

Arisaema odoratum J. Murata et S. K. Wu (Araceae),
a New Species from Yunnan, China

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A new species, *Arisaema odoratum* J. Murata et S.K. Wu, is described. The chromosome number $2n = 22$ is the first report in *Arisaema*. The tuberous underground stem and the sessile, elongate spadix appendix suggest that it belongs to sect. *Tortuosa*.

A new species of *Arisaema* found through a Sino-Japanese botanical expedition in 1993 is described. For observation of chromosomes, the root tips were pretreated with 0.2% colchicine for four hours at room temperature, fixed in 45% acetic acid, macerated in 1N HCl, stained with 2% aceto-orcein and squashed. Pollen grains were removed from dried herbarium specimens, coated with gold and observed with a JEOL JSM 820 SEM at 10 kv.

Arisaema odoratum J. Murata et S.K. Wu, sp. nov., insignis spatha albo, spadicis appendice dependenti odorati; differt a *A. yunnanensi* spadicis matura monoecia, a *A. prazeri* pseudocaulis brevioris. Typus. CHINA, Yunnan: Dayao, Sanchahe, alt. ca. 1400m, June 13, 1993, J. Murata, H. Murata & S.K. Wu 1124 (TI holotype; K, KUN isotype). Fig. 1.

Parodioecious. Tuber subglobose. Cataphylls 2–3, membranaceous. Foliage leaves 1 or 2, ternate; pseudostem 4–7 cm long, cylindrical but with free margins; free part of petiole 9–15 cm long; leaflets sessile, entire, ovate to oblong, apex acuminate, base

cuneate. Inflorescence monoecious (bisexual) in mature plants, fragrant, peduncle nearly as long as petiole. Spathe white, 7–8 cm long; tube infundibuliform, gradually opening to blade; blade ovate, oblong to narrowly oblong, acute to acuminate, 5.5–6 cm long, 1.7–4 cm wide, bend forward. Spadix appendix whip-shaped, sessile, 5–9 cm long, bent down from the base, dull green, changing to orange. Male flowers white. Female flowers green or creamy, congested in basal part of spadix.

Chromosome number: $2n = 22$ (Fig. 2).

Apart from the distinct white spathe, this species looks similar to small plants of *A. yunnanense* Buchet and *A. prazeri* Hook. f. From *A. yunnanense*, which has a unisexual (female) spadix when mature, however, it is distinct in its bisexual spadix. From *A. prazeri*, which has a pseudostem longer than the petiole, it is distinct by the pseudostem much shorter than the petiole. The tuberous stem and sessile and elongate spadix appendix suggest that this species belongs to the sect. *Tortuosa* Engler subsect. *Tortuosa* (Murata 1984) together with *A. yunnanense* and *A.*



Fig. 1. *Arisaema odoratum* J. Murata et S.K. Wu in the wild habitat (J. Murata, H. Murata & S.K. Wu 1124. TI).

prazeri, although the dimorphy of the spinules on the pollen surface is not so distinct in this species (Fig. 3B) and *A. prazeri* (Fig. 3A) as in *A. yunnanense* and *A. tortuosum*.

This species has several remarkable characteristics. The first one is the chromosome number. In the previous studies, the basic chromosome numbers of *Arisaema* were reported to be $x = 10, 12, 13$ and 14 (Murata and Iijima 1983, Petersen 1989, Murata 1990). The chromosome number of this species, $2n = 22$, is not only a new number but gives a new basic number

of $x = 11$ for the genus.

The second characteristic is the odor of the inflorescence. Inflorescences of *Arisaema* generally have a foul odor, but this species has a strong odor like the flowers of *Jasminum* or *Michellia*. Only known example but the present species of this kind of odor is *A. candidissimum* W. W. Smith of sect. *Franchetiana* Engler (J. Ohno pers. comm.), which also has a white spathe. The combination of white spathe and fragrance is considered to have originated independently in the two different sections, as a result of adaptation

