (b.) Dehra Dün; rare.
258. Lantus telesmatotus, the grey-backed shrike (Jerdon I., 403). From 2,000 to 4,000 feet; common.
259. Lantus nigricaps, the black-headed shrike (Jerdon I., 404). From 2,000 to 5,000 feet; rare.
260. Lantus vittatus, the bay-backed shrike (Jerdon I., 405). The Düns and warm valleys.
261. Lantus cristatus, the brown shrike (Jerdon I., 406). In the cold weather only; not common.
385. Tephrodornis pondiceriana, the common woodshrike (Jerdon, 410). The Düns only.
387. (Bis) Hemipus capitallis, the Himalayan pied shrike (S. F. I., 486). The Düns and up to 5,000 feet; rare.
388. Volucivora syzygi, the black-headed cuckoo shrike (Jerdon I., 416). The Düns and warm valleys; rare.
389. Volucivora melaschista, the dark grey cuckoo shrike (Jerdon I., 416). Up to 7,000 feet; not common.
390. Graucalus macell, the large cuckoo shrike (Jerdon I., 417). The Düns only; rare.
391. Pericrocotus speciosus, the large minivet (Jerdon I., 419). Up to 8,000 feet; not uncommon.
392. Pericrocotus brevirostris, the short-billed minivet (Jerdon I., 421). Up to 8,000 feet; common.
393. Pericrocotus roseus, the rose minivet (Jerdon I., 422). The Düns and warm valleys.
394. Pericrocotus peregrinus, the small minivet (Jerdon I., 423). The Düns only; common.
395. Buchanga atrata, the common drongo-shrike (Jerdon I., 437). Up to 4,000 feet; common.
396. Dicrurus annectans, the crow-billed drongo (Jerdon I., 430). In the warm valleys; rare.
397. Buchanga longicaudata, the long-tailed drongo (Jerdon I., 430). From 4,000 to 7,000 feet; common.
398. Buchanga corvula, the white-bellied drongo (Jerdon I., 429). The Düns and warm valleys; rare.
399. Chapaia mees, the bronzed drongo (Jerdon I., 428). In the warm valleys; very rare.
400. Dissemurus grandis, the large racket-tailed drongo (Jerdon I., 436). In the warm valleys; rare.
401. Chilao hoffmanni, the hair-created drongo (Jerdon I., 439). In the warm valleys; rare.
402. Artamusfuscus, the ashy swallow shrike (Jerdon I., 441). From 3,000 to 5,000 feet; common.
403. Muscipula paradisi, the paradise flycatcher (Jerdon I., 446). In the Düns and warm valleys; common.
404. Myiagra aurea, the black-naped blue flycatcher (Jerdon I., 450). In the warm valleys; rare.
405. Leucocercus albicollis, the white-throated fantail (Jerdon I., 451). From 2,000 to 6,000 feet; common.
406. Leucocercus aureola, the white-browed fantail (Jerdon I., 452). The Düns only; common.
407. Chelidonyx hypoxantha, the yellow-bellied fantail (Jerdon I., 455). The warm valleys; rare.
408. Callicepha soylenensis, the grey-headed flycatcher (Jerdon I., 458). Up to 5,000 feet; very common.
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298. Hemichileidon aburrimus, the sooty flycatcher (Jerdon I., 458). From 6,000 to 10,000 feet; common.

299. Alseonax latirostris, the southern brown flycatcher (Jerdon I., 459). From 3,000 to 8,000 feet; common.

300. Steporela melanops, the verditer flycatcher (Jerdon I., 463). From 4,000 to 8,000 feet; common.

304. Cyornis rubeculoides, the blue-throated redbreast (Jerdon I., 466). Up to 6,000 feet; not common.

310. Muscicapula superciliaris, the white-browed blue flycatcher (Jerdon I., 470). Up to 8,000 feet; common.

314. Niltava sundara, the rufous-bellied fairy bluechat (Jerdon I., 473). Up to 3,000 feet; not common.

319. Siphia striophila, the orange gorgetted flycatcher (Jerdon I., 479). From 5,000 to 8,000 feet; very rare.

388. Siphia leucomeleanus, the slaty flycatcher (Jerdon I., 479). From 5,000 to 7,000 feet; rare.

292. (bis). Erythrotererna parva, the white-tailed robin flycatcher (Jerdon I., 481. S. F. V., 471). The Dim; common.

293. (ter.) Erythrotererna hyperythra, the rufous-bellied robin flycatcher (S. F. V., 471). The Dim; rare.

295. Erythrotererna maculata, the little pied flycatcher (Jerdon I., 489). From 2,000 to 6,000 feet; rare.

323. Troglodytes nipalensis, the Nepal wren (Jerdon I., 491). From 4,000 to 10,000 feet; rare.

342. Myiophonus temminckii, the yellow-bellied whistling thrush (Jerdon I., 500). Common up to 6,000 feet.

345. Pitta brachyura, the yellow-breasted ground thrush (Jerdon I., 503). Not rare up to 6,000 feet.

347. Cinclus australis, the brown water ouzel (Jerdon I., 506). Common up to 5,000 feet.

350. Zoothera monticola, the large brown thrush (Jerdon I., 509). Rare, 6,000 to 8,000 feet.

351. Cyanocinclus cyanus, the blue rock thrush (Jerdon I., 511). In the Dim and low hills in the cold weather.

352. Petrophila erythrogaster, the chestnut-bellied thrush (Jerdon I., 514). 5,000 to 8,000 feet; common.

353. Petrophila cinclorhyncha, the blue-headed chat thrush (Jerdon I., 515). 2,000 to 8,000 feet; common.

355. Geocichla citrina, the orange-headed ground thrush (Jerdon I., 517). Up to 8,000 feet; not common.

356. Geocichla unicolor, the dusky ground thrush (Jerdon I., 519). Up to 8,000 feet; common.

357. Turdulus wardi, Ward's pied-blackbird (Jerdon I., 520). 5,000 to 8,000 feet; common.

358. Geochlora dissimilis, the variable pied-blackbird (Jerdon I., 521). 7,000 feet; very rare.
361. Merula boulbou, the grey-winged blackbird (Jerdon I., 525). Up to 6,000 feet; common.
362. Merula albocincta, the white-collared ouzel (Jerdon I., 526). 6,000 to 8,000 feet; not rare.
363. Merula castanea, the grey-headed ouzel (Jerdon I., 526). 5,000 to 8,000 feet; rare.
364. Turdus atrorubris, the black-throated thrush (Jerdon I., 520). Common in the cold weather.
365. Turdus viscivorus, the missel thrush (Jerdon I., 521). 5,000 to 10,000 feet; not common.
370. Oreocinclia mollissima, the plain-backed mountain thrush (Jerdon I., 523). Very rare.
371. Oreocinclia dauma, the small-billed mountain thrush (Jerdon I., 523). Up to 8,000 feet; common.
372. Grammatoptila striata, the striated jay thrush (Jerdon II., 11). 5,000 to 8,000 feet; not common.
373. Pyctorhia sinensis, the yellow-eyed babbler (Jerdon II., 15). Up to 3,000 feet; common.
374. Sitticyphas pyrrhope, the red-billed wren babbler (Jerdon II., 22). 3,000 to 6,000 feet; rare.
375. Pomatorhinus leucogaster, Gould’s scimitar babbler (Jerdon II., 30). The Dunes and warm valleys; rare.
376. Pomatorhinus erythrogenys, the rusty-cheeked scimitar babbler (Jerdon II., 81). 3,000 to 6,000 feet; common.
377. Garrulax leucolophus, the white-crested laughing thrush (Jerdon II., 36). The Dunes and warm valleys.
378. Garrulax albogularis, the white-throated laughing thrush (Jerdon II., 88). 5,000 to 8,000 feet; common.
379. Trochalopteron erythrocephalum, the red-headed laughing thrush (Jerdon II., 45). 5,000 to 8,000 feet; common.
380. Trochalopteron variegatum, the variegated laughing thrush (Jerdon II., 45). 2,000 to 5,000 feet; rare.
381. Trochalopteron rufogularis, the Rufous-chinned laughing thrush (Jerdon II., 47). 2,000 to 5,000 feet; rare.
382. Trochalopteron lineatum, the streaked laughing thrush (Jerdon II., 50). 4,000 to 8,000 feet; very common.
383. Actinodura egerfoni, the Rufous bar-wing (Jerdon II., 83). 5,000 to 8,000 feet; rare.
384. Siria capistrata, the black headed sibia (Jerdon II., 84). 4,000 to 8,000 feet; very common.
385. Maleacococcus terricolor, the Bengal babbler (Jerdon II., 50). The Dunes only.
386. Argya malcolmi, the large grey babbler (Jerdon II., 64). The Dunes only.
387. Chatterhuss caspidea, the striated bush-babbler (Jerdon II., 67). The Dunes only.
388. Chatterhuss carilii, the striated red-babbler (Jerdon II., 70). The Dunes only.
444. Hyptipetes pearckoides, the Himalayan black bulbul (Jerdon II., 77). 5,000 to 8,000 feet; common.

