

FIELD OBSERVATIONS OF THE SICHUAN WOOD OWL *Strix uralensis davidi* IN WESTERN CHINA

Terenska opazovanja sečuanske kozače *Strix uralensis davidi* v zahodni Kitajski

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In 1995, 1997, and 1999 at least one pair of the rare Sichuan Wood Owl *Strix uralensis davidi* has been observed in the nature reserve “Lianhuashan”, Gansu Province (Kangle County / Central China). During 13 encounters, one photo, the territorial song, and a rising scale (“nest-site demonstration”) of the male and “begging” notes of the female were recorded. Supported by a conservation programme sponsored by British Petrol (BP), several nest boxes were mounted in suitable habitat in 2002 – 2003, which enabled close observation of breeding success of this rare species in 2005 for the very first time. In 2006 we obtained recordings of 3 territorial males, 2 females and 2 freshly hatched young ones. Description of the species is based on field observations and compared to characteristics of the European subspecies of Ural Owl (*Strix u. liturata* and *Strix u. macroura*). Due to the small remaining patches of mountain forests, the habitat of this owl is extremely threatened by fragmentation. With its 47 km² of natural woodland, the reserve forms a distributional relict of great importance, which will hopefully allow the survival of this nearly unknown owl.

Key words: Sichuan Wood Owl, *Strix uralensis davidi*, montane forest, fragmentation of habitat, preservation, central China, eastern Tibet

Cljučne besede: sečuanska kozača, *Strix uralensis davidi*, gorski gozd, fragmentacija habitata, varstvo narave, osrednja Kitajska, vzhodni Tibet

1. Introduction

The Sichuan Wood Owl (in Chinese language = “*Sichuan liu xiao*”, MacKINNON & PHILLIPPS 2000) was first described by SHARPE (1875) as *Syrnium davidi*, named after the French missionary Father Armand David (like a large number of plants, birds and mammals in China) who discovered this large owl during his first expedition to China in 1866. The majority of descriptions of the species in the literature are traceable to single observations and collections from the late 19th and early 20th centuries. Because of the obvious resemblance to the Ural Owl of Eurasia, initial taxonomic estimations classified the Sichuan Wood Owl as a subspecies of *Strix uralensis* (STRESEMANN 1923) or even a “local phase” (GROSSMAN & HAMLET 1964). Although since then only a few incidental

observations and a few specimens in museums have become known, nowadays lists emphasize the status of this rare owl as a separate species, mostly based on its absolute isolation for millions of years (KÖNIG *et al.* 1999, CLEMENTS 2003). As information about distribution, ecology, reproduction, voice, and behaviour of the Sichuan Wood Owl are completely lacking, a final decision requires new field observations and molecular analysis.

As a first approach, a comparison of the territorial songs of Sichuan Wood Owl (recorded in Lianhuashan nature reserve) and Ural Owl (tape recordings from Bavarian Forest National Park) showed a clear similarity. Since, in field experiments, the Sichuan Wood Owl fully recognized the play back of Ural Owl’s song, implying conspecificity, this was a crucial fact for my suggestion to rank the Sichuan Wood Owl

as a subspecies of Ural Owl (SCHERZINGER 2005).

Given the sparse records of the Sichuan Wood Owl, maps of its distribution give a rather rough picture – primeval forests in the high mountains of Sichuan, Sikiang and Qinghai. This owl species is not listed in the extensive catalogue of vertebrate fauna of Gansu (LIU 1995), as the owl's occurrence in this province was only detected on our first visit in 1995 (SUN *et al.* 2001, SCHERZINGER 2005). Clearly, the remote area of distribution is limited to coniferous forests at high elevations in the mountains of western China and eastern Tibet, therefore interpreted as a true relict of the last ice ages and the pre-glacial distribution of woodland (VOOUS 1962; Figure 1).

In this paper we not only present recent observations and the first record of successful breeding of this rare owl, but also point to the new opportunities for field work in the formerly closed areas of Chinese mountains.



