



Breeding distribution and seasonal movements of Swinhoe's Rail *Coturnicops exquisitus* (Aves: Rallidae)

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Abstract: We summarized records of the Swinhoe's Rail and reconstructed its breeding range, winter range and migration ways. We distinguished two evolutionarily significant units within Swinhoe's Rail: a continental and a Japanese. The continental form breeds mainly in the borderland between China and the Russian Far East, while the Japanese is an endemic of Japan.

Keywords: Rallidae, *Coturnicops exquisitus*, eastern Palearctic, distribution

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Introduction

Swinhoe's Rail *Coturnicops exquisitus* (Swinhoe, 1873) is a rare, secretive, and less known species of Eastern Asia (Ripley 1977, Taylor 1996, Taylor and Perlo 1998, BirdLife International 2001). It is known from a few museum specimens and a limited number of field records (see below). Until now, it was assumed that the species consists of single population, and its distribution and migratory patterns were insufficiently known. To reconstruct breeding distribution and seasonal movements of this rail species, we revised the available museum specimens (mounts, skins and eggs) and collated available field records to assess long-term and seasonal changes in the distribution of this species. The results are presented below. We will show that the species consists of two independent evolutionary significant units (ESUs) with different breeding ranges and different migratory strategies.

Methods

We searched for mounts, skins, eggs, and skeletons of the Swinhoe's Rail, and restudied them where they were available, in the museum of St.-Petersburg, Russia (JM et DGDR), Warsaw,

Poland (JM), Kiev, Ukraine (JM) and Tring, United Kingdom (DGDR et JM). In addition, we searched literature and used specialized internet databases (GBIF, VertNet, YIOA) for locating specimens in other museums.

We distinguished documented (specimens, photos) and undocumented (visual, by hearing or unspecified) records.

Museum acronyms are as follows: AMNH – American Museum of Natural History, New York, USA; ANSP – Academy of Natural Sciences, Philadelphia, USA; FHCSS – First Higher Common School in Seoul, South Korea; HMS – Hokkaido Museum, Sapporo, Japan; IZB – Institute of Zoology, Chinese Academy of Sciences, Beijing, China; KGU – Institute of Biology, Ecology and Natural Resources, Kemerovo State University, Kemerovo, Russia; LivCM – National Museums, Liverpool, United Kingdom; LWMS = LiWong Museum, Seoul, South Korea; MAFF – Ministry of Agriculture, Forestry and Fisheries, Tokyo, Japan; MAFS – Ministry of Agriculture and Forestry, Shiryazaki, Japan; MCZ – Museum of Comparative Zoology, Harvard University, Cambridge, USA; MIZ – Museum and Institute of Zoology, Polish Academy of Sciences, Warszawa, Poland; MVZ – Museum of Vertebrate Zoology, University of California, Berkeley, USA; MZS – Zoological Museum, University of Strasbourg, Strasbourg, France; NFUH – Northeast Forestry University, Harbin, China; NHMUK – Natural History Museum, Tring, United Kingdom; NKC = private collection of Nagamichi Kuroda, Japan; NSMT – National Science Museum, Tokyo, Japan; SMNS – State Museum of Natural History, Stuttgart, Germany; SMTD – State Museum of Zoology, Dresden, Germany; TTC = private collection of Nobusuke Taka-Tsukasa, Japan; USNM – Smithsonian National Museum of Natural History, Washington, DC, USA; WM – Wenzhou Museum, Wenzhou, China; WMS = Wasson Museum, Songdo, South Korea; YCM – Yokosuka City Museum, Yokosuka, Japan; YIO – Yamashina Institute of Ornithology, Abiko, Japan; YPM – Yale Peabody Museum, Yale, USA; YPMY – Yamagata Prefectural Museum, Yamagata, Japan; ZIK – Zoological Institute, Ukrainian Academy of Sciences, Ukraine; and ZIN – Zoological Institute, Russian Academy of Sciences, Sankt-Peterburg, Russia.

Full list of localities and records known to us is given in Appendix. For the geographic position of localities listed in Appendix see also Figs. 7–10. We ended full search for the records on 31 Dec. 2021, but we included later data where possible.

We created all maps in QGIS 3.32.3-Lima (QGIS Development Team 2023), using the following base maps: kosmosnimiki.ru (satellite) and ESRI (shaded relief). The Winkel-Tripel projection is used in all maps.

Results and discussion

Population structure

W. Heim et al. (2019) found that birds recorded from the Asian continent and from Japan differ consistently in mtDNA structure. This confirms that *C. exquisitus* consists of two metapopulations. However, more research is needed to assess the taxonomic status of these metapopulations. Provisionally, we treat them as evolutionary significant units (ESUs).

No results of marking studies are available. However, by analogy with other East Asian bird species (Mlíkovský 2023), we suggest that the continental ESU moves to southern China for winter, while the insular ESU does not leave Japan.

The origin of winter birds recorded in Ryukyu Islands, Japan (southwest from Kyushu to Taiwan) is unknown.

ESU-01 (continental)

Breeding range. Our data (Fig. 1) indicate that these birds spend June–August in their breeding grounds, and we accept records from that period as indications of breeding (Fig. 3). At least some individuals reach the breeding range already in the second half of May (Fig. 1), but as the population still seems to be on move in that time, we did not accept such records as evidence of breeding.