447. Hypsipetes malaccensis, the rufous-bellied bulbul (Jerdon II., 79). From 3,000 to 8,000 feet; common.

456. Rubigula flaviventris, the black-crested yellow bulbul (Jerdon II., 85). 3,000 to 8,000 feet; rare.

458. Otoocompsa leucogenys, the white-cheeked crested bulbul (Jerdon II., 90). Up to 8,000 feet; common.

461. Pycnonotus pygmaeus, the common Bengal bulbul (Jerdon II., 93). Up to 7,000 feet; common.

462. Pycnonotus hemorhous, the common Madras bulbul (Jerdon II., 94). The Dâns only.

465. Phylloscopus aurifrons, the gold-fronted green bulbul (Jerdon II., 99). The Dâns and warm valleys.

466. Phylloscopus hardwickii, the blue-winged green bulbul (Jerdon II., 106). Up to 6,000 feet, not rare.

468. Icera typhia, the white-winged green bulbul (Jerdon II., 109). The Dâns and warm valleys.

470. Oriolus kundoo, the Indian golden oriole (Jerdon II., 107). Up to 4,000 feet; common.

471. Oriolus indicus, the black-naped Indian oriole (Jerdon II., 109). The Dâns only; rare.

472. Oriolus melanoleucus, the black-headed oriole (Jerdon II., 110). The Dâns and warm valleys.

474. Oriolus tristis, the maroon oriole (Jerdon II., 113). Kumarsone only; rare.

475. Copechus sularis, the magpie robin (Jerdon II., 114). Up to 4,000 feet; common.

476. Kestrelina macroura, the shama (Jerdon II., 116). In the Dâns only; very rare.

477. Myiomyia leucura, the white-tailed blue-chat (Jerdon II., 116). 6,000 to 8,000 feet; very rare.

480. Thamnobia cambiaensis, the brown-backed Indian robin (Jerdon II., 129). The Dâns only; common.

481. Pratincola capra, the white-winged black robin (Jerdon II., 129). Up to 8,000 feet; common.

483. Pratincola indicus, the Indian bush-chat (Jerdon II., 131). Up to 5,000 feet; common.

486. Pratincola ferox, the dark-grey bush-chat (Jerdon II., 127). Up to 8,000 feet; common.

497. Ruficilla rufuliventris, the Indian redstart (Jerdon II., 137). The Dâns and warm valleys.

498. Ruficilla hodgeoni, Hodgson's redstart (Jerdon II., 138). Near the snows; rare.

499. Ruficilla erythropus, the white-winged redstart (Jerdon II., 139). Near the snows; rare.

502. Ruficilla frontalis, the blue-fronted redstart (Jerdon II., 141). Near the snows; common.
504. Eutirica carulescens, the blue-headed redstart (Jerdon II, 141). In the higher valleys; common.

505. Rhynchornis fasanus, the plumbeous water-robin (Jerdon II, 142). Up to the snow level; common.

506. Ochthoeca leucomelas, the white-capped redstart (Jerdon II, 143). Up to the snow level; common.

507. Larvivora superciliaris, the blue woodchat (Jerdon II, 145). In valleys, 3,000 to 6,000 feet.

508. Ianthus cyanus, the white-breasted blue woodchat (Jerdon II, 146). From 4,000 to 6,000 feet.

512. Callophrys guttatus, the common ruby-throat (Jerdon II, 150). The Dūns in the cold weather.

513. Callophrys pectoralis, the white-tailed ruby-throat (Jerdon II, 151). In the elevated valleys.

514. Cyanecula suavis, the Indian blue-throat (Jerdon II, 152). In the Dūns in winter.

515. Acrorhynchus stenotus, the large red-warbler (Jerdon II, 154). In the Dūns in winter.

516. Acrorhynchus nubicolor, the lesser red-warbler (Jerdon II, 155). The valleys and lower hills.

517. Acrorhynchus agricolus, the paddy-field warbler (Jerdon II, 156). The valleys and lower hills.

527. (sic.) Horornis pallidus, the pale hill-warbler (S. F. III, 241). From 4,000 to 8,000 feet; rare.

530. Orthotomus sutorius, the Indian tailor-bird (Jerdon II, 166). The Dūns and warm valleys.

535. Prinia stewarti, Stewart's wren-warbler (Jerdon II, 171). The Dūns only; common.


537. Prinia cinereocapilla, Hodgson's wren-warbler (Jerdon II, 173). The Dūns and lower hills.

538. Prinia hodgsoni, the Malabar wren-warbler (Jerdon II, 174). Probably identical with No. 536.

539. Cisticola curritans, the rufous grass-warbler (Jerdon II, 174). The Dūns only; rare.

540. Drymea incornata, the common wren-warbler (Jerdon II, 176). The Dūns only; common.

544. (sic.) Drymea rufescens, the great rufous wren-warbler (S. F. I, 437). The Dūns only; rare.

547. Suva crinalis, the brown mountain wren-warbler (Jerdon II, 183). At 8,000 to 9,000 feet.

548. Suva strigularis, the black-breasted wren-warbler (Jerdon II, 184). From 4,000 to 6,000 feet; rare.

551. Franklinia buchanani, the rufous-fronted wren-warbler (Jerdon II, 186). The Dūns only; rare.
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533 Hypoclis rama, Sykes' warbler (Jerdon II., 189). The Duns only; not common.

534. Phylloscopus tristis, the brown tree-warbler (Jerdon II., 190). The Duns in the cold weather.

536 Phylloscopus magnoirostris, the large-billed tree-warbler (Jerdon II., 191). Not uncommon.

539. Phylloscopus nitidus, the bright-green tree-warbler (Jerdon II., 192). Not common.

562. Phylloscopus viridanus, the greenish tree-warbler (Jerdon II., 192). Common in the cold-weather.

563. (♀♂) Phylloscopus tyleri, Tyller's tree-warbler (S. F. III., 243N). Kumaun only; rare.

