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Falconry Heritage

Local terminology of Golden Eagle topography in Altaic Kazakh Eagle Falconry

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(Photo: D. Scott)

We have obtained genome sequences for 30 Peregrines with 367.34 Gb data in total for three breeding populations in Arctic Eurasia: West, Central and East. From these data we identified more than 3 million Single Nucleotide Polymorphisms (SNPs). We have identified a system of SNPs that can be used for the population assignment of individuals with unknown origin. Now, using this marker system, we have the ability to determine the region of origin of migratory Eurasian Peregrines used in Arabian falconry. We also detected genome level differentiations among the Peregrine breeding populations of the three populations (Figure 10). Now, we are researching how these differentiations have evolved.

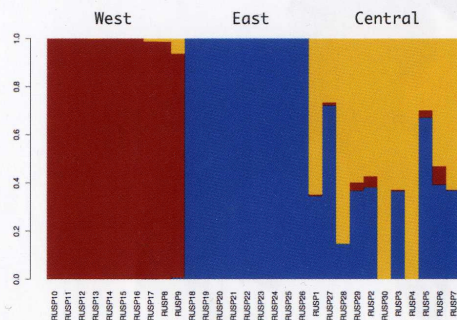


Figure 10. Peregrine populations in Arctic Eurasia. Structure analysis ($K = 3$).

We are establishing a DNA database for the Saker Falcons breeding at artificial nests in Mongolia. To do this, we have identified highly polymorphic microsatellite markers ($N = 20$) from the Saker Falcon genome. To date, in this on-going project, we have successfully used these markers to identify individuals breeding at a single grid of artificial nests over the period 2011-2013. These markers enable us to know when individual adult birds return to breed each year and also whether or not these returning birds alter their nesting sites in successive years. This information is useful for estimating adult survival and quantifying the extent of breeding dispersal.

Publications in 2015

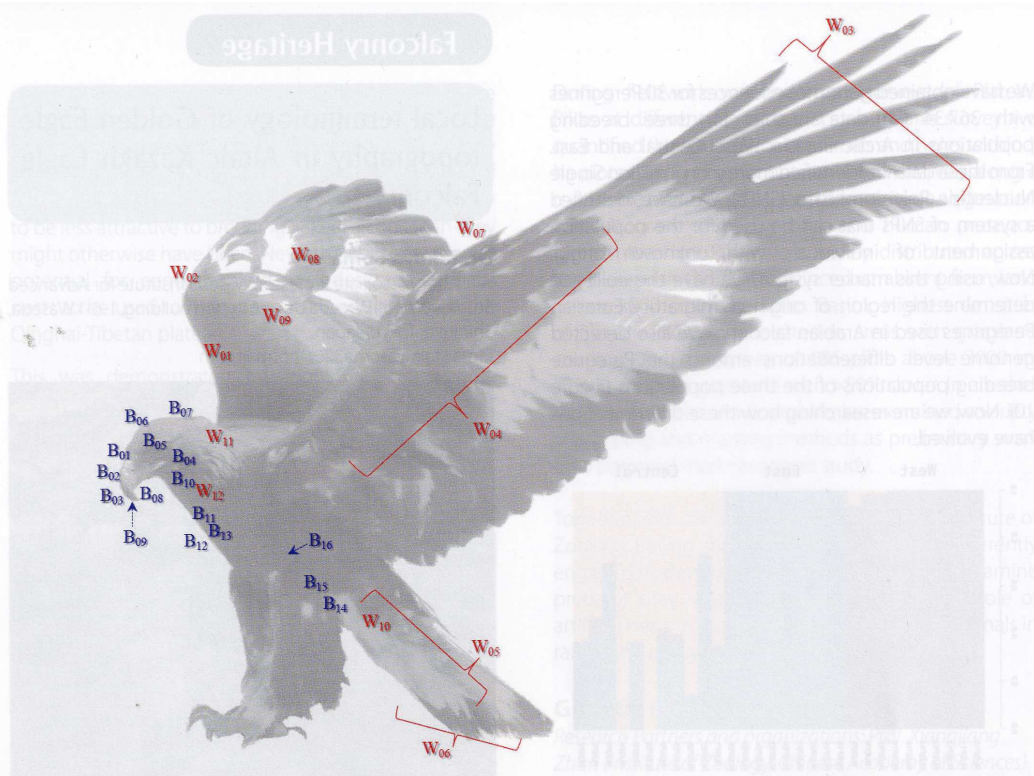
Dixon, A., Ma, M. & Batbayar, N. 2015. Importance of the Qinghai-Tibetan plateau for the Endangered Saker Falcon *Falco cherrug*. *Forktail* **31**, 5-10.

