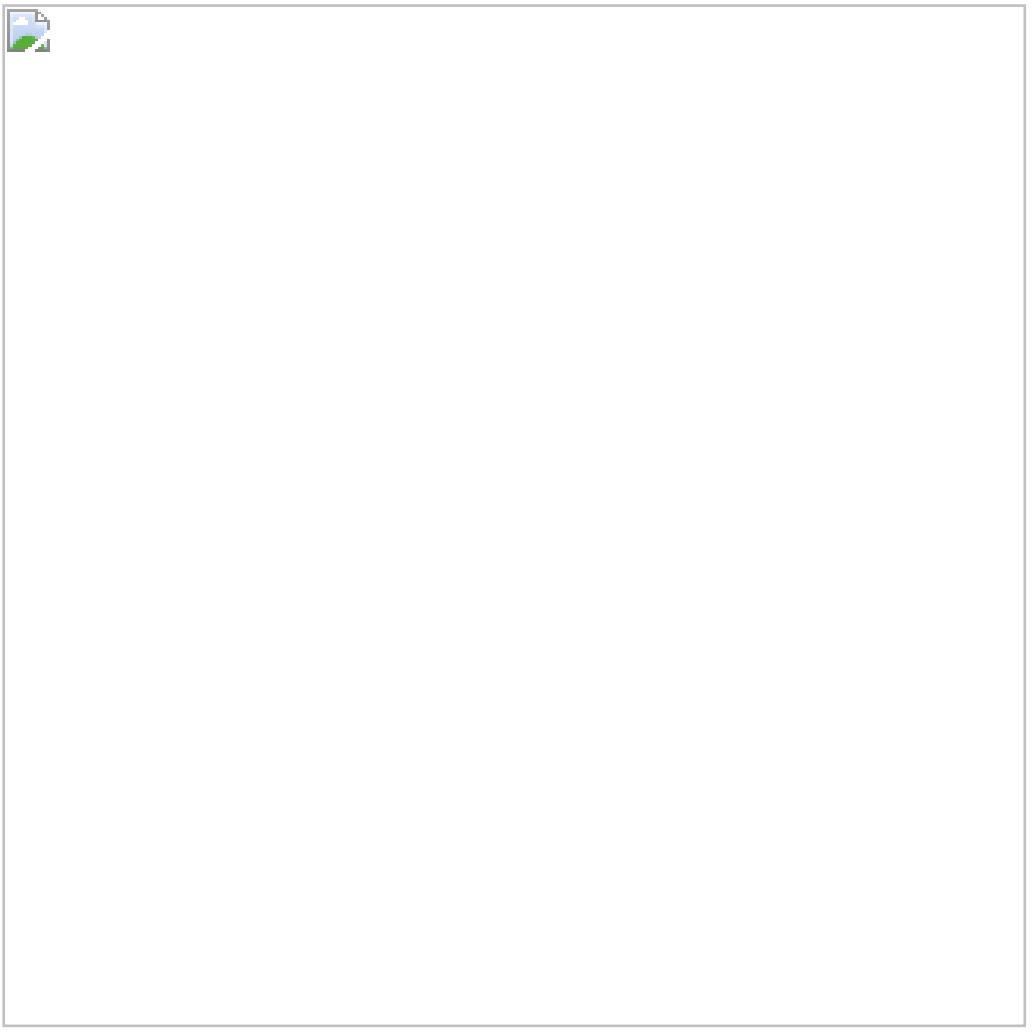

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Valid name for the Balkan lynx: *Lynx lynx martinoi* Mirić, 1978, is a junior synonym of *Lyx lyx balcanicus* Bureš, 1941

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Abstract. Two available subspecific names are used interchangeably for the Balkan lynx. In this contribution I demonstrate that the valid name is *Lynx lynx balcanicus* Bureš, 1941, and *L. l. martinoi* Mirić, 1978, is its junior synonym. The type locality of *L. l. balcanicus* is the Šara Mts. in the Republic of Macedonia. In reaching this conclusion, I refrain from infringing upon taxonomic judgment on whether or not the Balkan lynx is a subspecies in its own right. While addressing the Balkan lynx over the last decade, conservationists have largely ignored the older synonym *balcanicus* and used instead a junior synonym *martinoi*.

Key words: Balkan endemism, principle of priority, subspecies, type locality, zoological nomenclature

The Eurasian lynx *Lynx lynx* (Linnaeus, 1758) is a polytypic species of about ten subspecies (Heptner & Sludskij 1972, Arx et al. 2001), which are based on the morphological variation between groups of populations. The traditional subspecific taxonomy conforms fairly closely with a phylogenetic structuring retrieved from molecular markers (Gugolz et al. 2008). Each of the phylogeographic lineages or subspecies qualifies potentially as an independent unit for conservation management purposes. Although the IUCN Red List ranks the Eurasian lynx as being of Least concern (Lc), regional assessments in the western Palaearctic elevated the species into the Near Threatened (NT) category at the European scale (Temple & Terry 2007), and classified it as Endangered (EN) for the Mediterranean (Temple & Cuttelod 2008). Within the countries of the European Community the lynx is protected under the Bern Convention (Appendix III) and is listed in Annexes II, IV, and V of the Habitat Directive (Silva et al. 2011). Schmidt et al. (2011) suggest that conservation planning would benefit from a clarification of Evolutionarily Significant Units among lynx populations.