561 Phylloscopus affinis, Tickell's tree-warbler (Jerdon II., 194). In the cold-weather; not common.

562. Phylloscopus indicus, the olivaceous tree-warbler (Jerdon II., 194). In the cold-weather; rare

563. Reguloides occipitalis, the large crowned warbler (Jerdon II., 196). Dehra Dun; very rare.

565. (♀♂) Reguloides humilis, Brook's tree-warbler (S. F. VII., 131). In the Duns only; common in winter.

564. Reguloides pruinalis, the yellow-rumped warbler (Jerdon II., 197). Not uncommon.

567 Reguloides viridipes, the green-winged warbler (Jerdon II., 198). Not uncommon.

569. Calococca burkii, the black-browed warbler (Jerdon II., 199). In the higher valleys; rare.

571. Abrornis schisticeps, the black-eared warbler (Jerdon II., 201). 5,000 to 8,000 feet; common.

573. Abrornis albociceps, the white-browed warbler (Jerdon II., 202). Very common

580. Regulus himalayensis, the Himalayan fire-crest (Jerdon II., 206). 8,000 to 10,000 feet; rare.

582. Sylvia affinis, the allied grey warbler (Jerdon II., 209). The Duns only in the cold-weather.

584. Henicurus maculatus, the spotted forktail (Jerdon II., 212). Up to 6,000 feet; common.

586. Henicurus schistaceus, the slaty-backed forktail (Jerdon II., 214). Kumaun only; rare.

591. Henicurus asleri, the short-tailed forktail (Jerdon II., 214). 2,000 to 6,000 feet; common.

590 Motacilla madrasiensis, the pied wagtail (Jerdon II., 217). The Duns only; common.

592. (♀♂) Motacilla hodgsoni, Hodgson's pied wagtail (S. F. I., 26). Up to 10,000 feet; not common.

593. Motacilla personata, the black-faced wagtail (Jerdon II., 218). The Duns only in the winter.
592. Calobates melanope, the grey and yellow wagtail (Jerdon II., 229). Up to 10,000 feet; common.

593. Budytes cinereocapilla, the grey-capped field wagtail (Jerdon II., 229; S.B. VI., 363). The Dûns only.

593. (bis.) Budytes melanocephala, the black-headed field wagtail (S.B. VI., 363). The Dûns only.

593. (ter.) Budytes flavus; the yellow wagtail (S.B. VI., 363). The Dûns only; common.

594. Budytes calcarius; the black and yellow wagtail (S.B. VII., 401). Up to 2,000 feet; not common.

594. (bis.) Budytes citreola, the grey-headed yellow wagtail (S.B. VII., 401). The Dûns in winter.

595. Anthus maculatus; the Indian tree-pipit (Jerdon II., 229). Up to 2,000 feet; not rare.

596. Anthus arborescens; the tree pipit (Jerdon II., 229). In the Dûns in the cold weather.

596. Corydalis rufula, the Indian titiark (Jerdon II., 233). The Dûns and warm valleys.

597. Agrodroma sordida; the brown rock-pipit (Jerdon II., 226). Up to 3,000 feet; not common.

597. Anthus rossaceus, the vinous-throated pipit (Jerdon II., 237). 4,000 to 12,000 feet; common.

598. Heterara sylvana, the upland pipit (Jerdon II., 239). 3,000 to 5,000 feet; common.

599. Cochoa purpurea, the purple thrush-tit (Jerdon II., 243). 3,000 to 5,000 feet; rare.

600. Cochoa viridis, the green thrush-tit (Jerdon II., 243). 3,000 to 5,000 feet; rare.

600. Pteruthius erythropterus, the red-winged shrike-tit (Jerdon II., 245). 4,000 to 5,000 feet; rare.

601. Leiothrix lutea, the red-billed hill-tit (Jerdon II., 250). Up to 2,000 feet; not uncommon.

602. Siva striigula, the stripe-throated hill-tit (Jerdon II., 252). 5,000 to 9,000 feet; not common.

603. Siva cyanura, the blue-winged hill-tit (Jerdon II., 253). Kumaon 7,000 feet; rare.

604. Ixulus flavivillosis, yellow-naped flowerpecker (Jerdon II., 258). 6,000 to 7,000 feet; rare.

605. Yuhina occipitalis, the slaty-headed hill-tit (Jerdon II., 251). Kumaon, 3,000 feet; rare.

606. Zosterops palpebrosus, the white-eyed tit (Jerdon II., 265). Common up to 7,000 feet.

607. Sylviparus modestus, the yellow-browed flowerpecker (Jerdon II., 267). 4,000 to 5,000 feet; not common.

608. Euphthalicus erythrocephalus, the red-headed tit (Jerdon II., 270). 4,000 to 6,000 feet; very common.
Lophophanes melanolophus, the crested black-tit (Jerdon II., 273). 5,000 to 8,000 feet; common.

Lophophanes rufonuchalis, the Simla black-tit (Jerdon II., 274). 9,000 to 12,000 feet; not rare.

Parnis monticolus, the green-backed tit (Jerdon II., 277). 4,000 to 8,000 feet; very common.

Parnis nipalis, the Indian grey-tit (Jerdon II., 278; S.F. VII., 220N). Up to 7,000 feet, not common.

Macleiojphus xanthogenys, the yellow-cheeked tit (Jerdon II., 279). 4,000 to 6,000 feet; not very common.

Corvus tibetanus, the Tibet raven (Jerdon II., 294). At great elevations; rare.

Corvus culminatus, the Indian corbie (Jerdon II., 295). The Düns only; common.

Corvus intermedius, the blackhill crow (Jerdon II., 297). 4,000 to 9,000 feet; common.

Corvus splendens, the common Indian crow (Jerdon II., 298). Up to 5,000 feet; common.

Nucifraga hemispila, the Himalayan nut-cracker (Jerdon II., 304). 6,000 to 10,000 feet; common.

Garrulus bispectaculis, the Himalayan jay (Jerdon II., 307). 5,000 to 8,000 feet; common.

Garrulus lanceolatus, the black-throated jay (Jerdon II., 308). 4,000 to 8,000 feet; very common.

Urocissa occipitalis, the red-billed blue magpie (Jerdon II., 309). 3,000 to 5,000 feet; common.

Cissa chinensis, the green jay (Jerdon II., 310). In Kumaon only; up to 7,000 feet; rare.

Dendrocitta rufa, the common Indian magpie (Jerdon II., 314). The Düns only; common.

Dendrocitta himalayensis, the Himalayan magpie (Jerdon II., 316). Up to 5,000 feet; common.

Fregilus himalayensis, the Himalayan chough (Jerdon II., 319). At high elevations; rare.

Sturnus vulgaris, the common starling (Jerdon II., 391). The Düns in winter only; rare.

Sturnus pastor contra, the pied starling (Jerdon II., 332). The Düns only; common.

Acridotheres tristis, the common mynah (Jerdon II., 325). Up to 7,000 feet; common.

Acridotheres fuscus, the jungle mynah (Jerdon II., 327). Up to 7,000 feet; common.

Sturnus pagodarum, the Brahminy mynah (Jerdon II., 329). The Düns only; not common.

