A NEW SUBSPECIES OF *LEPUS EUROPAEUS* PALLAS, 1758 (MAMMALIA: LAGOMORPHA) FROM SOUTHEASTERN TURKEY: *LEPUS EUROPAEUS MURSALOGLUAE* SSP. NOV.

İrfan Albayrak* and Yasin Demirbaş*

* Department of Biology, Faculty of Science and Arts, Kırıkkale University, Kırıkkale, TURKEY. E-mail: iralbayrak@yahoo.com

[Albayrak, İ. & Demirbaş, Y. 2019. A new subspecies of *Lepus europaeus* Pallas, 1758 (Mammalia: Lagomorpha) from southeastern Turkey: *Lepus europaeus mursalogluae* ssp. nov.. Munis Entomology & Zoology, 14 (1): 28-35**]**

ABSTRACT: In this study, the specimens of the hare with yellowish fur colour from southeastern Turkey were determined to be a new subspecies, *Lepus europaeus mursalogluae* ssp. nov. Existence of new subspecies in that region was defined with occipitonasal length and habitat characteristic of six hare specimens were obtained from Elbeyli near Kilis, Viranşehir near Şanlıurfa, and Belen near Hatay in this study as well as phylogenetic and geographical picture, uniform fur colour pattern, and relatively differentiated chromosome structure previously recorded by various researchers for the group.

KEY WORDS: Leporidae, *Lepus europaeus mursalogluae* ssp. nov., Turkey

The order Lagomorpha is represented by 13 genera and 93 species belonging to 3 families (Ochotonidae, Leporidae, and Prolagidae) in the world. The Leporidae family (hares, rabbits, and jackrabbits) includes 11 genera and 61 species and the genus *Lepus* (true hares) has 32 species. Species of *Lepus* are indicated to still have taxonomic problems, mainly due to high degree of morphological variations and the potential of rapid adaptation to the environmental factors (Wilson & Reeder, 2005; Robinson & Mathee, 2005; Chapman & Flux, 2008; Smith & Johnston, 2008). In addition, discussions regarding whether or not *Lepus europaeus* Pallas, 1778 and *Lepus capensis* Linnaeus, 1758 with wide distribution were from the same species have been ongoing (Petter, 1961; Yom-Tov, 1967; Corbet, 1978; Ben Slimen et al., 2005, 2006, 2008a,b). These two taxa have still been accepted as different species (Smith & Johnston, 2008).

Lepus europaeus has a distribution from Southern Sweden and Finland to England, in most parts of Europe (except for Iberian Peninsula, southern part of Cantabria and Ebro River, and southern Siena in Italy), plateaus of Western Siberia and Israel, Syria, northern Iraq, Tigris-Euphrates valley, western Iran in the south; *Lepus capensis*, on the other hand, has a distribution in Africa, Sinai and Arabian Peninsula, Jordan, Syria, Israel and southern Iraq and western Euphrates River (Wilson & Reeder, 2005). In addition, the only one species of Genus *Lepus* spreading in Turkey is *Lepus europaeus* (Flux & Angermann, 1990; Kasapidis et al., 2005; Demirbaş et al., 2013).

While Harrison & Bates (1991) recorded that there were eight subspecies (*L. c. syriacus* Ehrenberg, 1833; *L. c. sinaiticus* Ehrenberg, 1833; *L. c. connori* Robinson, 1918; *L. c. arabicus* Ehrenberg, 1833; *L. c. cheesmani* Thomas, 1921; *L. c. omanensis* Thomas 1894; *L. c. atallahi* Harrison, 1972 and *L. c. jefferyi* Harrison, 1980) of *Lepus capensis* in Arabia, Wilson and Reeder (2005) recorded 16 subspecies (*L. e. caspicus* Hemprich ve Ehrenberg, 1832; *L.e. connori* Robinson, 1918; *L. e. creticus* Barrett-Hamilton, 1903; *L. e. cyprius* Barrett-Hamilton, 1903; *L. e. cyrensis* Satunin, 1905; *L. e. europaeus* Pallas, 1778; *L. e.*

hybridus Desmarest, 1822; *L. e. judeae* Gray, 1867; *L. e. karpathorum* Hilzheimer, 1906; *L. e. medius* Nilsson, 1820; *L. e. occidentalis* de Winton, 1898; *L. e. parnassius* Miller, 1903; *L. e. ponticus* Ognev, 1923; *L. e. rhodius* Festa, 1914; *L. e. syriacus* Ehrenberg, 1833 and *L. e. transsylvanicus* Matschie, 1901) of *L. europaeus*. Ferguson (2002) identified the subspecies *L. capensis philistinus* with reddish light brown colour from southern Palestine and expressed that this subspecies could sympatrically inhabit with *L. c. syriacus* in the north and *L. c. sinaiticus* in the south.