Figure 1: Whereas the range of the Eurasian Ural Owl *Strix uralensis* extends over the entire palaeartic forest belt, the Sichuan Wood Owl *Strix uralensis davidi* occurs only in a strictly isolated area of montane forests in western China and eastern Tibet (map of distribution, from Voous 1962)

Slika 1: Areal kozače *Strix uralensis* se razteza čez celoten gozdni pas Palearktiki, sečuanska kozača *Strix uralensis davidi* pa se pojavlja le na popolnoma izoliranem območju gorskih gozdov v zahodni Kitajski in vzhodnem Tibetu (povzeto po Voous 1962)

2. Study area and methods

In the years 1995, 1997 and 1999 we succeeded in making field observations, photographic and tape recordings of at least one breeding pair of the Sichuan Wood Owl, during stays from April–May, May–June, and June–July in the “Lianhuashan Nature Reserve”. Though preliminary, these observations can help to improve the description and to document aspects of the behaviour of this rare forest-dwelling owl. Stimulated by the offer of nearly 40 large nest boxes, one successful brood was observed by Y. Fang in 2005.

This event was monitored by automatic video-camera in the nest box during the full nestling time. A 5-week stay in 2006, from the end of May to the beginning of July, resulted in records of 3 territorial males, 2 females, and two freshly fledged young ones. We have now obtained a long series of photos by high-speed digital camera.

2.1. Study Area

“Lianhuashan Nature Reserve” (coordinates 34°56′–58°N / 103°44′–48°E) was founded at the eastern edge of the mountainous Qinghai-Tibetan Plateau in Gansu Province (western China), south of the provincial capital city Lanzhou. Covering an area of approximately 120 km², the reserve includes coniferous forest (dominated by fir and spruce trees; mainly *Abies fargesii* and *Picea asperata*) on shaded slopes, with dry slopes on the southern exposition as well as treeless alpine meadows. The portion of non-fragmented woodland is approximately 47 km², the tree line being more than 3000 m a.s.l. (KLAUS *et al.* 1996). The reserve is named after a conspicuous rock summit, nearly 3500 m in height, which is visited by several thousand Buddhist pilgrims every year. Due to the sacredness of this precious landscape, large coniferous forests have persisted in natural stands. But due to heavy logging in the 1970's, stands of old growth forest only remain on extremely steep slopes, on exposed rocky ridges, and in inaccessible canyons (Figure 2; SUN *et al.* 2007, *in press*).



Figure 2: Natural forest near the tree line at 3000 m a.s.l. in the “Lianhuashan Nature Reserve”, Gansu Province, China; The island character of the forest relict in the reserve is intensified due to extensive clear cuts in surrounding landscapes and overgrazing of vegetation (photo: W. Scherzinger)

Slika 2: Naravni gozd blizu drevne meje na 3000 m n.v. v “Lianhuashan Nature Reserve”, provinca Gansu, Kitajska; Otoški značaj reliktnega gozda je poudarjen zaradi intenzivnih golosekov v okolici in intenzivne paše (foto: W. Scherzinger)

All the field records of Sichuan Wood Owl were collected in the main valley of “Lianhuashan Nature Reserve”, which stretches from a saddle at the base of the “Three Sisters Mountain” in the west (approximately 2900 m a.s.l., with dense coniferous old growth forest on a steep slope) to a swampy area along a small creek to the east, with dense coniferous stands.

2.2. Field observations

As the main purpose of the stay in the nature reserve was field research on endemic woodland grouse (Chinese Grouse *Bonasa sewerzowi*; see KLAUS *et al.* 1996), we detected the occurrence of Sichuan Wood Owl fortuitously. Whenever possible, we took the opportunity to collect at least rough information about habitat use and distribution, and about behaviour and vocalization of this very special bird. Oral imitation of territorial song and the nest-site-demonstration note (both well known notes from *Strix uralensis liturata / macroura*, the European subspecies) were used to stimulate vocalization of the free ranging owls.

