

## Summer birds in Arkhangai province, Mongolia, July-August 2002.

Anthony S. Cheke

139 Hurst Street, Oxford OX4 1HE, UK; anthony@innerbookshop.com

### Abstract

A list of breeding birds for Tsetserleg and its surroundings is given for the first time, and additions are noted for the Khorgo-Terkhiin Tsagaan Nuur National Park. The presence of Eurasian Griffons and Lammergeiers in the Khangai mountains is confirmed, and Black-headed Gulls suspected of breeding near Tsagaan Nuur, a new locality. An apparent marked increase in breeding/summering numbers of Tufted Duck and Velvet Scoter and a possible range expansion of Daurian Redstarts was noted. Mass mortality was observed in House Sparrows from eating moths.

**Key words:** breeding checklist, Gypsy Moth, sparrow, Tsetserleg, Khorgo, Terkhiin-Tsagaan-Nuur

### Introduction

Mainly through the effort of East German expeditions in the 1970s and 1980s, and the activity of Mongolian ornithologists in the last decade, the overall composition of the Mongolian avifauna is well-known - but not many sites are well documented. The country is large (1,566,500km<sup>2</sup>) and sparsely populated (2.65m; 1.69/km<sup>2</sup>), but has large numbers of domestic animals (c70m, exceeding the carrying capacity, Avaadorj & Badrakh 2001); the principal way of life outside the capital is nomadic herding. Ulaanbaatar (hereafter 'UB') is the only major urban area, with nearly a third of the country's human population (773,700) (Mayhew 2001, www.geohive.com). Little has been written about the Mongolian avifauna in English, though Bräunlich (2002) recently published a useful general birdwatchers' overview. The following notes may serve as a more specific introduction to one province.

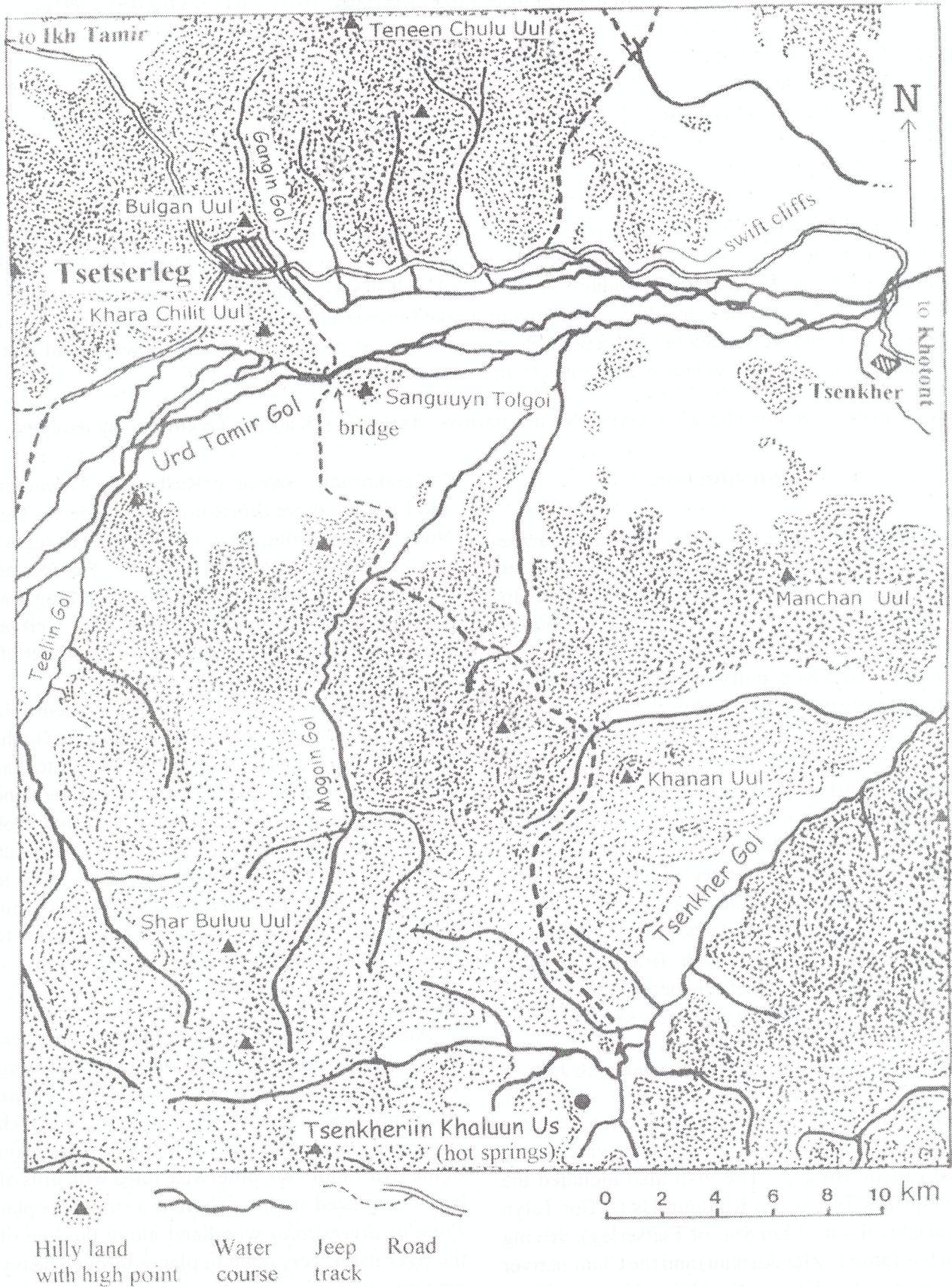
In 2002 I spent nearly three weeks (20 July - 8 August) based at Tsetserleg (pop. c20,000), principal town of Arkhangai *aimag* (province); the town is also known locally by the province name and Erdene Bulgan. The visit also included the hot springs Tsenkeriin Khалуun Us (= Bor Talyn Arshaan) about 33 km SSE of Tsetserleg), driving via Ikh Tamir (=Zhankushuu) and the Chuluut river gorge to the Khorgo-Terkhiin Tsagaan Nuur national park (c120km NW, staying 30/7-2/8); Khorgo is also known as Tariat. These localities are all within the Khangai range of hills and mountains. I travelled the roughly 400km to and from UB by jeep, via Khotont, Kharkhorin

(=Karakorum), Sansar (=Rashaant), Erdenesant and Lün; the more direct northern route via Ogi Nuur, an interesting lake, is no longer in regular use. Names are spelt here in the current transliteration system recognised for Mongolian Cyrillic script (Mayhew 2001); the German literature uses different spellings - e.g. Zezerleg/Cecerleg for Tsetserleg.

Tsetserleg was visited by German expeditions only en route to other places, and their visits to the lake Terkhiin Tsagaan Nuur (Mey 1994, Stephan 1988) were brief and confined to the eastern end and the adjacent wooded volcano, though Kitson (1978) reached the western end. *Nuur* is Mongolian for lake, *gol* for river. There are many lakes in Mongolia called *tsagaan nuur* ('white lake'), but for the rest of this paper 'Tsagaan Nuur' refers to the one in the Khorgo national park

### Habitats

Although best known for its endless steppes, Mongolia still has a substantial amount of forest. Tsetserleg nestles at around 1700m under granite mountains wooded with birch *Betula* spp. and larch *Larix sibirica*, on the edge of the wide floodplain of the Urd Tamir Gol, otherwise lined with hills of bare overgrazed steppe. There is a strip of poplar *Populus diversifolia* woodland along the line of the river itself, very open in places through heavy grazing pressure. South into the Khangai mountains, the hot springs are in the upper valley of the Tsenkher Gol, the north-facing slope of which is covered in dense mature larch forest, with steppe on the south-facing slopes. In general, Mongolian larch forests are heavily grazed, selectively cut over



Map.1. Tsetserleg and the hot springs. Redrawn from a photocopy of the 1:200,000 Russian survey map (part) and the Mongolian 1:500,000 series sheet L-47-B (part). The jeep track route through the hills from the Urd Tamir floodplain to the hot springs is interpolated by the author (not marked on any map).

and subject to late summer fires, though there is regeneration in places; the forest at the hot springs was notably much less grazed or logged than in other places visited. Forests are still occasionally sprayed from the air against caterpillar pests (B. Williams *pers. comm.*). I have included the Choit Tamir Gol valley at Ikh Tamir (over the hills c20km NW of Tsetserleg) in the Tsetseleg area for the purposes of the checklist, though it was only visited in passing; it is very similar to the Urd Tamir valley, with an equivalent fringe of poplars along the river.