Subspecific status of *Lepus europaeus* in Turkey was comprehensively discussed by Demirbaş & Albayrak (2014) lastly. Demirbaş & Albayrak (2014) recorded that *L. europaeus* was represented with only one subspecies, namely *L.e. syriacus*, in Anatolia. Findings of researchers regarding fur colour are compatible with fur colour (dominant gray in hind quarter and leg) given for samples of *L. e. syriacus* previously recorded by Lewis et al. (1967) in Lebanon. In addition, Demirbaş and Albayrak (2014) could not evaluate hares from Turkish Thrace due to insufficient number of samples.

Karyology of *L. europaeus* with brown colar type in Turkey was examined by Demirbaş et al. (2010), Arslan (2010) and Tez et al. (2012). Karyotype of the genus *Lepus* in Turkey is quite similar to those previously recorded in Europe (Shröder et al., 1978; Zima & Kral, 1984; Azzoroli Puccetti et al., 1996) except for differences caused by various amounts of heterochromatin. However, due to having a duplication on one of subtelocentric chromosomes, karyotype of sample with yellowish colour type obtained from Elbeyli near Kilis which is similar to yellowish type hares recorded previously by Sert et al. (2005, 2009) in Şanlıurfa Province in southeastern Anatolia is different from other populations of European hare in Turkey (Demirbaş et al., 2010).

The aim of this study was to examine whether or not two hare (*Lepus europaeus*) populations with different fur colours (yellowish type vs. brownish type) in Southeastern Anatolia Region where is the entrance way to Anatolia of Afro-Eremial mammals had a differentiation in subspecies level. This hypothesis, which will bring light to current taxonomic status of hare in the region, was tested by using six specimens of yellowish type *L. europaeus* obtained from three different localities close to Syrian borderline. As a result, the specimens with yellowish colours from southeastern Turkey were suggested as a new subspecies, *Lepus europaeus mursalogluae*.

MATERIALS AND METHODS

We examined six *Lepus europaeus* specimens obtained from three localities of southeastern Turkey between 2008 and 2013 (Fig. 1). The hares were divided into two age groups as juvenile and adult based on presence of bulge called as "Stroh sign" at the tip of the ulna bone (Stroh, 1931), clarity of frontal and sagital sutures, and structure of supraorbital bulge (Suchentrunk et al., 2000). Only the three adult specimens were used for comparison and evaluation. A juvenile sample belonging to Elbeyli district was prepared in type of standard museum specimen by being stuffed (see Fig. 3C) and was preserved in Mammal Collection of Kırıkkale University, Faculty of Arts and Sciences, Department of Biology.

For taxonomic evaluations; hindfoot length and ear and 20 cranial characters of three adult samples were measured according to Angermann (1968), Nagorsen (1985), and Harrison & Bates (1991).

RESULTS

It was determined that there were some taxonomic differences between two hare populations (yellowish colour type vs. brownish colour type) recorded in Southeastern Anatolia Region of Turkey.

Lepus europaeus mursalogluae ssp. nov.

Holotype: 98084 (collection number), adult male skull from Kilis-Elbeyli (36°39'N, 37°27' E) which was close to Syrian border, collected 09 September 2009 by Prof. Dr. İrfan Albayrak, deposited in Department of Biology, Faculty of Science and Arts, University of Kırıkkale.

Other materials (n=5): Elbeyli, Kilis, 3 (3 ♂♂), Viranşehir, Şanlıurfa, 1 (1 ?) and Belen, Hatay, 1 (1 ?).