Sturnus malabaricus, the grey-headed mynah (Jerdon II., 330). The lower hills; rare.
690. Pastor roseus, the rose-coloured starling (Jerdon II., 353). The Dúns only; common.
691. Sarcoglossa spilloptera, the spotted-winged star (Jerdon II., 354). Up to 6,000 feet; common.
692. Eulabes intermedia, the Nepal hill mynah (Jerdon II., 339). The Kumraon bázár; rare.
693. Ploceus philippinus, the common weaver-bird (Jerdon II., 343; S. F. VI. 399). The Dúns; common.
694. (Bir) Ploceus megarhynchus, the great billed weaver-bird (S. F. III., 406). Kumraon bázár; rare.
695. Ploceus manyar, the striated weaver-bird (Jerdon II., 348). The Dúns only; common.
696. Munia rubronigra, the chestnut-bellied munia (Jerdon II., 359). The Dúns only; rare.
697. Munia punctulata, the spotted munia (Jerdon II., 354). Up to 6,000 feet; not uncommon.
698. Munia acuticauda, the Himalayan munia (Jerdon II., 356). Up to 5,000 feet; not common.
699. Munia malabarica, the plain brown munia (Jerdon II., 357). The Dúns only; common.
700. Estrilda Amanda, the red wax bill (Jerdon II., 359). The Dúns to warm valleys; rare.
701. Passer indicus, the Indian house-sparrow (Jerdon II., 363). Up to 7,000 feet; very common.
702. Passer cinamomomus, the cinnamon-headed sparrow (Jerdon II., 365). 4,000 to 7,000 feet; common.
703. Passer montanus, the mountain sparrow (Jerdon II., 366). From 3,000 to 7,000 feet; rare.
704. Gymnoris flavicollis, the yellow-throated sparrow (Jerdon II., 368). Up to 4,000 feet; common.
705. Emberiza stracheyi, the white-necked bunting (Jerdon II., 373). From 5,000 to 10,000 feet; rare.
706. Emberiza buettoni, the grey-necked bunting (Jerdon II., 373). Bhagirathi valley; rare.
707. Emberiza fusata, the greyheaded bunting (Jerdon II., 376). Káli on the Jumna; not rare.
708. Emberiza pusilla, the dwarf bunting (Jerdon II., 376). Inserted on Jerdon's authority.
709. Melophrus melanoterus, the crested black bunting (Jerdon II., 381). The Dúns and warm valleys.
710. Hesperiphona icterodes, the black and yellow grossbeak (Jerdon II., 384). Garhwal, near the snows.
711. Hesperiphona affinis, the allied grossbeak (Jerdon II., 385). Kumraon, near the snows.
712. Muscicapa melanoxanthus, the spotted winged grossbeak (Jerdon II., 386). Dehra Dúns, up to 10,000 feet; rare.
728. Mycrobaz carminipes, the white-winged grosbeak (Jerdon II., 287). Kumase, near the snows; rare.
729. Pyrrhula erythrocephala, the red-headed bulbfinch (Jerdon II., 339). 6,000 to 10,000 feet; rare.
730. Carpodacus erythrinus, the common rosefinch (Jerdon II., 338). Up to 10,000 feet; not rare.
731. Propasser rhodopeplus, the spotted-winged rosefinch (Jerdon II., 400). Mussoorie; rare.
732. Propasser rhodocharis, the red-mantled rosefinch (Jerdon II., 401). Garhwal; rare.
733. Propasser rhodochrous, the pink-browed rosefinch (Jerdon II., 403). 5,000 to 10,000 feet; not rare.
734. Propasser pulcherrius, the beautiful rosefinch (Jerdon II., 402). Kumaon (type Jerdon).
735. (bis.) Propasser ambiguus, Wilson's rosefinch (S. F. II., 326). Garhwal 5,000 to 10,000 feet.
736. Calliscandthis burtoni, the red-browed finch (Jerdon II., 407). The interior of Garhwal; rare.
737. Carduelis caniceps, the Himalayan goldfinch (Jerdon II., 408). 5,000 to 10,000 feet; common.
738. Hypocharis spinoides, the Himalayan siakin (Jerdon II., 409). 4,000 to 5,000 feet; not common.
739. Metoponina pusilla, the gold-headed finch (Jerdon II., 410). Common in the interior of Garhwal.
740. Fringilla montifringilla, the mountain finch (Jerdon II., 412). Mussoorie (type Hutton); doubtful.
741. (bis) Fringilla sorcida, the Himalayan larkfinch (S. F. I., 41). In the interior of Garhwal.
742. Miranda assamica, the Bengal bushlark (Jerdon II., 416). In the Duons; very local.
743. (bis) Miranda immaculata, the mountain bushlark (S. F. T., 41). Near Chakrata (Marshali); rare.
744. Miranda erythroptera, the red-winged bushlark (Jerdon II., 418). In the Duons only; not common.
745. Pyrrhula grisea, the black-bellied finch lark (Jerdon II., 424). In the Duons only; common.
746. Calandrella brachydactyla, the short-toed lark (Jerdon II., 428). The Duons only, in winter; rare.
747. Otocoris pennicillata, the horned lark (Jerdon II., 429). In the interior of Kumase.
748. Alauda dulcivox, the Himalayan skylark (Jerdon II., 433; S. F. I. 39). At all elevations; not common.
749. Alauda galgula, the Indian skylark (Jerdon II., 434). The Duons only; rare.
750. Crocops phoenicopterus, the Bengal green pigeon (Jerdon III., 447). The Duons only; not common.
773. Crocopus chlorigaster, the southern green pigeon (Jerdon III., 448). The Dúns only; not common.

776. Sphenocercus sphenurus, the kokla green pigeon (Jerdon III., 453). 4,000 to 8,000 feet; common.

778. (bis.) Sphenocercus minor, the lesser kokla (S. F. III., 255). In the warm valleys of Garhwal.

783. Alsoconus hodgsoni, the speckled wood pigeon (Jerdon III., 463). Interior of Kumaon and Garhwal; rare.

784. Palumbus casiotis, the Himalayan cushion (Jerdon III., 454). Interior of Kumaon and Garhwal; rare.

787. Palambena eversmanni, the Indian stock pigeon (Jerdon III., 467). The Dúns only, in winter; rare.

788. Columba intermedia, the Indian rock pigeon (Jerdon III., 469). The Dúns only; common.

789. Columba rupestris, the blue hill pigeon (Jerdon III., 470). Rare; probably migratory.

790. Columba leuconota, the white-bellied pigeon (Jerdon III., 471). Near the snows.

792. Turtur pulchrratus, the ashy turtle dove (Jerdon III., 476; S. F. VI., 421). 5,000 to 10,000 feet; common

794. Turtur cambaimensis, the brown turtle dove (Jerdon III., 478). The Dúns and lower hills; common.

795. Turtur suratensis, the spotted dove (Jerdon III., 479). Up to 6,000 feet; common.

796. Turtur risoria, the common ring dove (Jerdon III., 481). Up to 4,000 feet; common.

797. Turtur humilis, the red turtle dove (Jerdon III., 482). The Dúns and warm valleys; rare.

798. Chalcophaps indica, the bronze-winged dove (Jerdon III., 484). Up to 4,000 feet; not common.

802. Pterocles exustus, the common sandgrouse (Jerdon III., 502). The Dúns only; rare.

802. (bis.) Syrrhaptes tibetanus, the Tibetan sandgrouse (S. F. VII., 425). On the northern borders.

