

DIAGNOSES OF PANICUM SPECIES (GRAMINEAE)

HAWAIIAN PLANT STUDIES 149

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The following Hawaiian species of Panicum are novelties. Unless otherwise located, all the types are in the Bishop Museum, Honolulu.

Panicum annuale sp. nov. (sect. Depauperata).

Planta annua 7-12 cm alta caespitosa est, vaginis pilosulis, laminis 1 mm latis, spiculis 1.5-1.8 mm longis, gluma exteriori 1.5-1.8 mm longa glabra. Typus: Maui I., Kahakuloa, R. Sylva.

P. assurgens sp. nov. (sect. Depauperata).

Planta annua 36 cm alta est, vaginis pilosulis, laminis 3-4 mm latis pilosulis, spiculis 1.5-2 mm longis glabris, gluma exteriori 1.5-2 mm longa lanceolata. Typus: Lanai I., Kaumalapau Hbr., R. Hobdy 1,344.

Panicum baltodes sp. nov. (sect. Virgata), Figs. 1, 2.

Diagnosis Holotypi: Planta perennis subcaespitosa 15 cm alta est, rhizomatibus pluribus, vaginis 10-20 mm longis pilosis, panícula 3-4 cm longa, ramis puberulis, spiculis 2-2.3 mm longis glabris 2-floriferis, gluma secunda 1.9 mm longa 7-nervosa, lemma 2 mm longa 7-nervosa. Typus: Typus: Kauai I., Alakai Swamp, v. Balgooy 4,213 (L), isotype (BISH).

Panicum bifurcatum sp. nov. (sect. Depauperata).

Planta annua 37 mm alta est, vaginis pilosis, laminis 2-2.5 mm latis involutis pilosis, spiculis 2.3-2.5 mm longis glabris, gluma exteriori 2.3-2.5 mm longa lanceolata. Typus: Molokai I., Pohakumauliuli, N. Pekelo Jr. 31.

Panicum conjugens Skottsb., Acta Horti Gothob. 15: 298, fig. 106, 1944.

Lectotype: Kauai, bog along trail from Lihue Makanoi toward Kilohana, 13/8/38, O. Selling 2,886 (BISH).

Skottsberg published this species based on two and a possible third collections. The number 2,886 is here chosen as the lectotype.

Panicum Cookei sp. nov. (sect. Depauperata).

Diagnosis Holotypi: Planta annua perennisve 60 cm alta est, culmis 30 cm altis pilosulis, vaginis pilosis, laminis 4 mm latis planis infra pilosulis, paniculis 15-20 cm longis ramis pilosulis, spiculis 3-3.3 mm longis lanceoloideis glabris, gluma exteriori longissima 3-nervosa. Typus: Molokai I., Kaunakakai, E. Y. Hosaka 1,861.

Panicum ekeanum sp. nov. (sect. Turfosa). Fig. 3.

Diagnosis Holotypi: Planta perennis caespitosa est, culmis 6-7 cm altis glabris, vaginis 4-7 mm longis marginibus apicalibus ciliolatis, laminis 0.8-1.3 mm latis supra in basi pilosulis, racemis 2-5-floriferis, pedicellis 2-3 mm longis pilosulis, spiculis 1.8-2.3 mm longis, gluma exteriori 0.5-0.6 mm longa ovata, gluma interiori 1.8-2.3 mm longa elliptica acuta 7-nervosa. Typus: Maui I., Mt. Eke, O. Degener 10,830.

Panicum furtivum sp. nov. (sect. Depauperata).

Diagnosis Holotypi: Planta annua 11-19 cm alta est, vaginis 3-4 cm longis, laminis 2-3 mm latis pilosulis, spiculis 1.7-1.9 mm longis, gluma exteriori 1.7-1.9 mm longa lanceolata. Typus: Hawaii I., Kealahiki Pt., W. Char 78,079.

Panicum Hobdyi sp. nov. (sect. Turfosa), Figs. 4, 5A.

Diagnosis Holotypi: Planta perennis caespitosa est, culmis 5-10 cm altis, vaginis 3-10 mm longis glabris, laminis 0.8-1 mm latis involutis supra pilosulis, inflorescentia 7-15 mm longa pilosula 1-4-florifera, spiculis 1.9-2.3 mm longis gluma exteriori 0.8-1.2 mm longa ovata 3-nervosa. lemma fertili 1.7 mm longa 3-nervosa. Typus: Maui I., Eke trail, R. Hobdy 707.

Panicum honokowaiense sp. nov. (sect. Monticola?), Figs. 5B, 6.

Planta perennis lignosa est, culmis 70 cm longis decumbentibus glabris, vaginis 3-6.5 cm longis glabris, laminis 7-11 mm latis, paniculis 22 cm longis, spiculis 1.6-1.8 mm longis lanceoloideis glabris, gluma exteriori 1.6-1.7 mm longa lanceolata 5-nervosa, illa interiori 1.8-1.9 mm longa 7-nervosa. Typus: Maui I., Honokowai, R. Hobdy 777.

Panicum infraventale sp. nov. (sect. Turfosa), Fig. 7.

Planta perennis caespitosa est, vaginis subglabris, laminis 1.4-4.5 mm latis subglabris, spiculis 1.5 mm longis ellipsoideis glabris, gluma exteriori 0.6 mm longa. Typus: Kauai I., Kahoaluamanu, C. N. Forbes 402.K.

Panicum kahiliensis sp. nov. (sect. Turfosa?).

Diagnosis Holotypi: Planta perennis caespitosa 30-38 cm alta est, vaginis ciliatis, laminis 4-5 mm latis, spiculis 2.5-3 mm longis ellipsoideis glabris, gluma exteriori 1 mm longa ovata. Typus: Kauai I., Kahili Mt., B. C. Stone 1,654.

Panicum kahoolawense sp. nov. (sect. Depauperata).

Diagnosis Holotypi: Planta annua 6-8 cm alta est, vaginis subglabris, laminis 1-1.2 mm latis ciliatis et villosis, spiculis 1.2-1.3 mm longis ellipsoideis, gluma exteriori 1.2-1.3 mm longa in apice puberula. Typus: Kahoolawe I., L. W. Cuddihy 343,

Panicum kanaioense sp. nov. (sect. Trichoidea).

Diagnosis Holotypi: Planta annua 10 cm alta est, vaginis pilosis, laminis 3-3.5 mm latis glabris, spiculis 1.8-2 mm longis pilosis, gluma exteriori 1.8-2 mm longa. Typus: Maui I., Kanaio, R. Hobdy 1,273.

Panicum kaonohuaense sp. nov. (sect. Depauperata).

Diagnosis Holotypi: Planta annua 50 cm alta est, vaginis pilosis, laminis 4-5 mm latis infra villosis, spiculis 2.5-3 mm longis lanceoloideis glabris, gluma exteriori 2.5-3 mm longa. Typus: Maui I., Konohua Gulch, R. Hobdy 805.

Panicum Knudsenii sp. nov. (sect. Turfosa).

Diagnosis Holotypi: Planta perennis 16 cm alta est, vaginis pilosulis, laminis 4-7.5 mm latis ciliatis, spiculis 2-2.2 mm longis ellipsoideis glabris, gluma exteriori 0.7-0.8 mm longa. Typus: Kauai I., Alakai, C. N. Forbes 875.K.

Panicum kokeense sp. nov. (sect. Virgata).

Diagnosis Holotypi: Planta perennis glabra caespitosa 3-4 cm alta est, vaginis ciliatis, laminis 3-5 mm latis, spiculis 2-2.2 mm longis ellipsoideis, gluma exteriori 0.5 mm longa ovata. Typus: Kauai I., Kauluweki bog, A. C. Medeiros 502.

Panicum kukaiwaaense sp. nov. (sect. Depauperata).

Diagnosis Holotypi: Planta 3.5-9 cm alta pulvinosa breve vivens est, culmis vaginis laminis paniculisque puberulis, laminis involutis in aspecu 0.3-0.5 mm latis, paniculis 10-20 mm longis, spiculis 2-2.3 mm longis lanceolatis, gluma exteriori 2-2.3 mm longa et in 3 nervis microscopicis adpresse puberula. Typus: Molokai I., Kukaiwaa, R. Hobdy 2,184.

Panicum lihauense sp. nov. (sect. Depauperata),
Figs. 8, 9.

Diagnosis Holotypi: Planta perennis 15-20 cm alta caespitosa est, basi dura incrassata, culmis glabris, vaginis 13-20 mm longis, laminis 2.5-2.7 mm latis ligulatis glabris arte involutis, panicula 8-12 cm longa subcompacta sparse puberula, spiculis 2.6-3 mm longis lanceoloideis pilosis, gluma exteriori 2.6-3 mm longa. Typus: Maui I., Lihau Peak, R. Hobdy 825.

Panicum lineale sp. nov. (sect. Virgata), Figs. 10, 11.

Diagnosis Holotypi: Planta perennis caespitosa est, culmis 48 cm altis glabris, foliis omnibus basalibus, vaginis 8.5-15 cm longis glabris except in apice pilosulis, laminis 5 mm latis involutis glabris, paniculis 22-34 cm longis scabris. spiculis 3.8-4 mm longis lanceolatis glabris, gluma exteriori 2 mm longa 5-nervosa. Typus: Kauai I., Kulanalilia, C. Christensen 324.

Panicum longivaginatum sp. nov. (sect. Virgata), Figs. 12, 13A.

Diagnosis Holotypi: Planta 62-71 cm alta fere omnino glabra licet oerennis est, vaginis 5-11 cm longis

marginibus superis pilose ciliatis, laminis 10-13 mm latis panicula 11-13 cm longa, spiculis 2.8-3.1 mm longis fusiformi-ellipsoideis, gluma exteriori 0.3-0.6 mm longa flabellata. Typus: Hawaii I., Upper Waiakea Forest, R. Gustafson 2,400.

Panicum malikoense sp. nov. (sect. *Depauperata*).

Diagnosis Holotypi: Planta annua 5-10 cm alta est, culmis glabris, vaginis 8-12 mm longis puberulis, laminis 1-1.2 mm latis involutis glabris, spiculis 1.8-2.1 mm longis lanceoloideis glabris, gluma exteriori 1.8-2.1 mm longa ovata-lanceolata. Typus: Maui I., Maliko Gulch, 12/19176, R. Sylva.

Panicum mokuleiaense sp. nov. (sect. *Depauperata*?).

Figs. 14, 15.

Planta perennis est, culmis 21-30 cm altis in basi tuberosis, vaginis 4.5-6 cm longis glabris, laminis 3-4 mm latis involutis, panicula 9-12 cm longa, spiculis 2.3-3 mm longis lanceolatis villosis, gluma exteriori 2.5-3 mm longa. Typus: Oahu I., Mokuleia, H. St. John 23,692.

Panicum nephelophilum Gaud., var. *levius* var. nov.

Figs. 13B, 15.

Diagnosis Holotypi: Planta perennis 68 cm alta est, caudici incrassata, vaginis 5-9 cm longis glabris, laminis caulinis 6-9 mm latis glabris, panicula 20 cm longa, spiculis 2-2.3 mm longis lanceolatis, gluma exteriori glabra alteram excedenti. Typus: Maui I., Paunau-Kuhua, H. St. John et al. 17,702.

Panicum ninoleense sp. nov. (sect. *Depauperata*). Fig. 17.

Diagnosis Holotypi: Planta annua 6-12 cm alta est, vaginis 1-2 cm longis puberulis, laminis 1 mm latis involutis supra pilosulis infra puberulis, panicula 1.5-3.5 cm longa, spiculis 1.5-2 mm longis pilosulis et villosis, gluma exteriori 1.5-2 mm longa lanceo-ovata. Typus: Hawaii I., Ninole, H. St. John et al. 23,954.

Panicum ooense sp. nov. (sect. *Virgata*).