Comperative materials: *Lepus europaeus syriacus*: Kilis (Elbeyli), Kilis (Oylum), Gaziantep (Nizip).

Diagnosis: Dorsal colour was clearly uniform light pale yellowish brown. There was a duplication on one of subtelocentric chromosomes.

Measurements: Two external and 20 cranial measurements of three adult specimens are given in Table 1.

External characterisrics: It appears to be have same size with subspecies *Lepus europaeus syriacus* in Anatolia. Dorsal colour is clearly uniform light pale yellowish brown color without any black, except for the tips of the ears and the tail. Similarly, its skull, phallus characteristics and hair pattern are exactly the same as *syriacus*.

Habitat: Mursalogluae's brown hare was found on open agricultural lands and steppe regions with red soil at altitudes up to 567 m in the semiarid Southeastern Anatolia Region, close to the Syrian border. Its shelter structure is the same as subspecies *syriacus*.

Etymology: *Lepus europeus mursalogluae* is named in honor of famous zoologist and taxonomist, late Prof. Dr. Bahtiye MURSALOĞLU.

DISCUSSION

Ellerman & Morrison Scott (1951) recorded that short occipitonasal length (shorter than 87 mm) was distinctive feature of *Lepus capensis* and occipitonasal length was greater than 88 mm in *L. europaeus*. The researchers also expressed that *L. arabicus* had a bullae bigger than 16% of occipitonasal length; on the other hand, bullae was smaller than 15% of occipitonasal length in *L. capensis* and *L. europaeus*. Our samples with yellowish fur colour from Southeastern Turkey had a great occipitonasal length and small bullae, compatible with *L. europaeus* characteristic. Also, comparing the morphometric data of our specimens with those of the subspecies *L. europaeus syriacus* with brownish fur type from Southeastern Anatolian previously recorded by Demirbaş (2010), it was

concluded that our data fall within the range of those of *L. e. syriacus*. The skull characteristics of our specimens were also similar to those of *syriacus*.

Yom-Tov (1967) indicated that fur colour of Israeli hares was pale in the south and dark in the north depending on colour of soil. In addition, hares with dark and pale colour were expressed to inhabit together in some regions. They reported that these two populations were two subspecies of *L. capensis* which is a polymorphic species. Suchentrunk et al. (2000) supported the findings by given Yom-Tov (1967). Stoner et al. (2003) indicated that fur colour of hares adapted habitat, geography, altitude, and mode of living (diurnal, nocturnal, or crepuscular) and fur colour was not phylogenetic. In addition, Stoner et al. (2003) recorded that *L.capensis* did not have the general appearance of gray in colouring analysis of hares. Demirbaş et al. (2013) and this study revealed that Anatolian hares considering as *L. europaeus* represented a polimorphic fur pattern depanding on geography, similar to *L. capensis*.

Today, taxonomic problems between *Lepus europaeus* and *Lepus capensis* have not been solved, yet. Ben Slimen et al. (2008a) used microsatellite loci in order to determine genetic structure of African and Southern Israeli hares, which today have been accepted to be *L. capensis,* and genetic structure of European, Anatolian, and Northern Israeli hares which have been accepted as *L. europaeus*. Results of analysis showed that genetic difference between populations of two different taxa was not higher than the one within the taxon. They indicated the difference was resulted from geographical distance rather than specific gene pool of two species. Stamatis et al. (2009) expressed that brown hares in Europe were not divided into significant phyletic groups according to mtDNA results.

Kasapidis et al. (2005) stated that only one species in Anatolia and Balkans was *Lepus europaeus*. Sert et al. (2005, 2009) examined genetic variance of *L. europaeus* in Anatolia and indicated that there might be important gene flows from Caucasia, Iran, Syria, Iraq, Lebanon, and Israel, where *L. capensis* inhabit, towards Anatolian hares. Sert et al. (2009) recorded that genetic difference between Anatolian and European hare populations was low and genetic difference was also low between two forms (yellowish vs. brownish type) exhibiting different fur colour in Anatolia, but phylogenetic and geographical analyses indicated that yellowish type samples were slightly separated from other Anatolian samples with brownish fur type. The fact that the Southeastern Anatolian hares with yellowish fur are phylogenetically closely related to all other Anatolian hare with brownish fur may suggest that all Anatolian hares have a comman gene pool with only slight differentiation between yellowish and brownish ones.

