

# TWO NEW RECORDS OF CYPERACEAE FROM COASTAL FLORA OF THE CASPIAN SEA, IRAN

A. R. Naqinezhad & A. Ghahreman

A. R. Naqinezhad & A. Ghahreman 2002 12 30: Two new records of *Cyperaceae* from coastal flora of the Caspian sea, Iran. -*Iran. Journ. Bot.* 9 (2): 171-175. Tehran.

Two interesting coastal species, *Eleocharis caduca* (Delile) Schultes and *Carex extensa* Good. are reported as new records for the flora of Iran.

These species have been collected from the coastal line of Langerud - Lahijan in Gilan province, Iran. Characteristics and geographical distribution of the species are presented. *Eleocharis caduca* is compared with closely related species, *Eleocharis geniculata* (L.) Roemer & Schultes.

Distribution of *Carex extensa* in Asia is also presented in the map.

Ali Reza Naqinezhad & Ahmad Ghahreman, Department of Biology, Faculty of Science, Tehran University, Tehran, Iran.

Key words. Coastal plants, *Eleocharis caduca*, *Carex extensa*, Iran, new records .

گزارش دو گونه جدید از تیره کالچ (Cyperaceae) از فلور ساحلی دریای خزر

ایران

علیرضا نقی نژاد و احمد قهرمان

دو گونه *Eleocharis caduca* (Delile) Schultes و *Carex extensa* Good. برای اولین بار از ایران گزارش می شوند. این گیاهان از خط ساحلی لنگرود - لاهیجان در استان گیلان جمع آوری شده اند. ویژگیها و پراکندگی جغرافیایی این گونه ها بیان شده است.

*Eleocharis caduca* با گونه بسیار نزدیک به آن یعنی *E. geniculata* مقایسه می شود. پراکندگی *Carex extensa* در قاره آسیا در نقشه نشان داده شده است.

Table 1. The comparison of *Eleocharis caduca* and *E. geniculata*.

Species	<i>Eleocharis geniculata</i>	<i>Eleocharis caduca</i>
Distribution in Iran	S. Iran	N. Iran, the coast of Caspian sea
Growth period	annual	caespitose perennial with short and thin stolons
Shape of spike	globular or ovoid with obtuse tip	lanceolate, with acute tip
Glume number	50 or more	very fewer
Basal glume	Fertile	sterile
Glume tip	Rounded	obtuse
Glume midnerve	not very distinct and not reaching apex	very distinct and reaching apex
Glume color	grey brown	upper part of glume is red
Stylopodium	much wider than the length	width and length of stylopodium equal
Perianth bristles	Brown	almost white

## Introduction

In the framework of our coastal flora investigations, we studied coastal plants of the Caspian sea, mainly on the coastal line of Langerud-Lahijan, Gilan province (Naqinezhad 2001). These studies demonstrate that the coastal plants of the Caspian sea have not been completely studied in Iran. The existence of two new records *Eleocharis caduca* and *Carex extensa* and another species, *Isolepis cernua* that was previously reported (Kukkonen & al. 2001), confirms our previous claim. These species have not been previously reported from Iran.

***Eleocharis caduca* (Delile) Schultes.** -Fig. 1. Iran, Gilan prov.: Langerud, Chamkhaleh, 200 m after the main bridge, coast of the Caspian sea, -25 m, 22.7.2000, Naqinezhad, 28138 & 28139 - TUH.

*Eleocharis caduca* is a small and fine plant that is reported for the first time for Flora Iranica area and second time for Asia. The first collection of *E. caduca* for Asia is from Yemen (based on a specimen of Natural History Museum of Finland: Kukkonen, pers. com.).

*Eleocharis caduca* is very similar to another Iranian species, *E. geniculata* (L.) Roemer & Schultes (Kukkonen 1998). The differences between them are presented in table 1.

**Habitat.** *Eleocharis caduca* together with *Juncus acutus* L., *J. litoralis* C. A. Mey, *Isolepis cernua* Vahl and *Fimbristylis turkestanica* (Regel) B. Fedtsch grows on the moist slacks and depressions of the Caspian coast in Chamkhaleh. This habitat is characterized with summer drought and winter and autumn flooding.

