

A new subspecies of *Cyperus papyrus* from Egypt

Nový poddruh druhu *Cyperus papyrus* z Egypta

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CHRTEK J.1) et Z. SLAVÍKOVÁ²⁾ (1977): A new subspecies of *Cyperus papyrus* from Egypt. — Preslia, Praha, 49 : 183—185.

A new subspecies of *Cyperus papyrus* (*Cyperus papyrus* L. subsp. *hadidi*) has been described from Wadi Natroun in Egypt.

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Cyperus papyrus L. has a wide distribution area centered in the great river basins (Nile, Niger, Kongo, Zambezi etc.) in tropical Africa. It also occurs in Madagascar and the Mascarene Islands. It is in these areas that the species originated. From there it has spread or has been cultivated in other areas (e.g. in Sicily, Palestine, Egypt and elsewhere). The species is extremely variable and may be subdivided into a number of taxa of lower rank (subspecies) which often differ by their geographical distribution and morphology (shape of stem in transversal section, type of inflorescence, shape of stamens, size of fruits, etc.). The intraspecific variation has been studied by CHIOVENDA (1931) who based his taxonomic treatment on the morphology of stamens, especially of the connective. KÜKENTHAL (1936) adopted this classification and subdivided *Cyperus papyrus* into subsp. *antiquorum* (WILLD.) CHIOVENDA, subsp. *nyassicus* CHIOVENDA, subsp. *ugandensis* CHIOVENDA, subsp. *madagascarensis* (WILLD.) KUNTH, subsp. *zairensis* CHIOVENDA and subsp. *siculus* (PARL.) CHIOVENDA. Except for CUFODONTIS (1970) and few other authors, no attention has been paid to these problems in the past years.

A stand of *Cyperus papyrus* was discovered by Nabil el Hadidi (HADIDI 1971) on the shore of the Umm Risha Lake, Wadi Natroun (near the desert road between Cairo and Alexandria) in 1968. The Umm Risha Lake is the largest salt lake in the Wadi Natroun depression. Associated species include: *Cyperus laevigatus* L., *Fuirena pubescens* (POIR.) KUNTH, *Phragmites australis* (CAV.) TRIN. ex STEUD., *Scirpus litoralis* SCHRAD. var. *subulatus* CHIOV., *Typha australis* SCHUM. et THONN., *T. elephantina* ROXB. etc. Phytogeographically, this record is most remarkable, because the locality is entirely isolated. At present, the nearest localities are found in Sicily and Palestine (see RIKLI 1943). There are no recent records of this species from the Nile in Egypt. Morphologically, plants from Wadi Natroun differ considerably from those found in the nearest localities. The most conspicuous difference is seen in the cross-section of the stem which is indistinctly triangular to terete, contrast-

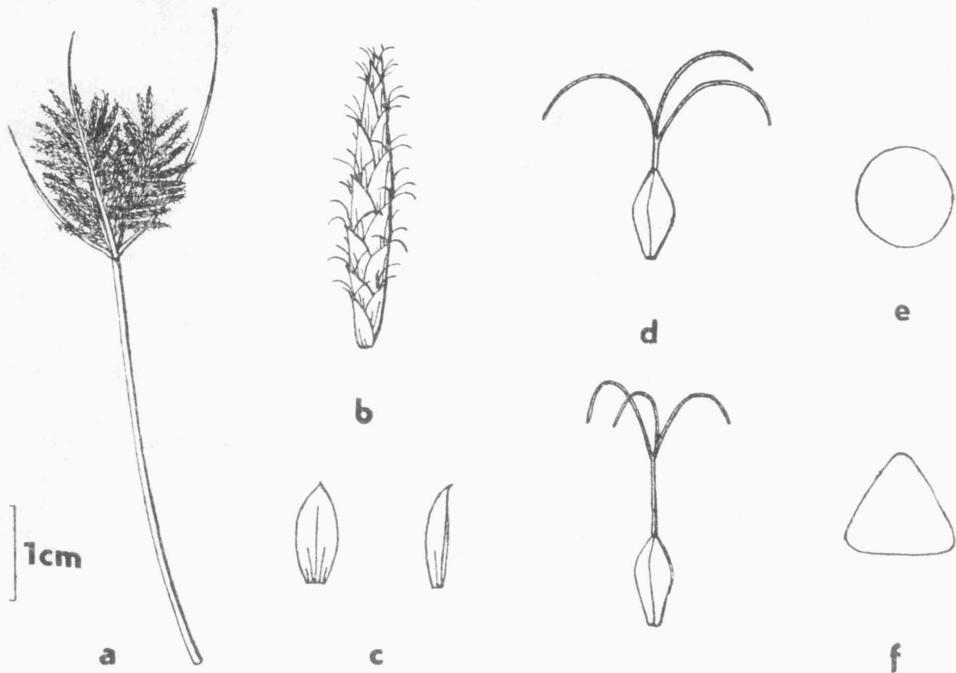


Fig. 1. — *Cyperus papyrus* L. subsp. *hadidii* CHRTEK et SLAVÍKOVÁ. a — part of the inflorescence, b — spikelet, c — glumes, d — pistils, e — shape of stem in transversal section. f — *Cyperus papyrus* L. subsp. *niliacus* TOURNAY. Shape of stem in transversal section.

