

***Eryx jaculus* (Linnaeus, 1758): a new species for the Italian herpetofauna (Squamata: Erycidae)**

GIANNI INSACCO¹, FILIPPO SPADOLA², SALVATORE RUSSOTTO³, DINO SCARAVELLI⁴

¹ Museo Civico di Storia Naturale, Via degli Studi 9, 97013 Comiso (RG), Italy. Corresponding author. E-mail: g.insacco@comune.comiso.rg.it

² Museo della Fauna del Dipartimento di Scienze Veterinarie dell'Università degli Studi di Messina, Polo Universitario SS. Annunziata. I-98100 Messina, Italy

³ Contrada Grassura Mollaka Faia, s.n. - 92027 Licata (AG), Italy

⁴ Dipartimento di Scienze Mediche Veterinarie, Università di Bologna, via Tolara di Sopra 50, Ozzano Emilia (BO) e S.T.E.R.N.A., Museo Ornitologico "F. Foschi" Forlì, via Pedriali 12, 47121 Forlì, Italy

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Abstract. The presence of a population of the Javelin sand boa *Eryx jaculus* in Sicilia is here reported for the first time. Observations of live snakes and road-killed individuals have been obtained from the region of Licata (Province of Agrigento), in the southern part of Sicily. Data on the distribution and pholidosis from four specimens are presented. The large area of occurrence of the snake in Sicily, that bears also a local vernacular name suggests an ancient origin of the colonization. The presence of this species, increases the numbers of snakes living in Italy.

Keywords. *Eryx jaculus*, Sicily, Italy, new record.

Eryx jaculus (Linnaeus, 1758), commonly known as the Javelin sand boa, has been recently assigned to the Erycidae family (Pyron et al., 2014). Javelin sand boa can be found in Southern Balkans, on many islands in the Aegean Sea, Transcaucasia, Eastern Ciscaucasia, North Africa and Middle East (Tokar and Obst, 1993; Gasc et al., 1997; Sindaco et al., 2013).

It is a medium-sized species that usually grows up to 30-60 cm of total length (Schleich et al., 1996 ; Fig. 1A). The Javelin sand boa prefers sandy and loose soils where it can easily burrow holes for breeding and sheltering. It is a predominantly crepuscular species (Boulenger, 1913). It feeds on lizards, mice and snails. It is an ovoviparous species; female specimens generate 6-12 eggs which hatch directly in the oviduct, and deliver live offspring in July (Fuhn and Vancea, 1961; Fuhn, 1969).

On 19 June 2006 a local TV station "TV Alfa Licata", reported the first sighting of an adult individual, in Licata, Agrigento. Subsequently, a series of field research and

interviews to locals allowed to collect data on the presence of this species in the Licata territory, along the Salso river valley where 6 specimens were located. For the classification was followed Arnold and Oviden (2002). Before the present study, only anecdotal information were available (cf. Tokar and Obst, 1993), and the only museum specimen (Natural History Museum of Florence) was considered mislabeled (Razzetti and Sindaco, 2006).

Corine Land Cover layers, provided by the Regional Environmental Office of the Sicily Region, were elaborated using Arcgis (9.2 ESRI) to categorize habitat types in the investigated area. A buffer area of 2000 m around each collection point was established and the third hierarchical level in Corine Land Cover Classes (Bossard et al., 2000) was used to evaluate the percentage of each category. During our study two specimens were found dead on the road, one found drowned in a shaft and three were captured alive. These were kept for a few days in captivity, in order to take measurements and pictures and

then released in the same location where they have been captured. Two dead specimens were preserved in the collection of the Comiso Natural History Museum (MSNC inventory 4501: 1, 2). The location data for each specimen are listed below.