Rahman, M.L., Batbayar, N., Purev-Ochir, G., Etheridge, M. & Dixon, A. 2015. Influence of nesting location on movements and survival of juvenile saker falcons *Falco cherrug* during the post-fledging dependence period. *Ardeola* **62**, 125-138.

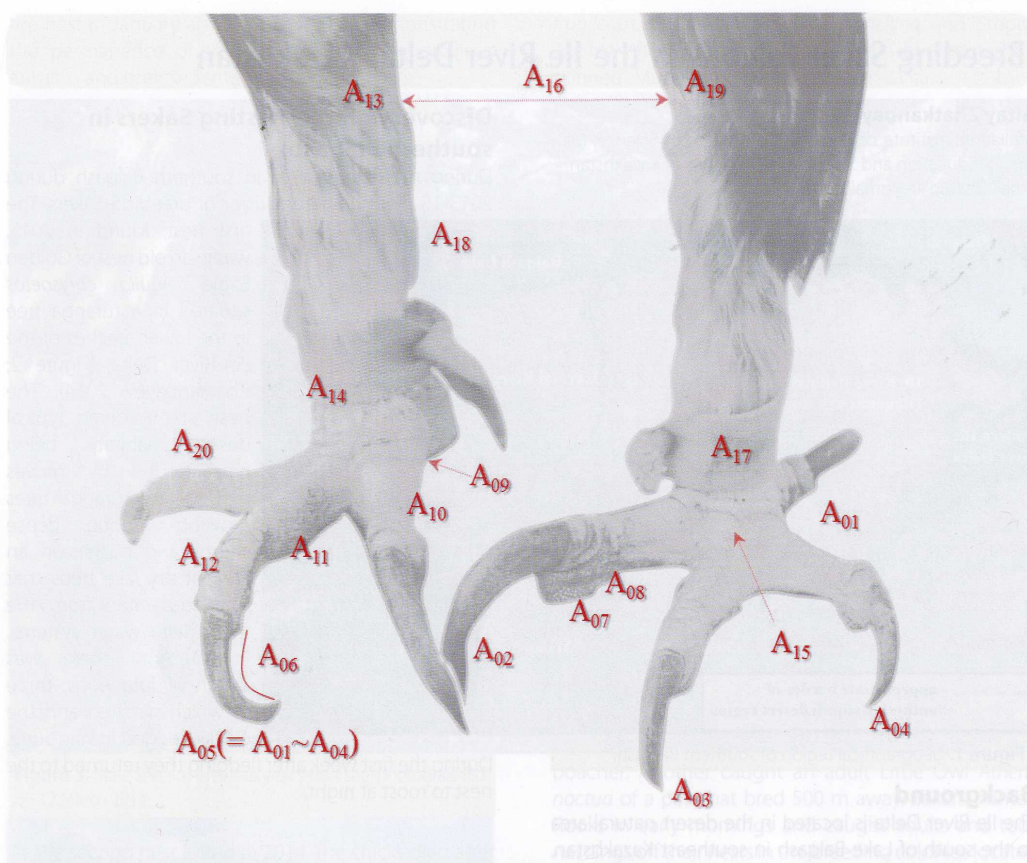
Local terminology and taxonomy in Altaic Kazakh eagle falconry reflects a distinctive recognition, classification, and nomenclature system based on traditional art and knowledge and traditional ecological knowledge. Local eagle masters have developed indigenous terms for body parts and plumage patterns on Golden Eagles (*Aquila chrysaetos*; Figures 1 and 2). I simply report here these local terms for eagle topography. These expressions are not frequently used any more among eagle hunters. However, this suggests deep awareness in classical anatomical taxonomy about captive eagles. This is also comparable to similar taxonomy in classical British and Japanese falconry.

The terms have been determined together with local Kazakh eagle masters and an experienced veterinarian living in Ulaanhus County in September 2014. Nevertheless, accurate correspondence to biological terminology is ambiguous and some of the terms in these diagrams are not fixed definition in the dictionary yet. Therefore, it contains some personal ethnographic interpretations (the Latin transcription from Cyrillic is written based on phonetics rather than verbatim replacement).

Figures 1 and 2. Indigenous Altaic Kazakh terms for parts of Golden Eagle.