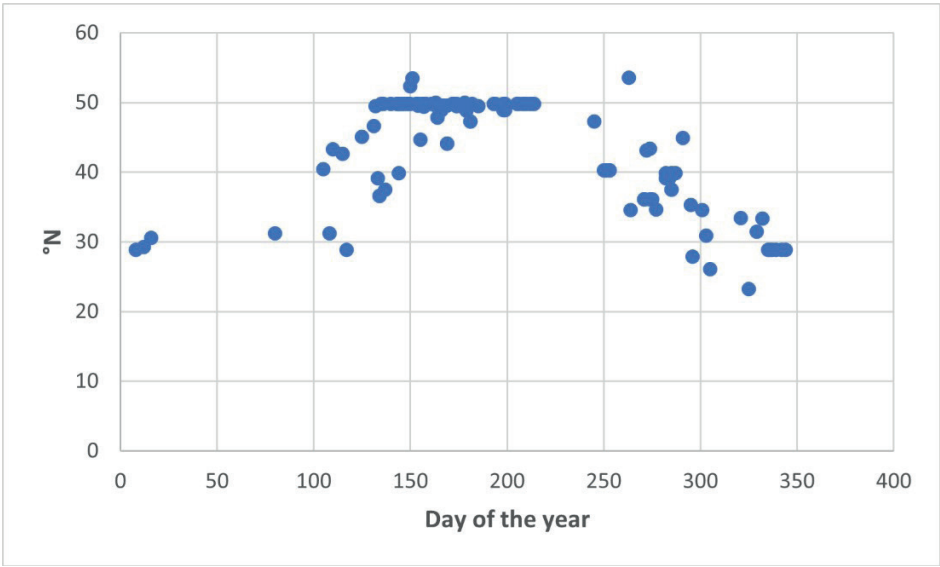


Fig. 1. Seasonal movements of continental Swinhoe's Rails (north latitude vs. day of the year). Each dot represents record of a bird.

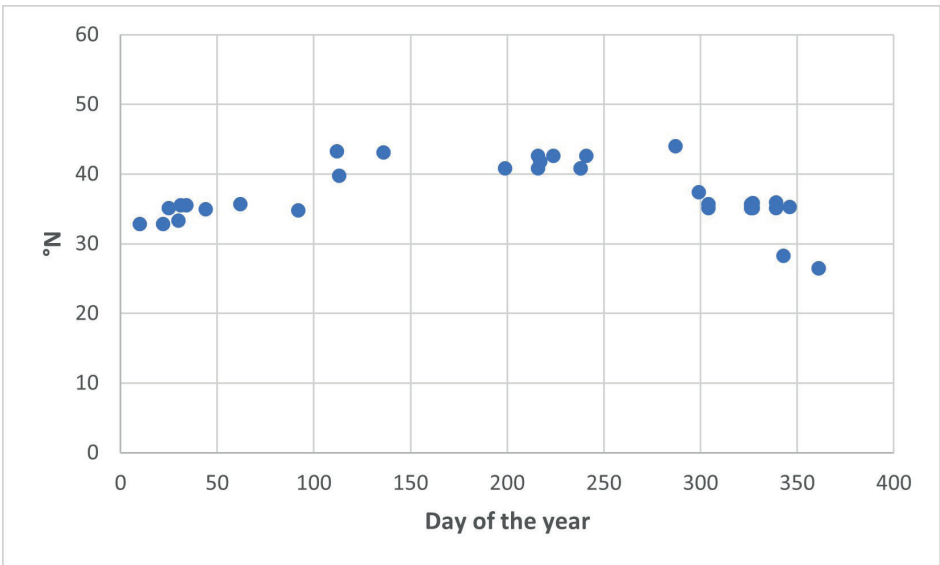


Fig. 2. Seasonal movements of Japanese Swinhoe's Rails. For explanation see Fig. 1. The two winter records south of 30°N are from Ryukyu Islands. It is unknown whether they are continental or Japanese breeders.

In fact, only two breeding records of ESU-01 are available: a clutch from Kurort-Darasun, Russia, collected in 1867 (see Appendix: Russia-01 for details), and an eggshell fragment from Murav'evka, Russia, collected in 2016 (Russia-09). The whereabouts of the Kurort-Darasun eggs is unknown, while the eggshell fragment from Murav'evka will be deposited



Fig. 3. Breeding distribution of Swinhoe's Rail (records from June–August). Blue dots – records before 1971, orange dots – records after 1970. For the identity of the localities see Fig. 7 and Appendix.

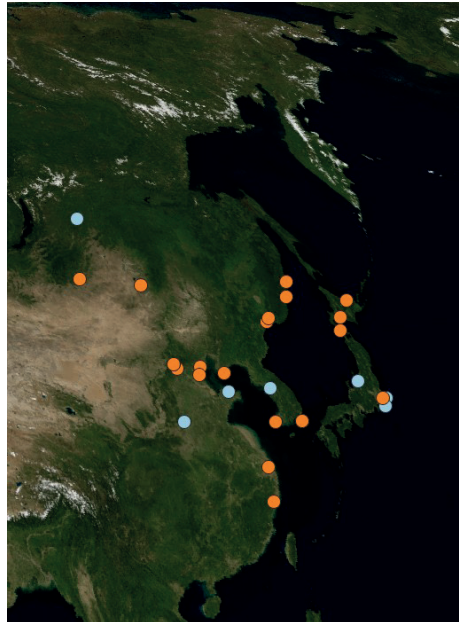


Fig. 4. Autumnal migration of Swinhoe's Rail (records from September–October). Blue dots – records before 1971, orange dots – records after 1970. For the identity of the localities see Fig. 8 and Appendix.

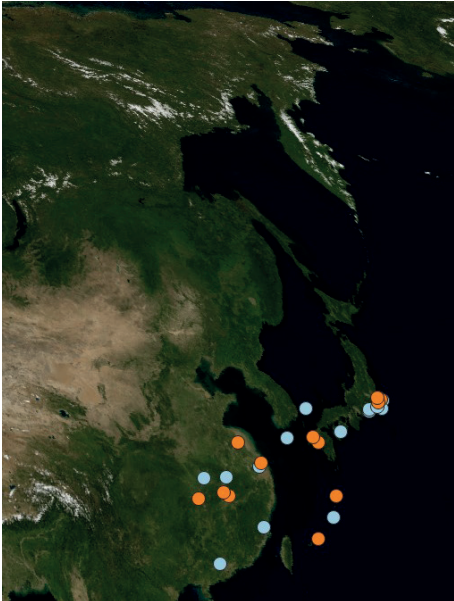


Fig. 5. Winter distribution of Swinhoe's Rail (records from November–March). Blue dots – records before 1971, orange dots – records after 1970. For the identity of the localities see Fig. 9 and Appendix.



Fig. 6. Spring migration of Swinhoe's Rail (records from April–May). Blue dots – records before 1971, orange dots – records after 1970. For the identity of the localities see Fig. 10 and Appendix.

in SMTD. All other alleged breeding records of *C. eximius* are based on incorrectly identified eggs (records R1 and R2) or an adult bird mistaken for a juvenile (Russia-04).