Fed by the Terkhiiin Gol, Tsagaan Nuur is a large lake (15 x 4 km) formed at 2060m behind a geologically recent lava flow, on which there is a sparse stunted larch forest with some pine *Pinus sibirica*, and a scrubby understorey; to the west there are some smaller lakes, notably Bandan Nuur and Khöödöö Nuur. The main lake is surrounded by hills of treeless steppe, with larch forest higher up to the south and smaller patches in the north; there is willow *Salix* spp. scrub in stream beds and on the lava fringeing the western end. East of the lake is Khorgo volcano, a modest cinder cone. The lake itself, which includes some islands, has gravelly shores to the north, grassy meadows to the south. The west end of the lake is very shallow with aquatic vegetation, conspicuously *Hippuris vulgaris* and *Polygonum amphibium*. Where the lava borders the lake at the east there are damp slacks, grass-fringed lagoons alternating with gravel. The lake is a wetland of international importance (Ramsar Site 2MN002, Frazier 2002); its ecology is briefly described in Scott (1989) and Frazier (2002). Grazing and human habitation in yurts (felt tents, *gers* in Mongolia) is legal in Mongolian national parks, though hunting and tree-felling are restricted; the density of livestock on the meadows at the western end of the lake was the highest I saw anywhere.

Gunin (1999) provides a detailed survey of the history, dynamics and conservation of Mongolian vegetation, but there are basic vegetation maps for the Tsetserleg and Khorgo areas at 1:500,000 in Sarangerel (2001), together with annual temperature and rainfall maps for the country. The severe problems of sustainability of overgrazed steppe are treated by Chuluun & Ojima (2001). An introductory illustrated survey of Mongolia's ecological zones can be found in Finch (1999; see also Batjargal & Enkbat 1998).

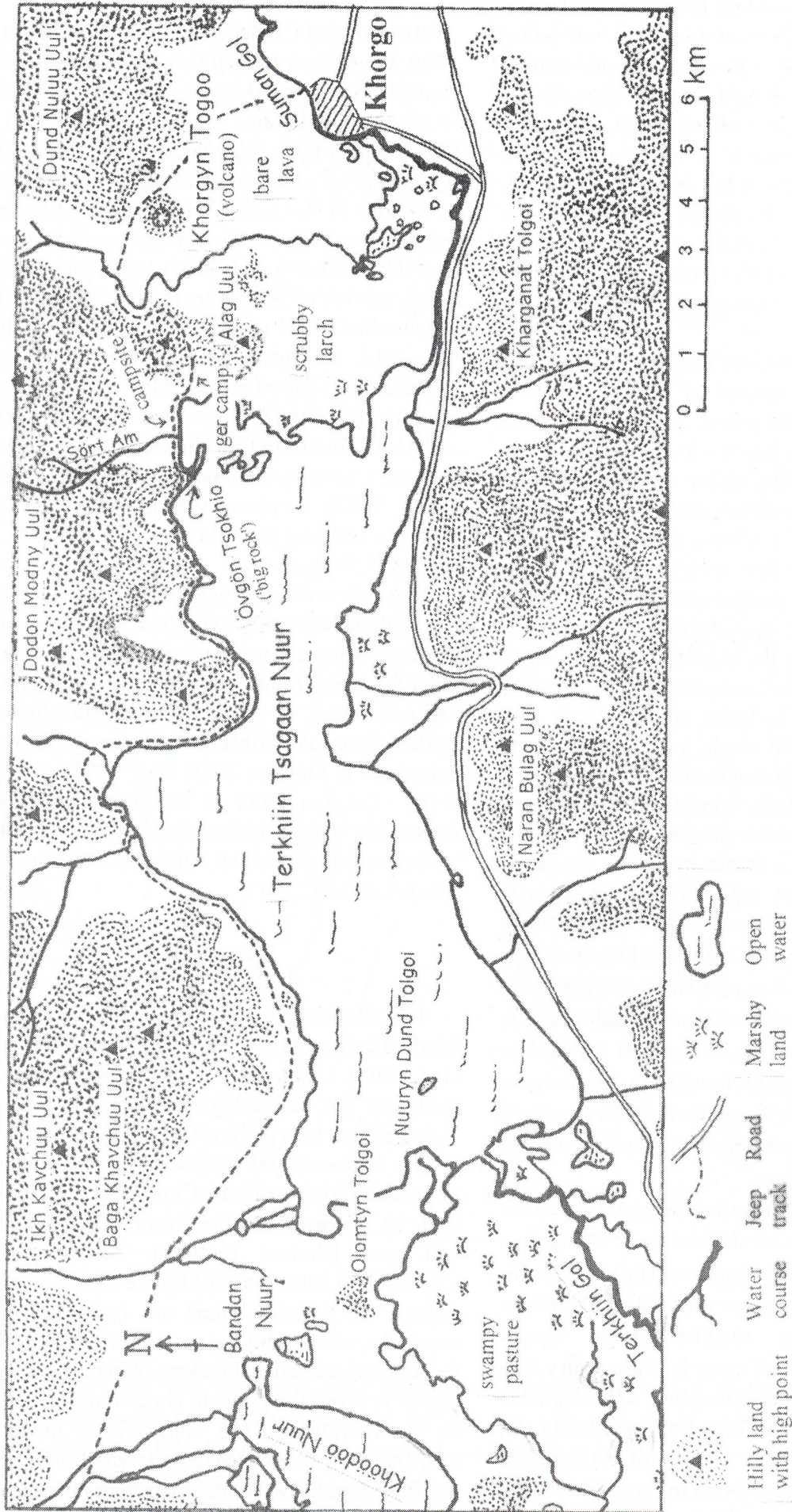
### Identification

Russian and Chinese field guides (Flint et al. 1984, Mackinnon & Phillipps 2000) were used for identification, critical species being cross-checked in other publications. László's paper (1997) on Hungarian bird-ringing expeditions in 1993-96, has a good series of colour photographs of difficult passerines in the hand (but almost totally lacks specific localities). Problem species of buzzards, grey shrikes, leaf-warblers and dark-capped tits are discussed further elsewhere (Cheke in prep.). The distribution maps in the Chinese guide include Mongolia, but many are in practice seriously misleading. The standard Mongolian bird list (Fomin & Bold 1991) gives concise details of status and distribution, updated in summary by Bold et al. (2002). In the systematic list the papers of Kitson (1978, 1983), Stephan (1988), Mey (1994) and F&B are referred to for brevity as K1, K2, S, M, and F&B respectively.

Late July is the time when most passerines have reared their first (only ?) broods, and young birds are everywhere, proving breeding, but making identification difficult for many species. Migration had not begun, so some warblers, thrushes and waders recorded by observers later in the summer/autumn (e.g. Stephan 1988, Mey 1994) were not seen. Tsagaan Nuur is so large that it was impossible without a telescope to determine distant waterfowl out on the lake; I may have missed some species of duck.

### Species list

The list follows the sequence in the standard Mongolian checklists (Fomin & Bold 1991, Bold et al. 2002). Under each species, observations are split into the Tsetserleg area [**T**], the Khorgo/Tsagaan Nuur area [**K**] and Other [**O**] - this consists mostly of incidental observations, but includes important sightings in the Chuluut Gol valley (en route to Tsagaan Nuur) and on the Tsagaan Sum Gol near Khotont (between Tsetserleg and Kharkhorin). Observations by previous observers (mostly at Tsagaan Nuur) are included where available; where I did not see a species, the earlier record is placed square brackets. Where no previous record is given for Tsagaan Nuur none was found in the literature. No comment is made on distribution for Tsetserleg records where the species has been regularly recorded by others in



Map.2. Khorgo and Terkhiin Tsagaan Nuur. Redrawn from a partial photocopy of the Russian 1:100,000 survey map.

adjacent areas, e.g. at Kharkhorin, or Khujirt and Orkhon Falls across the Khangai mountains to the south (Stephan 1988, Mey 1994 and refs. therein). Outside the Tsetserleg and Khorgo areas I have referred to previous observations only if mine were unusual or possibly contentious.

