

Natrix natrix (LINNAEUS, 1758)
climbing tree
to a height of 475 cm

On 5 May 2015, the second author (P. A.) visited a lake named Store Kattinge Sø, situated on the Danish island of Zealand, with the main purpose of watching birds. The locality is situated 5 km west-northwest of Roskilde (55°39'52"N, 12°01'05"E, 2 m a.s.l.). The lake is surrounded by a swamp dominated by common reed (*Phragmites australis*) and wood, at the observation site. Observations were made from a tall bird hide on a sunny day with temperature approx. 10 °C. A willow tree situated between the hide and the lake had been pollarded as it had grown too high and too close to the hide. On the top of this willow tree, at a height of 475 cm, a Grass Snake, *Natrix natrix* (LINNAEUS, 1758), was observed and photographed from 15:28 to 15:30 h (Fig. 1). Shortly after, the snake was frightened and leapt over the edge of the top of the tree, fell to the ground, and escaped quickly into the lake. The snake's total length was estimated to be 60-70 cm. The ground color was uniform black which is by far the dominating color morph on Zealand and elsewhere in eastern Denmark (east of the Peninsula of Jutland) (BILLE 2008).

The willow tree was not in an entirely vertical position, but its angle was on average 72°. The upper half was more upright (approx. 80°) than the lower half (approx. 64°). The diameter of the top of the tree was 46-57 cm. The willow tree was standing very close to the hide. The distance from top of the tree (where it had been cut) to the hide was 23 cm whereas the distance at ground level was 105 cm. The old willow had a rough bark with many structures and numerous young branches growing from the trunk (Fig. 2).

The rough structures of the bark, the abundance of young branches and the slight sloping of the trunk, provided excellent conditions for the Grass Snake to climb the willow tree and also partial hiding opportunities while climbing. The authors find it very likely that the snake reached the top of the tree in this way and exclude the possibility that the bird hide was used.

It is known that *N. natrix* is a good climber and a number of works briefly mention that it may be seen climbing shrubs and low trees occasionally, probably with the purpose of taking full advantage of solar radiation (DÜRIGEN 1897; ZIMMERMANN 1909; SMITH 1951; STEWARD 1971; STREET 1979; SCHLEICH et al. 1996; KABISCH 1999; BEEBEE & GRIFFITHS 2000; WAITZMANN & SOWIG 2007). ZIMMERMANN (1908) presented a photo of an individual which climbed a pine tree. VEITH (1991) (in a manuscript which had remained unpublished at the author's death in 1925) even mentioned that *N. natrix* may be seen hanging in shrubs, thereby looking like bunches of grapes. In a detailed ecological study of *N. natrix* in the Wuppertal area in western Central Germany by ECKSTEIN (1993) none of the 388 observations comprised climbing individuals, however, this author referred to unpublished observations of *N. natrix* climbing shrubs near Vienna in Austria. Other authors provided examples that Grass Snakes may climb to heights of one to two meters (ZIMMERMANN 1908; APPLEBY 1971; FELLEBERG 1981; KABISCH 1999; BUSCHENDORF 2004). ZIMMERMANN (1908) added that other observers found Grass Snakes at heights up to 3 m. According to VAUGHAN (2012) it is not unusual that *N. natrix* climbs trees, but is often overlooked in that position. The book has two photos of a broken stump with one partly hidden individual. The height above the ground is not mentioned, but judging from one photo it seems likely to be above eye level, perhaps 2-3 m above the ground. Grass Snakes do not only climb shrubs for basking: ROLLINAT (1946) described a film in which an individual was recorded climbing a shrub overhanging a water body and subsequently ate all the young birds in a nest. On the "Arkive" website (WILDSCREEN ARCHIVE 2016) a film demonstrates the ability of *N. natrix* to climb a tree species with rough bark, much like the authors' present observation.

One case of *N. natrix* having climbed an extraordinary height was described by VAUGHAN (2008, 2012). The author observed a "mating ball" consisting of one female and approx. seven males mating on the ground. After writhing and knotting the female broke free and moved through the grass and



Fig. 1: A Grass Snake *Natrix natrix* (LINNAEUS, 1758), situated on the top of the willow tree at a height of 475 cm above the ground. It was photographed from the bird hide on 5 May, 2015.
Photo: P. AASTRUP.

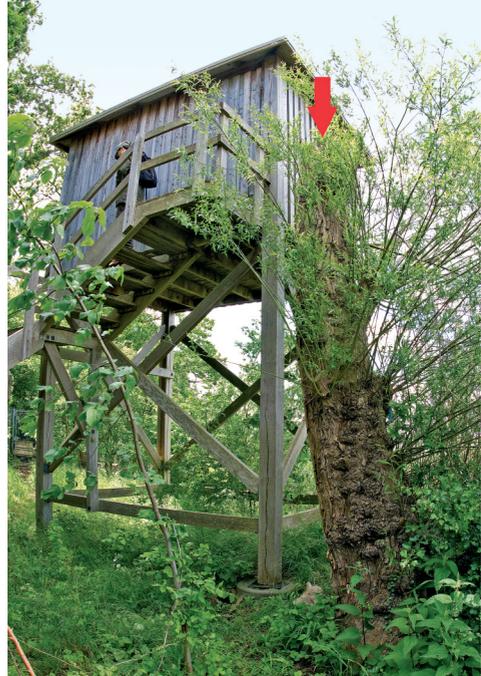


Fig. 2: The willow tree being close to the bird hide. Notice the rough bark, the numerous young branches and the slight slope of the tree. The red arrow points at the place where the grass snake was observed and photographed. Photo: H. BRINGSØE.

eventually climbed a tree to a height of at least 5-6 m. About 20 minutes later, the males also climbed the tree to that position and carried out mating while the female did not make any further attempt to retreat.

ZIMMERMANN (1909) explained that *N. natrix* ascends shrubs and small trees by “sliding upwards”, not by coiling around branches. When you surprise a Grass Snake under such circumstances it will drop to the ground (ZIMMERMANN 1908).

The authors of this note assume that the Grass Snake had climbed the tree to warm up in the sun. The observed height of climbing (475 cm) is only exceeded by VAUGHAN’s (2008, 2012) record of a mating ball at a height of at least 6-7 m.

The present observation provides an important reminder of the arboreal behavior of *N. natrix*, which must be considered when surveying for the species and considering

habitat management practices, particularly regarding plant species that facilitate climbing. For *N. natrix*, living trees and shrubs may not only provide basking opportunities, but also hunting grounds (nesting birds, treefrogs, rodents), night-time refuges or even hibernation sites. It is recommended that future observations of arboreal activities should be recorded effectively to further knowledge of the behavior of this species.

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