Due to heavy timber harvesting in the 1970's, before Lianhuashan became a strict reserve, even natural forest stands lack the very old trees that could offer large raptor's nests or hollow trunks as suitable nesting sites for the big owls. Therefore the birds could only use rocky precipices for nesting. In view of previous experience of preservation management for the Ural Owl in the Bavarian Forest National Park



Figure 3: Due to the lack of natural tree cavities, simple nest boxes could stimulate Sichuan Wood Owls *Strix uralensis davidi* to breed in an artificial nesting site (photo: Y. Fang)

Slika 3: Zaradi pomanjkanja naravnih dupel, lahko gnezdilnice spodbudijo sečuanško kozačo *Strix uralensis davidi* h gnezdenju (foto: Y. Fang)

(SCHERZINGER 1996 & 2006), we decided to mount big nest boxes for the Sichuan Wood Owl. This should not only optimise opportunities for suitable breeding sites, but also increase the chance, for the first time, to observe these owls when breeding and rearing. With the helpful support of a conservation programme of British Petrol Company (BP), about 20 specific nest boxes were mounted in 2002 – 2003 (Figure 3).

3. Results

3.1. Description of the Sichuan Wood Owl

Successful field observations were made mostly in the evening twilight, but on 13 Apr 1995, we discovered a male owl during daylight. Under field conditions in the dim coniferous stand, the plumage looked pale greyish-brown, with distinct longitudinal streaks on the breast and under parts; nape, mantle and backside were darker than the front, the white dots on the scapular feathers were prominent; the roundly framed facial disc was distinct, with a dull-yellow beak and narrow almond-shaped eyes (colour appendix - Figure 1). These characteristics are clearly shown in the close-up photo of the female breeding in one of the nest boxes in 2005 (colour appendix - Figure 2). The unicoloured central tail feathers are also specific.

3.2. Field observations

On calm evenings the owl's hooting could be heard over the whole of the main valley of Lianhuashan reserve, stretching in an east-west direction for about 1,5 km. Based on the observation points, the home range of the pair of owls measures a minimum of 200 ha. During our field-stays in 1995, 1997 and 1999 we obtained a total of 6 visual records of male and 4 of female; photo documents of a male were obtained in 1995 and 2006 (colour appendix - Figure 1). 14 acoustical records of the male were registered (territorial song and initial strophes of this note, nest-site-demonstration, and aggressive calls; Figure 4), and 3 of the female (begging notes). We regularly heard duets from the couple, with territorial song and “nest-site-demonstration” by the male and begging notes by the female. Twice we observed the male delivering prey to its female (Table 3; see appendix). In addition, Jia Chen-xi, a colleague of the Chinese research team, took a close-up photo of a male in summer 2003, and Fang Yun attracted a male by playback of tape recordings in May 2004.

In 2005, one nest box was occupied by a pair of Sichuan Wood Owls. Egg laying started between April