**Black-throated Diver** *Gavia arctica*. **K:** A pair with a half-grown chick on Bandan Nuur. 2 pairs on the main lake in 6/1977 (K1) is the only published record, but F&B listed it as a breeding site.

**Great Crested Grebe** *Podiceps cristatus*. **K:** A pair at the west end of Tsagaan Nuur. Recorded in 8/1978 and 9/1982 (S, M), but not listed by F&B.

**(Great) Cormorant** *Phalacrocorax carbo*. **K:** 200+ apparently nesting on Nuurnyund Dund Tolgoi island at the west end of the lake; up to c120 fishing at the east end. Only non-breeding immatures seen in 6/1977 (K1), also recorded in 8/1978 and 9/1982 (S,M); listed as a breeding site by F&B.

**Grey Heron** *Ardea cinerea*. **K:** 20+ around the west end of the main lake; 21 at Bandan Nuur, 25 at Khödöö Nuur. Some were juveniles; Nuurnyund Dund Tolgoi island is a likely breeding site - in Mongolia herons nest on the ground (K1). Recorded in 6/1977, 8/1978 and 9/1982 (K1, S, M). **O:** 2 by shallow lake in Chuluut Gol floodplain 3-4 km south of the bridge, 30/7; several at pools on the Tsagaan Sum Gol where the Tsetserleg road meets the river just west of Khotont, 6/8.

**[Black Stork** *Ciconia nigra*. **T:** 3 near Tsetserleg, 8/1978 (S). **K:** Several around Khorgo/ Tsagaan Nuur in 8/1978 (S); 1 on the river draining the lake in May 2002 (B. Williams, pers.comm)]

**Bar-headed Goose** *Anser indica*. [**T:** Birds were collected near Tsenkher in 6/1964 (Piechocki 1968) and the Urd Tamir Gol is listed as a breeding site by F&B] **K:** Small numbers only at the eastern end of the lake (c20 by the 'big rock', Övgön Tsokhio), but 1000+ feeding on the shore and on pasture at the western end, with smaller groups on Bandan Nuur (c20) and Khödöö Nuur (c100); all were adults with no sign of breeding activity. Equivalent numbers seen at the same place in late June 1977 (K1); Kitson suspected a moulting flock - but the birds I saw were not moulting - they all flew up when buzzed by a Saker Falcon. F&B list Tsagaan Nuur and the Terkhii Gol as breeding sites. **O:** 2 pairs each with 2 well-grown young on the Tsagaan Sum Gol near Khotont, 6/8.

**Whooper Swan** *Cygnus cygnus*. **K:** Small numbers of non-breeding adults on the main lake, the largest group being of 35. A pair with 4 half-grown young on Bandan Nuur, and 2 pairs (no young) on Khödöö Nuur. Four pairs in 6/1977 (K1), and a pair with 4 young in 8/1978 (S); listed as a breeding site by F&B **O:** A pair with 3 half-grown young on the lake in the Chuluut Gol floodplain, 30/8.

**Ruddy Shelduck** *Tadorna ferruginea*. Known as 'lama bird' (*angir*, E.Potapov, *in litt.*), this widespread duck nests close to settlements, traditionally protected for its colour resemblance to Buddhist monks' robes (Nowak 1970). **T:** 2 pairs with 7 well-grown young at the sewage works reservoir; 2 flew up the valley east of the town, 25/7. 5000 on an unnamed steppe-lake 45km east of Tsetserleg in 9/1982 (M): no doubt Builangiin Nuur, 43km east of the town, marked on the 1:500,000 map. Recorded on the Tsetserleg Gol by Tsenkher in 6/1964 (Piechocki 1968). **K:** Numerous on all the lakes, many with well-grown young. A few at Khorgo and Tsagaan Nuur in 8/1978 (S). **O:** In the Chuluut Gol floodplain, a pool in the hills above Ikh Tamir and in the river near Khotont.

**[Mallard** *Anas platyrhynchos*. Recorded in 6/1977 and 8/1978 (K, S)]

**[Teal** *A. crecca*. Recorded in 6/1977 (K1)]

**Gadwall** *A. strepera*. **K:** A few birds conformed at the east end of the lake, but numerous distant dabbling ducks were probably this species. Apparently not previously recorded here, but widespread elsewhere in Mongolia (K1,F&B).

**[Wigeon** *A. penelope*. **K:** Seen in 6/1977 (K1)]

**[Pintail** *A. acuta*. **K:** Seen in 6/1977 (K1), but only listed as a moulting site by F&B]

**[Garganey** *A. querquedula*. **K:** Seen in 6/1978 (K1)]

**Pochard** *Aythya ferina*. **K:** Distant ducks noted provisionally as Pochard along the south side and at west end. Apparently no previous reports, though widespread elsewhere in Mongolia (K1,F&B).

**Tufted Duck** *Aythya fuligula*. **K:** Several hundred pairs breeding, many females had small young. As only 10 seen on Tsagaan Nuur in 6/1977 (K1), and F&B list it only as moulting there, this may indicate a recent expansion, or more probably a recovery: Kozlova (1932-33) found them very widespread in the 1920s. 15 at Tsagaan Nuur in 9/1982 (M).

**Velvet Scoter** *Melanitta fusca* (incl. *deglandi/stejnegeri*). Velvet Scoters may be spreading, as Kozlova (1932-33) saw none in Mongolia in the 1920s, Nowak (1970) considered them “rare, on passage” in Mongolia, and only 13 pairs were seen on Tsagaan Nur in 6/1977 (K); not recorded by M or S. Considered rather restricted by F&B, but a common/widespread breeder by Bold et al. (2002), without regional details. **K:** Several hundred birds, but no sign of breeding or young. At Khövsgöl Nuur further north there were females with small young in early-mid July 1988 and 1990 (Kalbe 1994).

**Goldeneye** *Bucephala clangula*. **K:** Several at the lake’s west end, but many unidentified distant diving ducks may have been this species. 154 in 6/1977 (K1), but no evidence of breeding; Tsagaan Nuur is not included as a breeding site by F&B.

**[Red-breasted Merganser** *Mergus serrator*. **K:** Seen in 6/1977 when suspected of breeding (K1)]

**[Goosander** *M. merganser*. **K:** Seen in 6/1977, and **(O:)** on the Chuluut Gol some 40km SE (K1)]

**Black Kite** *Milvus migrans*. Mongolian birds are of the well-marked eastern race *lineatus*, treated by some (e.g. Mackinnon & Phillipps 2000) as a separate species. **T:** A few dozen birds around the town; nestlings heard calling from trees in the Gangin Gol valley, 24/7. Seen in 8/1978 (S); in 9/1982 50 roosted in poplars by the Choit Tamir Gol at Ikh Tamir (M). **K:** Spread throughout the lake edges, hills and village of Khorgo; also seen in 8/1978 and 9/1982 (S,M). **O:** Seen throughout, though most often near settlements, permanent or temporary (i.e. clusters of *gers*).

**Buzzards** *Buteo* spp. Most buzzards I saw had pale heads and rufous plumage resembling textbook Long-legged buzzards *B. rufinus*, but this colouration appears, in Mongolia, to be a feature of Upland Buzzards *B. hemilasius* (Mauersberger 1982, E.Potapov pers.comm.). **T:** Rufous birds infrequent around Tsetserleg; a more ‘normal’ Upland Buzzard seen on a post near Tsenker. A distant buzzard seen persistently hovering near the hot springs (behaviour more typical of Common Buzzard *B. buteo*). An ‘Upland’ buzzard seen by the Urd Tamir Gol in 8/1978 (S). **K:** 3 rufous birds over Khorgo volcano. An ‘Upland’ buzzard seen in hills near Khorgo in 8/1978 (S). **O:** Rufous birds frequent on the open steppe between Kharkhorin and Ulaan Bataar.

**Booted Eagle** *Hieraaetus pennatus*. **T:** Two large all-dark long-tailed ‘buzzards’ up the Gangin Gol valley on 29/7 were probably this species, but according to Eugene Potapov (*pers.comm.*) there are all-dark morphs of the Upland Buzzard that look very similar.