Our results indicate that Swinhoe's Rail currently occupies a narrow belt from the Greater Khingan Range in the west to Sanjiang Plain in the east (Fig. 3). Two early records lie outside the current range. One of them (Russia-01) is confirmed. The other one (China-35) is uncertain and may have been based on a migrating bird.

Ecologically, Swinhoe's Rail is a bird of grassy wetlands, particularly sedge (*Carex*) wetlands (Averin 2004, Wulf et al. 2017, R.J. Heim et al. 2019). Such wetlands are locally distributed over the Chinese Northeastern Plain (lowlands of Heilongjiang and Jilin provinces) and it could be expected that Swinhoe's Rails breed there. However, there are no June–August records of this species from those lowlands. In the past, Swinhoe's Rails may have been overlooked there due to their secretive habits. In the past half a century, much of these wetlands were changed in paddy fields or other fields (Zhou et Tachibana 2002, Zhang et al. 2003, Wang et al. 2006, Song et Deng 2017; see also Zhang et al. 2011), thus becoming unsuitable for Swinhoe's Rails.

It is probable that Swinhoe's Rail once bred in all Manchuria (as an ecogeographic region) and that it has lost much of its breeding grounds due to the human-caused habitat loss. Rough estimation would be that the breeding range of Swinhoe's Rail (ESU-01) originally had an area of about 1,000,000 km², while it currently declined to some 20% of that area. However, these estimations are based on ecogeographic predictions and cannot be proved due the shortage of data.

Autumnal migration. These birds migrate during September–November (Fig. 1) southwards in broad band (Fig. 4). Most records are from the coastal Russia and coastal China, which probably reflects skewed ornithological activities rather than a proper migration way. The record from Tungokočen (Russia-04) is probably an example of reversed migration.

The departure from breeding grounds and arrival on winter grounds seems to be highly individual (Fig. 1). As a standard, these birds migrate about 2500 km from the breeding to their winter grounds.

Winter range. The available data indicate that the continental form spends wintertime (November – March) mainly in the lowlands of south-eastern China between 28–31°N (Fig. 5). However, individuals were recorded south to 22°N in eastern China, perhaps as a result of overshoot autumnal migration, because all these records are from the early winter (Fig. 1).

Spring migration. Patterns of the spring migration (April – May; Fig. 1) resemble those of the autumnal migration (Fig. 6). The single record from Sichuan (China-30) indicates that Swinhoe's Rails may migrate in wrong direction in spring, and the records north and east of the breeding distribution (Russia-21, Russia-22) indicate that these rails may overshoot their breeding grounds on spring migration.

ESU-02 (Japanese)

Breeding range. It has been long believed that Swinhoe's Rails occur in Japan as vagrants only (Brazil 1991, BirdLife International 2023). However, first summer records of Swinhoe's Rails in Japan are from the 1870s (Japan-63) and molecular distinctness of Japanese birds from the continental ones indicates that Swinhoe's Rails breed in northern Japan since “time immemorial”.

Our data (Fig. 2) indicate that these birds spend June–August in their breeding grounds, similarly as continental birds. The known breeding distribution is limited to southern Hokkaido and northernmost Honshu (Fig. 3). The area of the breeding range can be roughly estimated at 25,000 km².

Habitat is similar to that of the continental form (Senzaki et al. 2021).

Autumnal migration. Japanese breeders are short-distance migrants, moving along Japanese islands for only about 1000 km (Fig. 4). They probably migrate in September – October (Fig. 2), although the near-absence of September records makes it difficult to properly assess the movements in that month.

Winter range. Japanese breeders spend wintertime (November – March; Fig. 2) mainly in southern Honshu at c. 33–36°N (Fig. 5), but also in northern part of the nearby Kyushu (Kitazawa et Yoshioka 2021). The origin of the birds recorded in Ryukyu Islands is unknown. If belonging to the Japanese population, then they are probably birds who overshoot their autumnal migration.

Preferred habitat is grassy wetlands (Fukuda et al. 2019, Matsumiya et Numano 2022).

Spring migration. Spring migration follows the same routes as autumnal migration (Fig. 6). Birds are probably migrating northwards mainly during April – May (Fig. 2). The data are few which may indicate that the spring migration is rather rapid.

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¹ This is a partial translation of Dybowski (1930).

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APPENDIX

List of localities from which Swinhoe's Rail was recorded. Within countries, the records are arranged chronologically according to the first record from each locality. For geographic position of the localities see Figs. 7–10.

