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NOTES ON MALESIAN GRASSES
VII. CHIKUSICHLOA, DIGITARIA

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I. CHIKUSICHLOA, A GENUS NEW FOR MALESIA

Among collections recently (1979) made in the surroundings of Kutacane, Aceh, N. Sumatra, by Mr. and Mrs. De Wilde, a grass has turned up which proved to be a species of *Chikusichloa* Koidz., a genus sofar known only from South China, Japan, and the Ryukyu Islands. As this is a very interesting find and since the genus is new for the Flora Malesiana area, a few notes seem appropriate.

Chikusichloa was originally described in the *Paniceae* by Koidzumi (1925), based on *C. aquatica* Koidz. from Kyushu. The author pointed out a resemblance to *Zizania* L., which is now considered to belong to the *Oryzeae*. Honda (1930) recognized its special position and created a subtribe *Paniceae-Chikusichloeae*. Keng (1931) correctly placed it in the *Oryzeae*, pointing out possible affinities with *Zizaniopsis* Doell & Aschers. and *Hydrochloa* Beauv. Ohwi (1942-a) recognized the subtribe, also, now in the *Oryzeae*, and added *Hydrochloa* to it; he corrected the spelling to *Chikusichloinae*. The two genera seem indeed distinct from the other *Oryzeae* by the very much reduced to absent glumes and sterile lemmas, the long-stipitate fertile lemma, which is dorsoventrally flattened at anthesis, and not laterally so, and which becomes more or less terete in fruit. Otherwise the two do not resemble each other very much.

Tateoka (1963) in his studies on the leaf anatomy confirmed the inclusion of *Chikusichloa* in the *Oryzeae*.

The spikelets of the *Oryzeae* usually consist of small glumes, here reduced to an inconspicuous, thickened structure, above which the spikelet breaks up. The lower two lemmas are usually much reduced; here they are absent to much reduced and then represented by minute, membranous, fragile, tongue-shaped appendages at the base of a stipe-like callus of the single, fertile lemma. Because the glumes and sterile lemma are so inconspicuous this stipe was regarded as part of the rachilla by Koidzumi, Honda, and Ohwi (1942-a), while Ohwi (1942-b), Keng, and Pilger (1954) suggested that it might be part of the pedicel itself. Koyama (1976) suggests that it could be regarded as the callus of the lemma, and as is shown by the presence of the sterile lemmas this is the case.

One 2-flowered spikelet was seen (*no. 19040*), in which the lower lemma was inserted at the summit of the stipe, immediately below the upper lemma. Its flower appeared to be abortive, but a 'normal' lemma and palea were developed. The upper lemma contained a fruit. As the sterile lemmas were also present, at the base of the stipe, this aberration must be regarded due to 'doubling'.

The three species known are very rare everywhere, apparently occurring in shaded, moist to muddy open places in forests and along rivulets: *C. mutica* Y. L. Keng in N. Sumatra and China (Hainan, Kwangsi); *C. aquatica* in China (Kiangsu) and Japan (Honshu, Kyushu); *C. brachyathera* Ohwi in Iriomote, Ryukyu Arch. The very disjunct distribution of *C. mutica* suggests that it may be found in between, also; the fact that it is rather inconspicuous, and also a grass growing in forests may cause it to be easily overlooked by foresters, who are often more interested in what grows way above their heads than at their very feet. I have not been able to find a similar distribution pattern. Most similar is that of the *Pentaphyllacaceae* (Van Steenis, 1955, fig. 2) as far as the distribution Sumatra – S. China is concerned, but *Chikusichloa* at present seems to 'jump' much farther and has a wider distribution.