1. adult, 19/06/2009; Lat. 37°6'46.44"N; Long. 13°56'20.35"E; Via Londra, Licata (AG); Rif.: youtube.com – “TV Alfa Licata, la città e i suoi problemi, la vipera”.
2. TL 422 mm; adult male; gr. 76; 09/06/2015; Lat. 37°9'18.23"N; Long. 13°53'32.53"E; Contrada Conca, Licata (AG); captured and released, Fig. 1A, B, C); Fig. 2A, Fig. 3A.
3. TL 445 mm; adult male; gr. 78; 13/06/2015; 37°8'7.08"N; 13°51'57.31"E; Contrada S. Francesco di Paola, Licata (AG); captured and released, Fig. 2B; Fig. 3B.
4. TL 190 mm; juvenile female; 13/06/2015; 37°8'7.05"N, 13°51'57.19"E; Contrada S. Francesco di Paola, Licata (AG); found drowned in a shaft, largely decomposed. Fig. 3C.
5. TL 215 mm; juvenile female; gr. 9, 03/07/2015; 37°8'7.21"N, 13°51'57.13"E; Contrada S. Francesco

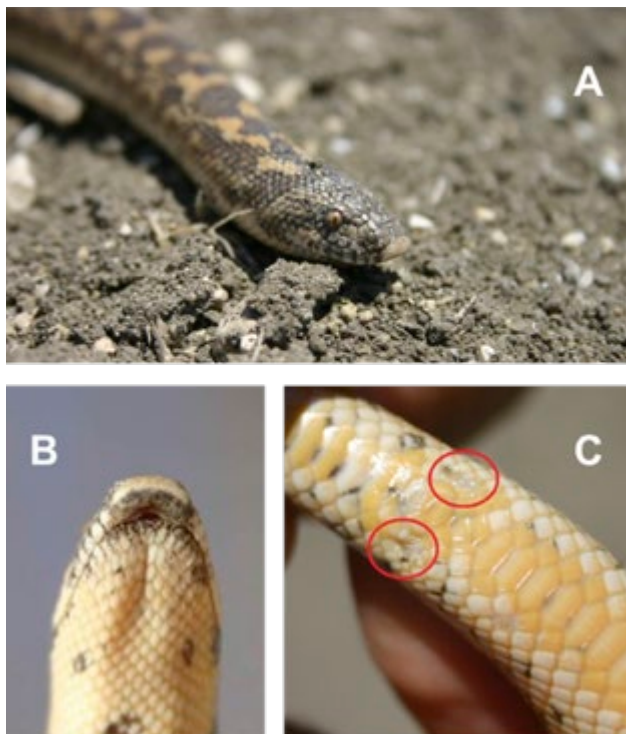


Fig. 1. *Eryx jaculus* adulte, male, from southern Sicily. A) view front body; B) details of the ventral body with claw-like spurs; C) ventral view of the mental groove.

di Paola, Licata (AG); captured and released; Fig. 2C; Fig. 3D.

6. TL 510 mm; adult female; 07/07/2015; Lat. 37°8'26.51"N; Long. 13°54'54.57"E; Contrada Calanino, Licata (AG); Rif. coll. MSNC 4501-1; run over by a car, mummified, preserved in the museum in Comiso; Fig. 3E.
7. TL 585 mm; adult female; gr. 173; 21/07/2015; Lat. 37°7'47.29"N; Long. 13°52'54.49"E; Poggio Cuterizzio – SS 115; Licata (AG); Rif. coll. MSNC 4501-2; run over by a car, preserved in the museum in Comiso; Fig. 2D; Fig. 3F.

The area where *Eryx jaculus* was observed extends for about 40 km² along the south coastal area of Sicily, in the Gela Gulf. It is an alluvial plain called “la Piana” created by the action of the river Salso and it is mostly flat with small hills. This geological substrate is mainly constituted of montmorillonite clays that greatly dries out during the xeric season and cracks creating characteristic deep fractures in the arid soil. The local climate is typically Mediterranean with mild and rainy winters and hot dry summers, with a constant marine breeze. The average temperature in Licata is 17.7 °C with annual precipitation up to 405 mm (climate-date.org). From the analysis of the Corine land cover data, in the buffer area the sighting points were mostly located in not irrigated arable lands (77,93%), followed by natural pastures and dry meadows (9,59%), agricultural mosaics (3,65%), and agricultural area with natural elements (3,11%).

