

A NEW CAREX FROM CRETE

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Carex cretica Gradst. & Kern, *sp. nov.*

Rhizoma caespitosum. *Culmus* erectus, triqueter, laevis, inferne foliatus, 15–30 cm altus. *Folia* culmo multo breviora, viridia vel cinereo-viridia, $1\frac{1}{2}$ – $2\frac{1}{2}$ mm lata, breviter acuminata, apice scaberula vel sublaevia, vaginis brunnescentibus; ligulae latiores quam longiores, obtusae vel subacutae. *Bracteae* foliaceae, inflorescentia breviores longioresve, superiores haud vel breviter vaginatae, inferiores vagina usque ad $1\frac{1}{2}$ cm longa instructae; vaginae antice appendicula membranacea in sicco facile destructa provisae. *Spiculae* 3–4, terminalis ♂, cylindrica, $1\frac{1}{2}$ cm longa, 2 mm lata, laterales ♀, in superiore parte culmi dispositae, oblongo-cylindricae, usque ad $1\frac{1}{2}$ cm longae, 3–4 mm latae, densiflorae, suprema sessilis, inferiores subsessiles vel breviter pedunculatae, erectae, pedunculis laevibus usque ad $\frac{1}{2}$ cm longis. *Glumae* ♂ obovato-lanceolatae, obtusae vel subacutae, glumae ♀ ovatae, acutae vel breviter acuminatae, muticae, tenuiter membranaceae, in carina viridi trinerves, marginibus enerviis albiohyalinis demum brunnescentibus. *Utriculi* glumas superantes, oblique erecti, obovati, obtuse trigoni, basi subcontracti, cum rostro $2\frac{1}{2}$ –3 mm longi, 1 mm lati, praeter nervos 2 marginales prominentes enervosi, virides vel maturitate brunnescentes, vix nitidi, apice in rostrum usque ad 1 mm longum marginibus parce scabrum vel laeve ore breviter bidentatum abrupte contracti, crura intus scabriuscula. *Nux* utriculum explens, obovato-oblonga, trigona, $1\frac{1}{2}$ mm longa, 1 mm lata, vix rostrata. Stigmata 3.

CRETE, Nómo Chaniá: Distr. Kydónia, valley between Skinés and Néa Roúmata, on the bank of a brook in the maquis together with *Carex remota*, alt. 350 m, 6/5/1967, Gradstein & Smittenberg 304 (HOLOTYPE, U); id., on the bank of a brook in the "phrygana", alt. 250 m, 5/5/1967, Gradstein & Smittenberg 277 (U, L, G); distr. Kíssamos, near Katsimatádos, schist-mountains, on the bank of a brook in the maquis, alt. 300 m, 17/4/1967, Gradstein & Smittenberg 148 (U, L).

This new species was collected during a stay on the island of Crete in the spring of 1967. Well-developed plants show a slight resemblance with young specimens of *Carex punctata* Gaud., a species which was recently discovered in the valley between Skinés and Néa Roúmata by W. Greuter (herb. Greuter S 4761 – Geneva) as an addition to the Cretan flora (not yet published). *Carex cretica*, though related to *C. punctata*, differs from it in many respects. The differences are shown below.