**Steppe Eagle** *Aquila (rapax) nipalensis*. I was surprised to find the Steppe Eagle’s principal prey, the Siberian Marmot *Marmota sibirica*, apparently extremely scarce – I only saw one, in the unlikely habitat of the lava-field at Tsagaan Nuur, although abandoned burrows were widespread. It is heavily hunted for meat and fur (Batjargal & Enkhbat 1998), and after three years of unusually dry weather, numbers may be dangerously low, at least in Arkhangai Province; around 1990 150,000 pelts were harvested annually in Arkhangai (Middleton 1992). A smaller ground-squirrel, the Long-tailed Suslik *Citellus (=Spermophilus) undulatus*, also an important prey for Steppe Eagles (Kozlova 1932-33), was common in open country. **T:** Several around the hot springs and en route there; 1 along the Khara-Chilit hills just south of the town, 28/7. Recorded in 8/1978 (S). **K:** Scattered birds around the lake, more frequent at western end, where several juveniles seen. Also reported in 8/1978 and 9/1982 (S,M). **O:** Widespread; after kites and buzzards, the commonest raptor seen when travelling.

**Lammergeier** *Gypaetus barbatus*. **T:** 3 over the Gangin Gol valley, 24/7. The species is not listed for the Khangai-Khentej region (north-central Mongolia) by F&B, but one was seen between Khorgo and Tsetserleg in 9/1978 (S), and Kozlova (1932-33) saw one in the western Khangai in 1929. Specimens in the Tsetserleg school ecology documentation centre and the ‘pitiful nature museum of stuffed animals’ (Mayhew 2001) at the Gangin Gol *ger* camp (*pers.obs.*), suggest it may not be uncommon in the area.

**Black [=Cinereous] Vulture** *Aegypius monachus*. **T:** Singles at the hot springs, the Artsam Gol valley between Tsetserleg and Ikh Tamir, and over the valley west of town. Seen in Tsetserleg and the Urd Tamir Gol in 8/1978 (S) [**K:** Recorded at Khorgo and the lake in 8/1978 (S)] **O:** 2 over the Chuluut Valley gorge and one over the Khanui Gol valley, 2/8; 3+ near Argalant (between Lün and UB), and a large group of 27 around a carcass at the road junction just south of Kharkhorin (on the Khögshin Gol floodplain), 6/8.

**Eurasian Griffon** *Gyps fulvus*. Robel (1993) discussed griffon records in Mongolia, concluding that, *contra* Piechocki (1968), sightings of Himalayan Griffons *G.himalayensis* were erroneous. According to Robel, *fulvus* extends only into the Mongolian Altai, well to the west of the Khangai range, though Piechocki recorded griffons in June (as *himalayensis*) at two sites in the Khangai. Himalayan Griffon is still listed by Bold et al. (2002), and Axel Bräunlich (*pers.comm.*) has seen one in the Mongolian Altai. **K**: Several just north of the lake, 1/8; identification confirmed by photographs.

**Saker Falcon** *Falco cherrug*. The low numbers seen, far less than expected in the Khangai according to Shagdarsuren *et al.* (2001), may reflect the export trade in Sakers that has developed in the past two decades (Lawless 2000, Shijirmaa *et al.* 2000). I did not see Brandt's Vole *Microtus (=Lasiopodomys) brandtii*, a principal food of Saker Falcons (Potapov *et al.* 2001); in May 2002 there was a substantial and widespread bird-kill in Central Mongolia (including Arkhangai) resulting from distribution of poisoned grain by local authorities to control voles (Batdelger & Potapov 2002). If continued this is likely to have far worse effects on raptor populations than trapping for falconry. [**T**: 1 near Tsetserleg in 8/1978 (S)] **K**: 1 harassing Bar-headed Geese at the west end of the lake, 31/7. 1 there and 3 between Khorgo and Tsetserleg 8/1978 (S). **O**: 1 near Samsar, 6/8.

**Hobby** *F.subbuteo*. **T**: Singles on two dates, one unsuccessfully chasing a wheatear.

[**Merlin** *F.columbarius*. **K**: 1 near Khorgo in 8/1978 (S)]

**Common Kestrel** *F.tinnunculus*. **T**: 1 in poplars by the Urd Tamir Gol. **K**: 1 up a valley at the eastern end of the lake; mobbed by magpies, it flew into a larch copse where I heard nestling raptors calling, though I could not locate the nest. Seen around Khorgo in 8/1978 (S).

[**Black-billed Capercaillie** *Tetrao parvirostris*. **T**: Two adults with two young, presumably this species, foraging under mixed pine/larch forest north of Bulgan Uul mountain outside Tsetserleg in late August 2002 (B.Williams, *in litt.*). I have traced no published records of capercaillies in this area, but, as with Lammergeiers, there are specimens in local exhibits (*pers.obs.*)]

[**Common Crane** *Grus grus*. **T**: Seen flying over Tsetserleg in 8/1978 (S)]

**Demoiselle Crane** *Anthropoides virgo*. **T**: A pair with 2 large young on the floodplain, and family groups on either side of Tsenkher. **K**: 2 pairs with young along southern edge of lake and 4 pairs at the west end/Bandan Nuur, one of which waded into waist-high *Hippuris* to hide from observers. Not seen by previous visitors to east end only, though recorded between Khorgo and Tsetseleg (M). **O**: Sparse; 4 pairs, each with 1 large young, shading themselves by power-line poles along main road between Lün and Sansar, 20/7; A pair near Kharkhorin, and a party of 4 c30km W of UB, 6/8. 5 + 2 in the Chuluut Gol floodplain, 3-4km south of the bridge, 30/7.

[**Great Bustard** *Otis tarda*. **K**: 2 over the Choit Tamir bridge at Ikh Tamir in 9/1982 (M)]

**Little Ringed Plover** *Charadrius dubius*. **K**: A few around the shores of the lake, including a family of 4 by the 'big rock'. Also seen in 6/1977 and 8/1978 (K2,S).

**(Northern) Lapwing** *Vanellus vanellus* **T**: 1 regularly near the sewage ponds. Seen at Ikh Tamir in 9/1982 (M). **K**: Small numbers at both ends of the main lake and at Bandan Nuur. Seen in 6/1977 (breeding suspected) and 9/1982 (K2,M). **O**: Several on Tsagaan Sumin Gol meadows near Khotont, 6/8. No obvious juveniles seen.

[**Green Sandpiper** *Tringa ochropus*. A pair along a 'rocky stream with bushes' near Tsagaan Nuur in 6/1977 may have been breeding (K2), though F&B do not list it for this area]

**Wood Sandpiper** *T.glareola*. Birds noted as this species in the field, but as only seen rather briefly in flight, the commoner Green Sandpiper *T.ochropus* cannot be ruled out. **K**: Singles at the west end and on the most northerly bay of the main lake.

**Greenshank** *T.nebularia*. [**K**: seen 6/1977 (K2)] **O**: 1 by the Tsagaan Sumin Gol, near Khotont, 6/8. Purely a passage migrant according to F&B.

**(Common) Redshank** *T.totanus*. **K**: Present all round the main lake, probably 100+ in all; no evidence of breeding. Seen 6/1977 (K2). **O**: 20+ at the lake in the Chuluut Gol valley 3-4 km south of the bridge, 30/7. F&B list no specific sites for Arkhangai province.

[**Spotted Redshank** *T.erythropus*. **K**: 28 seen here, and many elsewhere in 6/1977, suggesting they have a very early return migration (K2)]

**Common Sandpiper** *Actitis hypoleucos*. **T:** 7 along the Urd Tamir Gol south of Tsetserleg. **K:** Singles scattered around the lake. Breeds at higher altitudes according to F&B, but also at lower levels in some places (Kozlova 1932-33, A.Bräunlich *pers.comm.*), so may breed along the Urd Tamir.

**sandpiper/stint** *Calidris* sp. **K:** 2 unidentified small *Calidris* seen at the west end of the main lake, 31/7. Little Stints *C.minuta* seen there in 8/1978 (S).

