

CONSPECTUS OF GENUS *Eleocharis* R. BR. (Cyperaceae) IN BESSARABIA'S FLORA

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Key words: Bessarabia' flora, *Eleocharis* genus, a new species

Abstract: There is present genus *Eleocharis* in Bessarabia's flora. Also, there is given a new species for this territory: *Eleocharis klingei* (Meinsh.) B. Fedtsch.

Up to present genus *Eleocharis* in Bessarabia's flora was studied insufficiently from the point of taxonomy, corology and phytocenotic view. Results given in this report were obtained on the basis of field investigations and herbarium materials during expeditions in 1994-1996, as well as working up of older herbarium of Institute of Botany, Ac. Sci. R. Moldova, Universities of Chișinău, Tiraspol, Chernăuți and Odesa. The reports of early investigations of this territory: Săvulescu Tr. (1924, 1934), Paczoski J. (1914), Gejdeman T. (1986), Dubyna D., Șeleag-Sosonko Ju. (1989), Termena B. (1992) were also studied.

Below we present the synopsis and determination key of species of genus *Eleocharis* for Bessarabia's flora, which includes a new species for flora of this territory – *E. klingei* (Meinsh.) B. Fedtsch.

Determination key of species:

- 1.a. Stigmas 3; nuts trigonous or triquetrous 2
- 1.b. Stigmas 2; nuts biconvex 3
- 2.a. Spikelet without empty basal glume. Nuts longitudinally ribbed. Stylopodium small, 0.2mm. Perianth-bristles 3-4, rare absent *E. acicularis*
- 2.b. Spikelet on base has 1-2 empty glumes. Nuts not ribbed. Stylopodium not constricted at junction with narrow triangular conic *E. parvula*
- 3.a. Spikelet with 2 (rare 1), empty glumes, each half-encircling its base. Nuts are small-pointed. Leaf-sheats unpolished, purple or pale yellowish-brown 4
- 3.b. Spikelet with a single empty glume which surrounds completely or 2/3 of spikelet. There are few flowers. Nuts are small alveolated. Leaf-sheats often shiny, purple or reddish-brown 5
- 4.a. Stylopodium is conic with sharp tip. Glumes with narrow hyaline margin *E. palustris*
- 4.b. Stylopodium mitriform with obtuse tip. Glumes with wide hyaline margin *E. mitracarpa*

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- 5.a. Spikelets are relatively many flowered. Glumes of 4.5-5 mm in length, light-brown, with wide hyaline margin. Stems of 1.5-2.5 mm in diameter *E. klingei*
 5.b. Spikelets with few flowers. Glumes of 3.5-4(4.2) mm in length, as a rule dark-purple, without or with narrow hyaline margin. Stems of 0.5-1(1.2) mm in diameter *E. uniglumis*

Eleocharis R. Br. 1810, Prodr. Fl. Nov. Holl. I: 224. - *Heleocharis* R. Br. corr. Lestib. 1819, Essai Fam. Cyper.: 41, nom. conserv. propos. et rejic.

Lectotypus: *Scirpus palustris* L. (= *Eleocharis palustris* (L.) Roem. et Schult.).

Subgen. I. *Zinserlingia* Egor. 1981, Nov. Sys. Pl. Sys. Pl. Vasc. 18: 101, - Subgen. *Limnochloa* (Beauv.) Egor. 1976, in Fl. Part. Eur. URSS, 2: 109.

Typus: *E. quinqueflora* (Hartm.) O. Schwartz.

Stylopodium is not constricted at junction with nut, triangular conic or disk. Nuts quetros. Perennial plants, with creeping rhizome.

Sect. I. *Parvulae* Egor. 1976, l. c.: 210, id 1981, l. c.: 104. - Nuts of 1 mm in length, yellowish. Stylopodium is narrow triangular conic, with transparent margins. Perianth-bristles as a rule 5-7. Leaf-sheaths are membranous, non-obvious. Filiform rhizome. - Monotypic section.

Typus: *E. parvula* (Roem. et Schult.) Link ex Bluff, Nees et Schauer.

1. *E. parvula* (Roem. et Schult.) Bluff, Nees et Schauer, 1836, Comp. Fl. Germ. ed 2, 1, 1: 93; Zinserl. 1935, Fl. URSS, 3: 68; Şerbănescu et Nyarady E. 1966, Fl. RSR, XI: 625; Egor. 1976, l. c.: 110; Walters, 1980, Fl. EUR. 5: 282; Egor. 1981, l. c.: 104; - *Scirpus parvulus* Roem. et Schult. 1817, Syst. 2: 124.

Typus: Protolog: Germany, "In inundatis lacus Koelmensis in Mansfeldia".

On the sea shore and banks of salt lakes, in river deltas, dry lagoons, salt valleys, often submersed in water and blossoming after its falling tide. - The rare species, spread only on the Black Sea shore.

General spread: Europe, Far East, Middle Asia, Japan and China. $2n = 8, 10$.

Subgen. 2. *Eleocharis*. - *Scirpidium* Nees, 1834, Linnæa, 9: 293. - *Eleocharis* sect. *Scirpidium* (Nees) Benth. et Hook. f. 1883, Gen. Pl. 1047. - Stylopodium delimited from the nut, of different consistency and shape. Stigmas 2-3. Perennial plants, more seldom annual, with creeping or short rhizome.

Typus: generis lectotypus.