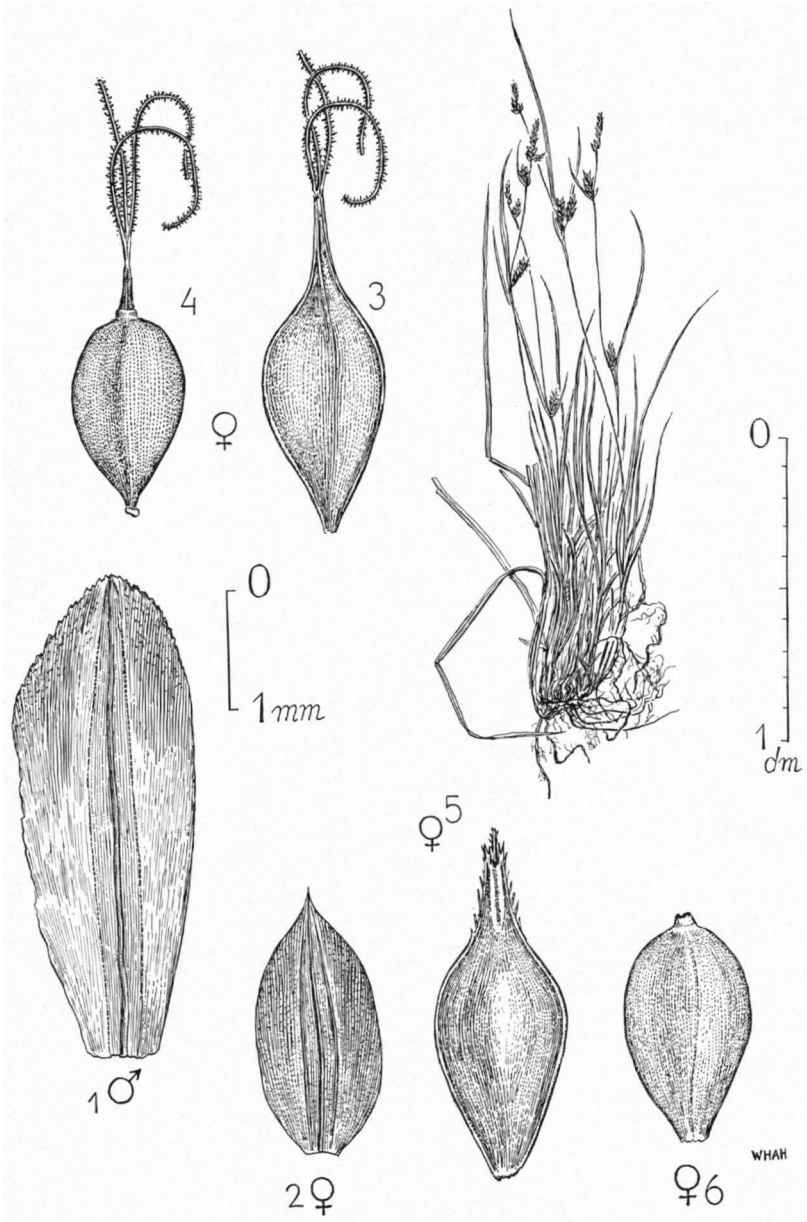


Fig. 1. *Carex cretica* Gradst. & Kern; top, at the right: habit; 1. male glume; 2. female glume; 3. young utricule (margins smooth); 4. young nut; 5. mature utricule; 6. mature nut.

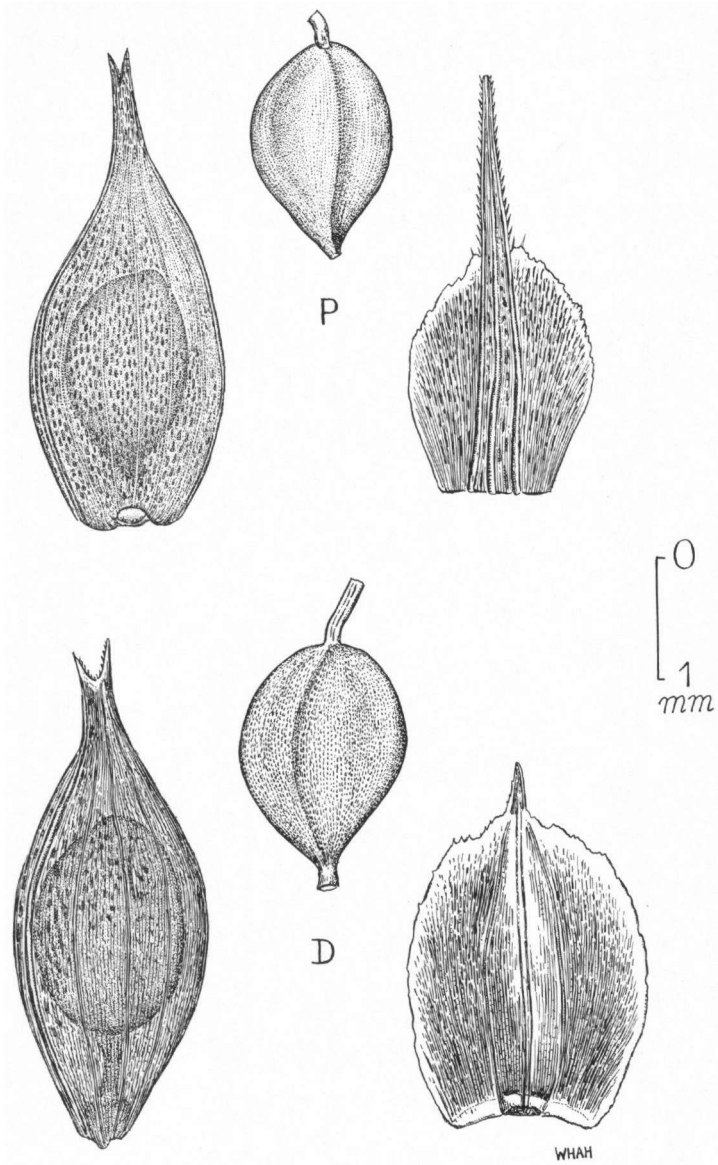


Fig. 2. P. *Carex punctata* Gaud.: utricule nut, female glume.
D. *Carex distans* L.: id.

Carex punctata

Leaves 2-4 (-6) mm wide.

Ligule as long as wide, acute or sub-acute.

Female glumes broadly ovate, mucronate or mucronulate.

Female spikelets 1-2½ cm long, 5-7 mm wide.

Peduncles of the spikelets more or less antrorsely rough.

Utricle:

(3-)3½ - 4 mm long (beak included),
1½ - 2 mm wide,
inflated,
horizontally spreading when mature,
shining, finally puncticulate;
beak smooth.

Nut not filling up the utricle, distinctly beaked.

Carex cretica

Leaves 1½-2½ mm wide.