**snipes** *Gallinago* spp. **T:** 3+ along the edge of the Urd Tamir Gol near bridge, 4/8. Seen only in flight, they flushed silently, flew straight and lacked a white trailing edge to the wing, possibly Pintail Snipe *G.stenura*. 1 flushed from dry land in a larch windbreak near the airstrip called hoarsely but flew straight (wing pattern not seen) - possibly Swinhoe's Snipe *G.megala*. **K:** 2 in swampy land at east end of lake on 31/7 had white trailing edges to wing and tail pattern like Common Snipe *G.gallinago*, but flushed silently, flew straight and had uniform dark underwings - characters conflict, so identification is impossible. Judging by Kozlova's habitat and distribution notes (1932-33), Swinhoe's is far the most likely species, though migrant Pintail were already around in late July; breeding Solitary Snipes *G.solitaria* should still be in their alpine nesting habitat in late-July/early August.

[**Curlew** *Numenius arquata*. 1 seen 'singing' in 6/1977 (K2); not reported to breed in this area by F&B]

**Black-headed Gull** *Larus ridibundus*. **K:** Small numbers on western and northern shores. Several were juveniles (also seen in 8/1978 (S)), suggesting a colony nearby, though not shown breeding in this area by F&B.

**Vega Gull** *L.vegae*. Recent studies (Liebers *et al.* 2001, Yesou 2001,2002) show that the 'herring gulls' of the race *mongolicus* should be attached to the eastern segregate *vegae* rather than the central Asian *cachinnans* as is conventional (Kalbe 1994, Yudin & Firsova 2002, Mackinnon & Phillips 2000); the old name for the complex, *argentatus*, was used by F&B and Bold *et al.* (2002). Gulls at Tsagaan Nuur had uniformly pink legs, as did birds at Khövsgöl Nuur in 1990 (Kalbe 1994), whereas *mongolicus* at Lake Baikal and in other reports from Khövsgöl has very variable leg colour (Pyzhianov & Tupitsyn 1992, Yésou 2001). Khövsgöl birds appear from Kalbe's photo and text to have darker mantles than those at Tsagaan Nuur. [**T:** Seen in

winter along the Urd Tamir Gol (G.Whitehouse, verbally)] **K:** Several hundred nesting on Nuuryn Dund Tolgoi island. Birds seen at all times far beyond the shore, even foraging on steppe up to 30+km east of the lake; also scavenged around campsites. No young had fledged; the island is too far offshore (1km) to see nest details. Khövsgöl birds had eggs/small young in early 7/1990 (Kalbe 1994). 'Herring Gulls' were known to nest at Tsagaan Nuur (F&B), but recent visitors to the eastern end only have seen small numbers (S,M); Kitson (K1,2) did not report on gulls. **O:** A few birds at the Chuluut Gol bridge, 30/8.

**Common Tern** *Sterna hirundo* **K:** 100++ on the main lake, Bandan Nuur and Khödöö Nuur. From their behaviour, some had eggs or young on the margins of the main lake, and on the flat lava islets at the east end. Many also recorded in 8/1978 (S), though the lake is not listed as a breeding site by F&B. **O:** A few along the Tsagaan Sumin Gol near Khotont, 6/8.

**Rock Dove/Feral Pigeon** *Columba livia*. **T:** Birds of feral origin outnumbered about 4:1 by Hill Pigeons in mixed flocks in and around the town, with some intergrades. Hybridisation was first noted in 1962 in northern Mongolia (Nadler & Gebauer 1985), but now seems widespread (e.g. S). **K:** A small flock of apparently wild-type birds in Khorgo village; no hybrids. **O:** In UB Feral Pigeons have swamped Hill Pigeons, although some intergrades were seen.

**Hill Pigeon** *C.rupestris*. **T:** Common in and around the town, outnumbering Feral Pigeons. Groups purely of Hill Pigeons flew in from the countryside to drink at watering points in the late afternoon. Also seen around the hot springs. **K:** Numerous around the *ger* camp and hills at east end of the lake; no feral pigeons were seen outside Khorgo village, and no Hill Pigeons in the village.

**Ural Owl** *Strix uralensis*. **T:** An adult with a recently fledged young seen at close quarters in larch forest at the hot springs, 27/7.

**Pacific Swift** *Apus pacificus*. **T:** c50 pairs nesting in buildings in the town; a huge colony (1000+) on two cliffs fronting the river just west of Tsenkher. 100+ pairs on the 'hero's rock' Taikhar Chuluu outside Ikh Tamir. Seen at Tsetserleg in 8/1978 (S). **K:** c30 pairs in a large collapsed lava tunnel in scrubby forest east of the lake. **O:** Seen over UB 20/7 & 7/8. No Common Swifts *A.apus* seen.



**Hoopoe** *Upupa epops*. **T:** Singles or loose groups of up to 6 in vegetated areas, including town parks. No sign of nesting or young, and the only call heard was at the hot springs. **K:** Scattered individuals all over, but 10+ together up the valley behind the campsite. Also seen in 8/1978 (S).

[**Greater Spotted Woodpecker** *Dendrocopus major*. **T:** A juvenile in larches on the Khorgo volcano in 9/1982 (M)]

**White-backed Woodpecker** *Dendrocopus leucotos*. **T:** 2 in willows, lower Gangin Gol valley, 24/7.

**Lesser Spotted Woodpecker** *D.minor*. **T:** An adult and juvenile in poplar woodland by river bridge, 4/8.

**Three-toed Woodpecker** *Picoides tridactylus*. **K:** Adult feeding a fledgling in tall poplars by river bridge, 4/8.

**Sand Martin** *Riparia riparia*. Sand Martins have recently been split, though the segregate *R.diluta* (Pale Martin) is not mentioned in the Mongolian literature. North-central Mongolia may be within the range of both species (Dickinson & Dekker 2001), but Tsagaan Nuur birds did not appear to differ from typical *R.riparia*, and the large size of the colony is indicative of this form (*ibid.*). [**T:** Said to breed near Tsenkher and the 'upper reaches' of the Urd Tamir Gol (F&B)] **K:** An active colony of 200+ holes in a sand cliff just west of the 'big rock'.

**Eurasian Crag Martin** *Ptyonoprogne rupestris*. **T:** Several hundred pairs with Pacific Swifts on a high river cliff just west of Tsenkher, a site noted by F&B; the second cliff held only swifts. 5+ around cliffs by the river bridge south of Tsetserleg, 4/8. [**K:** Seen over lava west of the lake in 8/1978 (S)] **O:** 2 pairs in the Chuluut Gol lava gorge near the sacred larch Zuun Salaa Mog ('tree with a hundred branches', Middleton 1992:89), 30/8.

**(Barn) Swallow** *Hirundo rustica*. **T:** 4 passing through the upper Gangin Gol valley on 29/7. **O:** Seen at bridges on the main road over the Tuul Gol at Lün and Tarnay Gol near Samsar.

[**Red-rumped Swallow** *H.aurica*. **T:** 3 near Tsetserleg in 9/1978; nesting at Kharkhorin in 1962 (S)]

**(Northern) House Martin** *Delichon urbica*. **T:** Birds with young at 27+ nests on a factory in Tsetserleg were definitely *D.urbica* and not Eastern House Martins *D.(u.) dasypus*. **O:** Seen at the bridge over the Tuul Gol at Lün, 20/7.

**larks** - a general note: Apart from isolated birds, larks were only seen on the main road between UB and Kharkhorin, mostly where the steppe was dominated by *Artemisia* spp. The absence of larks in Arkhangai province, confirmed (verbally) by American forester-naturalist Brett Williams, resident in Tsetserleg for a year, is a puzzle. The *Artemisia* component in the steppe vegetation is lower than in some other areas, but this is an insufficient explanation, as there is no reason to suppose any species requires *Artemisia*. Poisoned grain for voles might be implicated, but S & M also recorded few or no larks at Tsagaan Nuur, Tsetserleg and the road between in 1978 and 1982.

**Mongolian Lark** *Melancorypha mongolica*. **O:** Scattered birds between Lün and Sansar, 20/7.

**Shore/Horned Lark** *Eremophila alpestris*. **O:** 1 by road between Lün and Sansar, 20/7. Seen between Khorgo and Tsetserleg in 9/1982 (M).

**Skylark** *Alauda arvensis*. **K:** A probable (poorly seen) by the lake, 31/7. **O:** The commonest lark on the road between UB and Kharkhorin, 20/7, but none seen on return journey, 6/8 !

