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Methods are described in Bennett (1982), Grabiele & al. (2005) and Moscone & al. (1995, 1996).

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COMMELINACEAE

Commelina platyphylla Klotzsch ex Seub.

$2n = 2x = 30$, CHN (Fig. 1A–B, F). Argentina, Misiones Province, Capital Department, Posadas, 200 m W of Zaimán stream and 2.5 km W of Paraná river, in open field, 27°24′S, 55°53′W, 20 Nov 2001, *Grabiele 15* (CTES, MNES); Argentina, Misiones Province, Apóstoles Department, San José, in open wetland, 27°46′S, 55°45′W, 20 Dec 2002, *Grabiele 23* (CTES, MNES, SI); Argentina, Misiones Province, Capital Department, Posadas, at the coast of Paraná river, in open field, 27°21′S, 56°00′W, 14 Jan 2003, *Grabiele 24* (CTES, MNES, SI); Argentina, Misiones Province, Candelaria Department, Campo San Juan, 7.5 km E of Paraná river, in open field, 27°24′S, 55°36′W, 15 Oct 1994, *Guillen 371* (MNES); Argentina, Misiones Province, Capital Department, Garupá, 2 km W of Garupá stream, in open field, 27°28′S, 55°50′W, 23 Aug 2003, *Grabiele 46* (MNES); Argentina, Misiones Province, Candelaria Department, Parque Provincial Cañadon de Profundidad, 2 km W of Garupá stream, in clearing area, 27°33′S, 55°42′W, 5 Apr 2003, *Grabiele 49* (MNES); Argentina, Misiones Province, Candelaria Department, Cerro Corá, 15 km SE of Paraná river, in open field, 27°31′S, 55°35′W, 10 Apr 2003, *Grabiele 51* (MNES). Paraguay, Itapúa Department, Trinidad, 9 km NW of Paraná river, in open field, 27°07′S, 55°42′W, 1 Apr 2003, *Grabiele 54* (MNES).

Commelina platyphylla is a diploid species widely distributed in South America, representing a convenient model for karyological study. DAPI staining showed an unimodal and symmetrical karyotype (2A according to Stebbins, 1971) comprising 9m + 6sm medium-size chromosomes ranging from 2.29 to 4.04 µm, and 47.77 µm per haploid genome (Fig. 1K). In addition, CMA/Distamycin-A/DAPI fluorescence banding revealed the presence of two different types of constitutive heterochromatin (Hc), CMA+ DAPI– (GC-rich) and CMA– DAPI+ (AT-rich), both comprising the 7.08% (3.38 µm) of the haploid genome (Fig. 1A–E). GC-rich Hc (42% of total) is exclusively NOR-associated, covering the entire terminal macrosatellite of chromosome pairs nos. 10 (*sm*) and 13 (*sm*) (Fig. 1A, D, K). AT-rich Hc (58% of total) is localized interstitially (pairs nos. 4 and 12) or found at proximal (pairs nos. 2, 3 and 10) positions (Fig. 1B, K). Ag-NOR staining revealed 1 (77%) > 2 (19%) > 3 (3%) > 4 (1%) nucleoli in interphase nuclei (Fig. 1G–J) and 1 (38%) > 2 (35%) > 3 (15%) > 4 (12%) active nucleolar organizer regions (NORs) in metaphase (Fig. 1F); nucleolar dominance of pair no. 10 vs. 13 (1.6 times) is observed by classical staining and confirmed by Ag-NOR and also nucleolar associated bodies (NABs) were recognized (Fig. 1H). Polymorphisms for cytological markers were not observed. The equilocal distribution of the different Hc blocks and NORs (Fig. 1K), its arrangement within the classical staining predicted suprachromosomal organization according to Bennett´s model (Fig. 1L) added to the disposition of the chromocenters and the NABs in the interphase nuclei (Fig. 1C, E, H) suggest concerted evolution for the Hc and NORs dispersion in *C. platyphylla*.