RUSSIA

1. Kurort-Darasun, Zabaykalsky Province (51.21°N, 113.71°E): A female (MIZ, lost; Mlíkovský 2007) sitting on eggs was accidentally killed during grass mowing by a local farmer in July 1867 (see below for the date) in a valley of a right tributary of the Tura river just north of Kurort-Darasun (perhaps this was the Markova River, 2 km north of Kurort-Darasun) and at once brought to Benedykt Dybowski, who resided at Kurort-Darasun at that time. He forwarded the bird and the clutch to Władysław Taczanowski in Warszawa (Warsaw), Poland (then part of the Russian Empire). The history of this record is confused and requires clarification. **Date of collection:** In 1866–1867 (Dybowski & Parvex 1868: 338), 1866–1868 (Taczanowski 1872: 341, 1873: 107), or July 1868 (Dybowski 1930: 299, 2013: 53). Combining these records, we think that July 1867 is the most plausible date of collection. **Clutch size:** Three eggs (Taczanowski 1873: 107) or five eggs (Dybowski 1930: 399, 2013: 53). **Identity:** Listed as *Crex erythrothorax* (Dybowski et Parvex 1868: 338), *Porzana erythrothorax* (Taczanowski 1873: 107), or *Porzana undulata* (Taczanowski 1874: 333). The description of the bird by Taczanowski (1873: 107) shows that it was a *Coturnicops exquisitus* (Sharpe 1894: 128, and subsequent authors; our restudy of the description). The lost MIZ female is one of the two syntypes of *Porzana undulata* Taczanowski, 1874 (Mlíkovský 2007: 47). **The MIZ eggs:** Taczanowski (1873: 107) gave measurements of two eggs as follows: 28.3 × 20.4 mm, and 28.0 × 20.0 mm. This is the only data on the size of eggs of *Coturnicops exquisitus* available yet. **The NHMUK egg:** An egg (NHMUK 1901.11.20.447) was collected at “Darasun” in Jul. 1867 and identified as “*Rallus (Ortygometra) erythrothorax*” (original label). It came to NHMUK in February 1901 via Verreaux, Tristram and Crowley (label data). The date and place of collection, and the original identification would indicate that this is an egg from the Dybowski's *Coturnicops* clutch. However, we restudied the egg and found it morphologically inseparable from those of *Zapornia pusilla*. At Kurort-Darasun, Dybowski collected at least two clutches of *Zapornia pusilla*, which he sent to Taczanowski (Dybowski et Parvex 1868: 338, Taczanowski 1873: 106, Dybowski 1930: 299, 2013: 53). Thus, the NHMUK egg may have originated from one of those two clutches. **Assessment:** Current whereabouts of the clutch and the female killed on it are unknown (Mlíkovský 2007). However, the description of the female confirms that it belonged to *Coturnicops exquisitus*, so the clutch also did.
2. Lake Hanka, Primorsky Province (c.45.05°N, 132.85°E): Specimen (ZIN 56564) collected by N. Prževal'skij on 4 May 1868 (Prževal'skij 1870 sub “*Ortygometra* n.sp.”, Taczanowski 1874, Nejfel' dt 1967, Mlíkovský 2007). This specimen is one of the two syntypes of *Porzana undulata* Taczanowski, 1874 (Mlíkovský 2007: 47).
3. De-Friz Peninsula, Primorsky Province (43.28°N, 132.00°E): One seen on 20 Apr. 1962 (Labzúk et Nazarov 1967).
4. Tungokočen, Zabaykalsky Province (53.57°N, 115.78°E): Specimen (KGU 2354) collected by L. Laptev and V. Šibanov on 20 Sep. 1962 (Gagina 1965). It was identified as a juvenile by Gagina (1965), and thus accepted as a breeding record (e.g. Kuročkin et Košelev 1987, 1989, W. Heim et al. 2019). However, the bird was adult (our restudy based on photos of the specimens sent to us by N.V. Skalon), and the locality and the collection date indicate that it was a vagrant.
5. Bol'šoj Pelis Island, Primorsky Province (42.65°N, 131.45°E): Dead bird (current whereabouts unknown), probably killed by a Peregrine Falcon *Falco peregrinus* found

- on 25 Apr. 1966 (Labzûk et al. 1971, Nazarov et Truhin 1985), and one living seen on 2 Sep. 1977 (Nazarov et al. 1978).
6. Barabaševka (river), Primorsky Province (43.10°N, 131.64°E): Specimen (ZIK 38784) collected by Ū.N. Glušenko and Ū.B. Šibnev on 28 Sep. 1976 (Glušenko et Šibnev 1977, Peklo 1997).
 7. Dobraâ River, Jewish Province (47.71°N, 131.89°E): Two seen in summer 1988 (Smirenskij 1990, Smirenskij in W. Heim et al. 2019).
 8. Bastak Nature Reserve (Obluch'ye District), Jewish Province (c.48.94°N, 133.12°E): Four singles recorded on 15 Jun. and 17–18 Jul. 2002 (Antonov 2003, 2006, Averin 2004, 2022).
 9. Murav'evka, Amur Province (c.49.84°N, 127.73°E): A single seen in summer 1992 and three in summer 1999 (Smirenskij in W. Heim et al. 2019). Adult birds repeatedly heard or seen on 23–30 May 2013 and 5 Jun. – 2 Aug. 2013 (W. Hein; eBird), 9–28 Jun. 2016 (Wulf et al. 2017, W. Heim and A. Thomas; eBird), 15–26 May 2017 (A. Thomas and W. Heim; eBird), 10 Jun. – 7 Jul. 2017 (W. Heim and A. Thomas; eBird), and on 6 Jun. 2021 (D. Kočetkov and V. Arhipov in GBIF; the Muravyevka being vast, this record was at 49.40°N, 129.73°E). An eggshell fragment was found in Muravyevka on 2 Jul. 2016 by T. Wulf (W. Heim et al. 2019, W. Heim in litt. on 24 Oct. 2023). It will be deposited in SMTD (W. Heim in litt. on 24 Oct. 2023).
 10. Hingan Nature Reserve (Antonovka section), Amur Province (c.49.45°N, 129.75°E): Recorded on 12 May 1995 (Râbcev 1997, Râbcev in BirdLife International 2001); three singles seen on 22 Jun. 2000 (Antonov 2003, 2006, Antonov et Parilov 2009, 2010); also recorded on 4 Jul. 2007 (Nečaev et Antonov 2020).
 11. Confluence of Bikin and Alhan rivers, Primorsky Province (46.65°N, 134.38°E): Observed on 11 May 1997 (Mihajlov et al. 1997).
 12. Blagodatnoe Lake, Primorsky Province (44.3°N, 136.54°E): Observed on 18 Oct. 1999 (Elsukov 2012, 2013).
 13. Losinyj Nature Reserve, Primorsky Province (46.17°N, 138.00°E): Recorded in autumn 2001 (Averina 2004).
 14. Hingan Nature Reserve (Kundur section), Amur Province (c.49.02°N, 130.45°E): A single recorded in late May 2002 at the lower reaches of the Uril River (M.P. Parilov in Antonov 2003).
 15. Birobidžan District, Jewish Province (c.48.45°N, 132.83°E): Recorded in “breeding season” of 2002 (Averin 2004).
 16. Oktâbrsk District, Jewish Province (c.48.13°N, 131.29°E): Recorded in “breeding season” of 2002 (Averin 2004).
 17. Smidovič District, Jewish Province (c.48.45°N, 133.57°E): Recorded in “breeding season” of 2002 (Averin 2004).
 18. Berezovye ozera (Birch Lakes), Lake Khanka area, Primorsky Province (44.64°N, 132.60°E): Mating calls tentatively attributed to Swinhoe's Rail heard on 2 Jun. 2003 (Glušenko et al. 2006a,b).
 19. Il'ihovka, Primorskiy Province (44.12°N, 131.60°E): An individual seen on 17 Jun. 2004 (V.N. Kurinnij in Glušenko et al. 2006).
 20. Artem, Primorsky Province (43.35°N, 132.21°E): Recorded on 1 Oct. 2007 (Volkovskaâ-Kordûkova et Kordûkov 2010).
 21. Berezovka, Amur Province (53.46°N, 126.97°E): Recorded on 31 May 2017 (A. Thomas and W. Heim; eBird).
 22. Kabansk Natural Reserve, Buryatia (52.30°N, 106.50°E): Mist-netted and photographed on 30 May 2019 (L. Damrow; Photo ML166372931; Anisimova et al. 2019). This is the first record of Swinhoe's Rail from Lake Baikal (cf. Mlíkovský 2009).