**Phenology.** Flowering period in April - May, Fruiting period in June - July.

***Carex extensa* Good.** -Fig. 2.

Gilan: Lahijan, Hassanbekandeh, coast of the Caspian sea near to Shahid Moradipoor Parry, -25m, 18.6.2001, Naqinezhad, 27855-TUH

*Carex extensa* is reported as a new record for the flora of Iran. Talish is the closest area to Iran collection (Kukkonen 1998).

This species is characterized as: Caespitose perennial. Stem terete. Sheaths of leaves frequently red-punctate; ligule red-punctate; blades 1.5-2.5 mm broad, folded or involute, greyish green. Inflorescence of 1-2 male spikes and 2-5 female spikes, mostly overlapping and lowest remote, erect, with peduncle to 70 mm long. Bracts much overtopping inflorescence. Utricles conspicuously nerved, greenish. Glumes and utricles often with reddish spots.

**Habitat.** *Carex extensa* grows also on the moist coastal slacks and salt-marshes of most coastal areas of Asia and Europe (Chapman 1977; Maarel, 1993; Tutin et al. 1980). In

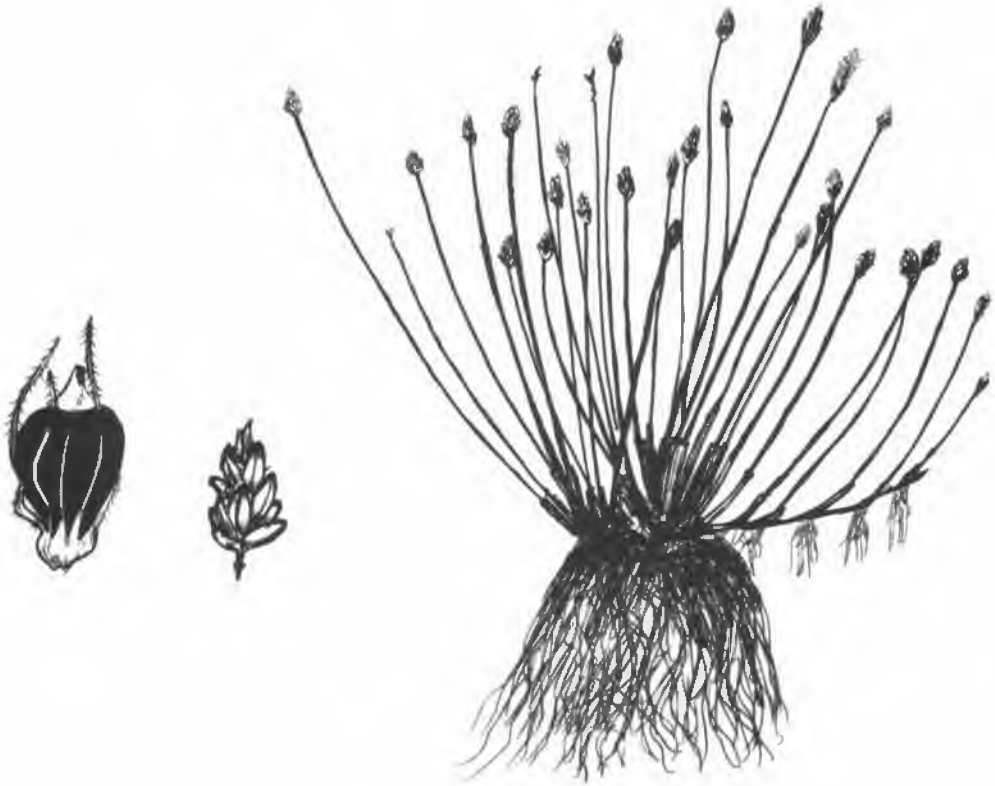


Fig. 1. *Eleocharis caduca*: Habit ( $\times 1$ ); Spike ( $\times 5$ ); Nut with bristles ( $\times 30$ ).

Asia, this species grows on the coasts of Caspian sea, Black sea and Mediterranean sea (Nillson 1985; Feinbrun-Duthan, 1986; Kukkonen, 1998; Shishkin, 1935). Map1.