803. Pavo cristatus, the common peacock (Jerdon III., 508). The Dúns only; common.

804. Lophophorus impeyanus, the monáí (Jerdon III., 510). From 8,000 to 13,000 feet; not uncommon.

805. Cerionis satyra, the Sikkim horned pheasant (Jerdon III., 516). From 9,000 feet to snow line.

808. Pucrasia macrolopha, the koklás pheasant (Jerdon III., 524). 6,000 to 10,000 feet; not rare.

809. Phasianus wallchili, the chir pheasant (Jerdon III., 527). 5,000 to 10,000 feet; scarce.

810. Euploeoecus alboeristatus, the white-crested kalij pheasant (Jerdon III., 523). Up to 4,000 feet; common.
512. Gallus ferrugineus, the red jungle fowl (Jerdon III, 538). The Düns and warm valleys.
516. Tetragallus himalayensis, the Himalayan snowcock (Jerdon III, 542). At great elevations.
517. Lerwa nivicola, the snow partridge (Jerdon III, 555). Near the snow line.
518. Francolinus vulgaris, the black partridge (Jerdon III, 558). Up to 5,000 feet; common.
520. Caccabia chukor, the chukor (Jerdon III, 564). 6,000 to 9,000 feet; not common.
522. Ortygornis ponticeriana, the grey partridge (Jerdon III, 569). In the Düns only; common.
523. Ortygornis gularis, the kyah partridge (Jerdon III, 572). Kumaon Tarai; rare.
523. (bis) Perdix hodgsonii, Mrs. Hodgson's partridge (S, F. VII, 438). Above 17,000 feet; very rare.
524. Arboricola torquolus, the black-throated hill partridge (Jerdon III, 577). 4,000 to 9,000 feet; common.
525. Arboricola rufogularis, the rufous-throated hill partridge (Jerdon III, 578). Kumaon only; rare.
526. Perdicula asiatica, the jungle bush-quail (Jerdon III, 581). The Düns and warm valleys.
529. Coturnix communis, the corn quail (Jerdon III, 586). Up to 4,000 feet; common.
530. Coturnix coromandelica, the rain quail (Jerdon III, 588). The Düns only; common.
531. Exsulfatoria chinensis, the blue-throated quail (Jerdon III, 591). The Düns only; rare.
532. Turnix talgoor, the black-breasted bustard quail (Jerdon III, 595). The Düns; common.
534. Turnix jousera, the larger button quail (Jerdon III, 599). Kumaon; lower hills.
535. Turnix dussumieri, the button quail (Jerdon III, 600). The Dehra Dün only; not common.
538. Syphelectodes bengalensis, the florikin (Jerdon III, 610). The Düns only; not rare.
539. Syphelectodes aurita, the lesser florikin (Jerdon III, 619). The Düns only; rare.
543. Glareola lactea, the small swallow plover (Jerdon III, 632). The Düns only; not common.
549. Egialitis crunica, the Indian ringed plover (Jerdon III, 640). The Düns only; rare.
552. Chettusia gregaria, the black-sided lapwing (Jerdon III, 644). Rare; migrat ry.
556. Chettusia leucura, the white-tailed lapwing (Jerdon III, 645). The Düns; rare; migrat ry.
Lobivanelus indicus, the red wattled lapwing (Jerdon III., 648). Up to 4,000 feet; common.

Sarciophorus bilobus, the yellow wattled lapwing (Jerdon III., 649). The Düns; a rare straggler.

Hooplopterus ventralis, the spur-winged lapwing (Jerdon III., 650). By the big rivers.

Esacus recurvirostris, the great stone-plover (Jerdon III., 652). The Düns; a rare straggler.

Cedinnemus crepitans, the stone-plover (Jerdon III., 654). The Düns only; not common.

Grus leucogeranus, the large white crane (Jerdon III., 663). Migrating; a rare straggler.

Grus cinerea, the common crane (Jerdon III., 664). An occasional cold-weather migrant.

Anthropoides virgo, the demoiselle crane (Jerdon III., 665). An occasional cold-weather migrant.

Scolopax rusticola, the woodcock (Jerdon III., 670). Up to 12,000 feet; not common.

Gallinago nemoricola, the wood snipe (Jerdon III., 672). The Düns; not common.

Gallinago solitaria, the Himálayan solitary snipe (Jerdon III., 673). Up to 12,000 feet; rare.

Gallinago scolopacinus, the common snipe (Jerdon III., 674). The Düns; common in winter.

Gallinago gallinula, the jack snipe (Jerdon III., 675). The Düns; common in winter.

Rhynchus bengalensis, the painted snipe (Jerdon III., 677). The Düns only; not rare.

Ibidorhynchus strutherii, the red-billed curlew (Jerdon III., 682). In the interior; rare.

Machetes pugnax, the ruff (Jerdon III., 687). The Düns only; in the winter.

Tringa minuta, the little stint (Jerdon III., 690). In the Düns in winter; occasionally.

Tringa temminickii, the white tailed stint (Jerdon III., 691). In the Düns in winter; occasionally.

Actitis glareola, the spotted sandpiper (Jerdon III., 697). In the Düns in winter; occasionally.

Actitis ochropus, the green sandpiper (Jerdon III., 698). An occasional migrant.

Actitis hypoleucus, the common sandpiper (Jerdon III., 699). Along the shores of rivers.

Totanus gliccis, the greenshanks (Jerdon III., 700). An occasional migrant.

Totanus stagnatilis, the little greenshanks (Jerdon III., 701). A rare migrant.
Totanus fuscus, the spotted redshanks (Jerdon III., 703). A rare migrant.

Totanus calidris, the redshanks (Jerdon III., 709). A rare migrant.

Himantopus candidus, the stilt (Jerdon III., 704). A rare migrant in the Dúns.

Metopidius indicus, the bronze-winged jacana (Jerdon III., 708). The Kumaun Taráí and Dúns.

Hydrophasianus chirurgus, the pheasant-tailed jacana (Jerdon III., 709). The Dúns and warm valleys.

Fulica atra, the baldcoot (Jerdon III., 715). The Dúns and warm valleys.

Gallinula chloropus, the water-hen (Jerdon III., 718). Up to 6,000 feet; common.

Erythra phoenicura, the white-breasted water-hen (Jerdon III., 720). In the Dúns; common.

Porzana alcoel, the brown rail (Jerdon III., 729). The Dúns; rather rare.

Porzana baillonii, Baillon’s crake (Jerdon III., 733). Up to 5,000 feet; not common.

Porzana fusca, the ruddy rail (Jerdon III., 724). Bhim Táí; rare.

Leptoptilus javanicus, the hair-crested stork (Jerdon III., 732). The Dúns only; rare.

Mycteria australis, the black-necked stork (Jerdon III., 734). The Dúns only; rare.

Ciconia nigra, the black stork (Jerdon III., 735). The Dúns only; rare.

Ciconia alba, the white stork (Jerdon III., 736). The Dúns only; rare.

Ciconia episcopa, the white-necked stork (Jerdon III., 737). The Dúns only; rare.

Ardea cinerea, the blue heron (Jerdon III., 741). The Dúns and lower hills; rare.

Ardea purpurea, the purple heron (Jerdon III., 743). The Dúns only; rare.

Herodias alba, the large egret (Jerdon III., 744). The Dúns only; rare.

Herodias intermedia, the smaller egret (Jerdon III., 746). The Dúns only.

Herodias garzetta, the little egret (Jerdon III., 746). The Dúns only; rare.

Buphæus coromandus, the cattle egret (Jerdon III., 749). The Dúns only.

Ardea cinerea, the pond heron (Jerdon III., 751). The Dúns only; common.