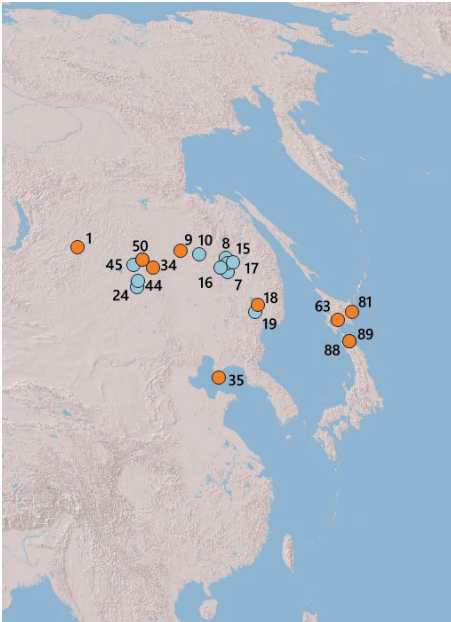


Fig. 7. Records of Swinhoe's Rail from June–August (breeding distribution; Fig. 3). Blue dots – undocumented records, orange dots – documented records. For details see Appendix.

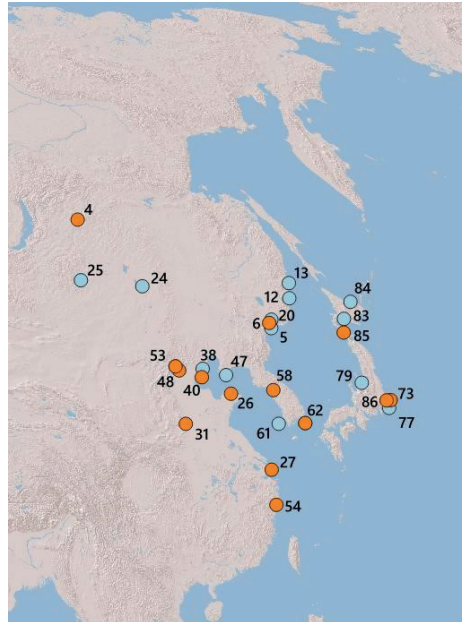


Fig. 8. Records of Swinhoe's Rail from September–October (autumnal migration; Fig. 4). Blue dots – undocumented records, orange dots – documented records. For details see Appendix.

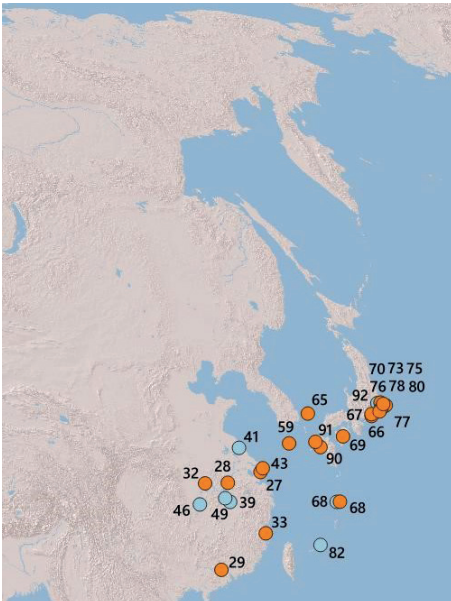


Fig. 9. Records of Swinhoe's Rail from November–March (winter distribution; Fig. 5). Blue dots – undocumented records, orange dots – documented records. For details see Appendix.

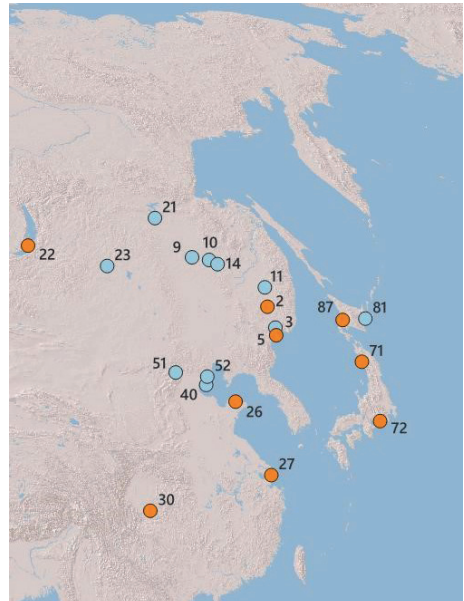


Fig. 10. Records of Swinhoe's Rail from April–May (spring migration; Fig. 6). Blue dots – undocumented records, orange dots – documented records. For details see Appendix.

MONGOLIA

23. Barun Torey, Dornod Province (49.90°N, 115.40): Recorded on “spring migration” (year?) (A.A. Vinokurova in Dawaa et al. 1994, Gombobaatar et Monks 2011).
24. Tashigay Nuur, Dornod Province (47.31°N, 118.16°E): An adult seen on 29 Jun. 2012 (J. Trimble; eBird). The occurrence of Swinhoe’s Rails at this locality was confirmed by a bird seen on 2 Sep. 2019 (S. Olofson in eBird), although that individual could already been on migration.
25. Khurkh River, Khentii Province (48.34°N, 110.44°E): Recorded on 8 Sep. 2002 (S. Gombobaatar et al. in Gombobaatar et Monks 2011).