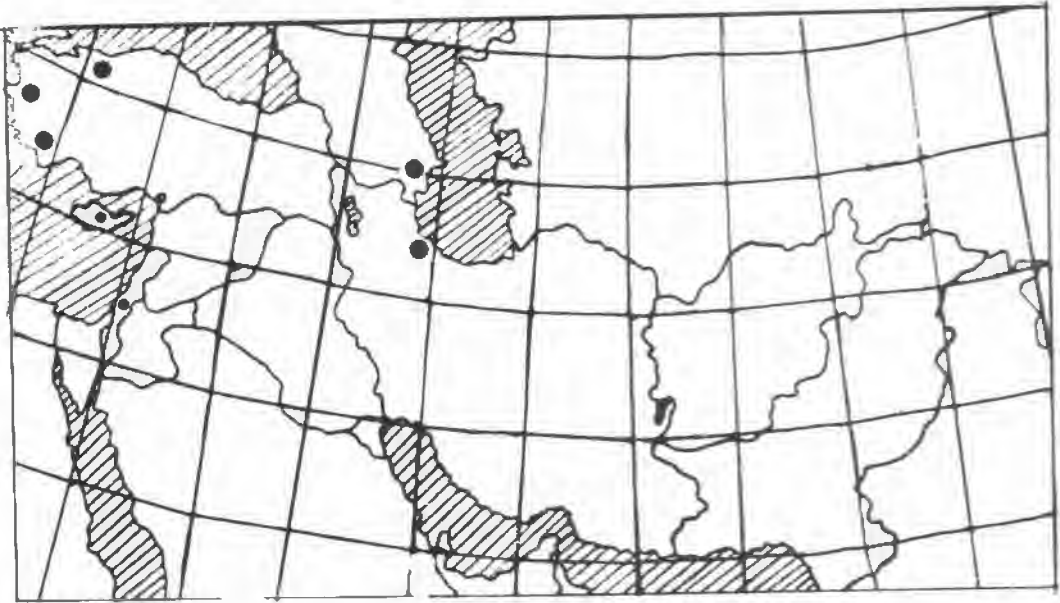
In our area, *Carex extensa* is very rare and always grows in *Juncus acutus* and *Fimbristylis turkestanica* populations.

*General distribution.* NW and W Europe, Mediterranean including African side, Black sea coasts in W and N Sara Island and the Caspian sea as the eastern outpost.

*Phenology:* Flowering and fruiting periods in May – July.

#### Acknowledgements

We are grateful to Prof. Dr. Ilkka Kukkonen for the comparison of our *Eleocharis* specimens with the specimens of Natural History Museum of Finland and Mr. Dr. Ghahremani-nezhad for correction of the manuscript. We thank Mr. H. Farjud for drawings.



Map. 1. Coastal distribution of *Carex extensa* in Asia.

## References

- Chapman, V. J., 1977: Wet Coastal Ecosystems, in Goodall, D. W., (ch. ed.) Ecosystems of the world, vol. 1. -Elsevier.
- Feinbrun – Dothan, N. 1986: Flora Palaestina, vol. 4, page 375. -The Israel Academy of Sciences and Humanities.
- Kukkonen, I. 1998: Cyperaceae in Rechinger, K. H., (ed.) Flora Iranica no. 173. -Graz, Akademische Druck-U. Verlagsanstalt.
- Kukkonen, I., Ghahreman, A. & Naqinezhad, A. R., 2001: *Isolepis cernua* (Cyperaceae), a new record from North of Iran. -Iran. Journ. Bot. 9 (1) : 107-110.
- Maarel, E. 1993: Dry Coastal Ecosystems (Polar regions and Europe) in Goodall, D. W.,(ch. ed.) Ecosystems of the world, vol. 2A: 103-105. -Elsevier.
- Naqinezhad, A. R. 2001: Floristic studies of Amirkelaye wetland and the coastal areas of Chamkhaleh- Jirbagh (B. Sc. thesis). - University of Tehran.
- Nilsson, P. H., 1985: Flora of Turkey and the East Aegean Islands vol. 9: pages 132-133, 635. -Edinburgh University Press.
- Shishkin, B. K., 1935: in Komarov, V. L. (ed.) Flora of the U.S.S.R, vol. 3, page 316 (Translated to English by N. Landau, 1985), Bishen singh Mahendra pal singh and koeltz scientific books.
- Tutin. T. G. Heywood, V. H. Burges, N. A., Moore, D. M., valentine, D. H., Walters, S.M. and Webb, D. A. 1980: Flora Europaea vol. 5, page 309. -Cambridge University Press.



Fig. 2. *Carex extensa*: Habit ( $\times 0.4$ ) ; Female spike ( $\times 1.7$ ) ; Utricle ( $\times 4.7$ ).