Ferguson (2002) recorded Philistine hare, *Lepus capensis philistinus* in an area with red soil located in Qedma (Israel) for the first time. It was slightly smaller than *L. capensis syriacus* and its distinctive characteristic was uniform reddish light brown colour containing no black except for the tips of the ears and the tail (Fig. 2). The researcher expressed that *L. c. philistinus* inhabited with the subspecies *L. c. syriacus* in the north and the subspecies *L. c. sinaiticus* in the south. Distinctive fur colour indicated by the researcher for *L. c. philistinus* was compatible with our samples with light yellowish brown fur obtained in this study (Fig. 2) and samples with yellowish fur colour previously recorded in Şanlıurfa by Sert et al. (2005, 2009). In the present study, it was appeared that our specimens with yellowish colour and ones previously given by Sert et al. (2005, 2009) were similar to the external appearance of the Palestinian hares and we assumed that this was likely to occur as a result of parallel evolution because both taxa live in habitats with reddish soil coloring. Also, in our study area, which was close to Syrian border, in Southeastern Anatolia, it was found that brownish type hares

which is also called as European type (Sert et al., 2009) and those with yellowish fur colour could produce hybrid individuals (Fig. 3).

External character measurements of our samples were within variation limits given by Ferguson (2002). However, the researcher did not state any cranial characteristic for this subspecies defined for the first time. The occipital length measurement of our samples obtained from Southeastern Anatolia corresponded to characteristic of "great occipitonasal length (>88 mm)" which was reported by Ellerman and Morrison-Scott (1951) for *Lepus europaeus* before and was distinctive for the species. In addition, our samples were collected from biotopes with red soil exhibiting habitat characteristic reported for the taxon by Ferguson (2002).

Consequently, in the present study we present a second distict taxon *Lepus europaeus mursalogluae* subsp. n. of the species *Lepus europaeus* from Turkey, based on the slight differentiated phylogenetic and geographical picture (Sert et al., 2009), discrete chromosome structure (Demirbaş et al., 2010), and uniform fur colour pattern (Demirbaş et al., 2013) given in previous studies as well as habitat characteristic and findings of "diagnostic occipitonasal length", reported in this study.

ACKNOWLEDGEMENTS

This study was financially supported by the Kırıkkale University, Scientific Research Projects Coordination Unit (Project numbers: BAP-2008/18, BAP 2012/32). We are grateful to Ministry of Forestry and Water Affairs, General Directorate of Nature Protection and National Parks for field research permits.

LITERATURE CITED

Angermann, R. 1968. Beiträge zur Kenntnis der Gattung *Lepus* (Lagomorpha, Leporidae). I. Abgrenzung der Gattung *Lepus*. Mitt. Zool. Mus. Berlin, 42: 127-144.

Arslan, A. 2010. Cytogenetic studies on European brown hare, *Lepus europaeus* Pallas, 1778 (Lagomorpha: Leporidae) in Turkey. Kafkas Univ. Vet. Fak. Derg., 16: 319-322.

Azzoroli Puccetti, M. L., Corti, M., Scanzani, A., Civitelli, M. V. & Capanna, E. 1996. Karyotypes of two endemic species of hare from Ethiopia, *Lepus habessinicus* and *L. starcki* (Lagomorpha, Leporidae): a comparison with *L. europaeus*. Mammalia, 60: 223-230.

Ben Slimen, H., Suchentrunk, F., Memmi, A. & Ben Ammar Elgagied, A. 2005. Biochemical genetic relationships among Tunisian hares (*Lepus* sp.), South African Cape hares (*L. capensis*), and European brown hares (*L. europaeus*). Biochem. Genet., 43: 577-596.

Ben Slimen, H., Suchentrunk. F., Memmi, A., Sert, H., Kryger, U., Alves, P. C. & Ben Ammar Elgagied, A. 2006. Evolutionary relationships among hares from North Africa (*Lepus* sp. or *Lepus* spp.), cape hares (*L. capensis*) from South Africa, and brown hares (*L. europaeus*) as inferred from mtDNA PCR-RFLP and allozyme data. J. Zool. Syst. Evol. Res., 44: 88-99.