CHINA

26. Yantai (formerly Chefoo), Shandong Province (37.53°N, 121.39): Specimen (NHMUK 1893.1.25.289) collected by A. Michie on 17 May 1873 (Swinhoe 1873), and two specimens (NHMUK 1894.1.20.80, LivCM T-9027) collected by A. Michie on 12 Oct. 1874 (Swinhoe 1875). Specimen NHMUK 1893.1.25.289 is the holotype of *Porzana exquisita* Swinhoe, 1873.
27. Shanghai (c.31.20°N, 121.50°E): Two specimens collected by F.W. Styan on 21 Mar. 1886 (NHMUK 1908.1.8.389), and on 18 Apr. 1886 (NHMUK 1908.1.8.398), respectively (Styan 1891); one recorded on 29 Oct. 2016 (Chen Qi in Brelsford 2016).
28. Anqing, Anhui Province (30.50°N, 117.03°E): Specimen (NHMUK 1909.4.9.2) collected by R. Bridgeman in Jan. 1906 (JM et DGDR, pers. observation).
29. Sanshui, Guangdong Province (23.20°N, 112.75°E): Specimen (NHMUK 1910.5.20.181) collected by R.E. Vaughan on 21 Nov. 1906 (Vaughan et Jones 1913).
30. Luzhou, Sichuan (28.87°N, 105.44°E): Specimen collected by F. Zappey on 26 Apr. 1908 (Thayer et Bangs 1912).
31. Xinxiang, Henan Province (35.30°N, 113.93°E): Specimen (MCZ 131309) collected by R. Bridgeman on 22 Oct. 1909 (VertNet).
32. Hankou (now part of Wuhan), Hubei Province (30.58°N, 114.27°E): Specimen (NHMUK 1934.1.1.2032) collected by H. Lynes on 16 Jan. 1912 (JM et DGDR, pers. observation).
33. Fuzhou, Fujian Province (26.06°N, 119.31°E): Specimen (MCZ 131310) collected by an unknown on 1 Nov. 1917 (GBIF, VertNet).
34. Bugt, Inner Mongolia (48.83°N, 122.11°E): An adult (SMTD 29450) collected by von Stein on 27 Jun. 1924 (Meise 1934, GBIF).
35. Dalian, Liaoning (38.90°N, 121.60°E): An adult (specimen YIO 13137) collected in Aug. 1924 (YIOA 2023). However, neither the collector, nor exact date of collection are known. The locality lies far from the breeding range as reconstructed here, and we suspect that this could have been a bird on migration (especially if collected in late August).
36. Qingdao, Shandong Province (36.07°N, 120.38°E): Five specimens collected by R.H. Lefevre, including three specimens (MCZ 140246, ANSP 107816, ANSP 107817) collected on 28 Sep. 1926, one specimen (ANSP 107818) collected on 1 Oct. 1926, and one specimen (USNM 535826) collected on 2 Oct. 1926 (GBIF, VertNet).
37. Changbai Shan (mountains), Jilin Province (c.42°N, 128°E): “Rare”, undated “summer records” (Fu et al. 1984, Zhao 1985). This record is not shown on our maps as it is unclear in which part of Changbai Shan (which is some 700 km long) the birds were recorded. The north-easternmost slopes of this mountain range face Lake Khanka, from where Swinhoe’s Rails are known (see Russia-02 and Russia-18).
38. Beidahe, Hebei Province (39.84°N, 119.50°E): Recorded on 9 Oct. 1987 and 14 Oct. 1987 (R. Tolk; GBIF, OBS).
39. Poyang Lake, Jiujiang Province (28.88°N, 116.42°E): Recorded on 8 Dec. 1989 (M. Bezuijen; eBird), 10 Dec. 1989 (D. Thomas; eBird), and 8 Jan. 2015 (D.-J. Léandri-Breton; eBird).

40. Puti Island (also known as Happy Island), Hebei Province (39.14°N, 118.83°E): Recorded on 14 May 1997 (M. Berlijn; OBS); on 13–14 May 2005 (R. Tolk, OBS; Lei et Liu 2006), and on 11 Oct. 2005 (G. Delforge; eBird and photos ML379489541, ML379034181, ML379034171, ML307053181).
41. Yancheng Nature Reserve, Jiangsu Province (33.35°N, 120.18°E): Recorded on 28 Nov. 1999 (B. Ringler; eBird).
42. Heilongjiang Province: Specimen (NFUH 10800_1) collected by Wu Wei on 26 Sep. 2002 (<http://museum.ioz.ac.cn/fileupload/image/bb/2123CX001200000054-1.jpg>).
43. Chongming Dongtan, Shanghai (31.50°N, 121.96°E): Recorded and photographed on 25 Nov. 2003 (J. Wang; http://www.rbcu.ru/birdclass/list.php?SECTION_ID=1093).
44. Nuomenhanburidesumu, Inner Mongolia (47.84°N, 118.82): An adult seen on 12 Jun. 2004 (A. Van Norman; eBird).
45. Hulunbuir, Inner Mongolia (49.21°N, 119.77°E): Recorded on 26 Jun. 2004 (Avian Knowledge Network; OBS).
46. Dongting Lake, Hunan Province (28.83°N, 112.70°E): Singles recorded on 5 Dec. 2005 (Lei et Liu 2006), 1-3 Dec. 2006 (Lei et Liu 2007).
47. Jinshitan Sea, Liaoning Province (39.13°N, 122.03): Recorded on 9 Oct. 2014 (T. Beeke; eBird).
48. Beijing (unknown place within) (c.39.88°N, 116.41°E): Recorded on 12 Oct. 2014 (Z. Zhou in Townshend 2014).
49. Bang Lake, Jiangxi Province (29.22°N, 116.00°E): Recorded on 12 Jan. 2015 (C. Turner; eBird).
50. Wuerqihan, Inner Mongolia (49.56°N, 121.38°E): Adults seen on 16 Jun. 2018 (T. Townshend; eBird), 3 Jun. 2019 (T. Townshend; eBird), 12 Jul. 2019 (B. Lyu; eBird), 15 Jun. 2020 (L. Land; eBird), and repeatedly on 13–18 Jun. 2021 (T. Townshend et al.; eBird).
51. Ma Chang, Beijing (52.30°N, 106.50°E): Recorded on 15 Apr. 2019 (T. Townshend; eBird).
52. Xiaodongshan, Hebei Province (39.82°N, 119.53°E): Recorded on 24 May 2022 (S. Bale; eBird).
53. Ming Dynasty Tombs, Beijing (40.25°N, 116.22°E): Recorded and photographed on 7 Sep. 2022 (Husk; <https://news.ifeng.com/c/8K1QfqEMDmE>), and daily on 8–10 Sep. 2022 (“Big Teeth et amal amer”; Y. Wang; J. Xing et al.; eBird).
54. Wenzhou Langwan Airport, Zhejiang Province (27.91°N, 120.85°E): Dead bird (WM, uncatalogued) found on 23 Oct. 2022 (eBird; photo ML521179011; <https://www.163.com/dy/article/HRRMNSGI0514CMDQ.html>; <http://www.shaoxing.com.cn/p/2993924.html>; <https://zj.news.163.com/23/0125/10/HRTVEQ3304098FCB.html>). Note that the photos are of a stuffed bird.
55. China (unknown locality in Jiangsu Province): Undated specimen (IZB 21731) (http://museum.ioz.ac.cn/topic_detail.aspx?id=65060).