Diagnosis Holotypi: Planta perennis 25-30 cm alta est, vaginis pilosis, laminis 6-7 mm latis ciliatis, spiculis 2.8-3 mm longis ellipsoideis glabris, gluma exteriori 0.6-1.3 mm longa ovata. Typus: Hawaii I., Puu Oo, C. N. Forbes 811.H.

Panicum pepeopaeense stat. nov. (sect. *Turfosa*).

P. imbricatum Hillebr., var. *molokaiense* Skottsb.,

Acta Horti Gothob. 15: 290, Figs. 52-66, 1944, non *P. molokaiense* Deg. & Whitney in Deg. 1936.

Lectotypus: Molokai I., Pepeopae, L. M. Cranwell 3,816 (GB).

Panicum simplex sp. nov. (sect. *Depauperata*).

Diagnosis Holotypi: Planta annua 25-36 cm alta est,

vaginis pilosis, laminis 2.4-3 mm latis pilosis, spiculis 2.2-2.5 mm longis glabris, gluma exteriori 2.2-2.5 mm longa. Typus: Lanai I., Hulupoe Bay, L. Stemmermann 3,711.

Panicum subglabrum sp. nov. (sect. Depauperatum).

Diagnosis Holotypi: Planta annua 58-"100" cm alta est, vaginis puberulis, laminis 5-8 mm latis puberulis, spiculis 3.3-4.2 mm longis lanceolatis glabris, gluma exteriori longiora. Typus: Lanai I., Poopoo Islet, R. Hobdy 1,357.

Panicum Sylvanum sp. nov. (sect. Depauperata, Fig. 18.

Diagnosis Holotypi: Planta annua 5-10 cm alta ramosa est, culmis minute puberulis, nodis puberulis, foliis caulinaribus multis, vaginis 6-11 mm longis minute puberulis, laminis 0.8-1.2 mm latis involutis minute puberulis, paniculis 15-25 mm longis pilosulis, spiculis 1.7-2 mm longis lanceoloideis glabris, gluma exteriori 1.7 mm longa elliptica 5-nervosa. Typus: Maui I., Maliko Bay, R. Sylva.

Panicum waikoloaense sp. nov. (sect. Depauperata), Fig. 19.

Diagnosis Holotypi: Planta annua 9-18 cm alta eramosa est, nodis pilose cinctis, folia basali ca 23 cm longo, 3-4 foliis caulinaribus 25-35 mm longis, laminis 1.5-2 mm latis pilose ciliatis supra pilosis infra sparse pilosulis, paniculis 2-5 cm longis pilosulis, spiculis 1.5-2 mm longis ellipsoideis acutis in dimidio basali pilosulis, gluma exteriori 1.5-2 mm longa late ovata 3-nervosa. Typus: Hawaii I., Puu Hononaoahae, K. M. Nagata 2,432.

Panicum waimeaense sp. nov. (sect. Turfosa).

Diagnosis Holotypi: Planta perennis caespitosa 4-5 cm alta est, culmis exsertis sparse pilosulis, vaginis sparse pilosulis, laminis 1-1.5 mm latis, racemis 4-7-floriferis infra pilosulis supra puberulis, spiculis 1.7-1.8 mm longis glabris, gluma exteriori 0.4-0.5 mm longa hemisphaerica umbonata. Typus: Kauai I., Waimea, C. N. Forbes 1,707a.K.

Panicum Wilburi sp. nov. (sect. Turfosa), Figs. 20, 21.

Diagnosis Holotypi: Planta perennis 25-29 cm alta est, culmis glabris, foliis caulinaribus multis, vaginis internodos excedentibus pilose ciliatis, laminis 4-7 mm latis, paniculis 4-5.5 cm longis, spiculis 2.2-2.3 mm longis glabris, gluma exteriori 0.8-1 mm longa ovata 1-nervosa. Typus: Kauai I., Alakai Swamp, H. St. John et al. 23,053.

Panicum wiliwilinuiense sp. nov. (sect. Depauperata).

Diagnosis Holotypi: Herba perennis 15-20 cm alta est, vaginis glabris, laminis 5-9 mm latis glabris, spiculis 1.2-1.5 mm longis ellipsodeis, gluma exteriori 1.2-1.5 mm longa elliptica. Typus: Oahu I., Waialae Iki, Y. Kondo.

LEGEND

Fig. 1. *Panicum baltodes* St. John, a, habit, X 1; b, sheath and ligule, X 20; c, panicle, X 4.

Fig. 2. *Panicum baltodes* St. John, d, node and shoot. X 10; e, spikelet, X 5; f, 1st glume, X 15; g, 2nd glume, X 15; h, sterile lemma, X 15; i, fertile lemma, X 15; j, palea, X 15.

Fig. 3. *Panicum ekeanum* St. John, a, habit, X 1; b, panicle, X 4; c, sheath and ligule, X 5; d, basal leaves, X 10; e, spikelet, X 15; f, 1st glume, X 15; g, 2nd glume, X 15; h, lemma, X 15; i, palea and grain, X 15.

Fig. 4. *Panicum Hobdyi* St. John, a, habit, X 1; b, raceme, X 4; c, spikelet, X 15.

Fig. 5A. *Panicum Hobdyi* St. John, d, stem and sheaths, X 10; e, 1st glume, X 15; f, 2nd glume, X 15; g, sterile lemma, X 15; h, fertile lemma, X 15; i, palea, X 15; j, pistil, X 15.

Fig. 5B. *Panicum honokowaiense* St. John, k, sheath and ligule, X 10; l, fertile lemma, X 15; m, palea, X 15.

Fig. 6. *Panicum honokowaiense* St. John, a, habit, X 1/4; b, panicle branch, X 4; c, spikelet, X 15; d, 1st glume, X 15; e, 2nd glume, X 15; f, sterile lemma, X 15.

Fig. 7. *Panicum infraventale* St. John, a, habit, X 1; b sheath and ligule, X 10; c, sheath and ligule, X 4; d, raceme, X 4; e, spikelet, X 15; f, 1st glume, X 15; g, 2nd glume, X 15; h, fertile lemma, X 15; i, palea, X 15; j, pistil, X 15.

Fig. 8. *Panicum lihauense* St. John, a, habit, X 1; b, panicle, X 4; c, 1st glume, X 15.

Fig. 9. *Panicum lihauense* St. John, d, sheath and ligule, X 10; e, sheath, ligule, and blade, X 10; f, spikelet, X 15; g, 1st glume, X 15; h, fertile lemma, X 15; i, palea, X 15.

Fig. 10. *Panicum lineale*, St. John, a, habit, X 1/4; b, spikelet, X 15; c, 1st glume, X 15; d, 2nd glume, X 15; e, sterile lemma, X 15; f, fertile lemma, X 15; g, palea, X 15.

Fig. 11. *Panicum lineale* St. John, h, sheaths and ligule, X 10; i, ligule, X 15; j, panicle branch, X 4; k, pistil, X 15.

Fig. 12. *Panicum longivaginatatum* St. John, a, habit, X 1/3; b, panicle branch, X 4; c, spikelet, X 15; d, 1st glume, X 15; e, 2nd glume, X 15; f, fertile lemma, X 15.

Fig. 13A. *Panicum longivaginatatum* St. John, g, palea, X 15; h, pistil, X 15; i, blade base, X 10.

Fig. 13B. *Panicum nephelophilum* Gaud., var. *levius* St. John, f, 1st glume, X 15; g, 2nd glume, X 15; h, fertile lemma, X 15; i, palea, X 15; j, sheath and ligule, X 10.

Fig. 14. Panicum mokuleiaense St. John, a, habit, X 1; b, fertile lemma, X 15; c, pistil, X 15.

Fig. 15. Panicum mokuleiaense St. John, d, sheath, ligule, and blade, X 10; e, panicle branch, X 4; f, spikelet, X 15; g, 1st glume, X 15; h, 2nd glume, X 15; i, sterile lemma, X 15.

Fig. 16. Panicum nephelophilum Gaud. var. levius St. John, a, habit, X 1/3; b, sheath, ligules and blades, X 10; c, panicle branch, X 4; d, spikelet, X 15; e, anther, X 15.

Fig. 17. Panicum ninoleense St. John, a, habit, X 1; b, sheath and ligules, X 10; c, sheath and ligules, X 10; d, panicle, X 4; e, spikelet, X 15; f, 1st glume, X 15; g, 2nd glume, X 15; h, sterile lemma, X 15; i, fertile lemma, X 15.

Fig. 18. Panicum Sylvanum St. John, a, habit, X 1; b, sheaths, X 10; c, sheath and ligule, X 10; d, panicle, X 4; e, spikelet, X 15; f, 1st glume, X 15; g, 2nd glume, X 15; h, sterile lemma, X 15; i, fertile lemma, X 15; j, palea, X 15; k, anthers, X 15.

Fig. 19. Panicum waikoloaense St. John, a, habit, X 1; b, panicle branch, X 4; c, leaf and sheath, X 10; d, sheath and ligule, X 10; e, 1st glume, X 15; f, 2nd glume, X 15; g, fertile lemma, X 15; h, palea, X 15; i, grain, X 15; j, stamens, X 15.

Fig. 20. Panicum Wilburii St. John, a, habit, X 1/2; b, sheath and blade, X 10; c, 1st glume, X 15; d, 2nd glume, X 15; e, sterile lemma, X 15; f, fertile lemma, X 15.

Fig. 21. Panicum Wilburii St. John, g, panicle branch, X 4; h, spikelet, X 15; i, palea, X 15; j, stamen, X 15.