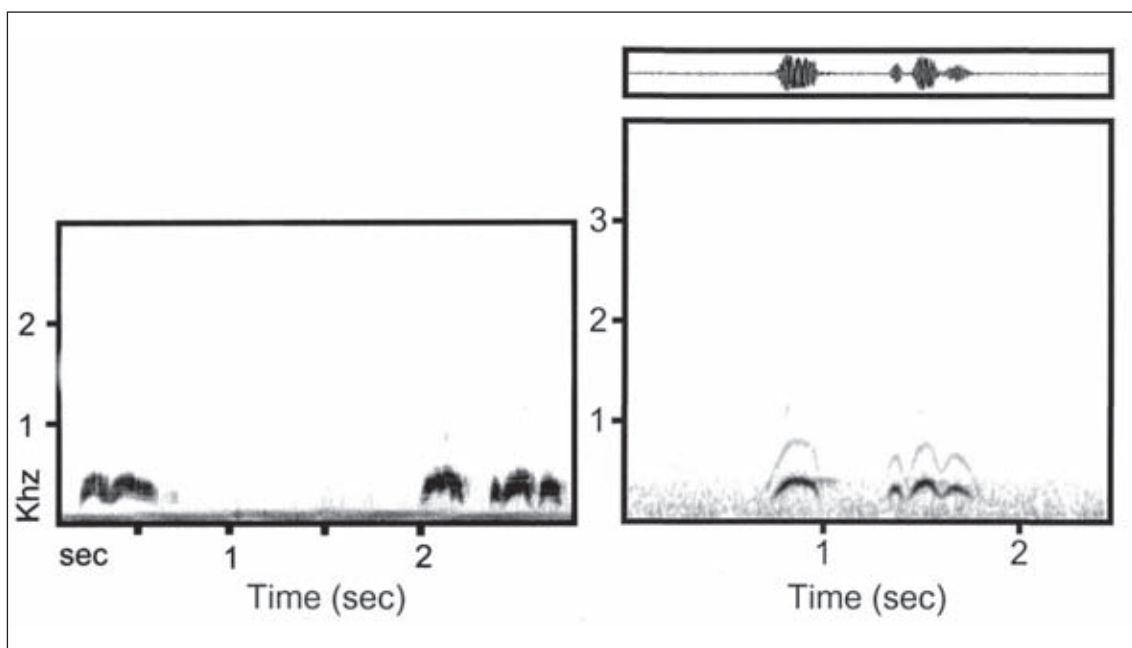


Figure 4: Sonographic comparison of territorial song of male Ural Owl *Strix uralensis* (left; record from captive birds in Bavarian Forest National Park) and Sichuan Wood Owl *Strix uralensis davidi* (right; record from Lianhuashan nature reserve)

Slika 4: Sonografska primerjava območnega petja samca kozače *Strix uralensis* (levo; posnetek osebkov v ujetništvu iz nacionalnega parka Bavarski gozd) in sečuanske kozače *Strix uralensis davidi* (desno; posnetek iz naravnega rezervata Lianhuashan)

25 – 27; the two fertile eggs measured 41.2 x 49.1 mm and 40.8 x 50.1 mm. Brooding started with the second egg at least, and the eggs hatched about 30 May. Nestlings remained in the nest box for 33 – 35 days. One sound fledgling left the nesting site between 3 and 5 Jul (colour appendix - Figure 1). This is the



Figure 5: Due to its size and diurnal activity the Gansu Pika *Ochotona cansus* is a favoured prey of the big wood dwelling owls (photo: W. Scherzinger)

Slika 5: Zaradi primerne velikosti in dnevne aktivnosti je žvižgač vrste *Ochotona cansus* priljubljen plen velikih v gozdu živečih sov (foto: W. Scherzinger)

first breeding record of this rare species under human observation. Favoured prey items include the Gansu Pika *Ochotona cansus* (Figure 5), but systematic records on hunting are lacking.

During an additional stay in 2006 we recorded 3 singing males and 2 females, and also detected 2 freshly fledged young ones in front of a nearly vertical rock-precipice, where they may have hatched in a cavity. Roosting at top of a spruce tree during daylight one of the fledglings got attacked by a Carrion Crow *Corvus corone corone*, while the adult male displayed conspicuously by singing and flying around (Figures 6 & 7).

Among the birds in the reserve we noted 3 further species of owls, the Little Owl *Athene noctua impasta* near the village, the Eagle Owl *Bubo bubo tibetanus*, and the Tengmalm's Owl in its local subspecies *Aegolius funereus beickianus*. With the support of suitable nest boxes, a minimum of 5 – 7 successfully breeding pairs of the latter species have been confirmed to date. Further play-back experiments with the songs of Collared Pygmy Owl *Glaucidium brodiei* and Tawny Owl *Strix aluco nivicola*, which could also live in this forest area, were not successful.



Figure 6: As soon as the Carrion Crow *Corvus corone corone* detected the helpless young at treetop, it approached in low-level attacks (photo: Y. Fang)

Slika 6: Takoj, ko je črna vrana *Corvus corone corone* zaznala nemočne mladiče sečuanske kozače *Strix uralensis davidi* v drevesnem vrhu, je začela s previdnimi napadi (foto: Y. Fang)



Figure 7: In striking contrast to the Ural Owl *Strix uralensis* the male Sichuan Wood Owl *Strix uralensis davidi* did not attack intruders, but showed a conspicuous distraction display, singing exposed and flying hyper-actively nearby (photo: Y. Fang)

Slika 7: Kot nasprotje kozači *Strix uralensis*, samec sečuanske kozače *Strix uralensis davidi* ne napade vsiljivcev ampak začne z odvračalnimi razkazovanjem, pri čemer poje popolnoma odkrit ter hiperaktivno leti v bližini (foto: Y. Fang)