Ben Slimen, H., Suchentrunk, F., Stamatis, C., Mamuris, Z., Sert, H., Alves, P. C., Kryger, U., Shain, A. B. & Ben Ammar Elgagied, A. 2008a. Population genetics of cape and brown hares (*Lepus capensis* and *L. europaeus*): A test of Petter's hypothesis of conspecificity. Biochem. Syst. Ecol., 36: 22-39.

Ben Slimen, H., Suchentrunk, F. & Ben Ammar Elgagied, A. 2008b. On shortcoming of using mtDNA sequence divergence fort he systematics of hares (genus *Lepus*): An example from cape hares. Mamm. Biol., 72: 25-32.

Chapman, J. A. & Flux, J. E. C. 2008. Lagomorpha Biology: Evolution, Ecology, and Conservation. Berlin, Germany: Springer. 1-413.

Corbet, G. B. 1978. The Mammals of the Palaearctic Region. A taxonomic review. London, Uk: B.M. (Natural History). 1-314.

Demirbaş, Y. 2010. Türkiye *Lepus* Linnaeus, 1758 Cinsinin Taksonomik Durumu (Mammalia: Lagomorpha). PhD, University of Kırıkkale, Kırıkkale, Turkey (in Turkish, English summary). 1-147.

Demirbaş, Y., Aşan, N. & Albayrak, İ. 2010. Cytogenetic study on the European brown hare (*Lepus europaeus* Pallas, 1778) (Mammalia: Lagomorpha) in Turkey. Turk. J. Biol., 34: 247-252.

Demirbaş, Y., Albayrak, İ. & Yılmaz, A. 2013. Studies on the Ecomorphological Variations of European Hare (*Lepus Europaeus*) in Turkey. Arch. Biol. Sci., 65: 559-566.

Demirbaş, Y. & Albayrak, İ. 2014. The taxonomic status and geographic distribution of the European hare (*Lepus europaeus* Pallas, 1778) in Turkey (Mammalia: Lagomorpha). Turk. J. Zool., 38: 119-130.

Ellerman, J. R. & Morrison-Scott, T. C. S. 1951. Checklist of Palaearctic and Indian Mammals 1758-1946. London, UK: British Museum (Nat. Hist.). 1-832.

Ferguson, W. W. 2002. The mammals of Israel. Jerusalem, Israel: Grefen Publishing House. 1-160.

Flux, J. E. C. & Angermann, R. 1990. Hares and Jackrabbits. *in*: Chapman JA, Flux JEC, editors. Status Survey and Conservation Action Plan. Gland, Switzerland: IUCN. 1-168.

Harrison, D. L. & Bates, P. J. J. 1991. The Mammals of Arabia. Kent, UK. Harrison Zoological Museum. 1-354.