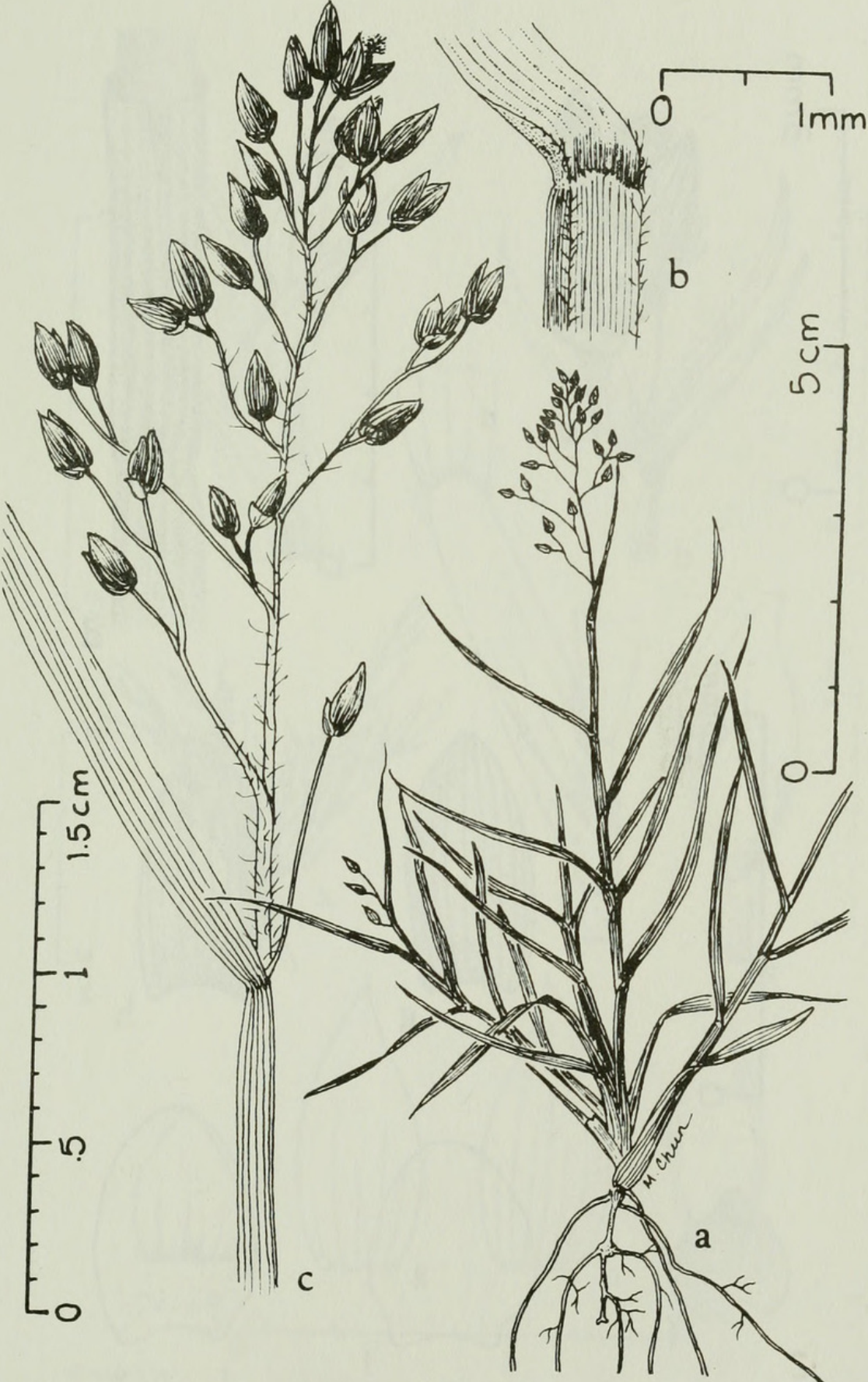
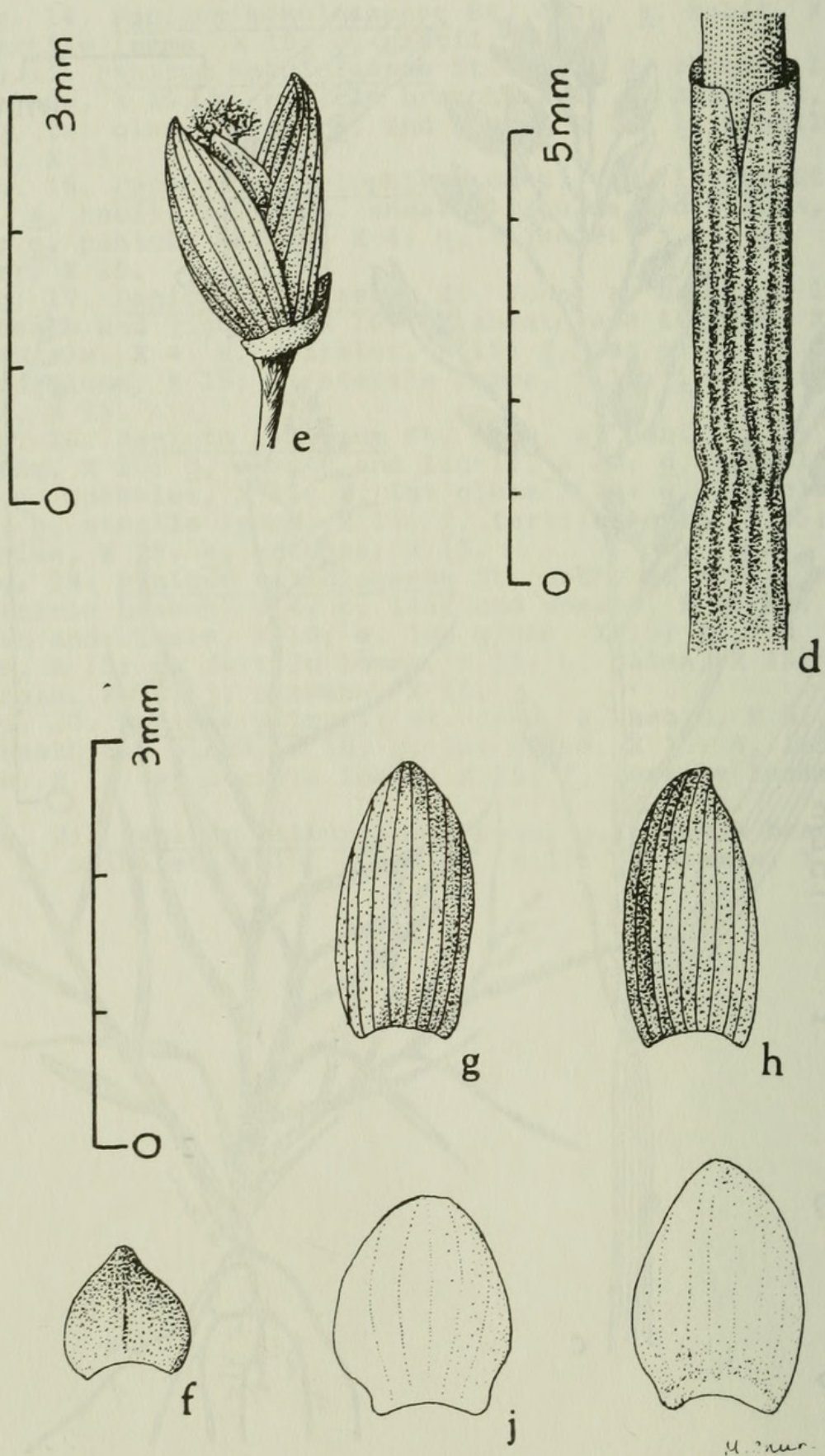


Fig. 1. *Panicum baltodes* St. John



H. M. J.

Fig. 2. *Panicum baltodes* St. John

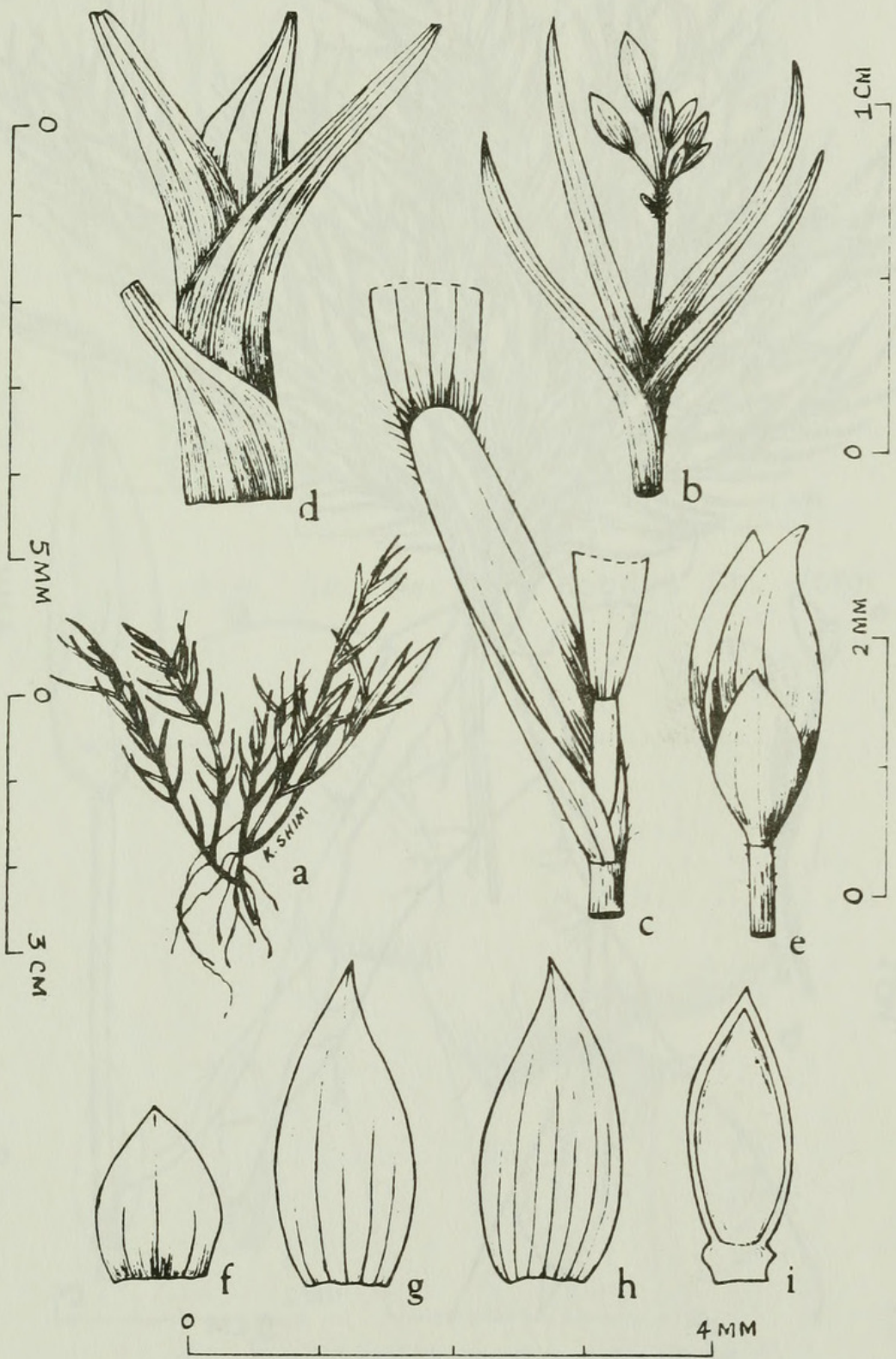
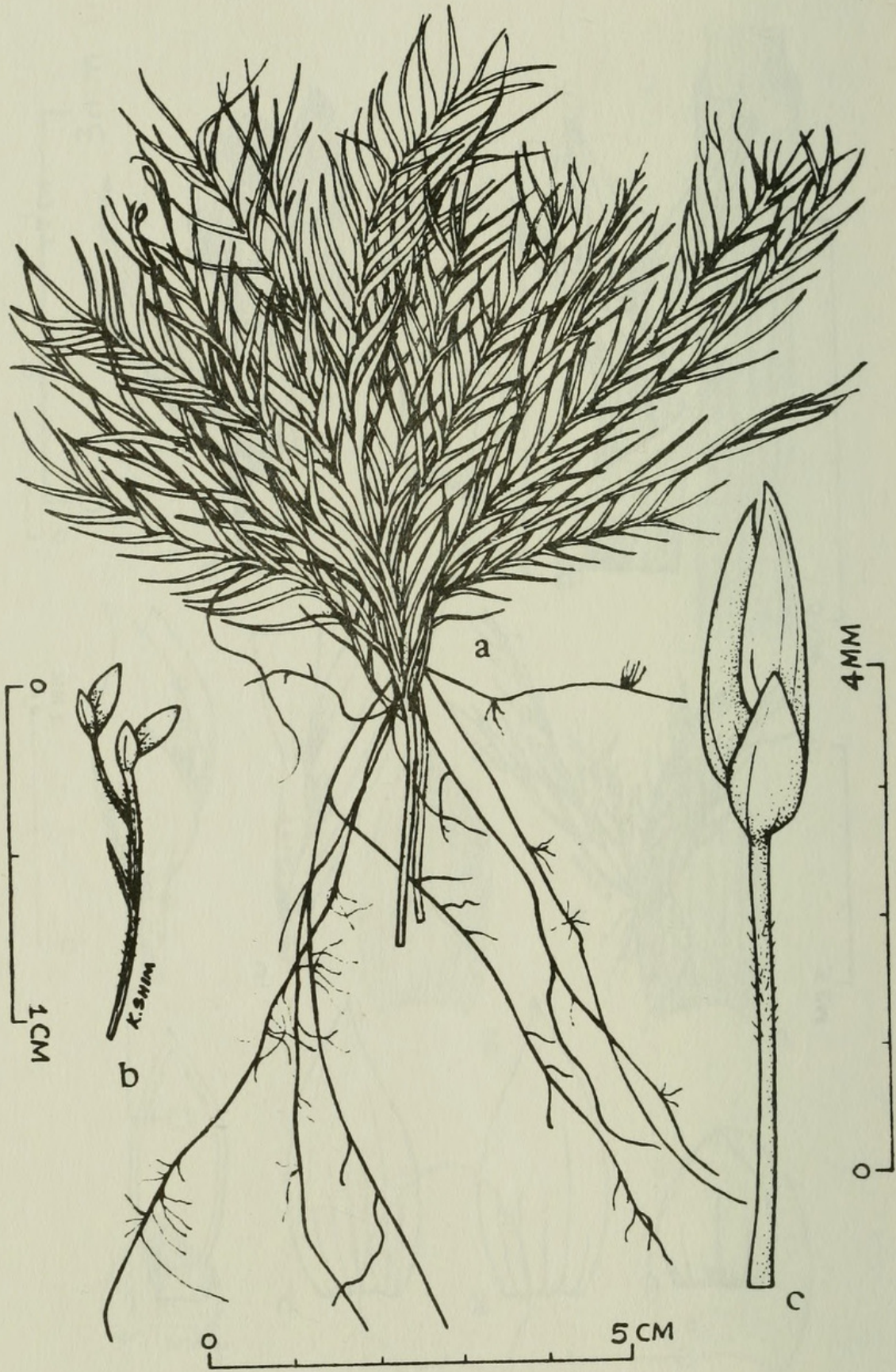