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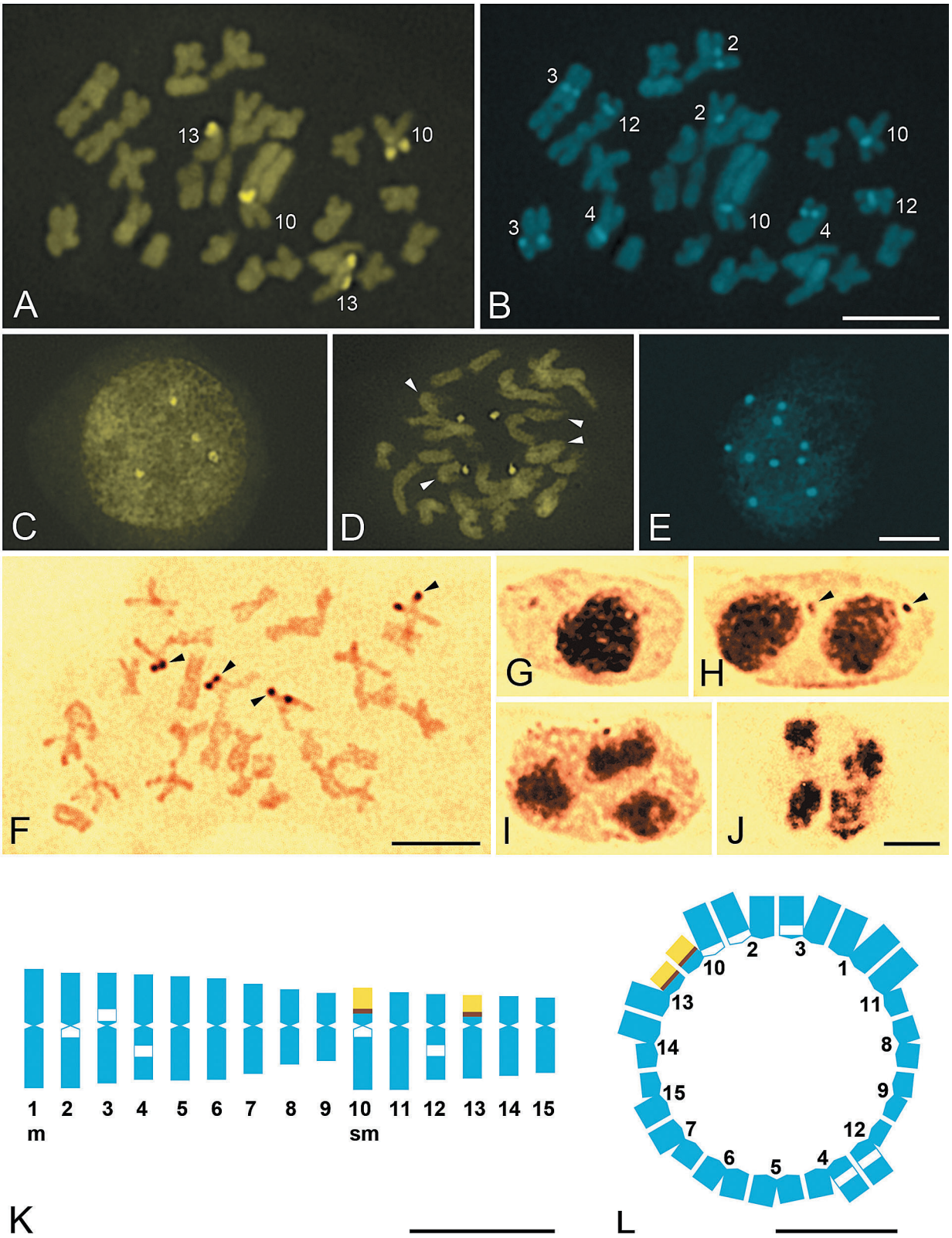

Fig. 1. Cytogenetic characterization of *C. platyphylla*. **A–E,** CMA/DA/DAPI-stained chromosomes and nuclei. **A, C–D,** metaphase bands, nucleus chromocenters and prometaphase terminal macrosatellites, respectively, CMA enhanced (bright yellow) corresponding to NOR-associated GC-rich Hc. **B, E,** metaphase bands and nucleus chromocenters, respectively, DAPI enhanced (bright blue) corresponding to AT-rich Hc. **F–J,** Ag-NOR-stained chromosomes and nuclei. **F,** metaphase with active NORs (dark brown). **G–J,** nuclei with different number of nucleoli (dark brown). **K–L,** conventional idiogram and predicted natural karyotype, respectively (light blue, euchromatin; yellow, GC-rich Hc; white, AT-rich Hc; brown, active NORs). Arrowheads point out chromosomes carrying NORs (D, F) or NABs (H). Scale bars = 5 µm.