**Blyth's Pipit** *Anthus godlewski*. **K:** Several around an empty winter corral, valley behind campsite; identity confirmed by photographs. Kitson (1979b) found it "common in the Hangai [=Khangai] in June", without more detail; no previous published records for Tsagaan Nuur.

**Olive-backed Pipit** *A.hodgsoni*. **T:** Common in the forest in the upper Gangin Gol valley behind Tsetserleg, and in larch forest at the hot springs. **K:** Heard in a larch patch south of the lake, and in another patch in the valley behind the camp site; no previous published records from here.

**Water Pipit** *A.spinoletta*. **T:** 1 in the unexpected habitat of exposed granite outcrops above the town, 26/7. [**K:** Common at Khorgo and Tsagaan Nuur in 8/1978 and 9/1982 (S, M), presumably migrants]

**unidentified pipit** *Anthus trivialis/cervinus*. **K:** Smaller streakier pipits associating with Blyth's at the winter corral were probably Tree Pipits *A.trivialis* but possibly immature Red-throated Pipit *A.cervinus*; no records here, but both known from elsewhere in Mongolia (F&B,S,M).

**Citrine Wagtail** *Motacilla citreola*. **T:** A female showing nesting behaviour in wet meadows at the edge of the Urd Tamir Gol floodplain, 26/7. **K:** A pair in damp grass near the eastern lake edge.

**Grey Wagtail** *M.cinerea*. **T:** A few pairs with fledglings along the Gangin Gol stream rising behind the town. Plenty on the gravel shore and in

poplars by the Urd Tamir Gol bridge south of Tsetserleg. Seen near Tsetserleg in 8/1978 (S). [**K**: Recorded at Khorgo in 8/1978 (S)]

**Pied [=White] Wagtail** *M.alba*. **T**: Common in and around the town (many juveniles), along the Urd Tamir Gol (where seen in 8/1978 (S)), and at the hot springs: birds taking dead flies from the surface of the hot baths. **K**: Common at the *ger* camp and the shore west of the lake; also seen in 8/1978 (S). **O**: Several at the Chuluut Gol bridge south of the lava gorge. 1 seen in urban UB, 7/8.

**Brown Shrike** *Lanius cristatus*. **T**: 2 pairs with fledglings in willow scrub along the upper Gangin Gol stream, 29/7.

**unidentified grey shrike** *L.exubitor/sphenocercus*. **K**: An adult with two flying young in scrub on lava near the western lake shore; the birds showed characters of both these large grey shrikes, so remain indeterminate. No previous records for Tsagaan Nuur.

**Magpie** *Pica pica*. **T**: Common in the town and vegetated surroundings. **K**: Less common than elsewhere: only in larch and willow up the valley behind campsite. **O**: In the Chuluut Gol lava gorge, scrub near where the main road crosses the Mongol Els dunes in the Tarnay Gol valley, and UB. Seen between Tsetserleg and Tsagaan Nuur in 8/1978 (S).

[**Nutcracker** *Nucifraga caryocatactes*. **K**: 15 by Khorgo volcano in 9/1982 (M)]

**Red-billed Chough** *Pyrrhocorax pyrrhocorax*. **T**: Common in and around Tsetserleg, often associating with Daurian Jackdaws. Several around the hot springs joined kites mobbing a Steppe Eagle. **K**: Fewer here: small parties in Khorgo village, once near the campsite, at the northernmost bay and near Khödöö Nuur. Numerous in 8/1978 (S) and seen on the volcano in 9/1982 (M). **O**: Many along the Tsagaan Sumin Gol near Khotont, and a few in the Erdene Zuu temple at Kharkhorin. Frequent in urban UB.

**Daurian Jackdaw** *Corvus dauuricus*. **T**: A flock of 200+ adults and juveniles foraged out on the floodplain and roosted in town. [**K**: Many at Khorgo airstrip in 8/1978 (S)] **O**: Numerous along the Tsagaan Sumin Gol west of Khotont, 6/8.

**Carrion Crow** *C.corone*. **T**: Mostly in and close to the town, especially in parks, outnumbering urban choughs by about 2:1. **K**: Only seen once, near the *ger* camp. Recorded in 8/1978 (S). **O**: 4 near Kharkhorin; common in UB.

**Raven** *C.corax*. **T**: Regular at the rubbish tip and in the updrafts of Bulgan Uul mountain dominating the town. Occasional almost anywhere (except in town), though only one at the hot springs. Seen at Tsetserleg and by the Urd Tamir Gol in 8/1978 and 9/1982 (S,M). **K**: Only seen at Khödöö Nuur, but noted at Khorgo in 8/1978 and 9/1982 (S,M). **O**: Seen between Ikh Tamir and the Chuluut Gol valley, at the Chuluut Gol lava gorge, between Kharkhorin and UB, and in UB itself.

[**Alpine Accentor** *Prunella collaris*. **K**: Seen in mountains near Khorgo and roosting in the Khorgo volcano crater in 9/1982 (M)]

**Brown Accentor** *P.fulvescens*. **K**: 1 in sparse larch forest on the lava field west of the lake, 1/8. No previous records, but seen well enough to distinguish it from the next species.

[**Siberian Accentor** *P.montanella*. **K**: Seen on lava by the river at Khorgo and in nearby hills in 8/1978 (S). A passage migrant in Mongolia, whereas the Brown Accentor is a widespread breeder (Kozlova 1932-33, F&B)].

**Lesser Whitethroat** *Sylvia curruca* **K**: 1 in willow scrub by east end of lake.

(**Common**) **Chiffchaff** *Phylloscopus collybita*. **T**: A plain leaf-warbler with weak eye-stripe and no wing-bar in willow/birch scrub by the lower Gangin Gol stream appears to have been this species.

**Greenish Warbler** *P.trochiloides*. Birds I saw had single wing-bars consistent with *P.t.viridianus*, the race reported in western Mongolia (Kozlova 1932, 1932-33, Kitson 1979a, A.Braunlich *pers.comm.*). I often got only fleeting views of leaf-warblers in the canopy, so other species may also have been present. **T**: Frequent in the park by the Zayayn Gegeenii temple, and in poplars by the Urd Tamir Gol. Also seen by the river in 8/1978 (S); cited as “common in the Hangai mountains in late June” 1977 (Kitson 1979a).

**Red-breasted Flycatcher** *Ficedula parva*. The eastern form is sometimes treated as a separate species, Taiga Flycatcher *F.albicilla* (e.g. Cederroth *et al.* 1999). **T**: Juveniles regular in the park by the temple and in scrub along the Gangin Gol. Common in poplars by the Urd Tamir; also seen there in 8/1978 (S).

**Spotted Flycatcher** *Muscicapa striata*. **T**: 1 in poplars by the Urd Tamir Gol and a few in willow/birch scrub on the lower Gangin Gol stream. F&B report it along the Urd Tamir.

**Siberian Flycatcher** *M.sibirica*. **T**: Juveniles numerous in larch forest by the hot springs; but

one adult found to confirm identity. Listed as occurring along the Urd Tamir by F&B.

**Siberian Stonechat** *Saxicola maura*. The Asian form is currently treated as separate from *torquata* following DNA studies (Urquhart 2002, Wink *et al.* 2002). **K:** A family party along the stream up the valley behind the campsite. No previous record at Tsagaan Nuur.

**Northern Wheatear** *Oenanthe oenanthe*. **T:** Common in open areas around the town, nesting in ground-squirrel burrows, many adults feeding fledglings. **K:** Common around the lake, absent only in sparse larch forest. Seen in the hills around Khorgo in 8/1978 (S). **O:** Numerous along all roads travelled; the most ubiquitous bird I saw in Mongolia.

**Desert Wheatear** *O. deserti*. [**K:** A probable on the lava-field by Khorgo in 8/1978 (S)] **O:** 1 on the road between Lün and UB, 6/8.

[**Isabelline Wheatear** *O. isabellina*. I saw none, but widely recorded by others (e.g. Kozlova 1932-33, M, S: at Orkhon, Khujirt and between Kharkhorin and UB). **K:** Seen in hills near Khorgo in 8/1978 (S)].