Fig. 3. *Panicum ekeanum* St. John



Fig, 4, *Panicum Hobdyi* St. John

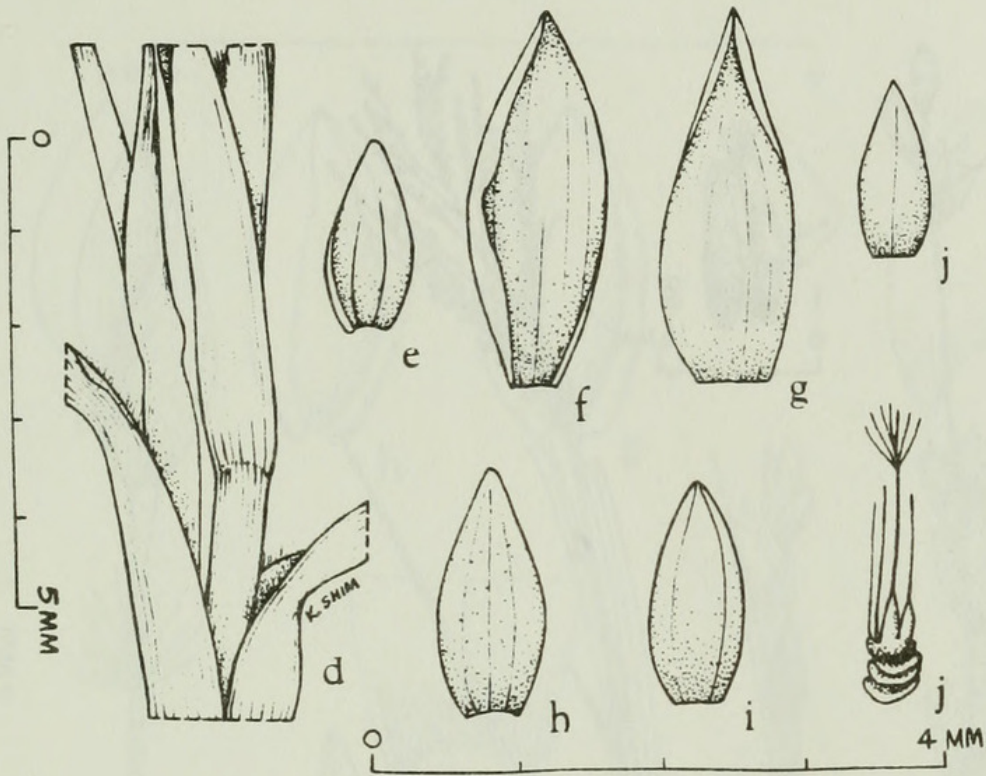


Fig. 5A. *Panicum Hobdyi* St. John

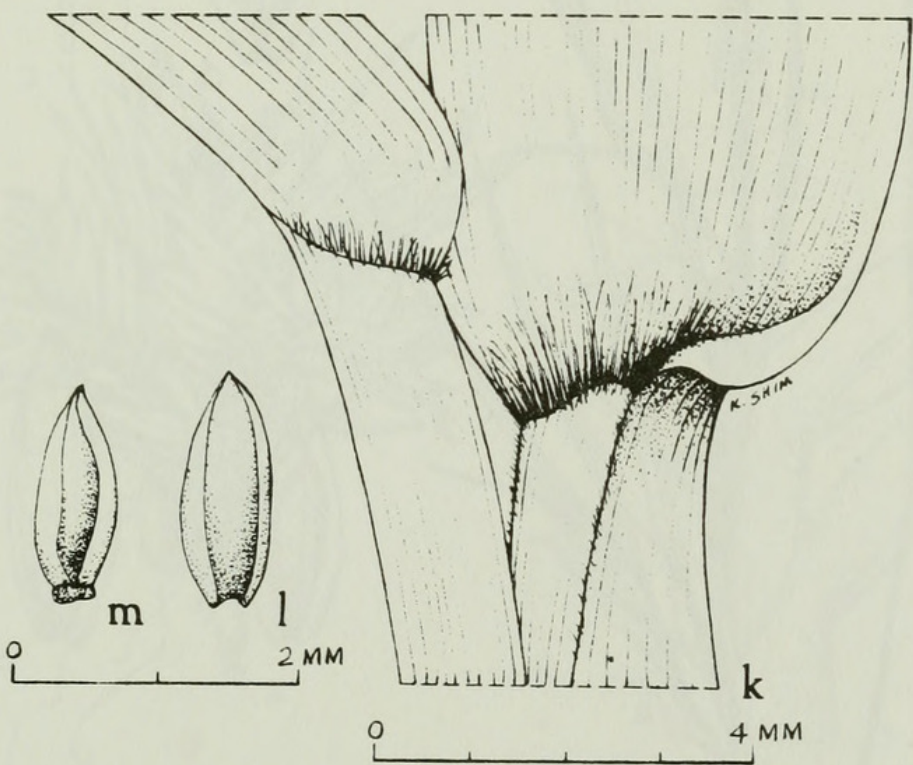


Fig. 5B. *Panicum honokowaiense* St. John

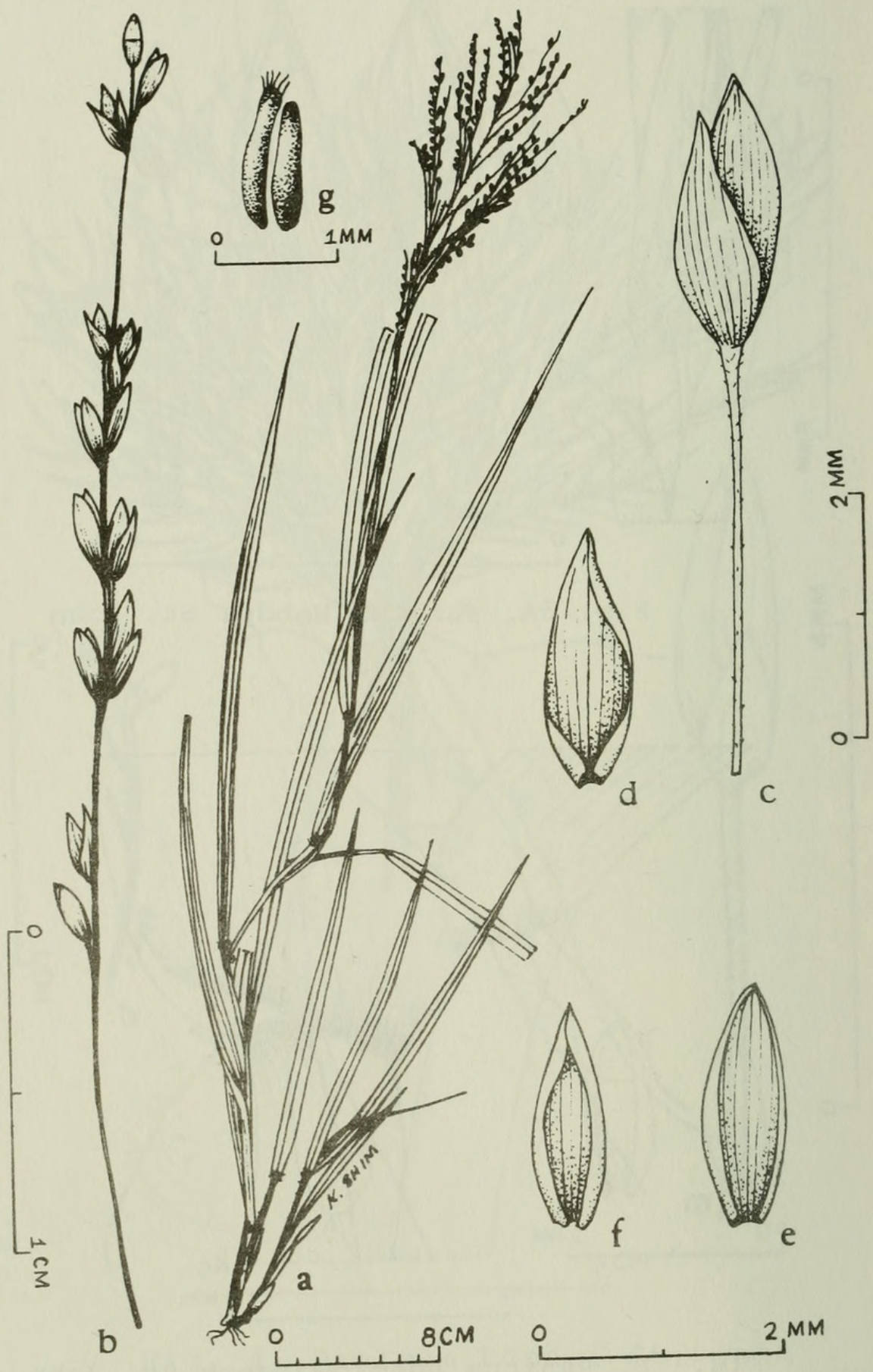


Fig. 6. *Panicum honokowaiense* St. John

