

raised below; petioles 0.8-8 cm long. Racemes up to 33 cm long, turning black when dry; whorls close; bracts 1-4 mm long, linear; bracteoles 1-2 mm long, linear; pedicels ± 1 mm long, slender. Calyx 4.5-5.5 mm long, tubular, slightly narrowed towards base; teeth 5, subequal, broad at base, narrowed towards the tip, hirsute within. Corolla 7-8.5 mm long, greenish pale yellow, subbilabiate, closely veined; upper lip 3-lobed, lateral lobes rounded, sparsely pubescent without, the middle acute, pubescent without; lower lip entire, acute, glabrous. Stamens 4, each 0.8-1.1 cm long, exerted, subequal; filaments of two stamens attached to the upper lip bearded with white hairs at base; anthers reniform. Disc subentire. Ovary 4-partite, glandular; style 0.8-1.3 cm long, filiform; stigma bifid. Nutlets 4, each 0.8-1 mm long, rounded on one side, angled on the other, black with a few deciduous glands. (Figs. 1-7).

Holotype, *Shetty & Vivekananthan* 33420 A

(Lower Vagavurrai, Devicolam, Kerala, South India, 1800 m, 5-2-1970) has been deposited in the Central National Herbarium, Calcutta (CAL); isotypes *Shetty & Vivekananthan* 33420 B-Z and paratypes *Shetty & Vivekananthan* 27370 A-F (same locality, 25-4-1966) have been deposited in the Regional Herbarium, Botanical Survey of India, Coimbatore (MH).

ACKNOWLEDGEMENTS

The authors wish to express their grateful thanks to Dr. S. K. Mukerjee, former Keeper, Central National Herbarium, Howrah for his valuable opinion on the specimen and to Rev. Fr. K. M. Matthew for translating the description into Latin.

B. V. SHETTY

Botanical Survey of India, Jodhpur
AND

K. VIVEKANANTHAN

Botanical Survey of India, Coimbatore

TWO NEW GRASSES FROM MARATHWADA

During the course of studies on the grass flora of Marathwada region on the Deccan Plateau of India, two species revealed to be new to science. These are described in the present paper.

Isachne bicolor Naik et Patunkar spec. nov.

Herba annua decumbens, 30-45 cm alta; culmus laevis; nodi glabri, pilosi. Folia 35-45 $\times$ 3-7 mm, anguste ovato-lanceolata, utraque facie capillis bullatis tecta; nervi 11-15 utraque costae parte fere distincti; margines integrae vel serrulatae, cartilagineae; vaginae pilosae vel in medio glabrae, superiores vero marginibus exceptis glabrae. Panicula anguste effusa, 2-5 cm longa; rami adscendentes, inferiores 1-1.5 longi. Rami et pedicelli filiformes vittis luteis glandulosis. Spiculae late ovatae, 2.75-3.25 mm. Glumae fere

orbiculares, apiculatae vel non, 2.5-3 mm diam., glabrae vel dorso capillis bullatis, 5-9 nerves. Flosculi similes, lemmata bicolorata, dorso dense pilosa, 2.25-2.5 mm diam., concava. Palea bicarinata, fere complete lemmatibus tecta.

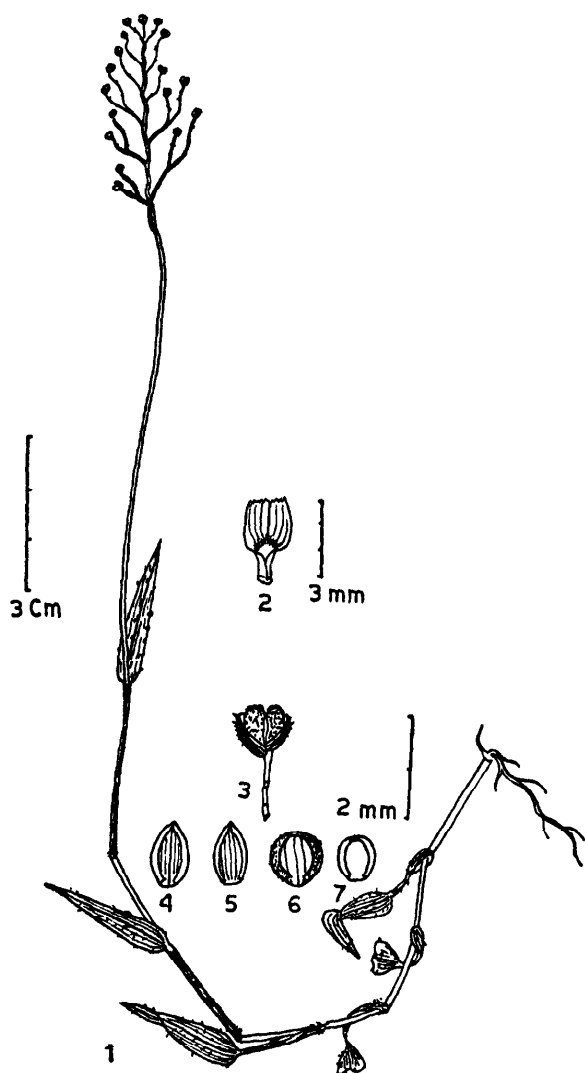
I. kinabaluensi Murr. simillima sed foliis conspicue nervatis et capillis bullatis tectis, spiculis longioribus, glumis pilosis, lemmatibus bicoloratis et omnino pubescentibus differt.

