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Four new species in *Aspidistra* KER-GAWL. (Ruscaceae) from China, Vietnam and Japan

With 4 Figures

Summary

Four species of *Aspidistra* new to science are described, i.e. two species from China, Prov. Sichuan (*A. nanchuanensis* H.-J.TILLICH sp. nova and *A. lobata* H.-J.TILLICH sp. nova), one species from northern Vietnam (*A. tubiflora* H.-J.TILLICH sp. nova), and one species from southern Japan, Ohsumi Islands (*A. insularis* H.-J.TILLICH sp. nova). Including the four new species, the genus recently encompasses 80 species.

Zusammenfassung

Vier neue Arten in der Gattung *Aspidistra* KER-GAWL. (Ruscaceae) aus China, Vietnam und Japan

Zwei neue *Aspidistra*-Arten aus China, Prov. Sichuan (*A. nanchuanensis* H.-J.TILLICH sp. nova und *A. lobata* H.-J.TILLICH sp. nova), eine neue Art aus Nord-Vietnam (*A. tubiflora* H.-J.TILLICH sp. nova) sowie eine Art aus Süd-Japan, Ohsumi Islands (*A. insularis* H.-J.TILLICH sp. nova) werden beschrieben. Die Anzahl der in der Gattung bekannten Arten erhöht sich damit auf 80.

Introduction

During the past 25 years, a growing interest in *Aspidistra* arose quite suddenly, and the number of known species grew rapidly from 11 in 1980 to recently 76 (TILLICH 2005). The center of diversity is southern China, Prov. Guangxi and adjacent northern Vietnam. It became evident, that the genus comprises a surprising diversity in flower structure. Summarising overviews are given in LANG et al. (1999), LI et al. (2000) and TILLICH (2005). The description of the four new species is based on herbarium material from Missouri Botanical Garden (MO) and Botanische Staatssammlung München (M). A key for 49 Chinese species is published in LIANG & TAMURA (2000), an extended key to determine all known species including the four new ones described here is given in TILLICH (2005).

Description of new species

Aspidistra nanchuanensis H.-J.TILLICH sp. nova

Fig. 1

Holotype: China, Prov. Sichuan, Nanchuan County, 29.1° N, 107.0° E, 1200 m. March 23/1996, LIU ZHENG-YU 15426 (MO 5309036!).

SPECIES *A. oblanceifolia* F.T.WANG & K.Y.LANG similis, sed flores 20 mm diametro, lobis late triangularibus, 8 mm longis latisque, stigma 18 mm diametro.

Rhizome creeping, epigeous, Ø ca. 5 mm; **Leaves** up to 120 cm long, petiole 40–50 cm, stiff; Lamina narrow lanceolate to nearly linear, 60–70 × 2.0–2.8 cm, basally narrow cuneate, gradually and asymmetrically tapered to petiole, green, midvein a small groove on upper surface, sharply protruding on lower surface, ca. 20 fine secondary veins at each side of midvein; **Peduncle** ca. 1 cm, with few scales; **Perigone** widely funnel-shaped, 15 mm



Fig. 1
Aspidistra nanchuanensis H.-J. TILICH sp. nova, holotype

long, $\varnothing$ ca. 20 mm, lobes 6, ovate, 8 mm wide and long, with four keels, two central keels distally fused at middle of lobe and running separately down to middle of tube, two lateral keels short, deltoid; **Stamina** 6, at lower third of tube, filaments 0.5 mm long, anthers ovate, 2 mm long; **Pistil** ca. 6 mm long, ovar narrow conical, 3–4 mm long, stigma nearly sessile, disc-shaped, $\varnothing$ ca. 15 mm, margin with small incisions and bent downwards, leaving only very small openings for pollinators. The flowering season is March/April.

Distribution and habitat: The species is known from the type locality only. Habitat information is scarce, the label mentions only „by the small river“.

Etymology: The species is named after the habitat region, Nanchuan County, Prov. Sichuan.

Additional material: Isotype: Beijing (Peking), Academia Sinica, Institute of Botany, Herbarium (PE).

Note: The species differs from *A. oblanceifolia* F.T.WANG & K.Y.LANG by the larger flowers ($\varnothing$ 20 mm), perigone lobes widely ovate, 8 mm long and wide, and much longer leaves with petioles 40–50 cm long and blades 60–70 cm long.

***Aspidistra lobata* H.-J.TILLICH sp. nova**

Fig. 2

Holotype: China, Prov. Sichuan, Emei-Shan Mountains, 1400 m, moist forest slope; 02. 04. 1997, LI CEHONG 97-373 (MO 04488999!).

SPECIES *A. zongbayi* K.Y.LANG & Z.Y. ZHU similis, sed perigonii lobi 6–7 $\times$ 2–3 mm, reflexi, carinis duobis tantum instructi. Stigma plana, ca. 11 mm diametro.