Kasapidis, P., Suchentrunk, F., Magoulas, A. & Kotoulas, G. 2005. The shaping of mitochondrial DNA phylogeographic patterns of the brown hare (*Lepus europaeus*) under the combined influence of Late Pleistocene climatic fluctuations and anthropogenic translocations. Mol. Phylogenet. Evol., 34: 55-66.
Lewis, R. E., Lewis, J. H. & Atallah, S. I. 1967. Lagomorpha and Rodentia. J. Zool., 153: 45-70.
Nogorsen, D. W. 1985. A morphometric study of geographic variation in the snowshoe hare (*Lepus americanus*). Can. J. Zool., 63: 567-579.
Petter, F. 1961. Elements d'une revisiun des lievres europeens et asiatiques du sousgenres *Lepus*. Zeitschr. F. Säugetierkunde, 26: 30-40.
Robinson, T. J. & Matthee, C. A. 2005. Phylogeny and evolutionary of the Leporidae: a review of cytogenetics, molecular analyses and supermatrix analysis. Mammal. Rev., 35: 231-247.
Sert, H., Suchentrunk, F. & Erdoğan, A. 2005. Genetic diversity within Anatolian brown hares (*Lepus europaeus* Pallas, 1778) and differentiation among Anatolian and European populations. Mamm. Biol., 70: 171-186.
Sert, H., Ben Slimen, H., Erdoğan, A. & Suchentrunk, F. 2009. Mitochondrial HVI sequence variation in Anatolian hares (*Lepus europaeus* Pallas, 1778). Mamm. Biol., 74: 286-297.
Schröder, J., Antoni, J. & Van Der Loo, W. 1978. Comparison of the karyotypes in the Jack rabbit (*Lepus californicus deserticola*) and the European hare (*Lepus europaeus*). Hereditas, 89: 134-135.
Smith, A. T. & Johnston, C. H. 2008. *Lepus europaeus*. The IUCN Red List of Threatened Species. Available from: http://dx.doi.org/10.2305/IUCN.UK.2008.RLTS.T41280A10430693.en.
Stamatis, C., Suchentrunk, F., Moutou, K. A., Giacometti, M., Haerer, G., Djan, M., Vapa, L., Vukovic, M., Tvrtkovic, N., Sert, H., Alves, P. C. & Mamuris, Z. 2009. Phylogeography of the brown hare (*Lepus europaeus*) in Europe: a legacy of southeastern Mediterranean refugia? J. Biogeogr., 36: 515-528.
Stoner, C. J., Biinida-Emonds, O. R. & Caro, T. 2003. The adaptive significance of colouration in lagomorphs. Biol. J. Linn. Soc., 79: 309-328.
Stroh, G. 1931. Zwei sichere Altersmerkmale beim Hasen. Berl. Munch. Tierärzt. Wochenschr., 12: 180-181.
Suchentrunk, F., Alkon, P. U., Willing, R. & Yom-Tov, Y. 2000. Epigenetic dental variability of Israeli hares (*Lepus* sp.): ecogenetic or phylogenetic causation? J. Zool. Lond., 252: 503-515.
Tez, C., Özkul, Y. & İbiş, O. 2012. Karyological comparisons of the European hare (*Lepus europaeus* Pallas, 1778) from the Asian part of Turkey, with morphological contributions. Arch. Biol. Sci., 64: 935-942.
Wilson, D. E. & Reeder, D. M. 2005. Mammals Species of the World: A Taxonomic and Geographic Reference. 3rd ed. Baltimore, USA: The Johns Hopkins University Press. 1-2142.
Yom-Tov, Y. 1967. On the taxonomic status of the hares (Genus *Lepus*) in Israel. Mammalia, 31: 246-259.
Zima, J. & Kral, B. 1984. Karyotypes of European mammals. Praha, Czech Republic: Academia. 1-62.

Table 1. Descriptive statistics of the morphometric measurements (mm). n=sample size, r= range, m= mean, ±sd= standard deviation.

Characters	n	r	m	±sd
Hind foot length	3	138.0-140.0	139.3	1.1
Ear length	3	110.0-120.0	115	5.0
Occipitonasal length	3	93.7-94.0	93.8	0.1
Skull profile length	3	94.0-94.5	94.1	0.3
Condilobasal length	3	83.6-84.3	84	0.4
Basal length	3	75.4-77.1	76	0.9
Nasal length	3	41.1-42.3	41.6	0.6
Diastema length	3	26.5-27.4	26.8	0.4
Foramen incisiva length	3	23.5-24.3	24	0.4
Palatal length	3	5.6-6.5	6	0.4
Zygomatic length	3	36.0-38.1	36.9	1.0
Zygomatic breadth	3	42.8-43.2	43	0.2
Nasal breadth	3	20.5-22.2	21.2	0.8
Rostral breadth	3	24.0-26.4	25.4	1.2
Meatus acusticus breadth	3	35.8-37.3	36.6	0.7
Bullae breadth	3	9.3-10.5	9.7	0.6
Braincase breadth	3	30.5-31.5	30.8	0.5
Skull height	3	26.0-26.6	26.3	0.3
Upper molar length	3	14.0-14.6	14.2	0.3
Lower molar length	3	14.3-15.3	14.7	0.5
Mandible length	3	68.0-69.8	68.8	0.9
Mandible height	3	34.0-37.5	36.2	1.9

Figure 1. Localities where specimens of uniform yellowish type hare from Southeastern Turkey were collected. ● : The locality (Qedma, Israel) where the subspecies, *Lepus capensis philistinus* was recorded, ★: samples evaluated in this study (1: Belen, Hatay; 2: Elbeyli, Kilis; 3: Viranşehir, Şanlıurfa), ▲: localities previously given by Sert et al. (2005) (4: Birecik, Şanlıurfa; 5: Suruç, Şanlıurfa).