Patunkar 1849A (Typus) et B-E (Isotypi) lectus in Mhaismal plateau, Aurangabad die 8-10-1973, positi in herbario Marathwada University, Aurangabad.

Isachne bicolor Naik et Patunkar spec. nov.

Decumbent annual 30-45 cm tall; culms smooth; nodes glabrous or pilose. Leaves

35-45 × 3-7 mm, narrowly ovate-lanceolate, covered on both surfaces with bulbous-based hairs; nerves 11-15 on either side of the midrib, rather conspicuous; margins entire or serrulate, cartilagenous; sheaths covered with hairs or glabrous in the centre, upper usually glabrous except at the margins. Panicle narrowly effuse, 2-5 cm long; branches ascending, the lower ones 1-1.5 cm long.



Isachne bicolor Naik et Patunkar

Figs. 1-7: 1. Habit. 2. Ligule. 3. Spikelet. 4 & 5. Lower and upper glume. 6 & 7. Lemma and palea.

Branches as well as the filiform pedicels with yellow glandular bands. Spikelets broadly ovate, 2.75-3.25 mm. Glumes nearly orbi-

cular, apiculate or not, 2.5-3 mm in diam., glabrous or with bulbous-based hairs all over the dorsal surface, 5-9-nerved. Florets similar; lemmas bicolourous, densely hairy on the back, 2.25-2.5 mm in diam., concave. Palea 2-keeled, nearly entirely enclosed by the lemmas.

Very similar to *I. kinabaluensis* Murr. from Burma but differs in having leaves with rather conspicuous nerves and covered with bulbous-based hairs, longer spikelets with hairy glumes and bicolourous lemmas that are pubescent all over.

This species has been collected from the Mhaismal Plateau in Aurangabad district where it grows in wet situations in association with *Coix aquatica* Roxb., *Echinochloa colonum* (Linn.) Link, various members of the Cyperaceae and other hygrophytes.

***Tripogon polyanthus* Naik et Patunkar spec. nov.**

Gramen perenne et dense caespitosum, 6-8 dm altum; stolon brevis, crassus, radicibus fibrosis et longis. Folia 30-75 × 2-3 mm, convoluta, glabra; vaginae laeves, glabrae; ligulae membranaceae. Racemi spiciformes 15-18 cm longi; rhachides laeves. Spiculae 2-6.5 cm longae, densae, erectae vel adscendentes, 40-50 vel magis floribus. Flosculi inferiores subsessiles, superiores breviter pedicellati; rhachillae articulus 1/3 vel paulo quam lemmata longior; callus pilosus. Gluma inferior 3-3.25 mm longa, 1-nervis, anguste lanceolata, caudato-acuminata, lateribus inaequalibus. Gluma superior 4-4.5 mm longa, 1-nervis, lineari-lanceolata, lateribus aequalibus. Lemma ovato-lanceolatum, 5-5.25 mm longum (arista inclusa), 2.25 mm latum, apice duobus lobis acutis. Arista 1-1.25 mm longa, e sinu capillacea. Palea 4-4.25 × 1-1.25 mm, obovato-lanceolata, 2-carinata; carinae brevior pilosae.