	Code	Local Kazakh name (Kazakh / Latin)		Anatomical/ Falconers Terminology
Body Section	B ₀₁	Көк Болат	<i>Kok bolat</i>	cere
	B ₀₂	Құсмұрын	<i>Kusmurun</i>	nare (nostrils)
	B ₀₃	Ақ тұмсық	<i>Ak tumsuk</i>	beak
	B ₀₄	Шегір көз	<i>Shegr Koz</i>	eye
	B ₀₅	Қабақ	<i>Khabak</i>	blow (eyelid)/ supraorbital ridge
	B ₀₆	Төбе	<i>Tube</i>	parietal/ vertex
	B ₀₇	Шүйде	<i>Shuide</i>	occiput/ back of head (nape)
	B ₀₈	Кемиегі	<i>Kemieg</i>	lower bill gonys
	B ₀₉	Қияғы	<i>Kiyag (= "cutting")</i>	toung (upper bill gonys?)
	B ₁₀	Жемсау (бөтере)	<i>Jemsau (Butege)</i>	goiter
	B ₁₁	Омырау	<i>Omurau</i>	thorax
	B ₁₂	Шеңгел	<i>Shengel</i>	sternum
	B ₁₃	Жембасар	<i>Jembasar</i>	crop
	B ₁₄	Сығым	<i>Sugum</i>	vent
	B ₁₅	Тегеурін	<i>Tegeurin</i>	synsacrum
	B ₁₆	Бауыр	<i>Baur (bukul ush jag)</i>	liver
Wing Section	W ₀₁	Кермеиық	<i>Kermeik</i>	brachium/ humerus
	W ₀₂	Жебе	<i>Jebe</i>	third digit
	W ₀₃	Құйрықтар	<i>Kuiruktar</i>	primary feather
	W ₀₄	Сан	<i>San</i>	covert feather
	W ₀₅	Сырт (бүкіл сырт жағы)	<i>Surt (bukul surt jag)</i>	white part of contour feather
	W ₀₆	Шалғайы	<i>Shalgaw</i>	empennage/ caudal ala?
	W ₀₇	Саңырауқұлақ	<i>Sangraukulak (= "mushroom")</i>	alula
	W ₀₈	Майтүбіт	<i>Maitubut</i>	patagium
	W ₀₉	Жотасы	<i>Jotas (jaurun surt)</i>	outer side of wings
	W ₁₀	Табан	<i>Taban</i>	down or coverts under tail
	W ₁₁	Балақ жүн	<i>Balakh Jun</i>	feather of back
	W ₁₂	Тұрқы (Ұзын)	<i>Turku (Uzun)</i>	feather of neck?



	Code	Local Kazakh name (Kazakh / Latin)		Anatomical/ Falconers Terminology
Leg and Arm Section	A ₀₁	Тегеурін	<i>Tegeurin</i> (= "onslaught")	first toe (hallux)
	A ₀₂	Жембасар	<i>Jembasar</i> (= "food presser")	second toe
	A ₀₃	Сығым	<i>Sugum</i> (= "opression")	third toe
	A ₀₄	Шеңгел	<i>Shengel</i>	fourth toe
	A ₀₅	Тұяқ	<i>Tuyak</i>	talon
	A ₀₆	Пышақ	<i>Pushak</i> (= "knife")	innerside of talon
	A ₀₇	Көбе	<i>Kube</i>	pad
	A ₀₈	Без	<i>Bez</i>	pad?
	A ₀₉	Табан	<i>Taban</i>	sole of the foot
	A ₁₀	Табан Қышыры	<i>Taban Kushur</i>	furrows of sole?
	A ₁₁	Болат	<i>Bolat</i>	pad
	A ₁₂	Аяқ қабыршағы	<i>Ayak Kavurshag</i>	crust of foot
	A ₁₃	Топшы	<i>Topsh</i>	thigh
	A ₁₄	Шалғы	<i>Shalg</i>	mower?
	A ₁₅	Серпер	<i>Serper</i>	sole of the foot?
	A ₁₆	Анғар	<i>Angar</i>	crotch (interval of legs)
	A ₁₇	Шонты/ салалы	<i>Shontu/ Salalu</i>	tarsus
	A ₁₈	Көбе құйрық	<i>Kube Kuiruk</i>	leg feather
	A ₁₉	Қауырсындар	<i>Kaursundar</i>	plumelet (of mantle?)
	A ₂₀	Мөлжем (Жұдырық)	<i>Meljem (Juduruk)</i>	fist