Rhizome slender, long creeping, $\varnothing$ 5 mm. **Petiole** 12–15 cm; **Lamina** lanceolate, 17–20 $\times$ 5.5–6 cm, green with small pale spots, with 20–25 secondary veins at each side of midvein, one half somewhat wider than the other one; **Peduncle** up to 5 mm long or flowers nearly sessile; **Perigone** deep purple, upright, cup-shaped, 12 mm high, tube- $\varnothing$ 12 mm, outsides with ca. 20 longitudinal, somewhat protruding ribs, lobes 6, deflexed, narrow triangular, 7 $\times$ 2–3 mm, with two adaxial keels; **Stamens** small, basal; **Pistil** 2–3 mm long, ovar inconspicuous, stigma patelliform, flat, $\varnothing$ 11 mm, its margin shallowly 6-lobed. The flowering season is March/April.

Distribution: The species is known from the type collection only.

Additional material: Isotype: Beijing (Peking), Academia Sinica, Institute of Botany, Herbarium (PE).

Note: The species differs from *A. zongbayi* K.Y.LANG & Z.Y.ZHU by longer and reflexed perigone lobes 7 $\times$ 2–3 mm, with only two keels, a very short style 3–4 mm long, and a patelliform stigma with flat surface.

***Aspidistra tubiflora* H.-J.TILLICH sp. nova**

Fig. 3

Holotype: Vietnam, Prov. Cao Bang, Municipality Quang Vinh, about 21 km N of Cao Bang town; 22°51' N 106°14' E, 650–800 m, 09. Dec. 1998. L. AVERYANOV *et al.* CBL 981 (MO 04966293!).

SPECIES *A. carnosa* H.-J.TILLICH similis, sed tubus perigonii 25 mm longus, basi dilatatus, 12–15 mm diametro, ceterum cylindricus ab 8–9 mm diametro, in lobis 6 linearibus abenus, pistillum 10 mm longum.

Rhizome creeping, epigeous; **Petiole** ca. 15 cm; **Lamina** narrow lanceolate to nearly lineate, 60–70 $\times$ 2.7 cm, base narrow cuneate, very gradually tapered to petiole, green, with ca. 20 parallel secondary veins at each side of midvein, with scattered anastomoses; midvein inconspicuous on upper surface, prominent on lower surface; **Peduncle** 4–8 cm, decumbent, cataphylls small, ovate, 2–3 distantly along the peduncle and 2 close to flower; **Perigone** tubular with 6 narrow lineate lobes, tube 2.5 cm long, basally widened, $\varnothing$ 12–15 mm, upper half cylindrical, $\varnothing$ 8–9 mm, lobes 11–12 $\times$ 2 mm, adaxially with two keels running to base of tube; **Stamina** 6, at base of tube, filaments 4 mm long, their bases broadly triangular, in contact to each other and to base of ovar, anthers 1 mm long, incurved to style base; **Pistil** 10 mm long, ovar conical, $\varnothing$ basally 4–5 mm, 4 mm high, finely furrowed, style ca. 3 mm, stigma funnel-shaped (?) or trilobed, $\varnothing$ ca. 4 mm.

Distribution and habitat: The species is known from the type locality only. It is found in evergreen closed wet primary forests close to the border to China, Prov. Guangxi. It grows epilithic or terrestrial on steep slopes or vertical limestone cliffs and is said to be very common in this area. It may occur also in southern Guangxi. As the type specimen indicates, the flowering season is November/December.