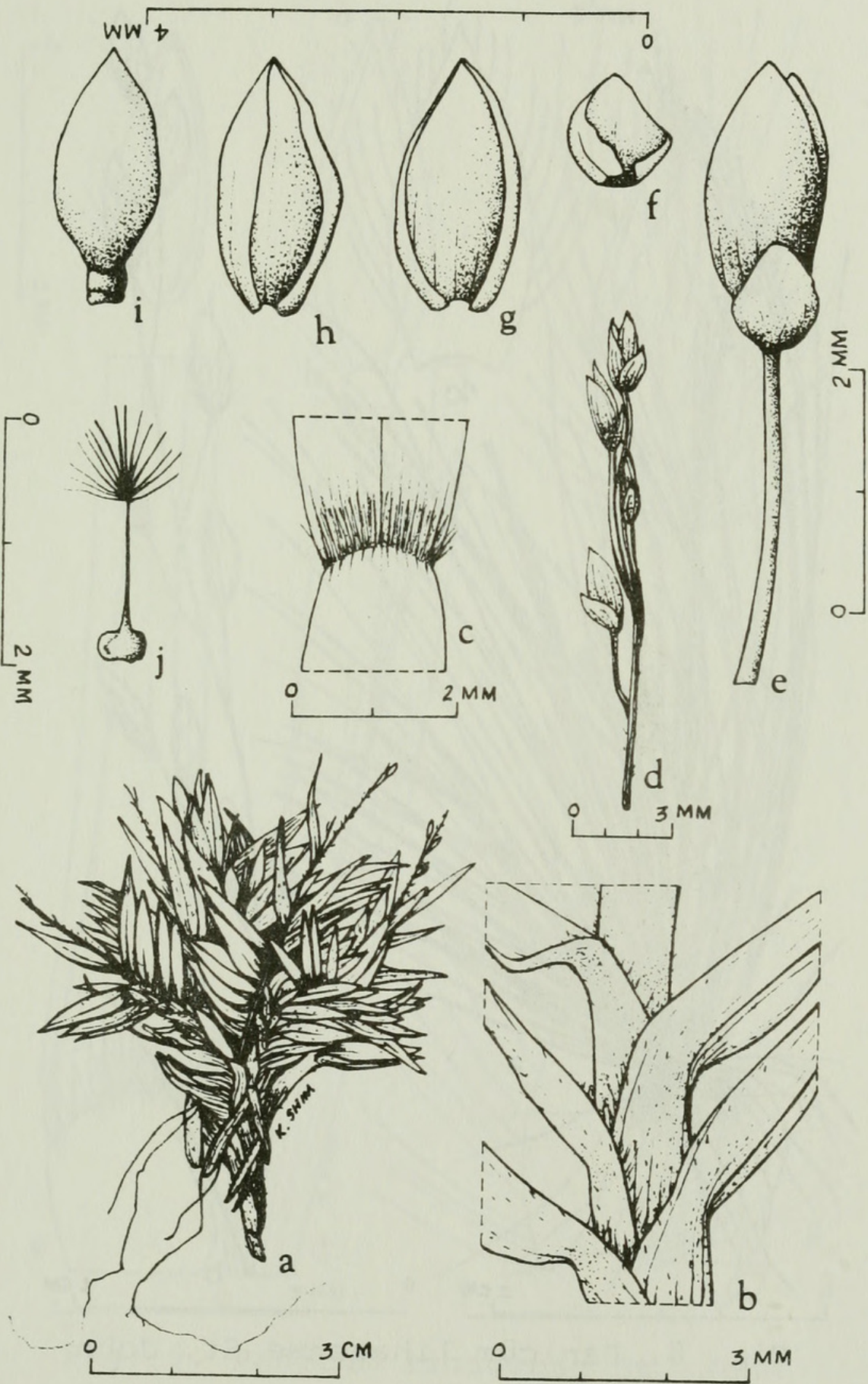


Fig. 7. *Panicum infraventale* St. John



Fig. 8. *Panicum lihauense* St. John

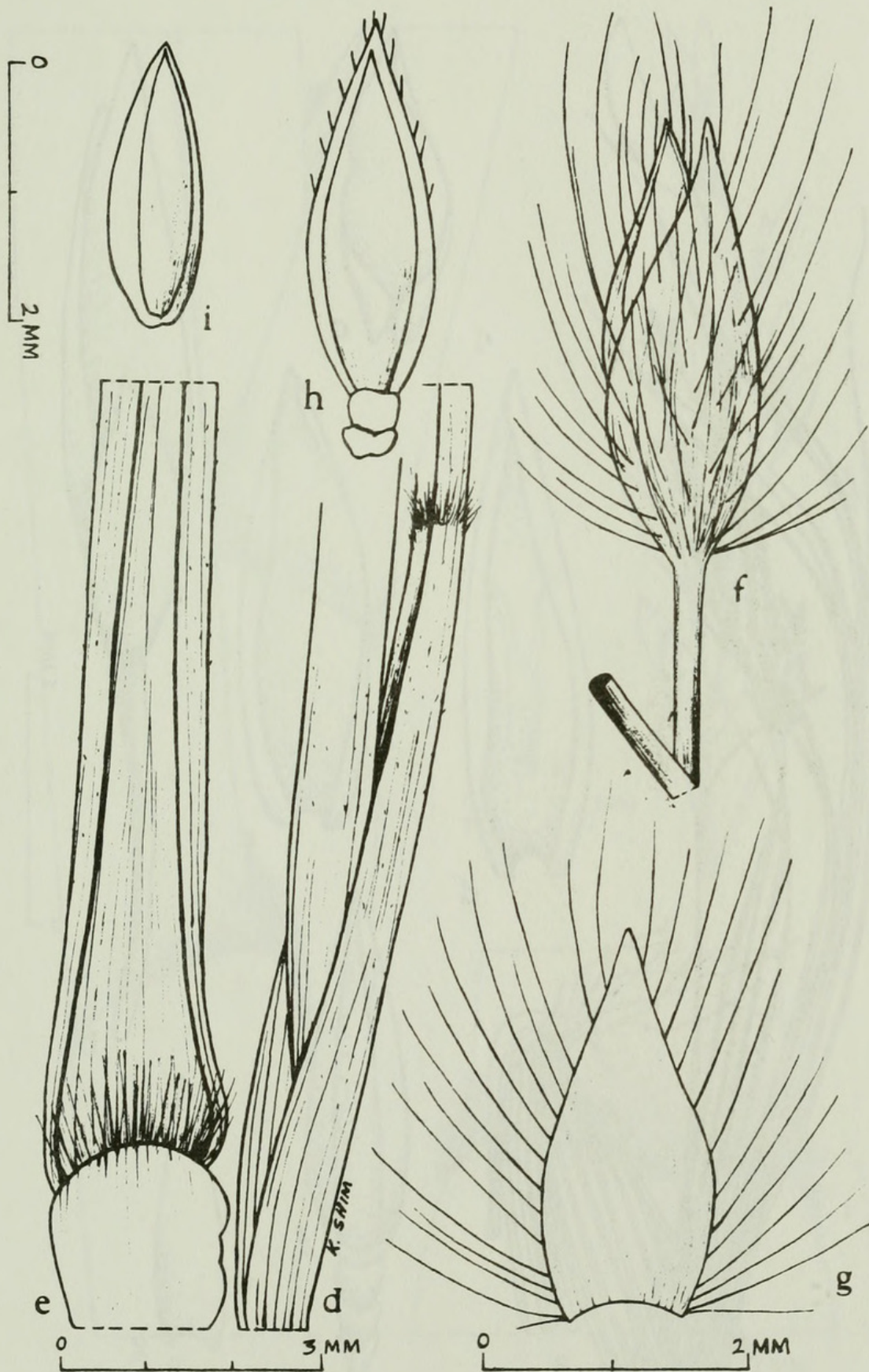


Fig. 9. *Panicum lihouense* St. John

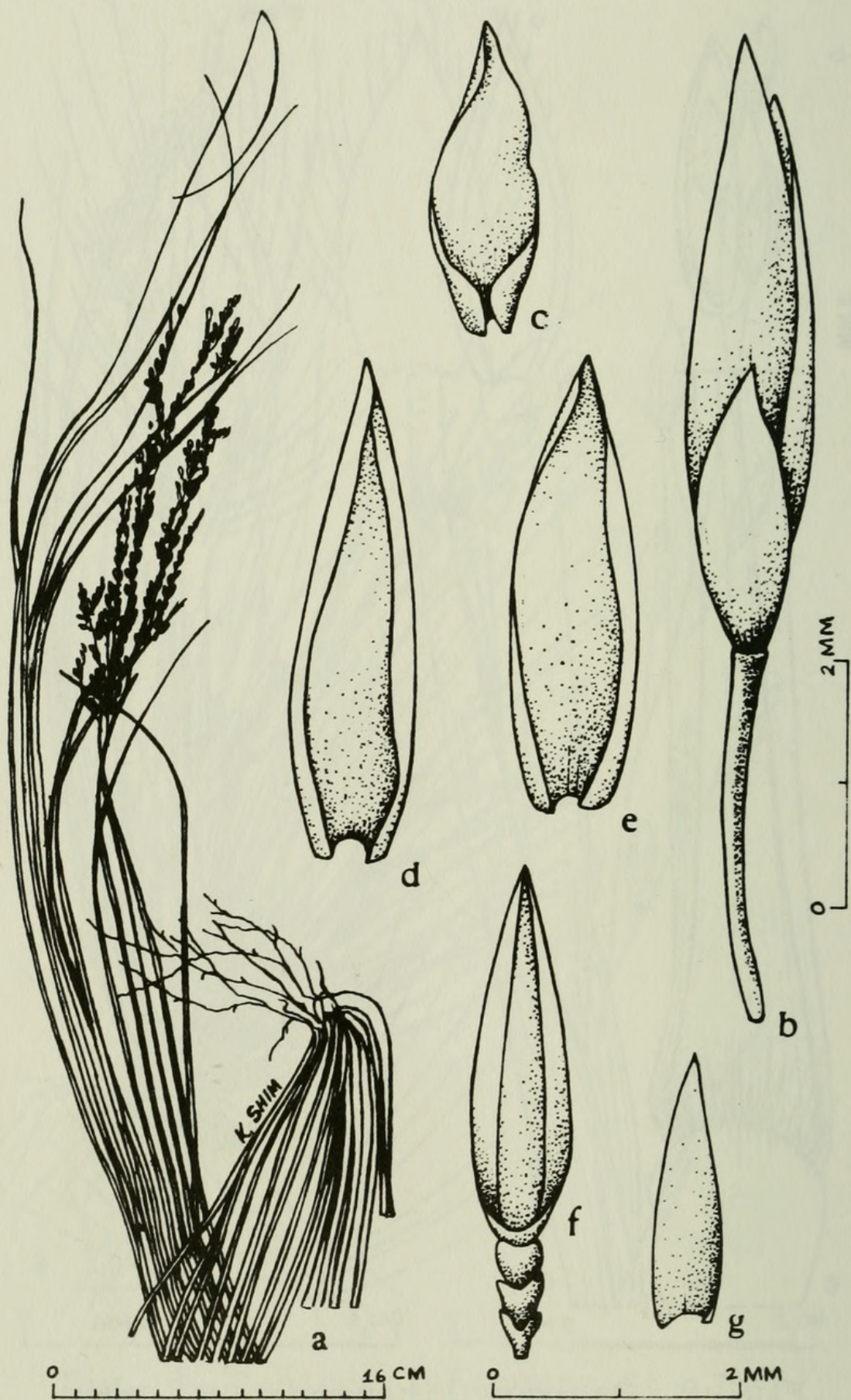


Fig. 10. *Panicum lineale* St. John