NORTH KOREA

56. North-western coast of Korea, presumably in the Pyongan Pukto Province (FHCSS, uncatalogued; probably destroyed in 1945), collected in spring 1917 (Mori 1917, Austin 1948, Tomek 1999).

SOUTH KOREA

57. Seoul region (c.37.50°N, 127.25°E): Eight specimens, including those collected on 5 Oct. 1913 (FHCSS, uncatalogued; probably destroyed in 1945), 6 Nov. 1914 (LWMS, uncatalogued), 23 Oct. 1927 (FHCSS, uncatalogued; probably destroyed in 1945), two collected on 29 Apr. 1930 (TTC; destroyed in 1945), 28 Oct. 1930 (WMS, uncatalogued; fate un-

- known), Oct. (year?) (NKC, destroyed in 1945), and an undated specimen (YIO, uncatalogued) (Shimokoriyama 1917, Snyder 1937, Austin 1948, Austin et Kuroda 1953).
58. Noryangjin (37.51°N, 126.94°E): Specimen (YIO 13136) collected by or for T. Momiyama in Sep. 1922 (YIOA).
 59. Jeju Island (33.38°N, 126.53°E): Specimen (YIO 13138) collected by or for T. Momiyama on 16 Nov. 1928 (YIOA).
 60. Nakdong estuary, Busan (c.35.10°N, 128.94°E): Recorded as “vagrant”; undated (Woo et al. 1997, BirdLife International 2001).
 61. Heuksando (34.67°N, 125.42°E): Recorded on 4 Oct. 2005 (Moores 2005).
 62. Hong Island (34.53°N, 128.73°E): Recorded and photographed on 28 Oct. 2005 (Kim Sung Hyun in Moores 2005), and recorded on 21 Sep. 2006 (Moores et Edelsten 2008).

JAPAN

63. Yufutsu Plain, Hokkaido (42.63°N, 141.77°E): An adult (USNM 95979) collected by T. W. Blakiston on 4 Aug. 1875 (Swinhoe 1876a, Stejneger 1886, Kato 2012), and another (HMS, uncatalogued) collected by an unknown before 1953 (Austin et Kuroda 1953). Calls repeatedly heard in 2012–2018, chicks seen on 12–29 Aug. 2018, and an abandoned nest found on 26 Aug. 2018 (Senzaki et al. 2021).
64. Japan (unknown localities): Two specimens, both collected by an unknown for F. Ringer, including one (USNM 114683) collected on 4 Nov. 1887, and another (USNM 114684) collected on 4 Nov. 1887 (VertNet); specimen (NHMUK 1894.1.20.81) collected by H.J.S. Pryer before 1894 in Japan (JM et DGDR, pers. observation); specimen (YIO 13130) collected on 12 May 1888 (YIOA); specimen (MAFS, uncatalogued) collected on 30 Apr. 1932 (Mishima 1956), specimen (YIO 13139) collected on 15 Jan. 1939 (YIOA); and six undated specimens (AMNH 546235, YIO 13127, YIO 13128, YIO 13129, YIO 13132, YIO 153314) (VertNet, YIOA).
65. Tokyo, Honshu (c.35.69°N, 13.69°E): Specimen (SMNS 10440) collected by F. Retz in 1889 (GBIF); another specimen (YIO 13123) collected by an unknown on 3 Mar. 1893 (YIOA).
66. Shizuoka, Honshu (34.98°N, 138.38°E): Specimen (YIO 13124) collected by an unknown on 13 Feb. 1891 (Austin et Kuroda 1953).
67. Suruga, Honshu (35.13°N, 138.49°E): Specimen (YIO 13131) collected by an unknown on 23 Nov. 1893 (YIOA); and two specimens (AMNH 546234 and 546236), both collected by an unknown on an unknown date.
68. Amami Oshima, Ryukyu Islands (28.26°N, 129.32°E): Two specimens (AMNH 546237 and AMNH 546238) collected by Alan Owston’s collectors on 27 Dec. 1895 (Brazil 1991, VertNet); recorded on 8 Dec. 2004 (A. Anthony; eBird).
69. Kōchi, Shikoku (33.56°N, 133.53°E): Two specimens (YIO 13125 and 13126) collected in Feb. 1905 (YIOA), and another specimen (HMS, uncatalogued) collected before 1953 (Austin et Kuroda 1953).
70. Ukishima (part of Tokyo), Honshu (35.98°N, 140.43°E): Specimen (YIO 13121) collected in Feb. 1922, and another specimen (YIO 13122) collected in Jan. 1929 (YIOA).
71. Akita, Honshu (39.72°N, 140.10°E): Specimen (YPM 117) collected on 23 Apr. 1926 (Mishima 1956, GBIF).
72. Tōtōmi, Honshu (34.82°N, 137.89°E): Specimen (YIO 13135), collected on 2 Apr. 1929 (YIOA).
73. Cape Inubo, Honshu (35.71°N, 140.87): Specimen collected on 31 Oct. 1929 (MAFF, uncatalogued) (Austin et Kuroda 1953); and another specimen collected on 22 Nov. 1929 (MAFF, uncatalogued) (Austin et Kuroda 1953).
74. Mikawa, Honshu (c.34.75°N, 137.30°E): Specimen (whereabouts unknown), collected before 1942 (Ornithological Society of Japan 1942).