Sect. 2. *Aciculares* Clarke, 1908, Kew Bull. Add. ser. 8: 105; Zinserl. 1935, l. c.: 70 (cum auct. Svens.); Egor. 1976, l. c.: 105; id. 1981, l. c.: 105. - Stigmas 3. Nuts weekly trigonous, finely longitudinally ribbed or subterete. Stylopodium small, triangular. Perianth-bristles 3-4, or absent. Spikelets without empty basal glumes. Perennial plants with filiform stems, lax caespitose.

Typus: *E. acicularis* (L.) Roem. et Schult.

2. *E. acicularis* (L.) Roem. et Schult. 1817, Syst. Veg. 2: 154; Sävul. et Rayss, 1924, Mat. Fl. Basarab. 1: 172; Zinserl. 1935, l. c.: 70; Şerbănescu et Nyarady E.

1966, l. c.: 655; Egor. 1976, l. c.: 110; Walters, 1980, l. c.: 282; Egor. 1981, l. c.: 106; Gheideman, 1986, *Opred. vâșș. rast. MSSR*, ed. 3: 88. — *Scirpus acicularis* L. 1753, Sp. Pl.: 48.

Typus. Protolog, "Habitat in Europa sub aquis purioribus". It forms dense stains in river water and in places from which water falled. Sporadic species, up to present considered as a rare species (Gheideman, 1986) but we recorded it on whole current of the rivers Dniester and Pruth, in delta and lakes Belev, Cahul, Danube, Ialpuș, Dniester lagoon in association with *Cyperus fuscus* L., *Scirpus triqueter* L., *Dichostylis micheliana* Nees.

General spread: Europe, Caucasus, Siberia, Middle Asia, North America. — $2n = 20, 56$.

Sect. 3. *Eleocharis*. — Sect. *Palustriformes* (Svens.)

Zinserl. 1935, l. c.: 72 (sine auct. comb.). — Stigmas 2. Nuts biconvex, with pointed or alveolate surface, spongy stylopodium. Perianth-bristles (2) 4-8, sometimes absent. Spikelets with 1 or 2 empty basal glumes. Perennial plants with creeping rhizome.

Typus: generis typus.

3. *E. palustris* (L.) Roem. et Schult. 1817, *Syst. Veg.* 2: 151; Sävil. et Rayss, 1924, l. c.: 171; Șerbănescu et Nyarady E. 1966, l. c.: 657; Egor. 1976, l. c.: 113; Walters, 1980, l. c.: 283; Egor. 1981, l. c.: 114; Gheideman, 1986, l. c.: 88. — *Scirpus palustris* L. 1753, Sp. Pl. ed. I: 47. — *E. eupalustris* Lindb. f. 1902, in Dorfner, *Herb. Norm.* 44: 108; Zinserl. 1935, l. c.: 76. — *E. intersita* Zinserl. 1935, l. c.: 76.

Lectotypus: "Hispania, 36, Loeffl." (LINN) - Strandhede, 1960, *Bot. Not. (Lund)*, 113, 2: 168.

On the banks of rivers, lakes, on humid and boggy areas. Frequent met on the whole territory, in phytocoenoses of valleys. Here are included samples of *E. intersita* Zinserl. from Botanical Garden of Chernăuți.

General spread: Europe and Asia, North America. — $2n = 16$.

4. *E. mitracarpa* Steud. 1854, *Syn. Pl. Glum.* 2: 77; Egor. 1976, l. c.: 115; Walters, 1980, l. c.: 283; Egor. 1981, l. c.: 118; Gheideman, 1981, l. c.: 88. — *E. argyrolepidoides* Zinserl. 1935, l. c.: 79.

Typus: "Persia austr., in paludibus planitie prope ruinas u. Persepolis, 18. V. 1842, Th. Kotschy". (P. isotypus LE!)

General spread: Ukraine, Caucasus, Middle Asia, Japan, China.

5. *E. uniglumis* (Link) Schult. 1824, in Schult. et Schult. f. *Mantissa*, 2: 83; Șerbănescu et Nyarady E. 1966, l. c.: 657; Egor. 1976, l. c.: 115; Walters, 1980, l. c.: 283; Egor. 1981, l. c.: 120; Gheideman, 1986, l. c.: 88. — *Scirpus uniglumis* Link, 1820, in Spreng., *Schred. u. Link, Jahrb. Gew.* 3: 77. — *E. euuniglumis* (Lk.) Schult. 1829, *Mant.* 2: 88; Sävil. et Rayss, 1924, l. c.: 55.

Typus: Germany, "Ppe Warnemünde Rost., Hb. Link, No 1346" — Strandhede, 1966, *Opera Bot. (Lund)*, 10, 2: 147.

On the humid places, ditch, boggies, water margins, salt valleys, lagoons. — Species is met sporadic on the whole territory (more seldom in the North districts), in association with *E. palustris* Roem. et Schult., *E. mitracarpa* Steud., *Scirpus lacustris* L., *Bolboschoenus maritimus* (L.) Palla, *Cyperus fuscus* L.

General spread: Central and South Europe, Asia. — $2n=46$.

6. *E. klingei* (Meinsh.) B. Fedtsch. 1915, Rast. Turkest.: 165; Zinserl. 1935, l. c.: 82; Egor. 1976, l. c.: 117; id. 1981, l. c.: 121. — *Scirpus klingei* Meinsh. 1901, Acta Horti Petropol. 18, 3: 262.

Typus: Tien Schan, "Chantau, No 48, Schrenk" (LE!).

A new species for Bessarabia's flora, registered in only one place on the bank of Sculeni lake in Chişinău city, in association *Eleocharietum (klingei) purum*.

General spread: Ukraine, Caucasus, Middle and Minor Asia.

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