ing with distinctly triangular stems in plants from Sicily, Palestine and the Upper Nile. By the morphology of stamens, especially by the shape of the connective, the Wadi Natroun plants differ from the Nile plants (*Cyperus papyrus* subsp. *niliacus* TOURNAY), resembling plants from Sicily and those designated as *Cyperus papyrus* subsp. *nyassicus* CHIOVENDA (see PAMPANINI 1933). This same conclusion has been drawn by PAMPANINI (1933) who found the Sicily plants (*Cyperus papyrus* subsp. *papyrus*) to approach subsp. *nyassicus*. This subspecies was described as an endemic from the Nyassa Lake; only recently it has been reported from N. Transvaal (PODLECH 1961). Because the Wadi Natroun plants differ by their particular combination of morphological characters from all the subspecies recognized hitherto and are geographically isolated, it is proposed that they be treated as a separate subspecies and named in honour of the collector, Prof. Dr. Nabil el Hadidi of the Cairo University, Giza.

Cyperus papyrus L. subsp. *hadidii* CHRTEK et SLAVÍKOVÁ, subsp. nova

Culmi teretes vel inconspicue triangulares. Anthela composita, multiradiata. Anthelulae densae, ± 3 spicas continentes. Spiculae breviter pedunculatae vel subsessiles, 6—8 (—10) mm longae, brunescens usque piceae. Squamae dense imbricatae, adpressae, ovato-ellipticae usque ellipticae, apice obtuse acutae, violaceo-striatae. Connectivum ultra antherae apicem porrectum, parte apicali antherae longitudine triplo vel quadruplo brevius.

Typus: Lacus Umm Risha, Wadi Natroun, Aegyptus, leg. 1968 Nabil el Hadidi. Typus in herb. CAI asservatur.

The new subspecies is known from the Wadi Natroun area only. A number of plants are in cultivation in experimental plots of the "Papyrus Institute" at one of the Nile Islands in Giza. All the features which characterize this subspecies are constant in cultivation. Also cultivated are plants from the Sudan. The two taxa differ, in addition to morphological characters (height of stem, shape of stem on cross-section, length of connective), also by their time of flowering, the Sudanese plants being distinctly late.

The taxonomy and the history of cultivation of *Cyperus papyrus* will be dealt with elsewhere.

We wish to thank Prof. Dr. Vivi Täckholm and Prof. Dr. Nabil el Hadidi for valuable information and encouragement.

SOUHRN

V práci je popsán nový poddruh druhu *Cyperus papyrus* L. (*C. p.* subsp. *hadidi* CHRTEK et SLAVÍKOVÁ) rostoucí na březích jezera Umm Risha ve Wadi Natroun (Egypt). Od ostatních poddruhů se liší význačnou znakovou kombinací — celkovým vzhledem, nevýrazně trojhranným až oblým stonkem na příčném řezu, prodlouženým spojidlem prašníků a dobou kvetení. Rostliny z Wadi Natroun jsou též ve velkém pěstovány pro potřeby Papyrus Institute na Nilu v Gize. Všechny znaky charakteristické pro nový poddruh zůstávají i u zde kultivovaných rostlin zachovány.

REFERENCES

- CHIOVENDA E. (1931): Il papiro in Italia. Un interessante problema di biologia, sistematica e fitogeografia. — Lavori Esequiti R. Ist. Bot. Modena, Forli, Memoria I. : 1—120.
- CUFODONTIS G. (1970): *Cyperus* L. — In: Enumeratio plantarum Aethiopiae. Spermatophyta. — Bull. Jard. Bot. Nat. Belg., Bruxelles, 40 (suppl.) : 1417—1440.
- HADIDI N. (1971): Distribution of *Cyperus papyrus* L. and *Nymphaea lotus* L. in inland waters of Egypt. — Mitt. Bot. Staatssamml., München, 10 : 470—475.
- KÜKENTHAL G. (1936): Cyperaceae-Scirpoideae-Cypereae. — In: ENGLER A. [ed.]: Das Pflanzenreich IV., 20 (Heft 101). — Leipzig.
- FAMPANINI R. (1933): Il papiro è autochtono in Sicilia? — Nuovo Giorn. Bot., Firenze, 40 : 1—62.
- RIKLI M. (1943): Das Pflanzenkleid der Mittelmeergebiet. — Bern.
- PODLECH D. (1961): Cyperaceae africanae. — Mitt. Bot. Staatssamml., München, 4 : 107—124.

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