75. Goi (now part of Ichihara), Honshu (35.51°N, 140.09°E): Specimen (MVZ 125436) collected on 3 Feb. 1952, and another undated specimen (YPM 49401) (GBIF).
76. Ichihara, Honshu (35.50°N, 140.12°E): Specimen (NSMT 20895) collected on 31 Jan. 1953 (GBIF).
77. Chiba, Honshu (c.35.61°N, 140.12°E): Recorded on 31 Oct. 1953, 22 Nov. 1953, 5 Dec. 1953, and 25 Jan. 1954 (Mishima 1956, Brazil 1991). Also recorded in that region on 26 Dec. 2016 (Takahashi et al. 2018).
78. Yokosuka, Honshu (35.28°N, 139.68°E): Specimen (YCM, uncatalogued) collected on 20 Dec. 1965 (GBIF).
79. Kishiwazaki, Honshu (37.37°N, 138.56°E): Recorded on 26 Oct. 1965 (Kazama 1968).
80. Sasagawa, Honshu (35.84°N, 140.66°E): Specimen (YIO 13133) collected by an unknown on 22 Nov. 1976 (YIOA).
81. Kushiro Shitsugen National Park, Hokkaido (43.11°N, 144.40°E): Recorded on 16 May 1977 (Brazil 1991); calls recorded in Jul. 2014; also recorded in the “breeding season” in 2017 (Senzaki et al. 2021).
82. Miyakojima (island), Ryukyu Islands (24.81°N, 125.28°E): Said to be “uncommon” between Oct. and Mar. (Kugai et Yamamoto 1981, Brazil 1991), but no details provided.
83. Lake Utonai, Hokkaido (42.70°N, 141.71°E): Recorded in Oct. 1981 (Tazawa et Anzai 1982).
84. Abashiri, Hokkaido (44.00°N, 144.22°E): Recorded on 14 Oct. 1987 (Brazil 1991, BirdLife International 2001).
85. Shiruichi, Hokkaido (41.60°N, 140.42°E): A single captured in Oct. 1987 (BirdLife International 2001).
86. Tomisato, Honshu (35.73°N, 140.34°E): A single ringed in Oct. 1993 (BirdLife International 2001).
87. Oyafune, Hokkaido (43.24°N, 141.35°E): Specimen (YIO 63433) collected on 22 Apr. 2002 (YIOA).
88. Hotokenuma wetland, Honshu (40.82°N, 141.38°E): Vocalizations heard almost every summer since 2003 (Miya et al. 2005, Senzaki et al. 2021); an adult with three chicks seen on 26 Aug. 2006 (Senzaki et al. 2021).
89. Aomori, Hokkaido (40.82°N, 141.38): Samples taken from birds on 17 Jul. 2012 and 3 Aug. 2012 (J. Ebina; GBIF).
90. Isahaya, Kyushu (32.85°N, 130.13°E): Heard on 10 Jan. 2021 and 22 Jan. 2021 (Kitazawa et Yoshioka 2021).
91. Imari, Kyushu (33.32°N, 129.83°E): Heard on 30-31 Jan. 2021; one mist-netted and photographed on 31 Jan. 2021 (Kitazawa et Yoshioka 2021).
92. Inashiki, Honshu (32.96°N, 140.32°E): Recorded on 5 Dec. 2021 (Yu Yatabe; eBird).
93. Himi, Toyama Prefecture, Honshu (36.90°N, 136.98): Undated specimen (YPM 49402) (GBIF).

UNKNOWN COUNTRY

94. Dataless specimen (ZIN 56565).

REJECTED RECORDS

- R1. Sungacha River, Primorsky Province, Russia (outflow from Khanka Lake at 45,05°N, 132.85°E): A clutch of four eggs was collected by Nikolaj Prževal'skij in 1868 or 1869, probably at the outflow of the Sungacha River from Khanka Lake, where Prževal'skij spent springs of those years (Prževal'skij 1870: 167). The clutch is deposited in ZIN (uncatalogued), where it was originally identified (label data) as belonging to *Porzana erythrothorax* (now a synonym of *Zapornia fusca*). Neifel'dt (1967) reidentified the

eggs as belonging to *Coturnicops exquisitus*. We restudied the eggs in 2012 (JM) and 2017 (JM and DGDR) and compared our photos of the eggs in the large egg collection of the NHMUK. We found the eggs inseparable from those of *Zapornia fusca*, thus confirming the original identification.

- R2. Albazino, Amur Province, Russia (53.39°N, 124.08°E): Otto Bamberg (1871–1942), German natural history dealer, imported 7–9 eggs from Albazino and sold them piece-by-piece as eggs of *Coturnicops exquisitus*. In Dec. 2011, we (DGDR and JM) restudied three Albazino eggs in NHMUK (NHMUK 1963.8.53) and found them morphologically inseparable from the eggs of *Zapornia pusilla*. As all Albazino eggs were said to be of approximately the same size, shape and coloration (Nehrkorn 1910, Schönwetter 1962), we assume that all belonged to *Zapornia pusilla*. It should be remembered in this respect, that Bamberg was suspected to sell incorrectly identified eggs from doubtful localities in his lifetimes (Gebhardt 1964: 25).
- R3. South Africa: Specimen (MZS Ave-02361), incorrectly listed as Swinhoe's Rail in GBIF, but reidentified as *Sarothura ayresi* (Gurney, 1877) (M. Meister in litt. in Aug. 2023).
- R4. Badagry Creek, Nigeria (06.41°N, 03.30°E): Recorded by S. Adefolu on 10 Feb. 2018 (GBIF). This undocumented record lies far from any other record of Swinhoe's Rail. We assume that it is based on an identification error.