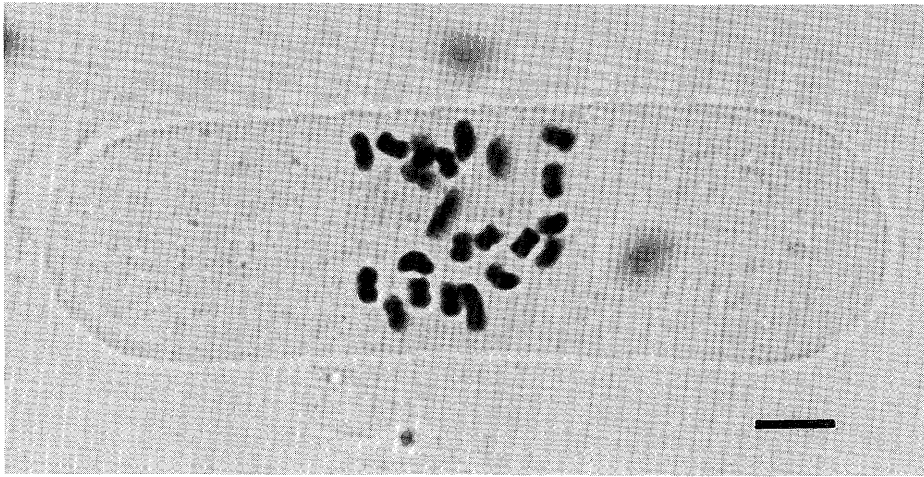


Fig. 2. Somatic chromosomes of *Arisaema odoratum*. (J. Murata, H. Murata & S.K. Wu 1124, TI). Scale = 2 μm .

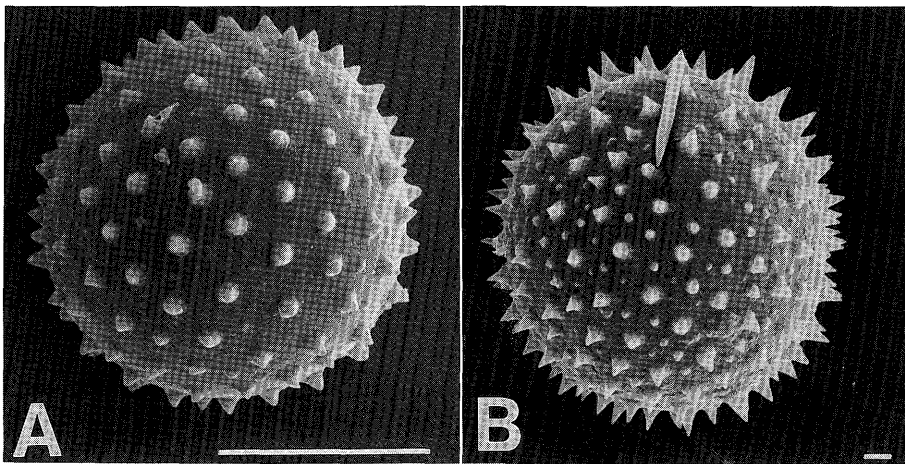


Fig. 3. Pollen grains of *Arisaema prazeri* (A: THAILAND, Doi Sutep, alt. 1750m, Cult. in Bot. Gard. Univ. Tokyo. Feb. 15, 1992, J. Murata. s.n., TI) and *A. odoratum* (B: J. Murata, H. Murata & S.K. Wu 1124, TI). Scale = 10 μm (A) and 1 μm (B).

for certain pollinators.

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邑田 仁, 武 素功, 楊 永平: 中国産テンナンショウ属の1新種 *Arisaema odoratum*

中国雲南省で採集したテンナンショウ属植物を新種として記載する。本種は三小葉に分裂する葉を持ち, *Arisaema yunnanense* および *A. prazeri* に似る。しかし, 仏炎包が白色であるばかりでなく, 前者とは花序が両性となることで, 後者とは偽茎が著しく短いことで明かに区別できる。地下茎が球茎であり, 花序附属体が無柄で伸長することから, *A. yunnanense* や *A. prazeri* と同様に, マイツルテンナンショウ節 sect. *Tortuosa* に属すると考えられる。しかし, 本種 (Fig. 3B) と *A. prazeri*

(Fig. 3A) では, 花粉表面の突起は *A. yunnanense* や *A. tortuosum* ほど著しく二型とはならない。本種の染色体数 $2n=22$ はテンナンショウ属で初めての報告である。またテンナンショウ属の花序は一般に悪臭を放つが, 本種は *Jasminum* や *Michellia* に似た芳香を持っている。Franchetiana節の *A. candidissimum* も白色の仏炎包と芳香を持つが, こうした形質の組み合わせはマイヅルテンナンショウ節と Franchetiana節で独立に進化したものと考えられる。