The indigenous lynx population from the Balkan Peninsula is of particular conservation concern owing to its genetic distinctiveness (Gugolz et al. 2008) and because it is threatened with extinction (Arx et al. 2001). Two subspecific names are available for the Balkan lynx and both are used interchangeably. This is contrary to a fundamental principle of zoological nomenclature that each taxon has a single and unique valid name. Both names for the Balkan lynx have been overlooked in several most influential taxonomic compilations, including the widely quoted Wilson & Reeder (2005). Quite paradoxically, while the trinomials for the Balkan lynx are absent from taxonomic lists, they started to be widely quoted in conservation literature (see below for references). When more than one name is used for a taxon, conservationists and other life scientists, who are specialized in topics other than zoological nomenclature, may have difficulties in finding the correct name under the provisions of the International Code for Zoological Nomenclature (hereafter referred to as the Code; International Commission on Zoological Nomenclature 1999). My intention in writing this paper is to clarify the nomenclatural confusion regarding the valid name for the Balkan lynx. One of the two descriptions was almost entirely in Cyrillic characters which I transliterated into Latin characters following the international standard ISO 9 (http://www.translitteration.com/transliteration/en/

bulgarian/iso-9/). This standard uses diacritics to ensure a univocal system of one character for one character equivalents, which allows for reverse transliteration.

Trouessart (1910) was possibly the first to classify the lynx from the Balkan Peninsula (specifically from Greece) as *Lynx lynx*. This was either overlooked or ignored by a number of subsequent authors, who applied the name *L. pardinus* (Temminck, 1824) for the Balkan lynx (Kovačev 1925, Hirtz 1927, Brink 1957); *L. pardinus* is endemic to the Iberian peninsula (Miller 1912). Owing to the paucity of material available for study, Trouessart (1910) and Miller (1912) refrained from a subspecific revision of *L. lynx*. The two names applicable for the Balkan lynx were proposed later on during the 20th century:

Lyx lyx Sub. sp. *balcanicus* Bureš, 1941: 52.

Lynx lynx martinoi Mirić, 1978: 30.

Type locality: "Manastir Sv. Trojice, Gebirge Kodža-Balkan, Prizren, Kosovo" (= Monastery Saint Trinity, Kodža Balkan Mts., above Prizren, Kosovo).

Mirić (1978) properly defined for *martinoi* the type and the type locality. At the time of writing, Kosovo was a constitutional province within the borders of the former Yugoslavia (specifically within the Republic of Serbia). Currently, the type locality of *martinoi* is within the borders of a self-declared and only partly recognized Republic of Kosovo.

Several issues associated with the name *balcanicus* require further clarification. Bureš (1941) had not designated a type specimen and type locality, which in his day was not always done. The name *balcanicus* was based on three individuals (syntypes) from Macedonia: (i) two skulls of lynxes which lived in the zoological garden in Skopje between 1937 and April 1941, and (ii) a living individual obtained on 13 October, 1941 by the Imperial Zoological Garden in Sofiâ from the Municipality of Skopje. At least two of these syntypes (one skull and the living animal) were from the Šara (= Šar Planina) Mts.; the third syntype was most likely of the same provenance, but this cannot be deduced indisputably from the text. Two of the syntypes, both from the Šara Mts., are illustrated; a skull (Bureš 1941) and a living individual (Bureš 1941). One of the two skulls was from Sokolovec on the Šara Mts., the only exact locality mentioned, but the figured cranial specimen cannot be indisputably linked to this site. Bureš (1941) also published a photograph of a mounted skin of a specimen killed either in 1889 or before (statements are contradictory), on Mt. Srădna Gora, Bulgaria. There is no doubt that Bureš based *balcanicus* on the individuals from Macedonia, and nowhere did he explicitly state that the name applies to the Bulgarian population as well. Therefore, the Bulgarian specimen cannot be regarded as a syntype of *balcanicus*. Note that the extinct lynx population from Bulgaria is currently classified as ssp. *balcanicus* (Popov et al. 2007).

Several authors quote as the type locality for *balcanicus* a "village Sokolovec in the Šar Planina Mts." (Kratochvíl 1968a) or "Šara-Gebirge bei Sokolovec" (Hemmer 1993). As discussed above, only one, or at most two of the three syntypes were from Sokolovec. In compliance with Articles 73.2.3 and 76.1 of the Code, the type locality encompasses the places of origin of all of syntypes. For *balcanicus*, the type locality is therefore on the Šara Mts. ("Šară Planina" in Bureš 1941), which also encompasses Sokolovec. Because the scope of *balcanicus* does not involve ambiguities, there is no need for restricting the type locality within the Šara Mts.