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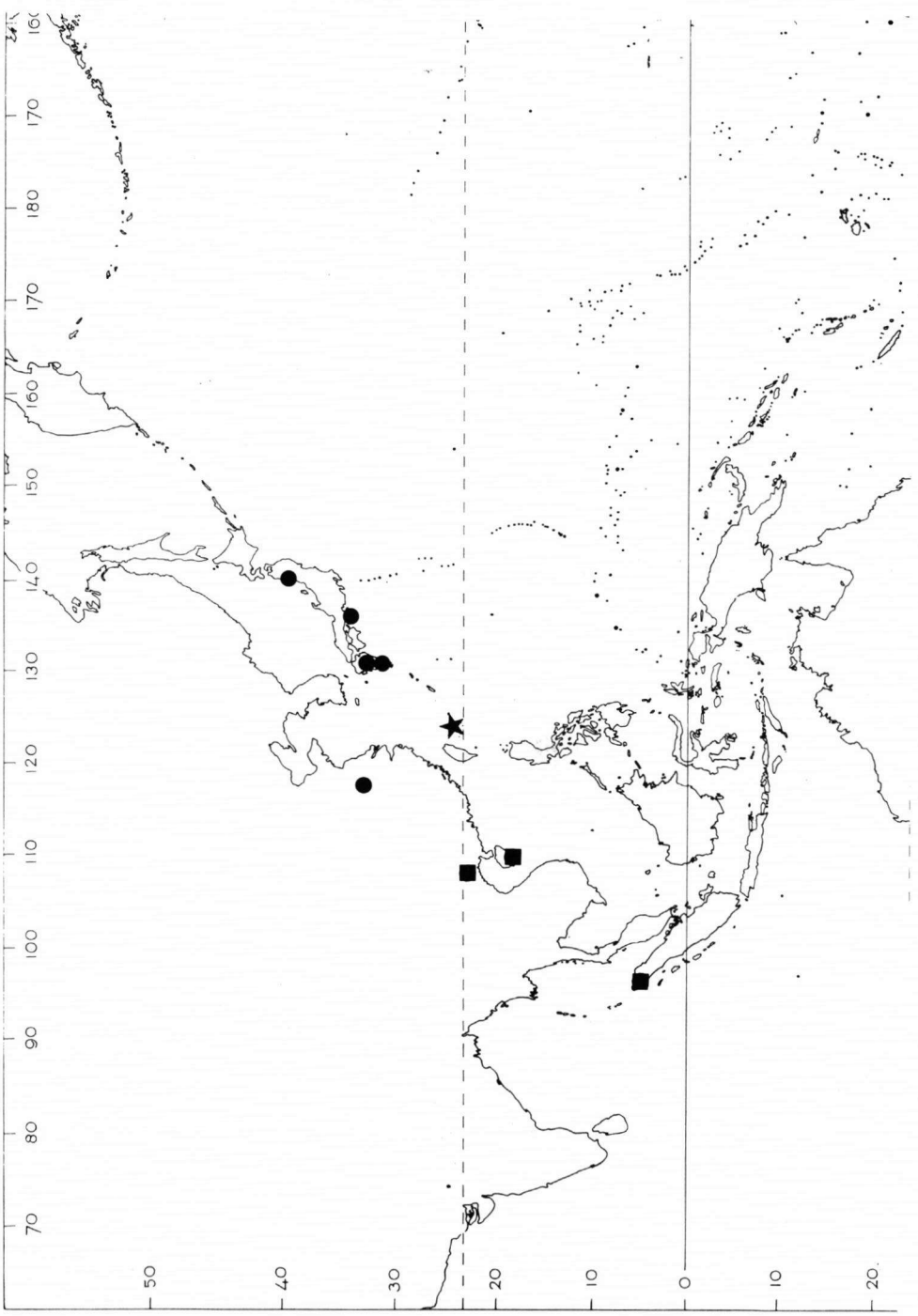
CHIKUSICHLOA

Chikusichloa Koidz., Bot. Mag. Tokyo 39 (1925) 23; Honda, J. Fac. Sc. Imp. Univ. Tokyo III, 3 (1930) 303; Y. L. Keng, J. Wash. Ac. Sc. 21 (1931) 526; Ohwi, Acta Phytotax. & Geobot. 11 (1942) 183, 188; Pilg., Bot. Jahrb. 76 (1956) 351. – Type: *C. aquatica* Koidz.

Tussocky perennials, branching extra-vaginally at base only. *Cataphylls* present. *Culms* simple, few-noded. *Ligules* membranous, truncate, erose, ciliolate. *Blades* flat, transversally veined, slightly pninnerved in lower part. *Spikelets* solitary in lax panicles, bisexual, 1-flowered, dorso-ventrally flattened at anthesis, ± terete in fruit, articulating above the remnants of the glumes. *Glumes* reduced to a callus-like, slightly lobed structure. *Lemma* with a stipe-like callus, which at base may have 2 small, ligulate, membranous appendages (sterile lemmas), callus-hairs absent, apex acute to incompletely awned, sulcately 5 – 7-nerved, papery. *Palea* slightly shorter, (2 –)3(– 5)-nerved, otherwise similar. *Rachilla-process* absent. *Lodicules* 2, more or less triangular, acute, margin ciliolate, nerved. *Anther* 1 (the dorsal), linear-lanceolate. *Styles* 2, free to base, laterally exserted in chasmogamous flowers. *Caryopsis* shortly fusiform; hilum linear, slightly shorter than the fruit; embryo small. – **Map. 1.**

Map. 1. Distribution of *Chikusichloa*. – ● *C. aquatica*; ★ *C. brachyathera*; ■ *C. mutica*.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Distribution: 3 species, very local in Malesia (N. Sumatra), China (Hainan, Kiangsu, Kwangsi), Japan (Honshu, Kyushu), Ryukyu Isl. (Iriomote).