**(Rufous-tailed) Rock Thrush** *Monticola saxatilis*. **K:** 2 juveniles on rock piles above the town, 23/7.

**Common Redstart** *Phoenicurus phoenicurus*. **K:** An adult male at the hot springs, 27/7.

**Black Redstart** *P. ochruros*. **T:** A singing male holding territory in a suburb ('ger district'). Juveniles common in all treed areas - parks, riverine scrub, poplar woodland, and larch forest at the hot springs. **K:** Much less numerous here, but several in winter corrals in valley behind campsite, and occasional by road between Khorgo and the lake. Seen in the lava field in 8/1978 and 9/1982 (S,M). **O:** 1 among old larches at the sacred tree, Chuluut Gol lava gorge, 2/8.

**Daurian Redstart** *P. aureus*. May have spread in recent years as Kozlova (1932-33) did not find it in the Khangai in the 1920s, and the German expeditions saw only autumn migrants in the vicinity (Khujirt:M). **T:** Juveniles present with Black Redstarts, but outnumbered by about 4:1. Only 1 adult seen, in poplars by the Urd Tamir Gol. **K:** 1 at winter corral in valley behind campsite.

**Dark-throated Thrush** *Turdus r. ruficollis*. **T:** Immature in poplars by the Urd Tamir Gol. Seen by the Choit Tamir Gol at Ikh Tamir in 9/1982 (M). **K:** 2 juveniles in scrub on lava by lake. A flock of 20-25 between Khorgo and the lake, 8/1978 (S).

**Long-tailed Tit** *Aegithalos caudatus*. **K:** A party in larch forest in the upper Gangin Gol valley.

**unidentified dark-capped tit.** *Parus montanus/songarus/cinctus*. The commonest tit in the area, a large species resembling a Siberian Tit *P. cinctus* but with a black crown, may have been the Songar Tit *P. songarus* (Harrap 1996), not formally recorded for Mongolia. **T:** Common both in willow scrub and larch forest all along the Gangin Gol, in poplars by the Urd Tamir Gol, and in larch forest at the hot springs. [**K:** Recorded (as Willow Tits) at the Khorgo volcano in 9/1982 (M)]

**Willow Tit** *P. montanus*. **T:** A small-bibbed tit singing a "wheezy slightly *Phylloscopus*-like song" in trees along the lower Gangin Gol on 5/8 appears to have been a true Willow Tit.

**Azure Tit** *P. cyanus*. **T:** 2 in poplars and riverine willow by the Urd Tamir Gol.

**Great Tit** *P. major*. **T:** A family in willow/birch along the lower Gangin Gol stream; 1 in poplars by the Urd Tamir Gol.

**(Eurasian) Nuthatch** *Sitta europaea*. **T:** Common in riverine willow/birch and larch higher up along the Gangin Gol stream; abundant in poplars by the Urd Tamir Gol; extraordinarily abundant (outnumbering all other woodland birds) in larch forest at the hot springs, far commoner than anywhere else I have seen them (Europe, Japan). [**K:** 1 seen in larches on the volcano, 9/1982 (M)] **O:** 1 in sparse old larches around the sacred tree, Chuluut Gol lava gorge, 2/8.

[**Wallcreeper** *Tichodroma muraria*. **K:** 2 in granite hills north of Khorgo in 9/1978 (S)]

**(Eurasian) Treecreeper** *Certhia familiaris*. **K:** Common in larch forest at the hot springs; like Nuthatch, more common here than anywhere else I have seen the species.

**House Sparrow** *Passer domesticus*. Has recently spread in Mongolia: confined to UB in the 1920s (Kozlova 1932-33), it was widespread by the 1970s (Mauersberger *et al.* 1982, Piechocki *et al.* 1982 etc.). **T:** Common in the town, outnumbered about 4:1 by Tree Sparrows. Also seen in 8/1978 (S). [**K:** Roosting with Tree Sparrows in Khorgo, 8/1978 (S)] **O:** Usually present at even the smallest *guanx* (roadside restaurant); common in UB, where hugely outnumbers Tree Sparrows.

Beginning late July, peaking on 2 August, there was a spectacular mass emergence of large whitish moths around poplars in the streets of Tsetserleg - specimens were identified at the UK

Natural History Museum as female Gypsy Moths *Lymantria dispar* (Jeremy Holloway *pers. comm.*). On 3/8, under the trees where moths were most abundant and sparrows of both species regularly roosted, I found 47 freshly dead juvenile sparrows, all but one *domesticus*. The moths were covered in easily shed hairs - Lymantriids are known for their unpleasant urticating hairs (Chinery 1993, Valledor 1994 & *in litt.*). Sparrows of both species were seen feeding on the abundant and easily caught moths, but young House Sparrows appear to have been killed by so doing - possibly by allergic swelling impeding breathing or from toxic shock (A. Valledor *in litt.*). Adults of both species seemed unaffected, as were most juvenile Tree Sparrows; perhaps more experienced birds were able to remove the hairs, or ate fewer moths.

**Tree Sparrow** *P. montanus*. Around Tsetserleg Tree Sparrows regularly clumsily caught and ate the abundant large grasshoppers that swarmed on the steppe. Strangely few birds seemed to exploit this resource, indeed the only ones seen apparently doing so were wheatears, Vega Gulls east of Khorgo, and occasional kites at Tsetserleg. **T:** Abundant around town; also seen at the hot springs. One juvenile dead amongst House Sparrows after the moth emergence. Many in Tsetserleg, 8/1978 (S). **K:** Common in Khorgo village, and around empty winter corrals up the valley behind the campsite. Seen in the village, 8/1978 (S). **O:** Seen almost wherever there were buildings or *gers*; rather few in urban UB.

**Rock Sparrow** *Petronia petronia*. **K:** A flock of c130, mostly juveniles, feeding on plentiful seeds on an ungrazed cliff and adjacent shore. **O:** Some with Tree Sparrows and Small Snowfinches by grainfields near Erdenesant, 6/8.

**Small Snowfinch** *Pyrgilauda davidiana*. [**K:** c50 flying over the lake in 9/1982 (M)] **O:** Only seen by grainfields near Erdenesant and also c30km west of UB, 6/8.

**Twite** *Carduelis flavirostris*. **K:** 2 feeding on thistle and burnet *Sanguisorba* seeds by the lake on 31/7; probables also on the volcano, where a flock of 30 was seen in 9/1982 (M). **O:** Several around the sacred tree by the Chuluut Gol lava gorge, 2/8.

**Common Rosefinch/Scarlet Grosbeak** *Carpodacus erythrinus*. **T:** Several juvenile rosefinches, probably this species, in poplars by the Urd Tamir Gol. [**K:** Unidentified rosefinches seen by the Khorgo volcano in 9/1982 (M)].

**Long-tailed Rosefinch** *Uragus sibiricus*. **T:** 1 seen twice in willows along lower Gangin Gol stream.

**Pine Bunting** *Emberiza leucocephala*. **T:** Some juveniles in larch forest by the hot springs.

**Pallas's Reed Bunting** *E. pallasi*. **K:** A pair in willow scrub on lava by the east end of the lake. Kitson (1979b) was unspecific, but appears not to have seen this species at Tsagaan Nuur; not recorded in 1978 or 1982 (S,M).

[**Masked Bunting** *E. spodocephala*. **K:** Seen in the Tsagaan Nur area in 8/1978 (S)]

**Ortolan Bunting** *E. hortulana*. **K:** Numerous juveniles around empty winter corrals in the valley behind the campsite and on the shore by the 'big rock'. Juvenile Ortolans are inadequately figured and described in books, though there is a good colour photo in László (1997); the 'plic' call is distinctive. Not previously seen at Tsagaan Nuur.

## Acknowledgements

The primary reason for visiting Mongolia was to visit my wife Ruth's sister and her family then working in Tsetserleg - my heartfelt thanks to Cath and Graham Whitehouse for their excellent hospitality, and also to Ruth Ashcroft for good company in the field on our many long hot walks. Brett Williams (US Peace Corps forester) was a most helpful source of local information, and Ganbold drove us to Tsagaan Nuur, round the lake and back again successfully despite having only sign language and a phrase book for communication. In the UK, Mike Wilson kindly helped with references, clarified Russian text and alerted me to the Songar Tit, Eugene Potapov supplied useful literature, Robert Prys-Jones allowed me to examine bird skins in the Natural History Museum (Tring) and Jeremy Holloway identified the sparrowcidal moths. Axel Bräunlich, Eugene Potapov and Mike Wilson commented helpfully on a draft of this paper.