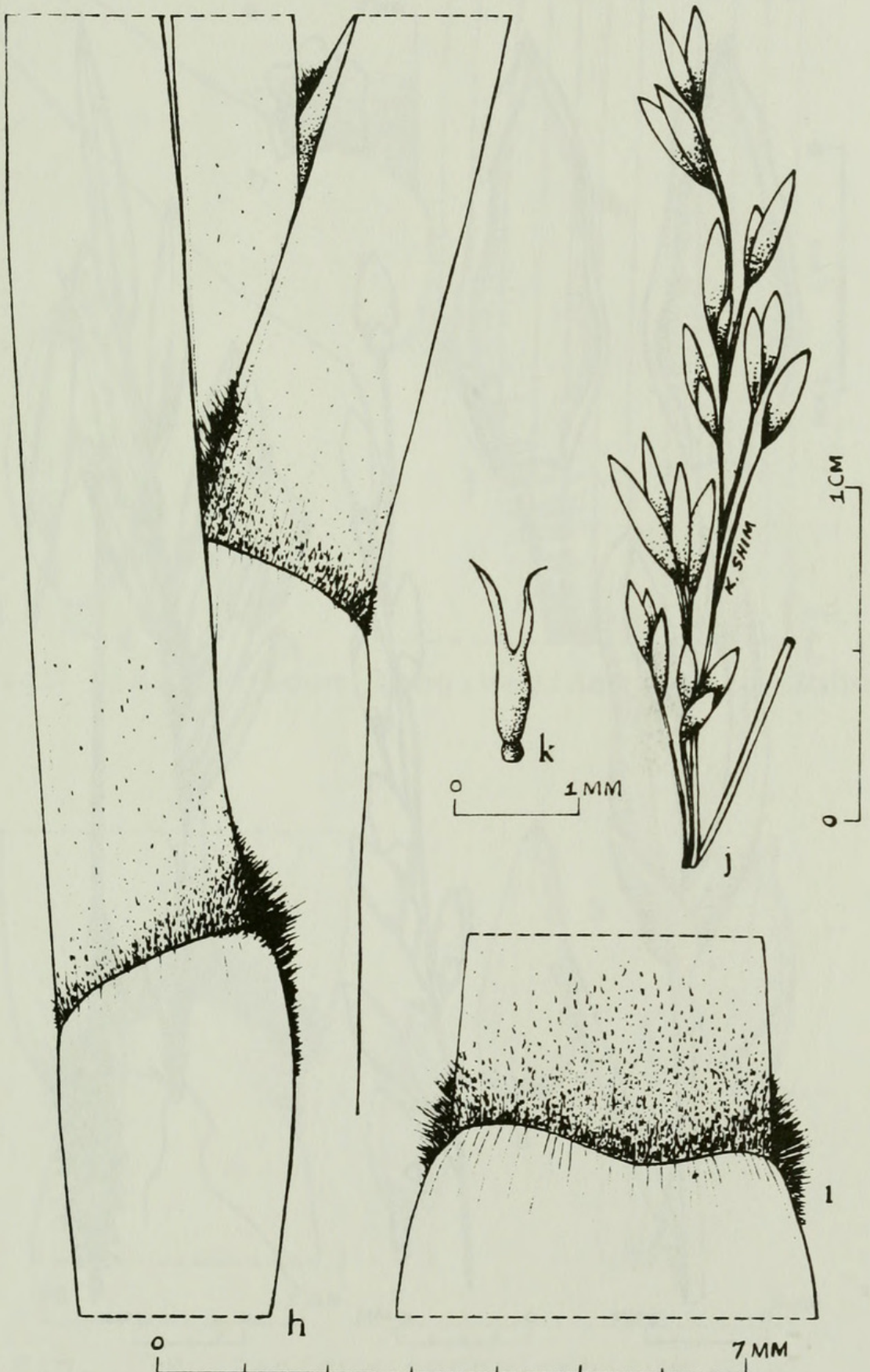


Fig. 11. *Panicum lineale* St. John

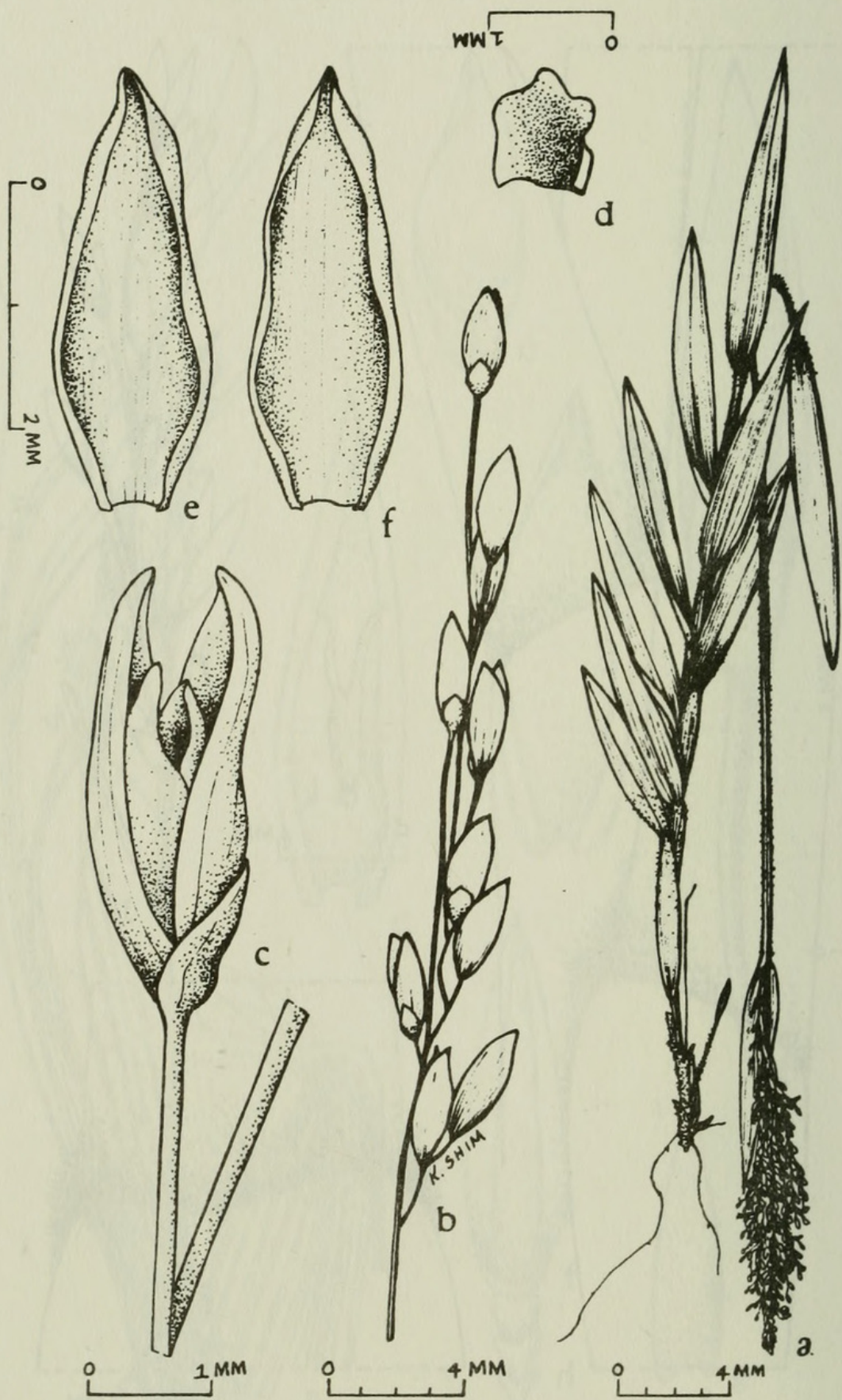


Fig. 12. *Panicum longivagatum*
St/ John

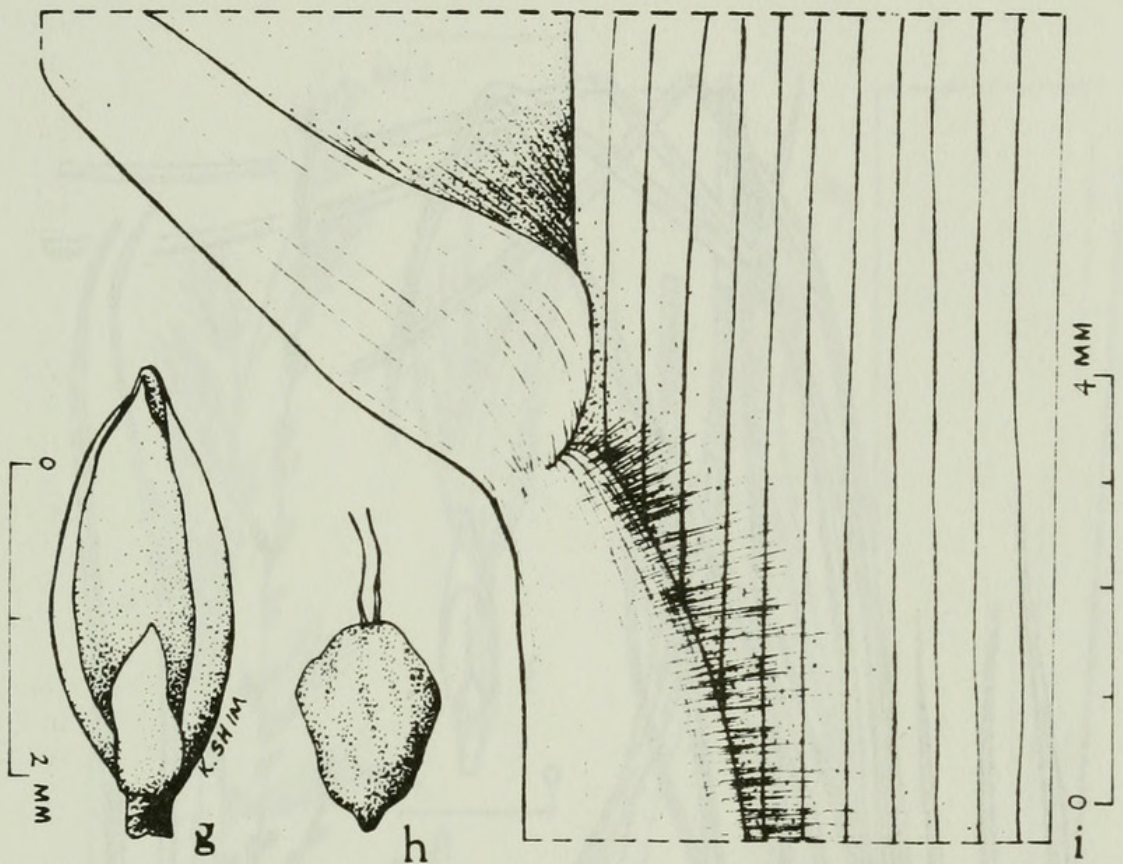


Fig. 13A. *Panicum longivaginatatum* St. John

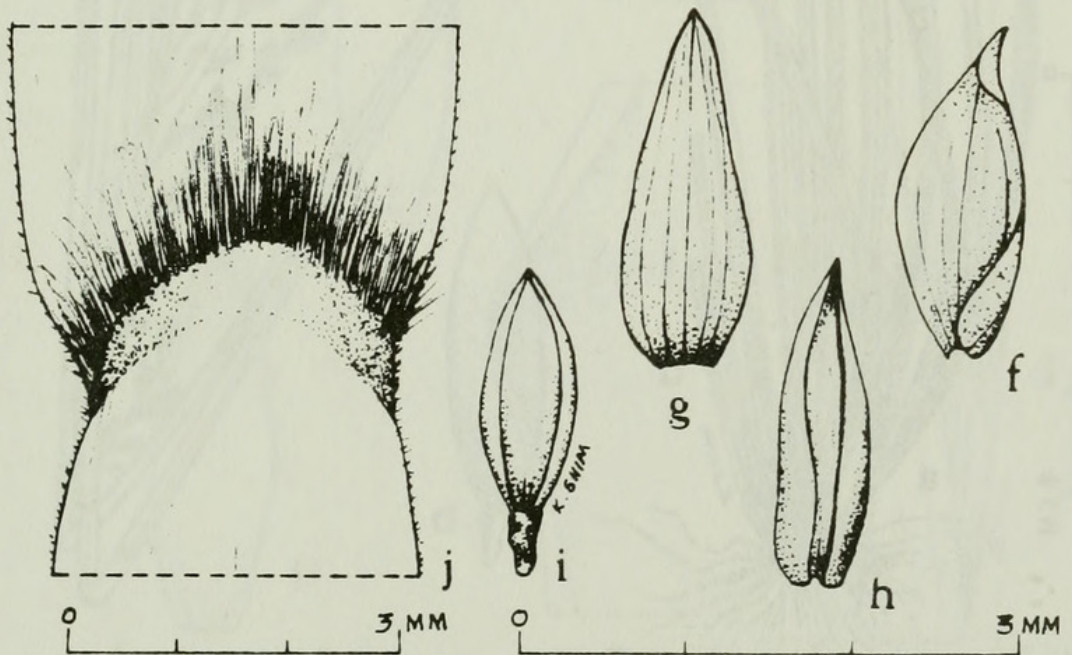