Ecology: Shaded, moist areas.

Anatomy: Tateoka (Bot. Gaz. 124, 1963, 265, f. 2): leaf-blade.

1. Chikusichloa mutica Y. L. Keng

C. mutica Y. L. Keng, J. Wash. Ac. Sc. 21 (1931) 527, f. 2; Anon., Fl. Hainan. 4 (1977) 398, f. 1207. Type: *R. C. Ching 8200* (NAS, holo, *n.v.*; US *sub no. 1501590*).

Tussocky perennial; *cataphylls* glabrous, smooth, somewhat shiny, many-nerved; culms up to *c.* 1.3 m high, erect, glabrous, smooth. *Auricles* with a few setae. *Ligules* rather stiff, 4 – 5 mm long, purple. *Blades* 19 – 44 (or more) by 1.2 – 2.2 cm, glabrous, margins scaberulous, otherwise smooth. *Panicle* effuse, 50 – 57 by 18 – 25 cm, pale green, axes smooth, glabrous, branches rather distant, ± solitary, laxly spikeled, the lowermost 15 – 17 cm long. *Spikelets* exclusively chasmogamous or cleistogamous on one plant, 5.3 – 7 mm long (see note), glabrous. *Stipe* slightly s-shaped and oblique at the very base, 0.7 – 1.5 mm long, scaberulous, appendages, if present, up to 1.5 mm long. *Lemma* ovate-lanceolate, 3.75 – 5.5 mm long, acute to acuminate, nerves scaberulous. *Lodicules c.* 0.7 mm long. *Anther* 1.5 – 2 mm long, yellowish. *Caryopsis c.* 2 by 0.7 mm, chestnut-brown, smooth; embryo 0.15 – 0.2 times as long.

Distribution: Malesia: Sumatra, Aceh, Upper Mamas River, *c.* 15 km W. of Kutacane, *c.* 3° 25′ N, 97° 40′ E.; known from 2 collections: *De Wilde & De Wilde-Duyfjes 18302, 19040* (L, BO, K, US); China: Hainan (Poa-t'ing), Kwangsi (Nanning).

Ecology: Damp, shaded, open spaces in mountain rain-forest, 1250 – 1500 m in Sumatra; side of stream in ravine, at 600 m in Kwangsi.

Notes: The description given above is mainly based on the Sumatran specimens. Number *18302* has all the specimens with chasmogamous flowers in relatively large spikelets (6 – 7 mm long), while the other collection is exclusively cleistogamous with small spikelets. The type-specimen, *Ching 8200*, has no fruits; the spikelets are relatively small, however, and all anthers seen were enclosed, some of them shedding pollen.

ACKNOWLEDGEMENTS

I want to thank the Director of the U.S. National Herbarium, Washington (US) for the loan of the type of *C. mutica* and some additional specimens of *Chikusichloa*.

II. A NEW DIGITARIA FROM NEW GUINEA

Among recent collections from Papua New Guinea a curious species of *Digitaria* section *Parviflorae* (*Gramineae*) was found. It was collected near Aiyura near Kainantu and from this provenance in comparison with the known distribution of the other species of the section, it might be suspected to have been introduced from Australia, where most relatives occur. Perhaps this is correct, but there seems to be no described species from that area to match the specimen and actually it most

resembles the New Guinea endemic *D. tararensis* Henr. From this it differs by its creeping habit, but perhaps only decumbent branches were collected, while there were also strictly erect culms present; contrary to my previous remarks (Veldkamp, 1973, p. 52) *D. tararensis* may have an occasional decumbent node with roots. The leaves are quite aberrant: flaccid, linear-lanceolate, ± patently pilose with a smooth upper surface. The spikelets are completely glabrous with a somewhat longer lower glume and equidistantly nerved sterile lemmas. The combination of these characters makes it not very plausible that the plant represents an exceptional form of *D. tararensis*, or any other species and I therefore describe it here as new. It is dedicated to Mr. E. E. Henty, the collector of the type, author of a most useful Manual of the New Guinea grasses, and who has always been most kind to me in litteris et persona.