4. Discussion

4.1. Comparison of Sichuan Wood Owl and Ural Owl

With respect to body size and specific characters, Sichuan Wood Owl strongly resembles the Eurasian Ural Owl, which also shows coarse longitudinal stripes on the breast and under parts, and almond-shaped, blackish-brown eyes in a distinct facial disc. However, the Chinese species / subspecies has a much

darker appearance, caused by the blackish-brown plumage on its scapulars. The central tail feathers are unicoloured dark brownish-black and without streaks (colour appendix - Figure 2; also photos of a mounted specimen, in SCHERZINGER 2005). Recorded sizes are: body length 540 – 580 mm, wing length 371 – 372 mm, and tail length 266 – 290 mm. ECK & BUSSE (1973) measured an index of tail to wing length 71.5 – 77.8 (compared to 70.1 in the smallest subspecies of Ural Owl *Strix u. hondoensis* from Japan, and 83.6 in the largest subspecies *Strix u. macroura* from the Carpathian Mountains; Table 1). There is no information about the body mass of Sichuan Wood Owl.

At first impressions the characteristics of the male's territorial song appear to be quite similar to those of the Ural Owl. However, the whole strophe is much shorter (0.42 – 1.41 s in Sichuan Wood Owl; 2.24 s in Ural Owl), and the frequency is significantly lower (basal amplitude maximal 356 – 420 Hz in Sichuan Wood Owl; 420 Hz in Ural Owl; SCHERZINGER 1980 & 2005). The difference is not so clear in the “nest-site-demonstration”. But clearly the owls themselves did not recognise this difference, when stimulated by imitations of Ural Owl's call notes, and displayed their full territorial performance. As species specific patterns of vocalization usually function as the strongest characteristics for reproductive isolation (KÖNIG 1994), this result strongly suggests that separation of these both types of owls has not yet reached species level. We therefore favour the original classification of Sichuan Wood Owl as a subspecies of Eurasian Ural Owl, until clarified by molecular analysis (STRESEMANN 1923, VOOUS 1962, BURTON 1973, WOLTERS 1975, GLUTZ & BAUER 1980, SCHERZINGER 2005; Table 2).

Although one successful brood was raised in one of the nest boxes in the reserve, our knowledge about reproductive biology is still only preliminary. Duration of brooding and nestling time corresponds with the breeding phenology of European subspecies of Ural Owl (GLUTZ & BAUER 1980). Nevertheless, further observations are necessary, so monitoring of vocalization, behaviour, ontogenetic development, breeding biology, and nutrition was carried out in 2006.

4.2. Survival of Sichuan Wood Owl – a function of forest management

The Sichuan Wood Owl has always been classified as extremely rare (WEIGOLD, in STRESEMANN 1923, HOLT *et al.* 1999). The isolated distribution, as well as the apparent rarity, of the Sichuan Wood Owl may suffice

Table 1: Weights and measurements of different subspecies of *Strix uralensis* (after MOMIYAMA 1928, MOŠANSKY 1958, ECK & BUSSE 1973, GLUTZ & BAUER 1980, MIKKOLA 1983, PIETIÄINEN 1988, KÖNIG *et al.* 1999); Sichuan Wood Owl *Strix uralensis davidi* belongs to the medium sized subspecies of east Asia**Tabela 1:** Teža in izmere podvrst *Strix uralensis* (po MOMIYAMA 1928, MOŠANSKY 1958, ECK & BUSSE 1973, GLUTZ & BAUER 1980, MIKKOLA 1983, PIETIÄINEN 1988, KÖNIG *et al.* 1999); Sečuanska kozača spada med srednje velike podvrste *Strix uralensis* vzhodne Azije

Subspecies	Weight [max]/ Teža [maks] (g)	Tot. length/ Dolžina (mm)	Wing/ Krilo (mm)	Tail/ Rep (mm)	Index of tail-to-wing length/ Indeks dolžine rep – krilo		
					Range	Mean	N
<i>Strix u. fuscescens</i>			310 – 332	232	70.1 – 74.4	72.88	4
<i>Strix u. hondoensis</i>			295 – 347	223 – 244			
<i>Strix u. japonica</i>			259 – 313	201 – 235			
<i>Strix u. nikolskii (daurica)</i>			310 – 355		71.4 – 78,8	75.43	4
<i>Strix u. yenissensis</i>			328 – 370				
<i>Strix u. davidi</i>	?	580 – 590	371 – 372	266 – 290	(71.5) – 77.8	74.65	2
<i>Strix u. uralensis</i>	657 – 950	500 – 620	340 – 380		77.1	77.10	1
<i>Strix u. liturata</i>	720 – 871 [1320]		338 – 396		77.4 – 78.2	77.87	3
<i>Strix u. macroura (carpathica)</i>	503 – 950 [1307]		354 – 415	270 – 315	80.6 – 83.6	82.10	3

to list this population in the category “vulnerable” (COLLAR *et al.* 1994), but more fieldwork is required to clarify this status. In China this owl is listed in category II of “nationally threatened” species (ZHENG & WANG 1998).