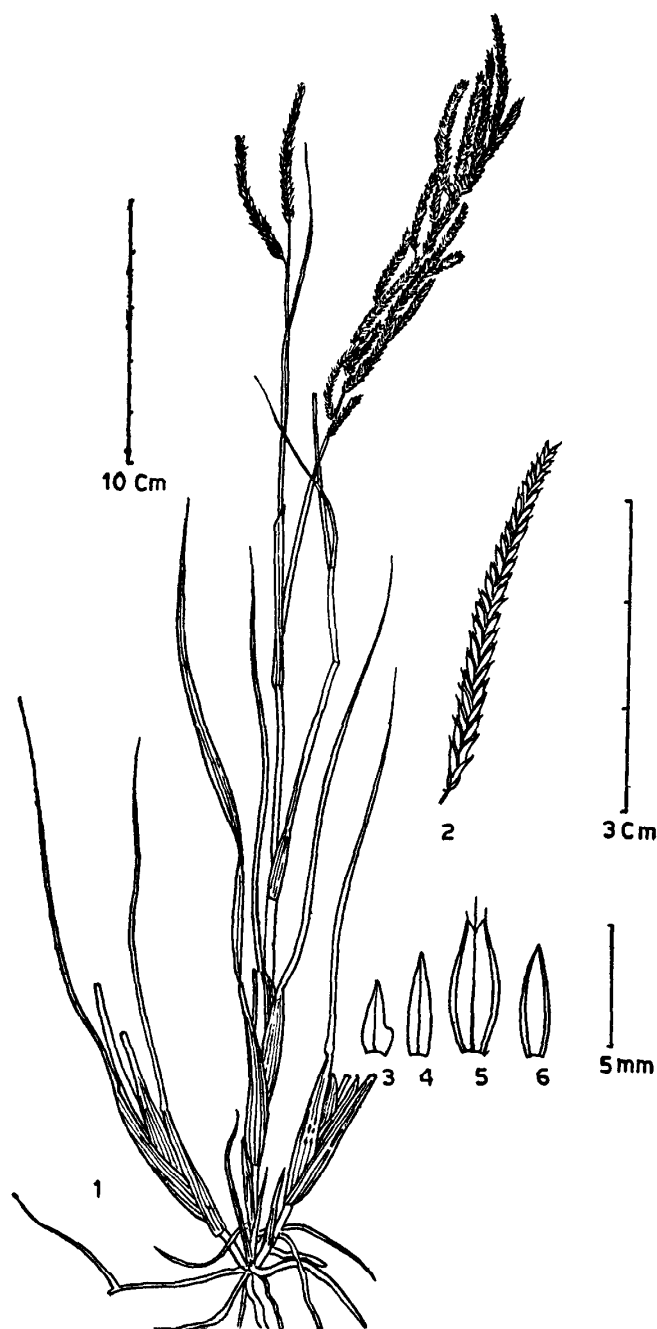
T. bromoidi Roth affinis sed spiculis longioribus, magis florescentibus, laxioribus, stramineis et lemmatibus apice bilobatis differt.

Patunkar 1859A (Typus) et isotypi B-E lec-

tus in Daulatabad die 18-10-1973, positi in herbario Marathwada University, Aurangabad.

Tripogon polyanthus Naik et Patunkar spec. nov.

Densely tufted perennial, 6-8 dm tall;



Tripogon polyanthus Naik et Patunkar

Figs. 1-6: 1. Habit. 2. Spikelet. 3 & 4. Lower and upper glume. 5 & 6. Lemma and palea.

stolon short, stout with long fibrous roots. Leaves 30-75 × 2-3 mm, convolute, glabrous; sheaths smooth, glabrous; ligule membranous. Raceme spiciform, 15-18 cm long; rhachis smooth. Spikelets 2-6.5 cm long, 40-50 or more flowered, dense, erect or ascending. Lower florets sessile, upper shortly pedicelled; joint of the rhachilla $\frac{1}{3}$ or slightly longer than the lemmas; callus hairy. Lower glume 3-3.25 mm long, one-nerved, narrowly lanceolate, caudate-acuminate, sides unequal. Upper glume 4-4.5 mm long, one-nerved, linear-lanceolate with equal sides. Lemma ovate-lanceolate, 5-5.25 mm long (including awn) and 2.25 mm broad, two-lobed at apex; lobes acute. Awn 1-1.25 mm long, capillary from the sinus. Palea 4-4.25 × 1-1.25 mm, obovate-lanceolate, 2-keeled; keels shortly hairy.

Near to *T. bromoides* Roth but differing in having much longer many-flowered spikelets which are rather divaricate, more loose and straw-coloured and the lemmas 2-fid at apex.

This species is generally found growing in open situations along dry stream-banks in association with *Aristida funiculata* Trin. & Rupr., *Eragrostis* sp. and other grasses of the drier localities.

ACKNOWLEDGEMENTS

Our sincere thanks are due to Prof. K. B. Deshpande of this department for providing facilities for work and to Dr. J. F. Veldkamp of Rijksherbarium, Leiden for critical examination of the specimens and his expert opinion in the matter. We are also grateful to Dr. C. J. Saldanha of St. Joseph's College, Bangalore for Latin translation.

V. N. NAIK AND B. W. PATUNKAR

Department of Botany,
Marathwada University, Aurangabad