Digitaria hentyi Veldk., *sp. nov.* – **Fig. 1**

Digitariae tararensis Henr. similissima, differt in culmis repentibus in nodis radicantibus, foliis flaccidis linearo-lanceolatis latioribus 7–8.5 mm latis molliter plus minusve patento-pilosis pagina superiore laevi, spiculis glabris, gluma inferiore paulo longiore, lemmatibus sterilibus equidistanter nervatis.

T y p u s: *NGF 20994* (Henty), Papua New Guinea, Eastern Highlands Dist., Kainantu Subdist., Aiyura, 6° 20′ S, 145° 55′ E, 1675 m alt., April 24 1974. (L, holo; iso in A, BISH, BRI, CANB, E, K, LAE, M, NSW, *n.v.*).

Matforming perennials with long-creeping culms, rooting in the decumbent nodes and there sometimes with cataphyll-bearing extravaginal shoots, more upwards branching intravaginally. *Cataphylls* up to 5 mm long, pubescent. *Sheaths* patently to slightly retrorsely softly bulbous-based bristly pilose to glabrous. *Ligules* 1.5–2 mm long, erose, glabrous. *Blades* flaccid, linear-lanceolate, 6.8–8.2 cm by 7–8.5 mm, margin finely crenulate, moderately and softly bbb-pilose on both sides, slightly scaberulous or not underneath; throat without a significantly more dense indument. *Peduncle* 26 cm long, glabrous, smooth. *Racemes* 7, only slightly divergent, longest *c.* 5.5 cm long, distant, solitary along the *c.* 4 cm long common axis, loosely spikeled. *Rachis* triquetrous, serrate. Abscission of the pedicels ± cupuliform. *Spikelets* binate, homomorphous, oblong, 1.9–2.3 mm

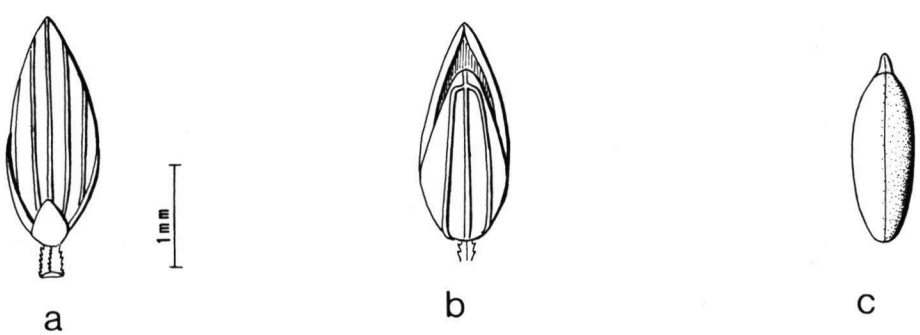

Fig. 1. *Digitaria hentyi.* – a. Spikelet abaxial; b. Spikelet adaxial; c. Fertile lemma in fruit, adaxial (*NGF 20994*).

long, glabrous. *Lower glume* triangular, 0.5(−0.6) mm long, apex rounded to acutish, not nerved, rather thick. *Upper glume* 1.5−1.75 mm long, 0.75−0.8 times as long as the spikelet, distinctly shorter than the fertile lemma, apex ± rounded, nerves 3(−5), apically anastomosing. *Sterile lemma* as long as the spikelet, nerves 7, equidistant, apically not anastomosing. *Fertile lemma* enclosed by the sterile one, apiculate, yellowish when ripe. *Anthers c.* 1 mm long, brownish (*i.s.*).

Distribution: New Guinea, only known from the type (see above).

Ecology: Gregarious in shaded waste area, 1675 m alt.

Note: The species may be fitted in my key to malesian *Digitaria* (Veldkamp, 1973, p. 26 as follows:

28. Spikelets 1.9−2.5 mm long. Fertile floret yellowish in fruit, enclosed within the scales.
    28-a. Tufted perennial, culms only rarely with a few decumbent, rooting nodes. Leaf blades linear, 2−5(−7) mm wide, glabrous, not flaccid, upper surface scabrous. Spikelets pubescent. Lower glume 0.2−0.4 mm long. Sterile lemma inequidistantly nerved.. . . . . **15. D. tararensis**
    28-a. Matforming perennial with long, decumbent culms, rooting and sometimes proliferating in the nodes. Leaf blades linear-lanceolate, 7−8.5 mm wide, pubescent, flaccid, upper surface smooth. Spikelets glabrous. Lower glume 0.5(−0.6) mm long. Sterile lemma equidistantly nerved. **15-a. D. hentyi**
28. Spikelets 1.5−2 mm long, [etc. ...].

In connection with this key I would like to point out that under both leads of couplet 3 the lines 'Abscission ...' should be deleted.

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