Ligule wider than long, subacute in the basal leaves, rounded in the bracts.

Female glumes ovate, acute or sub-acuminate, not mucronate.

Female spikelets up to 1½ cm long, 3-4 mm wide.

Peduncles of the spikelets smooth.

Utricle:

2½ - 3 mm long (beak included),
1 mm wide,
not inflated,
oblique-erect when mature,
hardly shining, not puncticulate;
beak slightly rough on the margins
and in the notch, margins rarely
smooth.

Nut filling up the utricle, hardly beaked.

Carex cretica is also allied to another *Carex* species known from Crete, viz. *C. distans* L. The latter is easily recognisable by the thicker spikelets, the brown, mucronulate glumes, and especially by the much larger, strongly several-nerved, inflated utricles. *Carex distans* f. *minor* Post (in Kükenthal 1909, p. 663), once collected on Crete near Sitia (Th. de Heldreich 1846, nr. 1650 - G), is rather more related to *C. cretica*. The utricles of this forma are relatively small and only faintly nerved, but in all other respects these plants belong to *C. distans*.

Carex cretica obviously prefers a non-calcareous, loamy soil, probably inundated in the wet season. It occurs on more or less sunny banks in the moist valleys of the lower schist-mountains, which reach a height of 700 m. These mountains are covered with an *Erica arborea* - *Arbutus unedo* maquis. In the valleys a *Platanetum orientalis* has developed, if not replaced by olive-groves, vineyards, or orange orchards. In muddy places in the running water a sociation of *Apium nodiflorum* (L.) Lag. and *Nasturtium officinale* R. Br. can be found. An investigation by Gradstein & Smittenberg (msc. Utrecht 1968) of the zonal arrangement of the hydrophytic vegetation in these valleys has shown that *Carex cretica* occurs in a consociation with the moss *Eurhynchium speciosum* (Brid.) Mild., in places where the banks are nearly flat. This consociation forms a small belt between the *Apium* - *Nasturtium* sociation and the *Platanetum orientalis*, and is

accompanied by a number of species from these contiguous communities. The consociation is represented in the table below.

Two types can be distinguished: a humid type with species of the *Apium – Nasturtium* sociation (anal. 118, 21), and a somewhat dryer type which is characterised by species of the *Platanetum orientalis* and other shade-loving plants (anal. 18).

On more or less steep banks, where the *Apium – Nasturtium* sociation is lacking, the consociation cannot be distinguished as an independent community. In this habitat *Carex cretica* was found once, growing scattered at the edge of the running water together with *Carex remota* L., in the "shadow" of the *Platanetum orientalis*.

Carex cretica – Eurhynchium speciosum consociation

Analysis number	118	21	18	119
Locality	L ²⁾	K ²⁾	K	L
Date, 1967	5/5	17/4	17/4	5/5
Area of sample, m ²	0,5 × 0,5	5 × 0,3	4 × 0,3	1,5 × 0,5
Herbs, cover %	30	80	25	80
height, cm	10	25(-75)	20(-50)	30
Bryophytes cover %	< 5	< 5	10	< 5

Species of the consociation

<i>Carex cretica</i>	x	2 ¹⁾	2	3
<i>Eurhynchium speciosum</i>	x	1	2	1

Species of the *Apium nodiflorum – Nasturtium officinale* sociation

<i>Apium nodiflorum</i>	2	1		
<i>Hydrocotyle vulgare</i>	x	x		
<i>Cyperus longus</i> ssp. <i>badius</i>		2		
<i>Mentha aquatica</i>		x		
<i>Galium constrictum</i>	1		x	

Species of the *Platanetum orientalis*

<i>Nerium oleander</i>		x	1	
<i>Hedera helix</i>			x	
<i>Carex pendula</i>			1	
<i>Rhagadiolus stellatus</i>			1	

Other species

<i>Lathyrus neurolobus</i>	1			1
<i>Brachypodium sylvaticum</i>	x			2
<i>Mentha</i> cf. <i>longifolia</i>	x			x
<i>Medicago coronata</i>		1		
<i>Carex flacca</i>		x		
<i>Oenanthe pimpinelloides</i>		x		

¹⁾ The figures in this table represent the total estimate of abundance and coverage of each species (the Braun-Blanquet scale).

²⁾ Locality abbreviations:

L = Lagós in the valley between Skinés and Néa Roúmata (Distr. Kydónia).

K = Katsimatádos (Distr. Kíssamos).

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<i>Ranunculus chaerophyllus</i>		2	
<i>Cirsium creticum</i>	2	x	
<i>Allium subhirsutum</i>	1	x	
<i>Rubus sanctus</i>	x	x	
<i>Tordylium apulum</i>		x	
<i>Adiantum capillus-veneris</i>		x	x
<i>Holoschoenus romanus</i>		x	2
<i>Carex divulsa</i>			x
<i>Plantago major</i>			x
Bryophytes			
<i>Pellia fabbroniana</i>		x	x
<i>Fossombronia angulosa</i>		x	
<i>Trichostomum mutabile</i>		x	

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