The name *balcanicus* was overlooked in several major revisions (Harper 1945, Ellerman & Morrison-Scot 1951, Corbet 1978, Wilson & Reeder 1993, 2005), but was used as a valid subspecific name by Atanasov (1968), Kratochvíl (1968b, c), Heptner & Sludskij (1972, 1980), and Hemmer (1993). In regional taxonomic compilations the name *balcanicus* was unknown prior to Kratochvíl's (1968a, b) influential monographs (Mirić 1960, 1962, Đulić & Mirić 1967). The name appeared as a valid trinomen for the first time in Mirić (1969) although the prevailing opinion of that time was to treat *balcanicus* as a junior synonym of *L. l. lynx* (Djulić & Tortić 1960, Đulić & Mirić 1967, Mirić 1970, 1972, 1974a, b). During the last decade conservationists started using a subspecific name for the Balkan lynx to unambiguously define the object of their concern. The majority of authors used the name *martinoi* (Arx et al. 2001, Paunović et al. 2001, Breitenmoser et al. 2008, Gugolz et al. 2008, Ivanov et al. 2008, Schwaderer et al. 2008). A suggestion by Spassov et al. (2006) that *martinoi* is possibly a junior synonym of *balcanicus*, has been uniformly ignored.

Simeonovski & Zlatanova (2001) in their brief discussion of the taxonomy and nomenclature of the Balkan lynx, state that Mirić (1978) "... also gives a new name to the Balkan lynx, considering the name given by Buresch ... [a] *nomen nudum*." As a matter of fact, Mirić (1978) while describing the ssp. *martinoi*, entirely ignored Bureš's (1941) paper, although he was well aware of it (cf. quotations in the previous paragraph). A *nomen nudum* refers to a name that fails to conform to Article 13 of the Code. In accordance with this Article, a name published after 1930 (i)

must satisfy the provisions of Article 11 and (ii) must be accompanied by a description or definition that states in words characters that are purported to differentiate the taxon (13.1.1.). Bureš (1941) fulfilled the requirements of Article 11: the name has been published (11.1.) in the Latin alphabet (11.2.) as a Latinized word (11.3.) in a manner consistent with the Principle of Binominal Nomenclature (11.4.), and was used validly when proposed (11.5.). The name *balcanicus* also conforms to Article 11.9. which requires a species-group name (a trinomen in the case of *balcanicus*) to be published in unambiguous combination with a generic name. Both the generic and the species name are consistently spelled incorrectly (*Lyx lyx* instead of *Lynx lynx*) in Bureš (1941), but this does not invalidate the name *balcanicus* (cf. provisions of Article 11.9.3.2.). Furthermore, Bureš (1941) did define characters, which he evidently believed would differentiate *balcanicus* from the nominotypical subspecies: a shorter tail with black hair covering the terminal one third. Although Mirić (1972, 1974a) concluded, perhaps rightly, that characters in Bureš (1941) are not diagnostic for *balcanicus*, this does not affect the validity of *balcanicus*.

Because Mirić (1978) did not attempt to invalidate *balcanicus*, it is difficult to understand his decision to introduce a new name for a taxon which had already been named. The Balkan Lynx Strategy Group (2008) states that "Mirić changed the name of the Balkan subspecies [*balcanicus*] to *Lynx lynx martinoi*." Changing of an available taxonomic name is a nomenclatural act and is regulated by the Code. First of all, Mirić (1978) did not propose *martinoi* to replace or substitute *balcanicus* and *L. l. martinoi* does not qualify as a new replacement name (*nomen novum*). According to the Code (Article 72.7) a new replacement name retains the same name-bearing type as the nominal taxon denoted by the replaced name, but Mirić (1978) designated for *martinoi* a new holotype. Neither is it evident that Mirić (1978) intended *martinoi* as a substitute name for *balcanicus*. A substitute name is any available name used to replace an older available name.

Therefore, the name *balcanicus* is available and, similar to *martinoi*, conforms to the provisions of the Code. Under the Principle of Priority, the valid name of a taxon is the oldest available name applied to it (Article 23 of the Code). The valid name for the Balkan lynx is *Lynx lynx balcanicus* Bureš, 1941, and *L. l. martinoi* Mirić, 1978, is its junior synonym. The type locality of *L. l. balcanicus* is the Šara Mts. in the Republic of Macedonia.

I refrain from infringing upon taxonomic judgment as to whether or not the Balkan lynx is a subspecies in its own right. My only intention in writing this paper was to ensure consistent subspecific nomenclature of *L. lynx* by demonstrating which of the two subspecific names is available for the Balkan lynx and which has priority. The usage of a particular Linnean name is not a matter of personal preference, but a consequence of the nomenclatural history of the name and regulations available through the Code. Ambiguities in nomenclature are decided by applying the Code directly, and never by reference to precedent. Therefore, although conservationists mostly used the junior synonym *martinoi* for the Balkan lynx during the last decade instead of *balcanicus*, this has no nomenclatural consequences.

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