Egretta javanica, the little green heron (Jerdon III., 753). The Dúns only.
933. Ardea cinnamomea, the chestnut bittern (Jerdon III., 755). Bham Tāl; common.
936. Botaurus stellaris, the bittern (Jerdon III., 757). The Dūns only; rare.
937. Nycticorax griseus, the night heron (Jerdon III., 758). The Dūns and warm valleys; rare.
938. Tantalus leucocephalus, the pelican ibis (Jerdon III., 761). The Dūns only; rare.
941. Threskiornis melanocephalus, the white ibis (Jerdon III., 768). The Dūns only; rare.
942. Geronticus papillosus, the black ibis (Jerdon III., 769). The Dūns only; rare.
945. Anser cinereus, the greyleg goose (Jerdon III., 779). Migratory; not common.
949. Anser indicus, the barred-headed goose (Jerdon III., 782). An occasional migrant.
950. Sarkidiornis melanotus, the black-backed goose (Jerdon III., 785). The Dūns only.
951. Nettapus coromandelianus, the cotton teal (Jerdon III., 786). The Dūns only.
952. Dendrocygna javanica, the whistling teal (Jerdon III., 789). The Dūns only.
953. Dendrocygna fulva, the large whistling teal (Jerdon III., 790). A straggler from the east.
954. Casarca rutila, the ruddy sheldrake (Jerdon III., 791). An occasional migrant.
957. Spatula clypeata, the shoveller (Jerdon III., 796). A cold weather migrant.
958. Anas boschas, the mallard (Jerdon III., 798). An occasional migrant.
959. Anas pecollorhyncha, the spotted-billed duck (Jerdon III., 799). The Dūns only.
961. Chaulioluma streperus, the gadwall (Jerdon III., 801). An occasional migrant.
962. Dafila acuta, the pin-tailed duck (Jerdon III., 803). An occasional migrant.
964. Querquedula crecca, the common teal (Jerdon III., 806). A regular migrant.
965. Querquedula circia, the blue-winged teal (Jerdon III., 807). A regular migrant.
967. Branta rufina, the red-crested pochard (Jerdon III., 811). An occasional migrant.
968. Fuligula ferina, the red-headed pochard (Jerdon III., 812). A rare migrant.
969. Fuligula nyroca, the white-eyed duck (Jerdon III., 813). An occasional migrant.
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972. Mergus merganser, the merganser (Jerdon III., 817). On the large rivers; common.
974. Podiceps cristatus, the crested grebe (Jerdon III., 821). A rare straggler from the east.
975. Podiceps minor, the little grebe (Jerdon III., 825). Up to 4,000 feet; common.
985. Sterna scena, the large river tern (Jerdon III., 885). The Dáns only; rare.
987. Sterna javanica, the black-bellied tern (Jerdon III., 840). The Dáns only; not common.
1003. Pelecanus javanicus, the lesser white pelican (Jerdon III., 957). An occasional migrant.
1004. Pelecanus philippensis, the grey pelican (Jerdon III., 869). An occasional migrant.
1005. Graculus carbo, the large cormorant (Jerdon III., 861). On the large rivers; common.
1007. Graculus javanicus, the little cormorant (Jerdon III., 863). The Dáns only; not rare.
1008. Flocus melanogaster, the Indian snake-bird (Jerdon III., 865). The Dáns only.

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a new genus of Picidae and new species of Sitta. V., 770.
New species of Hirundinidae. V., 779.
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McMaster, A.—Notes on the birds of Nagpur, J. A. S. Ben. XL, ii., 207.

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REPTILES.

Reptiles are vertebrate animals that breathe by lungs and are cold-blooded and for the most part oviparous. They include frogs, toads, lizards, chameleons, salamanders, tortoises, turtles and serpents and are very widely and commonly distributed throughout India. When Dr. Günther wrote his great work (1864) on Indian reptiles, 282 species of snakes were recorded from India including British Burma, of which 79 species were venomous, but of the latter 44 were marine snakes (Hydrophidæ) and of the remainder 17 were arboral species,
reducing the venomous terrestrial snakes to 18, of which only six are at all common. Theobald in his "Catalogue of the reptiles of British India," published in 1876, omits the marine snakes and describes 188 species, of which only 33 are venomous. The following list only includes species actually collected by Dr. Watson in Kumaon and of the 23 recorded, eight are venomous, a proportion not found in the plains of India. A reference is given under each species to Theobald's work, where a description will be found.

REPTILIA.

Order Sauria or Land Lizards.

Group Leptoglossae.

Varanus Dracaena, Linn.: common water lizard, attains to four feet in length, brownish olive colour, dotted with black scales: common near rivers. Th. 38.

Mogoa himalayana, Günth.: four inches long, of which tail is half: colour above greenish olive, with a few interrupted series of dark and whitish dots; a dark lateral band from nose through eyes, margined above with white: common. Th. 57.

Mogoa sacra, Stol.: body 1·37, tail 2 inches: colour light bronze brown, with a few dark brown spots accompanied by one or two indistinct pale spots scattered on head and body: very common. Th. 57.

Group Pachyglossae.

Hemidactylus maculatus, D. et B.: length 5½ inches: colour brownish olive or dark brown above, with darker spots, bands or streaks: occurs at low levels. Th. 75.

Gymnodactylus Launderanus, Stol.: length about 4 inches: colour greenish brown, densely marbled and spotted with dark brown: rare, occurs in Almora. Th. 81.

Sitana pondiceriana, Cuv.: about 5½ inches, fawn-coloured with rhomboidal dark spots on the back and a pale yellowish streak from below the eye through the ear to the loins: frequent. Th. 102.

Calotes versicolor, Daud.: the blood-sucker; grows 14 to 16 inches; in summer, the males have the body red, head and neck yellowish picked out with red: very common up to 4,000 feet. Th. 109.
Stelio tuberculatus, Gray: body 5 and tail 8½ inches: colour dark olive: very common up to 5,000 feet. Th. 116.

Stelio melanurus, Blyth: body 3·7 and tail 7·7 inches: colour olive grey: somewhat rare. Th. 117.

Stelio Dayanus, Stol.: body 6 and tail 12 inches: colour in adults blackish: found in the Bhábar. Th. 117.

Order Ophidia or Snakes.

Group 1.—Harmless colubrine snakes.

Typhlops bothriorhynchus, Günth.: grows to 11 inches; brown above and below or with the terminal half of scales slightly paler: occurs in Bhábar. Th. 122.

Typhlops tenuicollis, Peters: colour olive, browner above, yellowerish below: Bhábar. Th. 123.

Typhlops porrectus, Stol.: grows to 11 inches: colour above pale chocolate or leaden brown above shading into paler below: Bhábar. Th. 124.

Simotes Russellii, Daud.: grows to 27 inches: colour brownish olive with three dark arrow-shaped bands on the head very distinct and body crossed with about twenty white-edged black bars: belly yellow: very common on grassy slopes. Th. 150.

Simotes punctulatus, Günth.: grows to 36 inches: colour brown either crossed by numerous straight light, black edged bands, about two scales broad or crossed by irregular lines formed by the black edges of some scales or with some twenty-two pairs of pale black-edged spots down the back, more or less confluent: rare. Th. 152.

Ablabes tenuiceps, Blyth: grows to 14 inches: colour above uniform blackish ash, below whitish: frequent. Th. 154.

Ablabes Rappii, Günth.: grows to 23 inches: colour uniform dark bronze brown or blackish above, whitish below: common. Th. 154.

Ablabes collaris, Gray: grows to 32 inches: colour brown above, white below with black dots; a black collar yellow margined behind on the nape sometimes with a number of black dots: common. Th. 156.

Compsosoma semifasciatum, Blyth: colour above pale olive grey: transversely dark barred and spotted; a horse-shoe mark with the
ends directed backwards on the occipitals; a pale, elongate, lateral ocellus on each occipital: belly whitish or with a slight dusky tinge: common. Th. 164.

*Compsosoma Hodgsonii*, Günth.: grows to 63½ inches: colour uniform brownish olive: skin and margin of some scales black; lower parts yellowish: common. Th. 166.