Meristical analysis conducted on four specimens are listed in Fig. 2, following Eskandarzadeh et al. (2013), wconfirms they are indeed *Eryx jaculus* - the specimen B,

	▲ PIN posterior to internasal	● BEN between eye and nasal	● BE between eyes
Specimen	PIN	BEN	BE
A	2	3	7
B	3	3	7
C	2	3	7
D	2	3	7

Fig. 2. Meristic scale counts of the head in specimens of *Eryx jaculus* from Sicily. Number of scales posterior to internasal (PIN); Number of scales between eye and nasal (BEN); Number of scales between eyes (BE).



Fig. 3. *Eryx jaculus* founds in Licata (AG). A) male, alive in C.da Conca; B) male, alive in C.da S. F. di Paola; C) juvenile, female, drowned inside of well in C.da S. F. di Paola; D) juvenile female, alive in C.da S. Francesco di Paola; E) mummified individual in C.da Calannino; F) female, in Poggio Cuterizzio.

which has 3 PIN scales, is considered within the intraspecific variability (Boulenger, 1913; Tokar and Obst, 1993).

Considering the data collected and occasional observations of *E. jaculus* by local people (Table 1), there are information since 1930 in this area. The high frequency of sightings, as well as the presence of local vernacular names for the species (Apita, Aspit surdu, Spitu) strongly suggests that this species was not recently introduced. Given its nocturnal habits and very elusive nature, it is likely that this species simply went unnoticed for a long time.

Ancient introductions of snakes for religious cults or for war rituals were also proposed by Masseti and Zuffi (2011), with a particular reference to the Greeks who inhabited the area for a long time and fought two important battles on those lands in 405 A.C. and in 310 A.C. (Di Blasi, 1844). The presence of a consolidate population in this Sicilian valley, composed by adults and juveniles is underlining the biogeographic importance and the priority of conservation of this species. Also it is necessary to highlight that being the *E. jaculus* a protected rep-

Table 1. Sightings localities of *Eryx jaculus* by local people, since 1930 to 2013.

Date	Locality and Position	Number of specimens	Age/Sex	Name of observer
2006-2013	Contrada San Francesco di Paola, Licata; 37°8'7.15"N, 13°51'57.27"E	10, alive	adults	Salvatore Russotto
1999-2013	Contrada Grasciura, Licata; 37°7'48.32"N 13°52'31.17"E	8, alive	adults	Salvatore Russotto
2004	Torre S. Nicola, Licata; 37°6'46.70"N 13°52'8.01"E	1, dead	adult female	Salvatore Russotto
1986-1991	Contrada Pozzillo, Licata; 37°6'47.70"N 13°52'59.47"E	2, alive	adult females	Luigi Caci
1982-1987	Contrada Renella, Licata; 37°8'25.16"N 13°55'59.98"E	4, alive	adults	Epifanio Bonelli
1987	Contrada Poggio Cuterizzio, Licata; 37°7'46.84"N 13°52'52.83"E	1, alive	adult	Epifanio Bonelli
1984	Contrada San Francesco di Paola, Licata; 37°8'7.15"N, 13°51'57.27"E	1, alive	adults	Salvatore Russotto
1980	Contrada Pisciotto, Licata; 37°7'44.17"N 13°50'57.94"E	1, alive	adult	Epifanio Bonelli
1930-1970	Contrada Renella, Licata; 37°8'37.72"N 13°55'44.77"E	numerous, alive	adults	Giuseppe Casa
1930-1960	Contrada Culazzo, Licata; 37°8'59.71"N 13°55'36.86"E	numerous, alive	adults	Giuseppe Casa

tile listed in the Appendix IV of the 92/43/CEE Directive, in Appendix II of CITES, and Appendix III of the Bern Convention, its presence in Sicily calls for a prompt implementation of the relevant regulatory framework and safeguards activities as provided for under the law for the protected wild fauna in Italy. The range of the species in nearby areas in Sicily is also under study by the authors. A genetic study will be realized to verify subspecies attribution and identify the possible origin of this population.

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