Fig. 13B. *Panicum nephelophilum* Gaud.
var. *levius* St. John

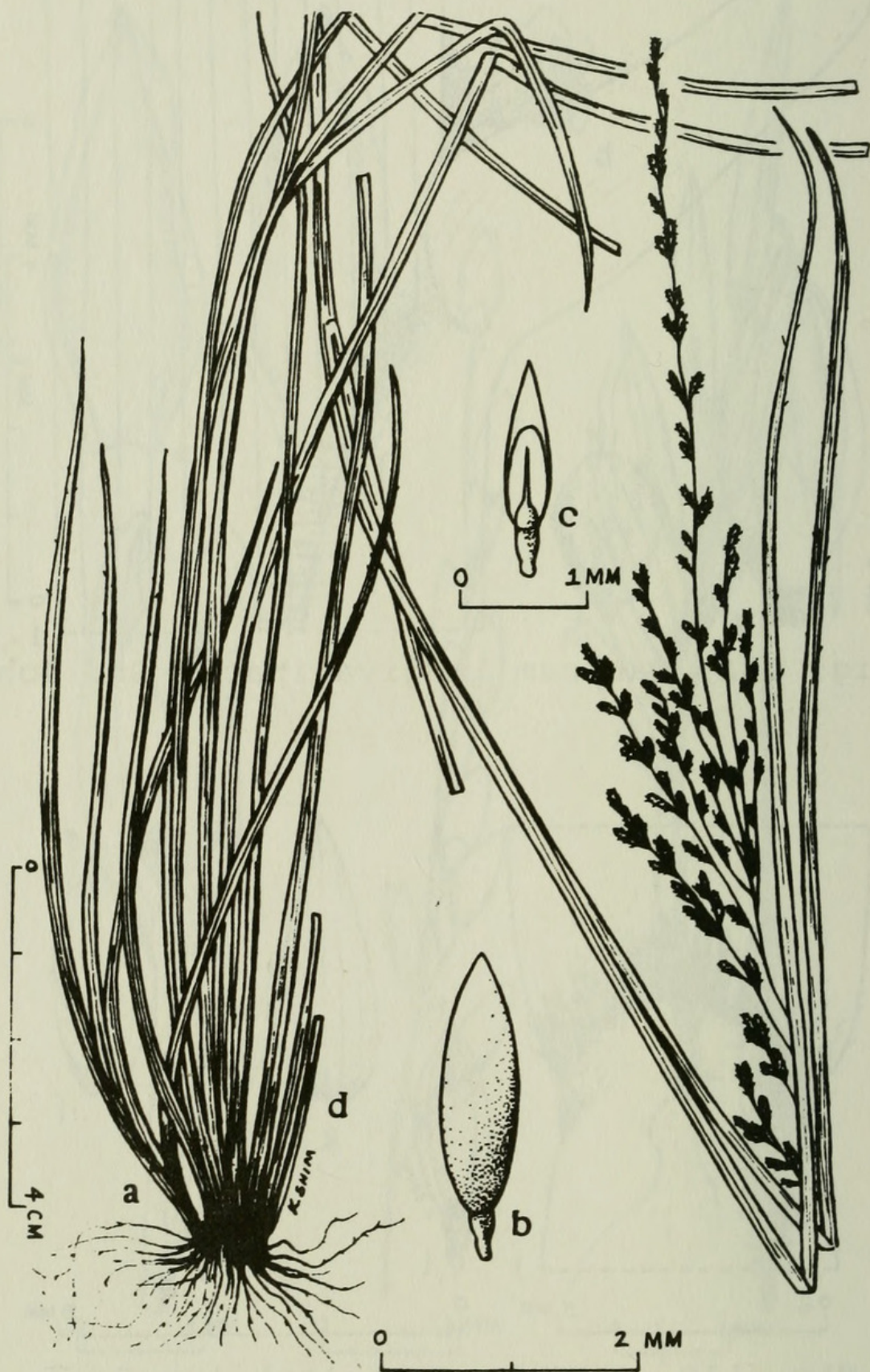


Fig. 14. *Panicum mokuleiaense* St. John

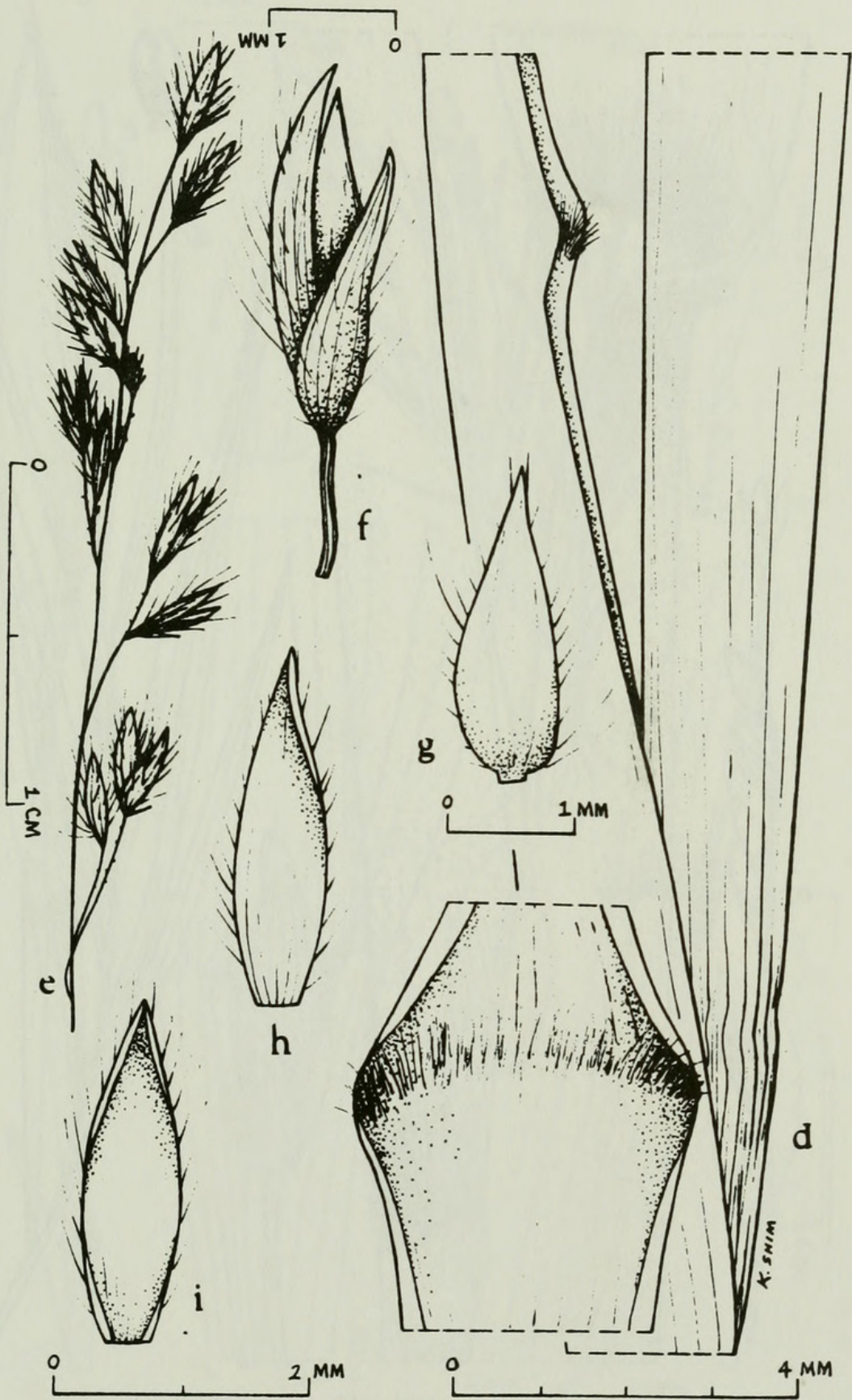


Fig. 15. *Panicum mokuleiaense* St. John



Fig. 16. *Panicum nephilophilum* Gaud.
var. *levius* St. John

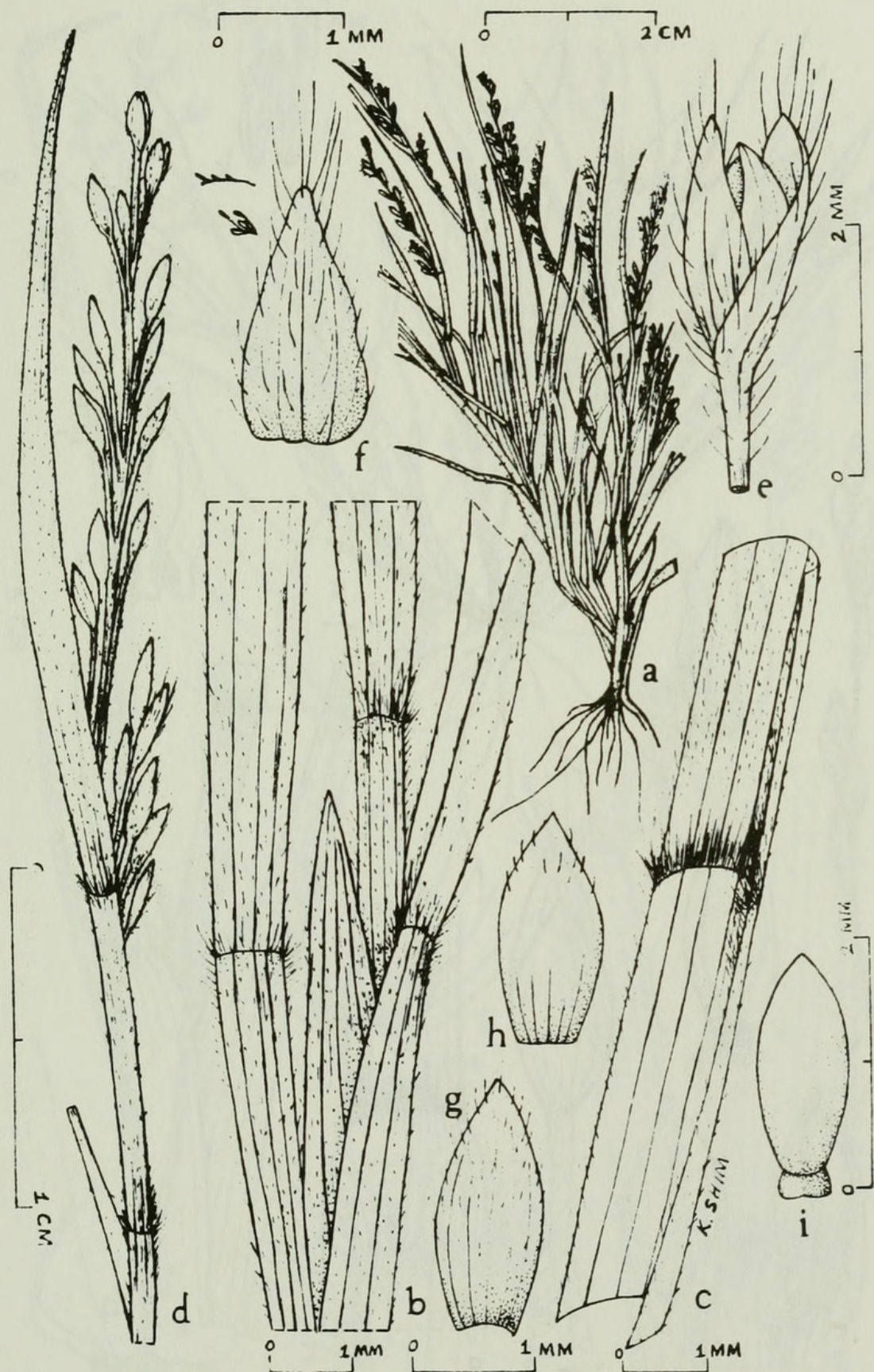