*Ptyas mucosus*, Linn.: the rat-snake or *dháman* of the plains; grows to 91 inches; colour light brownish olive; scales with dusky margins producing a reticulated appearance on the hind part of the body and the pointed tail: very common. This with *S. Russelii* comprise nineteen-twentieths of all the snakes killed in the hills. Th. 168.

*Tropidonotus platyceps*, Blyth: grows to 30 inches: colour in males above, dark brown, with a long elliptical mark on the neck and two rows of small blackish spots along the back anteriorly: below yellowish finely mottled with dusky green and a distinct blackish band on each side: a coral red band along the ends of the ventrals: common on ground under trees. Th. 174.

*Psammophis condanarum*, Merr.: grows to 40 inches: colour buff or yellowish: isabelline brown with a dark stripe, two broad scales down either side of the back from head to tail and a broader dark stripe on either side of the belly which is yellowish: common. Th. 187.

*Lyodon striatus*, Shaw: brown or black barred with yellow, the bars being broken up on the sides and a bright yellow collar on the neck: grows to about 20 inches; frequent. Th. 199.

*Python molurus*, Linn.: *ajgar, chardo* in Kumaun; grows to about 30 feet, but specimens over 20 feet are rare; have seen one of 25 feet killed in the Eastern Dún of Dehra; coloration like the *Daboia*, but several shields on the head and scales in 65 rows round the middle of the body; common up to 5,000 feet: seen in Bhabar, at Ukhimath and below Tángráth. Th. 206.

**Group 2.—Venomous colubrine snakes.**

*Naja tripudians*, Merr.: cobra, known as *kobra, nág, kála-samp, phanaula*: grows to 70 inches and is very common in the hills. Neck dilatable into a hood; scales smooth in 15 rows on the body,
but more numerous on the neck: nostril between two shields. Colour very variable from pale yellowish to pale and dark brown and black. The spectacle marks on the hood also vary in development and are sometimes replaced by a pale oval eye-shaped mark with a dark centre. Th. 208.

*Naja Elaps*, Schl.: the *ashuriya* of the plains; grows up to 200 inches, has been identified from Pithoragarh and Kāladhūngi and occurs also in the eastern Bhābar. It is difficult to distinguish between young specimens and the cobra; they are, however, of a pure jet black. The adult female is olive brown with paler cross bands deeply edged with black: beneath white mottled with black about the tail; throat yellow. Th. 209.

*Callophis MacClellandii*, Reinh.: grows to about 30 inches and is rare in Kumaon. Body and tail reddish brown with generally a black vertebral line from the nape to the tip of the tail: head and neck black, with a yellow bar behind the eyes; belly yellowish with black cross bands or quadrangular spots. Sometimes the belly bars are alternately short and long, giving the appearance of a chain of supra-abdominal spots. Tail black ringed or sometimes without rings and belly only spotted and sometimes the vertebral line is absent and the body encircled with black rings. Th. 214.

*Bungarus cœruleus*, Schln.: the *karait* of the plains and here frequent in the valleys. Colour above deep lustrous blue-black uniform or streaked and reticulated with white; below white; grows to 54 inches. Compared with the cobra it is a sluggish snake and does not possess a hood but like most snakes, however, it has the power, when irritated of compressing laterally the anterior six inches of its body. Th. 215.

Group 3.—*Venomous viperine snakes*.

*Daboia Russellii*, Shaw: grows to 54 inches and is common in the hills. Colour above greyish or reddish brown with three rows of blackish-brown annular ocelli each surrounded by an inner white and an outer black ring down the back and sides: the vertebral series ovate, the others circular and sometimes with supplementary ocelli of small size interspersed below between the others. A broad arrow mark on the head formed by two pale lines from the snout over the eyes to the temporal region. Rostral and labials yellowish
with brown margins. Belly yellowish or marbled with brown. Th. 217.

**Group 4.—Venomous pitted vipers.**

*Trimerurus carinatus*, Gray: colour above uniform grass green paler below or whitish; tail yellowish or rusty; grows to 37 inches. This is one of the handsomest of the arboreal species and is frequent in the hills, Siwaliks and Bhābar. It is easily recognised by its head being much thicker than its neck or body. Th. 221.

*Trimerurus monticola*, Gray: colour in males blackish ash, in females and young pale brown. Two rows of square black spots along the back, alternately placed or confluent; sides black or brown spotted; a yellow or white streak from the eye to the neck with a Y-like mark on the neck; belly densely marbled brown; grows to 21 inches; rare, occurs in valleys. Th. 220.

*Helys himalayana*, Günth.: colour dark brown, indistinctly spotted with darker spots transverse, edged with black; belly black, marbled with yellowish; a blackish band from the eye to the gape; grows to 25 inches; very common above 10,000 feet; found on Binsar. Th. 225.

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OF THE NORTH-WESTERN PROVINCES.

Fishes form the fourth division of the Vertebrata. Like the mammals, birds and reptiles, they possess a vertebra, but they are cold-blooded and breathe by means of gills. The body may be divided into the head, trunk and tail and is provided with fins which according to their position are called pectoral, ventral, anal, caudal, adipose, and dorsal fins. For the fishes of India we fortunately possess Day's great work which will enable the local student at once to distinguish his captures. The following list is extracted from Dr. Day's articles¹ on the "Geographical distribution of Indian fresh-water fishes" and gives a reference to the description of each species in his 'Fishes of India.' There are sixteen families comprising eighty-seven genera of fresh-water fishes found in India and Burma. Of these two only are common to Africa and India only (not being Malayan) both being likewise Palaearctic: 32 extend to the islands of the Malayan archipelago and 12 are common to the Indian, African and Malayan regions, of which six are likewise Palaearctic. Further, if the 369 species comprised in the Indian genera be taken, two only are African and not Malayan, but they are also Palaearctic: 27 are common to India and the Malayan archipelago and two to India, Africa and the Malayan region. In the Himalaya there are two great classes, the Tartarian fauna from the Palaearctic regions and the Hindustan forms and amongst the latter, the hill Barbels have a well-marked distinct position. Altogether the Himalayan region contains recorded representatives of some eighteen genera, but much still remains to be done by local workers in accurately recording the distribution of species. Every one knows the bewildering mass of vernacular names for fishes that obtain in every district, but a careful study of Day will enable the naturalist with a fresh specimen.

before him to determine the names of the following amongst others that are said to occur in the Kumaun Division:—selo, baldyan, kalonji, gulyal, gadhila, nai, bain, gadera, bakulo, kanalowa, kotuwa, jydun, pharkato, mingaro, unero, bhagtera, sanero, damaruwa, aro, baloso, rudhilo, gavro, bhogi, sauliya, kano, gdlar, kali-karnil, kargato, paparuwa, chilaluwa and the dry-fish known as ashida.

Some of these fishes are found in shallow pools near the sources of the great rivers and such are provided with a transverse inferior mouth and a sucker behind the lower jaw with which they attach themselves to the rocks in order to resist the force of the current. The cold in winter in these elevated regions is intense and in the southern tract abutting on the plains the waters are ever warm. In the Tarâi, the Bhuksas and the Thârus catch fish chiefly for their own consumption and in the hills the Doms are the principal fishermen. All classes in the hills except a few Brahmans and Baniyas eat fish at all times. No sustained and systematic efforts have ever been made to protect fish from poachers and the wanton destruction of fry and mature fish goes on almost unchecked. In the tract along the foot of the hills between the Sârda and the Ganges, nets with meshes of ½" are used and the great fishing season takes place in the cold weather. In the hills spearing fish by torch-light is sometimes resorted to and in Garhwal they are often snared in nooses made of white horse-hair which are attached to a line stretched across a river and near each group of nooses, a brightly-coloured flower or piece of cloth is fastened. The line is kept in its position by a leaden weight and the curious fish attracted by the novel object presented to them come swimming around it and are easily entangled in the nooses.