The availability of suitable habitats is strictly limited because of natural fragmentation of old growth coniferous forests, caused by the diverse morphology of the high mountains. In addition, human impact in the 1970's decreased the owl's chance of survival by extensive cutting and grazing in the natural mountain forests in large parts of the Gansu and Sichuan provinces, especially in the eastern Qinghai-Tibetan-Plateau (N. LIU, *pers. comm.*). Nowadays there is hope because, in the new politics in China, great effort is being made to maintain the woodland areas and encourage reforestation. Recently China's Ministry for land use and environment decreed a logging ban for nearly all the forests in mountainous areas, in some areas even for bamboo cutting. Furthermore, several reserves have been designated, some with a status comparable to that of national parks.

The first results of mapping the actual distribution of forest stands in the “Lianhuashan Nature Reserve”, based on satellite data, can be used to plan reforestation, and to create stepping stones and corridors between the remnant forest patches (KLAUS *et al.* 2001). In addition the new supply of suitable nest boxes will offer adequate nesting sites for the Sichuan Wood Owl, even in younger forest stands. We estimate a maximum density

of 4 territories of Sichuan Wood Owl in Lianhuashan reserve (woodland area about 47 km²; = 0.85 pairs / 10 km²). Further potential habitats exist at a distance of 30 km, and in the extensive forest alongside the mountain ridge at the border between the provinces of Gansu und Sichuan (Y.-H. SUN, *pers. comm.*). The owl was also observed several times in the famous Jiuzhaigou Reserve (HÖBCROFT, *pers. comm.*, C. JIA, *pers. comm.*). Unfortunately these data are not sufficient for even a rough estimate of total population size.

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Table 2: Suggestions in the literature about the taxonomic ranking of Sichuan Wood Owl as subspecies (*Strix uralensis davidi*) or distinct species (*Strix davidi*). Although there are no new findings, there has been a shift from “isolated race” to “valid species” in recent years, mainly in view of the very long isolation of the area of distribution.

Tabela 2: Pregled taksonomske razvrstitve sečuanske kozače kot podvrste (*Strix uralensis davidi*) ali vrste (*Strix davidi*). Kljub pomanjkanju novih podatkov je opazen premik od oznake “izolirana podvrsta” k “veljavni vrsti”, predvsem zaradi zelo dolge izoliranosti areala.

Reference	Insufficient knowledge/ Nezadostno poznana	<i>Strix uralensis davidi</i>		<i>Strix davidi</i>
		No splitting/ Ne ločuje	Subspecies/ Podvrsta	Distinct species/ Razložna vrsta
HOLT <i>et al.</i> (1999)	more study needed			
DICKINSON (2003)	more study needed			may be ?
GROSSMAN & HAMLET (1964)		dark phase		
ZHENG & WANG (1998)		isolated population		
STRESEMANN (1923)			heavily pigmented	
VOOUS (1962)			isolated	
BURTON (1973)			totally isolated	
ECK & BUSSE (1973)			isolated	
WOLTERS (1975)			W China	
CHENG (1987)			X	
VOOUS & CAMERON (1988)			X	
DUNCAN (2003)			well differentiated	
SIBLEY & MONROE (2003)			like <i>Strix u.</i> from Japan	
SHARPE (1875)				new species
PETERSON (1999)				X
KÖNIG <i>et al.</i> (1999)				absolutely isolated
MACKINNON & PHILLIPPS (2000)			sometimes as race	endemic
SUN, Y.-H. (2000; <i>pers. comm.</i>)				endemic species
HOWARD & MOORE (2003)			valid subspecies	probably
CLEMENTS (2003)				Nr. 2698
NICOLSON (2004; <i>pers. comm.</i>)				valid species
“Zoonomen” ¹	(uncertain)			X
“ITIS” ²				valid spec., Nr. 555434
“Avibase” ³				endemic species
“Animal Diversity Web” ⁴				X
“Global Owl Project” ⁵				X
DEL HOYO <i>et al.</i> (1999)				<i>Strix davidi</i> as superspecies of <i>Strix uralensis</i>