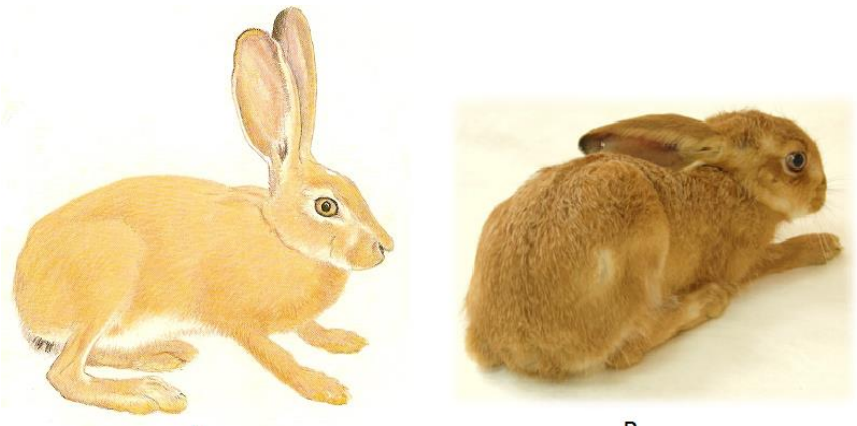

Figure 2. A: *Lepus capensis philistinus* from Qedma in Israel (Ferguson, 2002), B: a juvenile *L. europaeus* specimen from Kilis (Elbeyli) in Southeastern Anatolia.

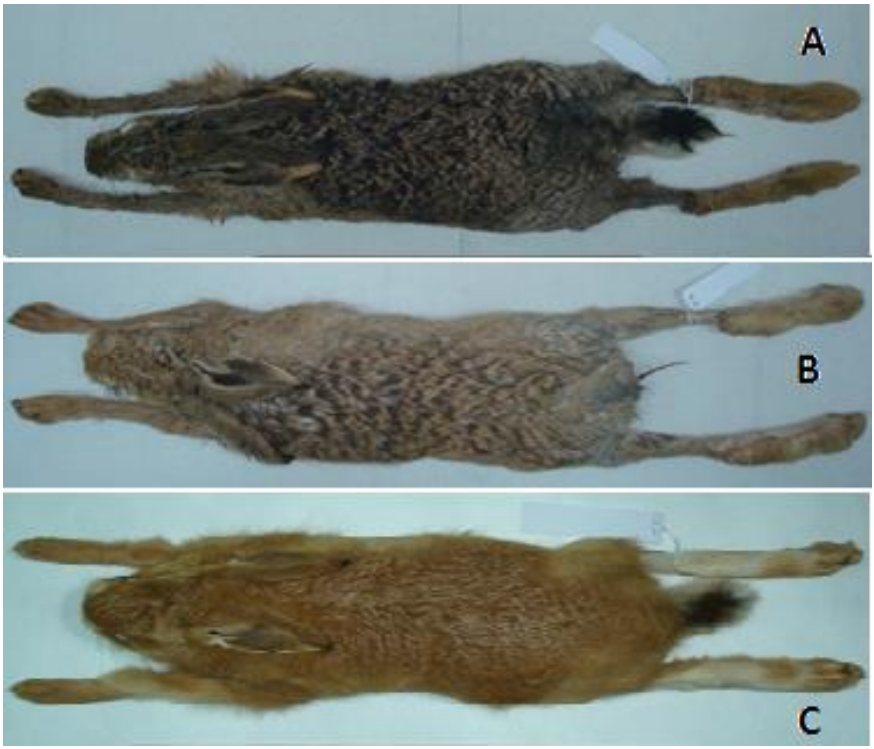

Figure 3. Fur types of brown hare recorded from study area: A–brown fur type from Oylum village near Kilis, B–An individual (from Nizip near Gaziantep) we assumed hybrid, C–yellowish fur type from Elbeyli near Kilis.