## References

- Avadorj D. & Badrakh S. 2001. Current situation and change of Mongolian pasture land. Abstract, in Chuluun & Ojima (2001), q.v., p59.
- Batdelger D., Potapov E. 2002. Mass mortality of birds in Mongolia -&- Further report on poisoning. *Falco* 20:4,5.

- Batjargal Z. & Enkhbat A. (eds.) 1998. *Biological diversity in Mongolia* (first national report). Ministry for Nature & the Environment -& UNDP Global Environment Facility, UB, Mongolia.
- Bold A., Boldbaatar Sh. & Tseveenmyadag N. 2002. *Mongol orny shuvuu, Khoyor nutagtan, MÖlkögchid*. Mongolyn Shinjlekh Ukhaany Akademi [Mongolian Academy of Sciences], UB, Mongolia (Checklist of Mongolian Birds, in Mongolian, with English & Latin names).
- Bräunlich, A. 2002. Birding in central Asia: an introduction to Mongolia. *Oriental Bird Club Bull.* 35:62-70.
- Cederroth C., Johansson C., & Svensson L. Taiga flycatcher *Ficedula albicilla* in Sweden: the first record for Europe. *Birding World* 12:460-468.
- Chinery M. 1993. *Insects of Britain and northern Europe*. 3rd.ed. HarperCollins, London.
- Chuluun T. & Ojima D. (eds.) *Open Symposium on "Change and sustainability of pastoral land use systems in temperate and central Asia"*, Ulaan Bataar June 28-July 1, 2001. Mongolian Academy of Sciences & International Inst. for the Study of Nomadic Civilization, UB, Mongolia.
- Dickinson E.C. & Dekker R.W.R.J. 2001. Systematic notes on Asian birds. 13. A preliminary review of the Hirundinidae. *Zool.Verh.* 334:127-143.
- Finch C. 1999. *Mongolia's wild heritage. Biological diversity, protected areas and conservation in the land of Chingis Khaan*. Avery Press, Boulder, Colorado.
- Flint V.E., Boehme R.L., Kostin Y.V., & Kuznetsov A.A. 1984. *A field guide to birds of Russia and adjacent territories* [formerly ...birds of the USSR]. Princeton Univ. Press, Princeton, NJ.
- Fomin V.E. & Bold A. 1991. *Katalog ptits Mongol'skoy Narodnoy Respubliki*. Nauka, Moscow. (in Russian)
- Frazier S. 2002. *A directory of wetlands of international importance*. 7th ed. Published online only: Wetlands International/ www.wetlands.org.
- Gunin P.D. (ed.) 1999. *Vegetation dynamics of Mongolia*. Kluwer Academic Publishers, Amsterdam.
- Harrap S. 1996. *Tits, nuthatches and treecreepers*. Christopher Helm/A & C Black, London.
- Kalbe L. 1994. Zur Vogelwelt am nordmongolischen See Chöwdsgöl. *Mitt. Zool. Mus. Berlin* 70 (Suppl.)/ *Ann. Ornithol.* 18:31-52.
- Kitson A. 1978. Notes on the waterfowl of Mongolia. *Wildfowl* 29:23-30.
- Kitson A. 1979a. Identification of Isabelline Wheatear, Desert Warbler and three *Phylloscopus* Warblers. *British Birds* 72:5-9.
- Kitson A. 1979b. Identification of Olive-backed Pipit, Blyth's Pipit and Pallas's Reed Bunting. *British Birds* 72:94-100.
- Kitson A. 1983. Notes on the waders of Mongolia. *Wader Study Group Bull.* 27:34-35.
- Kozlova E.V. 1932. *Ptitsy Vysokogornogo Khangaya* [Birds of the High Khangai]. Izdatel'stvo Akademii Nauk SSSR, Leningrad (in Russian).
- Kozlova E.V. 1932-33. The birds of South-West Transbaikalia, Northern Mongolia and Central Gobi. *Ibis* (13)2:316-347, 405-438, 567-596 & (13)3:59-87, 301-332.
- László K. 1997. Rövid beszámoló az 1993-96 között Mongóliában járt magyar madártani expedíciók eredményeiről [Short report on some findings of Hungarian ornithological expeditions to Mongolia between 1993-96]. *Túzok* 2:11-28 (in Hungarian).
- Liebers D., Helbig A.J. & de Knijff P. 2001. Genetic differentiation and phylogeography of gulls in the *Larus cachinnans-fuscus* group (Aves: Charadriiformes). *Molecular Ecology* 10:2447-2462.
- Mackinnon J.R. & Phillipps K. 2000. *A field guide to the birds of China*. Oxford University Press, Oxford.
- Mauersberger G., Wagner S., Wallschläger D. & Warthold R. 1982. Neue daten zur Avifauna Mongolica. *Mitt. Zool. Mus. Berlin* 58:11-74.
- Mayhew & Bradley. 2001. *Mongolia*. Lonely Planet Publications, Melbourne etc.
- Mey E. 1988. Herbstdaten zur mongolischen Avifauna. *Mitt. Zool. Mus. Berlin* 64 Suppl. / *Ann. Ornithol.* 12:79-128.
- Middleton N. 1992. *The last disco in Outer Mongolia*. Sinclair-Stevenson, London.
- Nowak E. 1970. The waterfowl of Mongolia. *Wildfowl* 21:61-68.
- Piechocki R. 1968. Beiträge zur Avifauna der Mongolei. Teil I. Non-Passeriformes. *Mitt. Zool. Mus. Berlin* 44:149-292.

- Potapov E., Banzragch S., Fox N. and Barton N.W.H. (eds.) 2001. *Saker Falcon in Mongolia: research and conservation*. Proceedings of international conference on Saker Falcon and Houbara Bustard, Ulaanbaatar, Mongolia, 1-4 July 2000. Ministry of Nature & Environment (+ 4 other agencies), UB, Mongolia.
- Pyzhianov S.V. & Tupitsyn I.I. 1992. Phenotypic variation in Mongolian subspecies of the Herring Gull]. Pp.18-20 in V.A. Zubakin et al. (eds.) [*The Herring Gull and related forms: distribution, systematics, ecology*]. Rossiiskaia Akademia Nauk, Stavropol (in Russian, English titles).
- Robel D. 1993. Zum Vorkommen von Schnee- und Gänsegeier (*Gyps himalayensis* und *Gyps fulvus*) in Zentralasien. *Beitr. Vogelkunde* 39:21-31.
- Sarangerel U. (ed.) 2001. *Natural sights of Mongolia atlas*. Mongolian Univ. of Science & Technology, UB, Mongolia.
- Scott D. 1989. *A directory of Asian wetlands*. IUCN, Gland, Switzerland.
- Shagdarsuren O., Sumya D., Potapov E. & Gombobataar S. 2001. The Saker in Mongolia: numbers and distribution. In Potapov *et al.* (2001), q.v., pp.25-33.
- Shijirmaa D., Banzragch S., Fox N. & Potapov E. 2000. The Saker Falcon *Falco cherrug* in Mongolia. In Chancellor R.D. & Meyburg B-U. (eds.) *Raptors at risk*. Proc.5<sup>th</sup> World conf. On birds of Prey & Owls, Midrand, South Africa 1998, pp.263-268. Hancock House, Blaine, Washington, USA.
- Stephan B. 1994. Ornithologische Beobachtungen in der Mongolei. *Mitt. Zool. Mus. Berlin* 70 (Suppl.)/ *Ann. Ornithol.* 18: 53-100.
- Urquhart Ewan. 2002. *Stonechats. A guide to the genus Saxicola*. Christopher Helm, London.
- Valledor de Lozoya A. 1994. *Envenenamientos por animales: animales venenosos y urticantes del mundo*. Ediciones Diaz de Santos, Madrid (in Spanish).
- Wink M., Sauer-Gürth H. & Gwinner E. Evolutionary relationships of stonechats and related species inferred from mitochondrial-DNA sequences and genomic fingerprinting. *British Birds* 95: 349-355.
- Yésou P. 2001. Phenotypic variation and systematics of Mongolian Gull. *Dutch Birding* 23:65-82.
- Yésou P. 2002. Systematics of *Larus argentatus-cachinnans-fuscus* complex revisited. *Dutch Birding* 24:271-298.