Remarks / opombe:

¹<http://www.zoonomen.net/>

²<http://www.itis.usda.gov/servlet/>

³<http://www.bsc-eoc.org/avibase/>

⁴<http://www.animaldiversity.ummz.umich.edu/site/accounts/classification.html>

⁵<http://www.globalowlproject.com>

5. Povzetek

V letih 1995, 1997 in 1999 je bil opazovan v naravnem rezervatu Lianhuashan, v provinci Gansu, osrednja Kitajska, najmanj en par redke sečuanske kozače *Strix uralensis davidi*. Med 13 srečanji sta avtorja posnela fotografije in teritorialno petje ter oglašanje. Namestila sta več gnezdilnic v primernem habitatu, v letih 2002 – 2003, ki so omogočile bližnje opazovanje gnezditve v letu 2005, prvič za to podvrsto. V letu 2006 sta posnela oglašanje 3 teritorialnih samcev, 2 samic in 2 pravkar speljanih mladičev. V diskusiji primerjata podvrsto z evropsko podvrsto kozače (*Strix u. liturata* in *Strix u. macroura*). Habitat te sove je izjemno ogrožen zaradi fragmentacije. V rezervatu je 47 km² ohranjenih gozdov, ki bodo morda omogočali preživetje te malo znane sove.

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APPENDIX / PRILOGA

Table 3: Diary of field observations of Sichuan Wood Owl *Strix uralensis davidi***Tabela 3:** Dnevnik terenskih opazovanj sečuanske kozače *Strix uralensis davidi*

Date/ Datum	Time / Čas	Habitat	Weather / Vreme	Description of observation / Opis opazovanja
10 Apr 1995	19.45 – 21.00	coniferous forest, 2700 m a.s.l.	snow cover, calm wind, clear sky, waxing moon, +2°C	male owl hoots spontaneously; I try to stimulate the owl by imitating Ural Owl's territorial song: male intensifies its vocalization; dives above my head, and lands in a high spruce tree, singing variable strophes of territorial song; also a rising scale (similar to "nest-site-demonstration" of Ural Owl)
11 Apr 1995	16.40	coniferous forest	overcast, 0°C	male owl calls spontaneously
	19.30 – 20.25	mixed forest, slope		male owl utters territorial song, and long sequences of "nest-site-demonstration"; female owl answers from a rocky area in a steep canyon, with hoarse "begging calls", and approaches the male; hasty duet (territorial song by the male, "begging calls" by female; male breaks into full song and "nest-site-demonstration" with high intensity; female returns suddenly to rocky slope)
12 Apr 1995	19.19 – 20.04	creek in coniferous forest		male utters single songs, flies to an open area on a dry slope; utters "nest-site-demonstration"
13 Apr 1995	12.30 – 17.25	dense spruce tree stand	calm snowing, –3°C	male utters single strophes of territorial song; Chinese Nutcracker <i>Nucifraga caryocatactes macella</i> performs mobbing against the owl; the owl tries to escape with short flights; vocal activity in large intervals; I stimulate the owl by imitation of territorial song; male owl lands about 5 m directly above me, in a dense canopy of spruce
	19.30	shrubby conifer, at hillside		male handing over a piece of prey to the female, at top of an exposed coniferous tree
14 Apr 1995	19.45 – 20.05	conifers in valley	full moon, 0°C, calm wind	male starts activity with territorial song; female softly sails past me and lands in the crown of a spruce tree – well visible against the sky; male lands beside its partner, while singing; a long duet follows (territorial song by the male, "begging" by the female); both owls sitting close to each other, turn their face towards each other and lean forward, handing over some piece of prey with the beak; female presses the fetched mouse against the sitting branch with one leg, tears some pieces with its beak and swallows the entire remainder; after this it rubs its beak against the branch; male departs; female continues "begging", flies to a rocky slope

