

## Taxonomy of the Genus *Peganum* L. (Peganaceae Van Tieghem) in Mongolia

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### Abstract

This paper deals with the species of the *Peganum* found in Mongolia based on morphological structure of seeds. A depressed-hollow surface of seeds was found for *Peganum harmala* and smooth surface for *P. nigellastrum* Bge, while convex surface was found for *P. harmala* var. *multisecta*. Seeds of *P. harmala* var. *multisecta* disperse only by water flow, whereas seeds of *P. harmala* disperse only by the effects of human activities and those of *P. nigellastrum* disperse by both human activities and wind. *P. harmala* and *P. nigellastrum* are distributed in Mongolia and Tibet, but *P. harmala* var. *multisecta* are also distributed in Mongolia. We suggest that *P. multisectum* (Maxim.) Bobr is distributed in Mongolia, but no *P. harmala* var. *multisecta* Maxim, based on morphological, ecological and areal differences.

**Key words:** *Peganum harmala* var. *multisecta*, *Peganum harmala*, *Peganum nigellastrum*, Peganaceae, Central Asia

### Introduction

Linneaus (1753) described *Peganum harmala* L., and later Maximovicz (1839) distinguished it the *P. harmala* var. *multisecta* Maxim, from the former taxon, based on the calyx leaves that are incised into 3-5 lobes. Subsequently, Bobrov (1949) combined *P. harmala* var. *multisecta* with *P. multisectum* (Maxim) Bobr.

Grubov (1998) consider that *P. harmala* var. *multisecta* was distributed in Central Asia, but Bobrov (1949) considered it as *P. multisectum*, based on the differences of morphology and distribution (Table 1).

Morphology and hystology of the vegetative and generative organs of *P. harmala* and *P.*

*nigellastrum* were studied by Saphina (1977), Ligaa (1997), Shiirevdamba (1990), Tserenbaljid (1996) and Tserenkhand (1999). These results show that the classification in *Peganum* L genus is still incomplete.

*P. harmala* is distributed from the Mediterranean sea to Central Asia. In Central Asia, this species is found in the subprovinces of Mongolia, Kashgaria, Tsaidam, Dzungaria and Tibet (southern). *P. nigellastrum* is distributed in China (west and west north of Pekin) and east Siberia (near Khyagt village). This species has also been recorded in the subprovinces of Mongolia and Tsinhai. *P. harmala* var. *multisecta* is widely distributed from Dzungaria, Mongolian Altai to Ordos, Hesi, Tsaidam, Tsinhai regions

Table 1. Classification of the genus *Peganum* L. distributed in Euroasia by different authors

№	Species	Subspecies	Morphology	References
1	<i>P. harmala</i> L.	-	Calyx leaves entire, glabrous plant	Bobrov (1949);
		var. <i>stenophyllum</i>	Leaves with narrow lobes	Grubov (1982, 1998)
		Boiss.	Calyx leaves incise into 3-5 lobes, leaves	Bobrov (1949);
		var. <i>multisecta</i> Maxim.	bi- or tripalmatisected	Grubov (1998)
2	<i>P. nigellastrum</i> Bge.	-	Calyx leaves incised into 5-7 linear lobes, setose plant	Bobrov (1949); Grubov (1982, 1998)
3	<i>P. multisectum</i> (Maxim.) Bobr.	-	Calyx leaves incise into 3-5 lobes, leaves bi- or tripalmatisected	Bobrov (1949)