The Superintendent of Dehra Dún reports on the state of fish-conservancy in his district in the following terms and there is reason to believe that what was written in 1871 is true of 1881:—

"Breeding fish are destroyed in great numbers and the small fry are also largely captured. The former are taken in the commencement of the rains in every conceivable manner. At that time, they run up small streams and are then killed with sticks, are caught in nets, in baskets, by hooks fastened on lines and in many other ways. Small fry are taken at the end of the rains in baskets placed in fields at the outlets for irrigation-water and in the cold-weather
they are captured wholesale in small-meshed nets. From the month of March up to the beginning of the rains, streams are dammed and turned. In the districts along the foot of the hills the mountain torrents, when they burst from the hills, have three or four different beds, all of which are full during the rains, but afterwards only one. One year the stream is in one of these beds and another year in another. The poachers choose a spot where the stream and an old bed are in close proximity and both have good pools in them. They then fix nets right across the stream about a mile, or more, below this spot: first, nets with large meshes, and then nets with smaller meshes which are kept in position by heavy stones placed on their lower edge and floats above. When the nets are all ready the operators dam up the stream, and open a water-way into the old bed, so that the force of the water soon cuts a deep way for itself, and then the late bed of the stream is left dry, except in the deep holes. All fish that try to escape down are stopped by the nets. The poachers then take away all the fish they want, and leave the rest to perish gradually as the pools dry up. Small fry may sometimes be seen lying dead, six and eight inches deep, in these holes. The poachers, in a day or two, go through the same process somewhere else lower down, and after a month or so when the fish have become accustomed to the new bed, they commence at the top again, and return the stream into its late bed, catching all the fish in the new bed.¹ This is one of the most deadly modes of poaching, but, in addition to this process during the same period, the poachers are in the habit of using nets of very small meshes, with which they catch the young fry of the larger kinds of fish where damming the stream is impracticable."

Some improvement has of late been effected in Dehra Dún with the co-operation of the landholders by limiting the size of the mesh in common use to one and a half inch between knot and knot; by prohibiting the sale of young fry in the markets and by establishing a close season during the first two months of the rains, but it is found that something more than private influence is required to check the wasteful use of this great food resource. In the hills some action should be taken to protect the mahâser. This fish so good for food and sport commences to run up the smaller streams

¹ See further Day’s official report on Indian fisheries.
about the end of March or beginning of April, and in June–July large specimens weighing ten to fifteen pounds may be seen in little streams not more than a few yards wide. These are all heavy with spawn and fall easy victims to the poacher. Where the streams narrow and run between rocks, the Doms fasten a series of strings with sharp strong barbed hooks every three inches to the rocks on each side and in this way secure a vast number of the larger fish. In the hills also the poisoning of pools with various vegetable drugs is a common practice and could easily be discouraged. The portions of plants more commonly used for this purpose are the bark of Zanthoxylon hostile, Wall., the tśmūr and tejbal of Kumaon, common throughout the hills: the fruit of Casearia tomentosa, Roxb., the chīla of the Siwalik tract and Anagallis arvensis, Linn., the jonkhdra and jaighani of Kumaon, of which the whole plant triturated is used to poison fish or to expel leeches from the nostrils hence its vernacular name. It is plausibly stated that fish are not such a common article of food as to need conservation, but it is precisely for this reason that they should be protected. Fish are universally eaten by the casteless classes that form the majority of the population and who are also the first to suffer in times of scarcity. It is not so necessary to protect the food-resources of the rich and powerful as to conserve those which might be made available for the poor labouring man and his family when famine is abroad. I would, therefore, strongly urge the prohibition of poaching and the introduction of a close season for the carp tribe: in fact the introduction of Ross’ Dún rules by legislative enactment.

PISCES.

ORDER PHYSOSTOMI.

Family—Siluridæ.


Amblyceps Mangots, Buch. Day, 490. Procured from Kangra and Darjiling and found in the upper Jumna.

Bagarius Yarrellii, Buch. Day, 495. The gūnch found near Haridwār and called the fresh-water shark. It attains a length of six feet or more.


Glyptosternum Botia, Buch. Day, 497. A mountain stream species found in the upper Jumna.


Family.—Cyprinidae. Carps.

Homaloptera maculata, Gray. Day, 525. Found in the Himalaya, also in the Wynád and Bhawâni rivers, Madras.


Oreinus sinuatus, Heckel. Day, 529. Occurs in the rivers within the hills and attaches itself by a sucker to the rocks and boulders and thus resists the action of the current. The species of this genus with Schizopygopsis, Schisothorax, Ptyeobarus, and Dip-tychus are strictly residents of the hilly regions of the Himalaya, though a few descend to the plains. The genus Oreinus extends from Afghanistán along the Himalaya to the frontiers of China. They also descend a short distance into the rivers of the plains and are absent from the level plateaus on the summit of the Himalaya.

Oreinus Richardsonii, Gray. Day, 530. This is the so-called mountain-trout of Kumaon, of which a figure is given by McClelland in J. A. S., Ben., IV., 39.

Oreinus plagiostomus, Heckel. Day, 530. This species occurs throughout the Himalaya from Afghanistán to Bhután.

Schizopygopsis Stoliczka, Steind. Day, 531. Found in the cold waters of the Himalaya about the source of the Indus, Tibet;
where the rivers are snow-fed and many of them never reach the sea.

_Schistothorax progestus_, McClell. Day, 532. The _dindwa_ of these Provinces: occurs from the head-waters of the Ganges eastwards.


_Labeo diplostomus_, Heckel. Day, 540. The _muheli_ of Hardwar occurs in the Himalayan rivers from the Panjáb to Asám, including the rivers at their bases.

_Labeo dyocheilus_, M'Clell. Day, 540. The _buddla_ of these Provinces: occurs in the same localities as the preceding.

_Labeo Pangusia_, Buch. Day, 541. Occurs throughout the Himalayan range and descends to the delta of the Ganges.


_Cirrhina Latia_, Buch. Day, 548. Occurs along the Himalaya in the hill rivers.

_Barbus chilinoides_, M'Clell. Day, 563. Occurs throughout the Himalaya as far east as Asám and descends into the Ganges.

_Barbus Tor_, Buch. Day, 564. Occurs throughout the hill rivers: the _mohiser_ of fishermen.

_Barbus hexastichus_, M'Clell. Day, 565. Occurs commonly in all rivers on and around the Himalaya.

_Apidoparia Jaya_, Buch. Day, 585. The _pabruwa_ of Hardwár: occurs also at Rájpur on the Jumna.


Barilius Bendelisis, Buch. Day, 590. Found in the Himálayan rivers and also in the plains (except Sind and the Malabar coast) and Ceylon.

Danio equipinnatus, M’Clell. Day, 596. Hitherto received only from the Himálayan rivers eastward of Népál.

Danio Dangila, Buch. Day, 596. Procured in the hills near Darjiling and in the Gangetic delta.


Botia Gono, Buch. Day, 606. Found from Sind through the Panjáb and Himálaya to Asám.


Leptocephalicichthys Guntea, Buch. Day, 609. From the Panjáb to Asám, including several of the Himálayan rivers.

Nemacheilus rupicola, M’Clell. Day, 616. Occurs in the rivers of the upper Himálaya and (?) Tibet at 16,000 feet above the level of the sea.


Nemacheilus stoliczkae, Steind. Day, 620. Taken in the Indus near Leh and in the Yárkand river.

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