continuation of Table 3 / nadaljevanje tabele 3

Date/ Datum	Time / Čas	Habitat	Weather / Vreme	Description of observation / Opis opazovanja
2 May 1997	20.40	mixed forest, slope	free of snow, up to 18°C during daytime, +2°C in evening	I stimulate vocalization by imitating territorial song; male answers from long distance, but does not approach
4 May 1997	20.15 – 20.30	mixed forest, rocky slope	rain during night, 0°C	I stimulate vocalization by imitating territorial song; male answers immediately with territorial song, and flies near to me; At least long series of “nest-site-demonstration”
6 May 1997	07.35	mixed forest, slope	full sunshine	spontaneous territorial song of male
	19.20	mixed forest, slope		male starts vocal evening activity with “nest-site-demonstration”
7 May 1997	20.08 – 20.22	coniferous forest		male starts singing at an inaccessible steep slope; female answers and a duet follows; I stimulate vocalization by imitating territorial song; male approaches and lands on an exposed branch (about 40 m distance); female follows (both birds clearly visible against the sky); female departs into darkness
1 Jul 1999	20.45 – 21.15	rocky canyon, dry	mostly rain, thunderstorm, 13°C	I stimulate vocalization by imitating territorial song; male utters the first syllables of territorial song; later the female utters a strident “begging” call; parts of territorial song are heard in a duet (probably two males) – followed by fierce aggressive calls (similar to territorial demarcation of Ural Owl in autumn)

POPRAVEK

Corrigendum

V številki 128/129 letnika 27 je prišlo do napake (slaba barvna reprodukcija in izrez) na sliki sečuanske kozače *Strix uralensis davidi* v barvni prilogi (str. 115). Sliko zato ponovno objavljamo v tej številki. Nekaj manjših napak se je pojavilo tudi na drugih mestih (označeno s stran-stolpec-vrstica): 48-2-5: namesto »Table 2« mora biti »Table 6«; 49: namesto »16 May 2002« mora biti »16 May 2003«; 52-1-14: namesto »Table 5« mora biti »Table 4«; 52-2-9: namesto »Table 6« mora biti »Table 5«. Na drugi strani ovitka je pri napisu »Ilustracija na naslovnici« potrebno dodati: »mušja listnica *Phylloscopus inornatus* in rumenoglava kraljička *Regulus regulus*«. Na četrti strani ovitka je napačen napis v drugem stolpcu: »Kratki članki/ Short Articles«; mora biti: »Kratki prispevki / Short Communications«.

In the issue 128/129 of the volume 27 there is an error (bad colour reproduction and frame) on the photograph of Sichuan Wood Owl *Strix uralensis davidi* in the colour appendix (page 115). We are therefore re-publishing the photograph in this issue. A few errors appeared on other places (denoted as page-column-line): 48-2-5: instead of »Table 2« there should be »Table 6«; 49: instead of »16 May 2002« there should be »16 May 2003«; 52-1-14: instead of »Table 5« there should be »Table 4«; 52-2-9: instead of »Table 6« there should be »Table 5«. On the second page of cover under the »Front page« there should be added: »Yellow-browed Warbler *Phylloscopus inornatus* and Goldcrests *Regulus regulus*«. On the fourth page of cover there is a wrong title in the second column: instead of »Kratki članki / Short Articles«, there should be: »Kratki prispevki / Short Communications«.



Figure 1: Adult male Sichuan Wood Owl *Strix uralensis davidi*, exposed during daylight in a spruce tree – left photo; fledgling of Sichuan Wood Owl, near the nesting site in a steep rock, a few days after fledging – right photo (photo: Y. Fang) – see page 5

Slika 1: Odrasel samec sečuanske kozače *Strix uralensis davidi*, slikan podnevi v smreki – leva slika; speljan mladič sečuanske kozače, v bližini gnezdišča v strmi steni, nekaj dni po tem, ko se je speljal – desna slika (foto: Y. Fang) – glej stran 5



Figure 2: Female Sichuan Wood Owl *Strix uralensis davidi* brooding in nest box (photo: Y. Fang) – see page 5

Slika 2: Samica sečuanske kozače *Strix uralensis davidi* med valjenjem v gnezdilnici (foto: Y. Fang) – glej stran 5