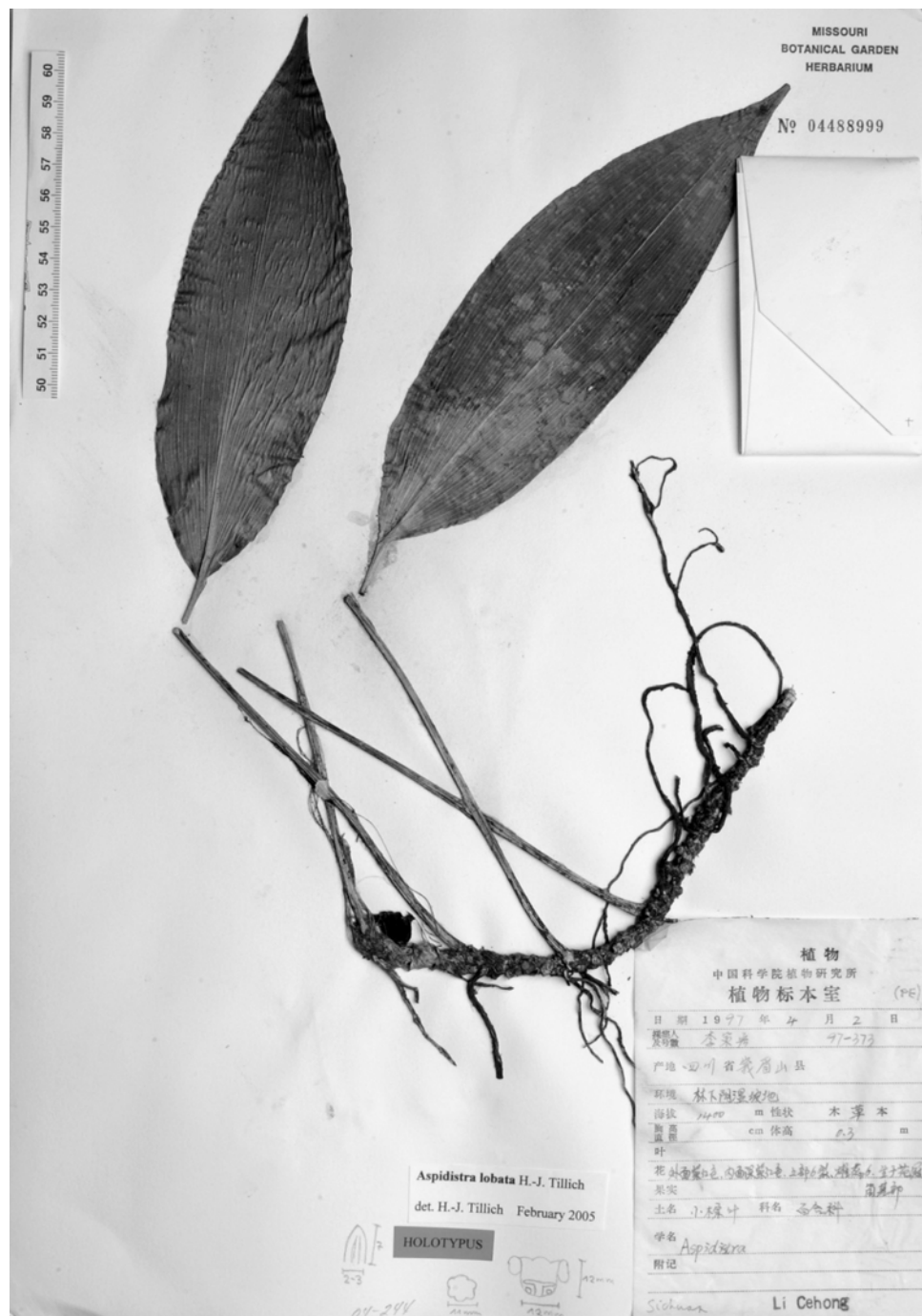


Fig. 2
Aspidistra lobata H.-J. TILlich sp. nova, holotype



Fig. 3
Aspidistra tubiflora H.-J. TILICH sp. nova, holotype



Fig. 4
Aspidistra insularis H.-J. TILICH sp. nova, holotype

Additional material: Isotype: Beijing (Peking), Academia Sinica, Institute of Botany, Herbarium (PE).

Note: The species is outstanding in the genus by its long tubular perigone.

***Aspidistra insularis* H.-J. TILLICH sp. nova**

Fig. 4

Holotype: Japan, Kagoshima Prefecture, Okinawa Islands, Kuroshima Island, Mt. Yaguradake, E 159°55'50"–56°10" N 30°49'50", 450 m; *SHINJI FUJII* 9361, Febr. 27/2003 (M!).

SPECIES *A. oblanceifolia* F.T. WANG & K.Y. LANG similis, sed perigonii lobi carinis distincte elevati instructi. Stigmatibus superficies plana, signo elevato cruciforme provisa.

Rhizome creeping, Ø ca. 5 mm, cataphylls up to 15 cm long, splitting into fibres by withering; **Petiole** ca. 30 cm, green, stiff; **Lamina** lanceolate, 40–50 × 7–8 cm, green, gradually tapering to petiole; **Peduncle** up to 5 mm long or flowers nearly sessile; **Perigone** cup-shaped, tube-Ø 10–12 mm, pale, lobes 8, purple, in two circles, lobes 5 × 3 mm, with two prominent, fleshy keels fusing distally at each lobe and basally with a keel of an adjacent lobe, from the basal fusion point a keel runs downward to middle of tube, lobes of outer circle with hyaline marginal wings; **Stamens** 8, at middle height of tube, filaments ca. 0.5 mm, anthers reniform, 2 × 1 mm; **Pistil** table-shaped, 7 mm high, ovary inconspicuous, style cylindric, ca. 3 mm long, stigma square, Ø 9 mm, with 4 closely adnate triangular lobes, their radial margins upfolded and forming a somewhat prominent diagonal cross figure, each lobe distally with an upfolded lip (lobulum inflexum). The flowering season is February–April.

Distribution and habitat: The species is known from the type collection only. It grows in understorey vegetation in *Castanopsis* forests.

Additional material: Isotype: Osaka Museum of Natural History, Herbarium (OSA).

Note: *A. insularis* is the second *Aspidistra* species found in Japan. It occurs in the very same region as *A. elatior* BLUME. Possibly some previous reports of the occurrence of *A. elatior* in that region may refer to *A. insularis*.

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