Fig. 17. *Panicum ninoleense* St. John

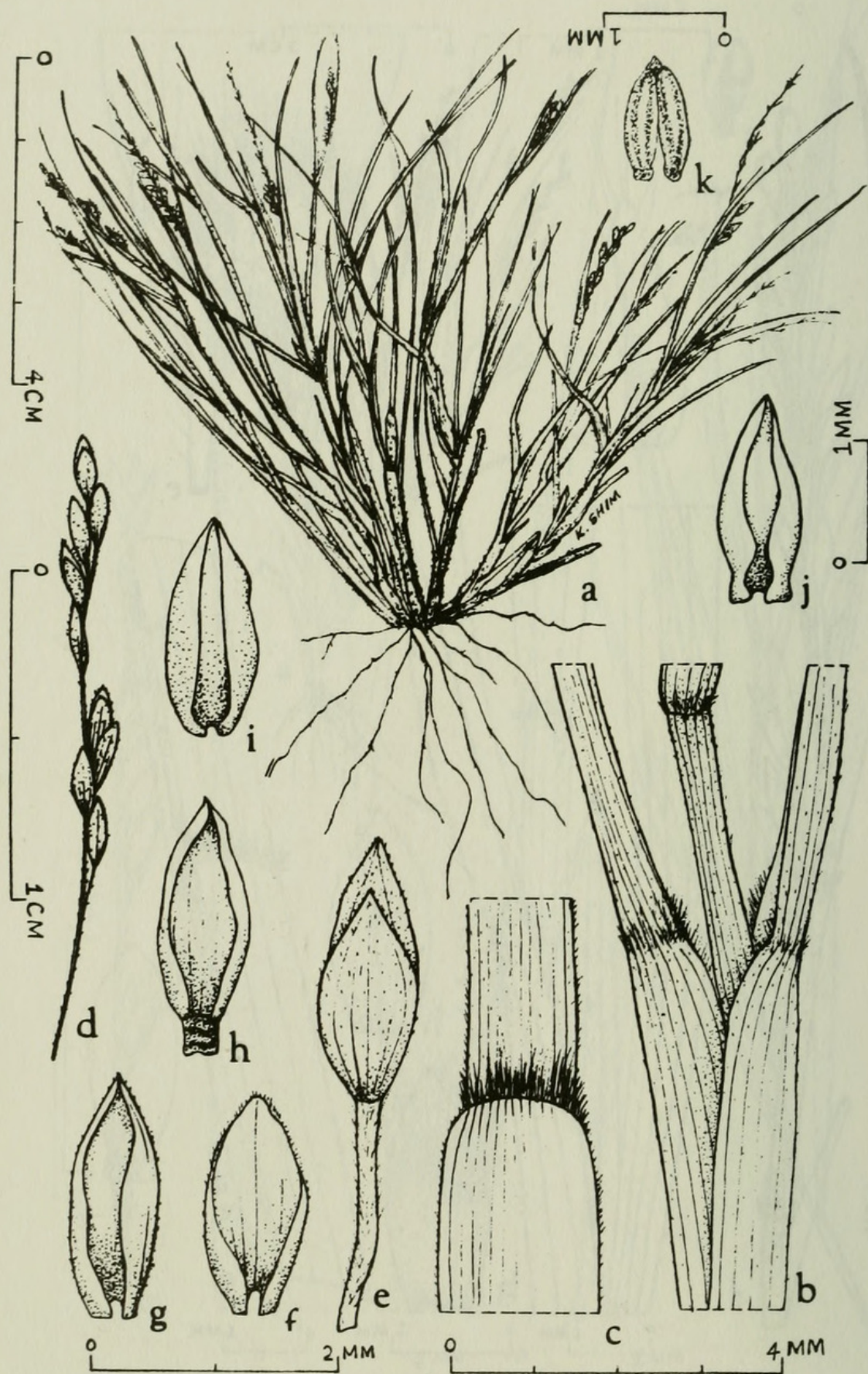


Fig. 18. *Panicum Sylvanum* St. John

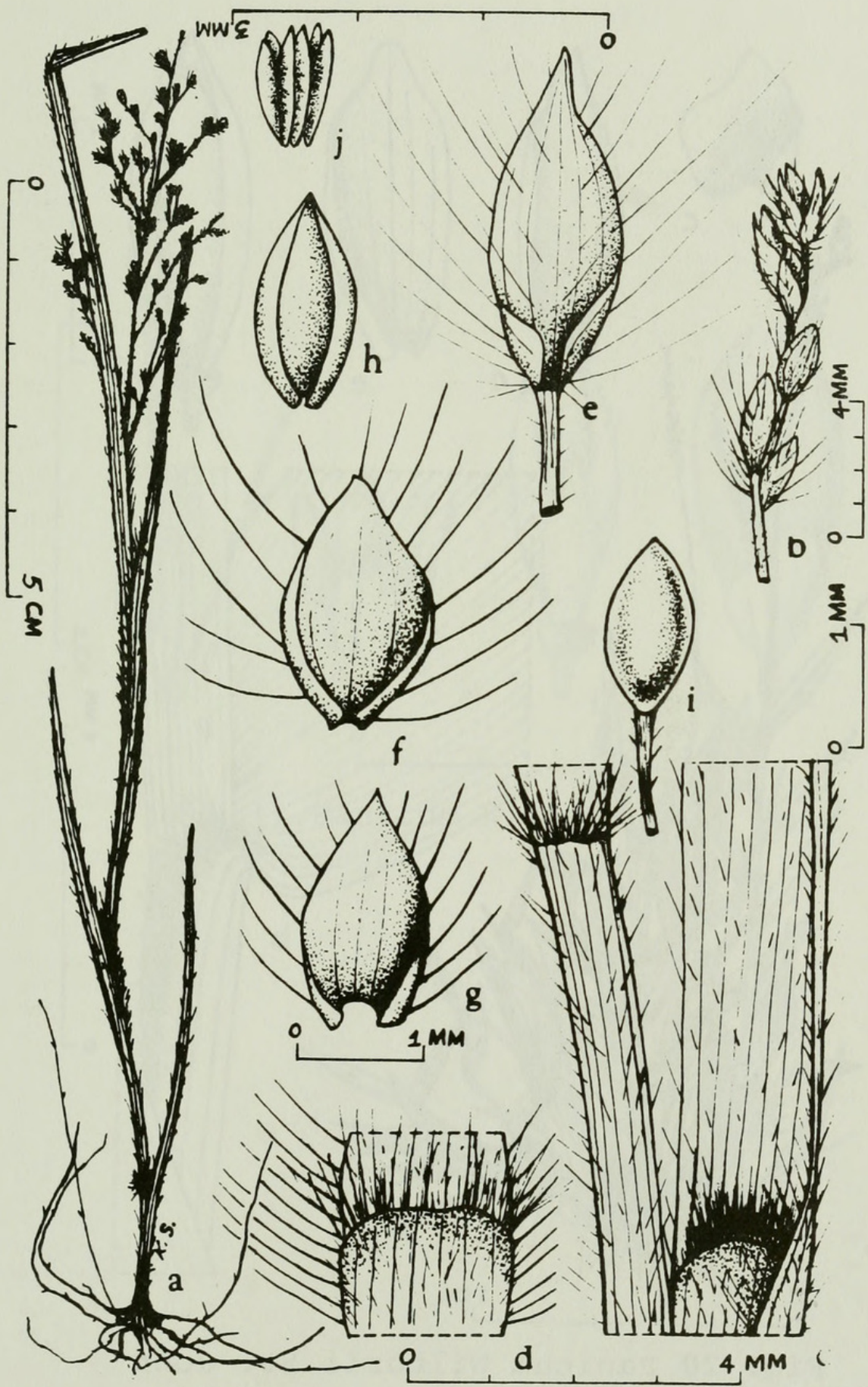


Fig. 19. *Panicum waikoloaense* St. John

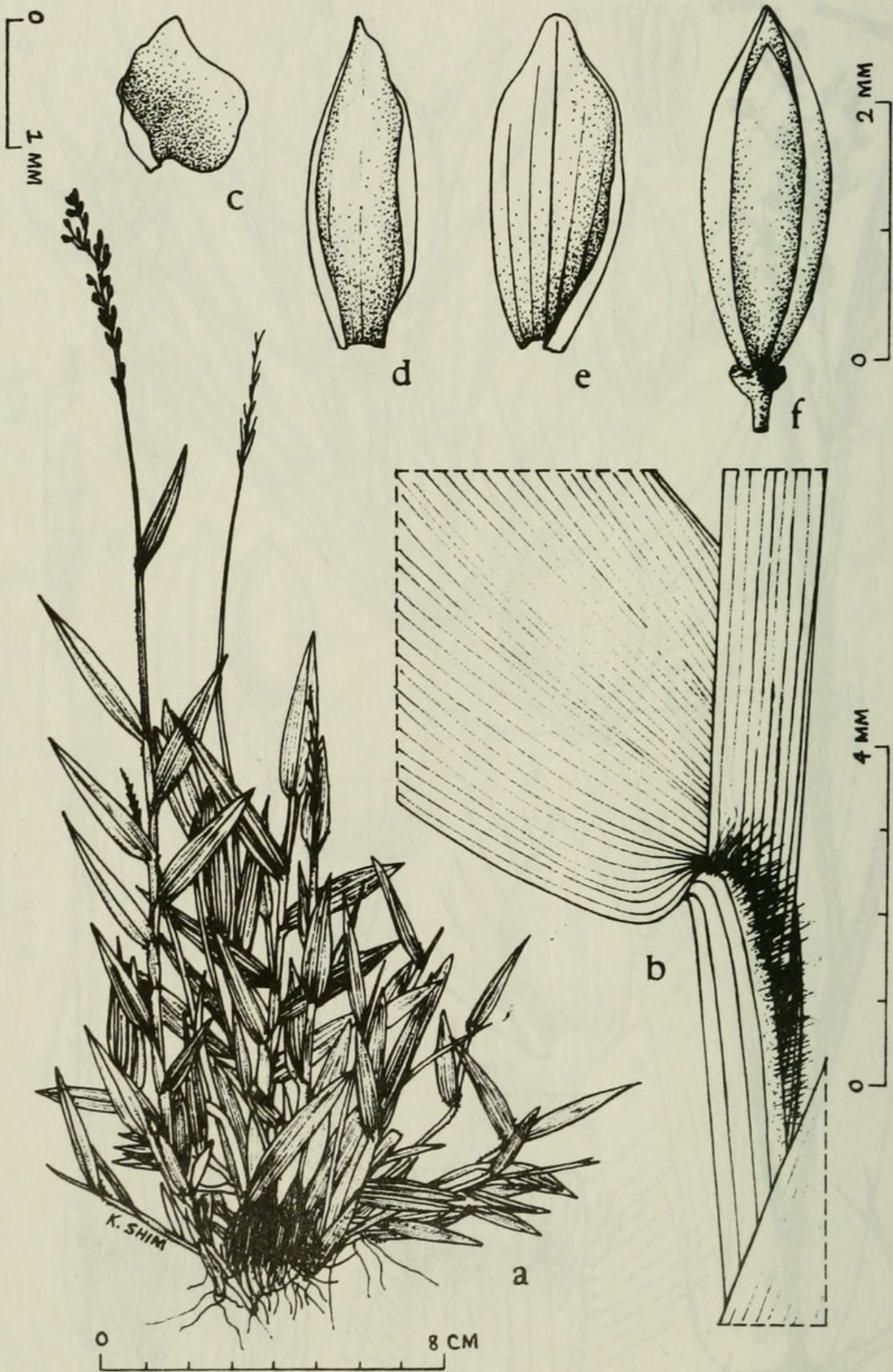


Fig. 20 *Panicum Wilburii* St. John

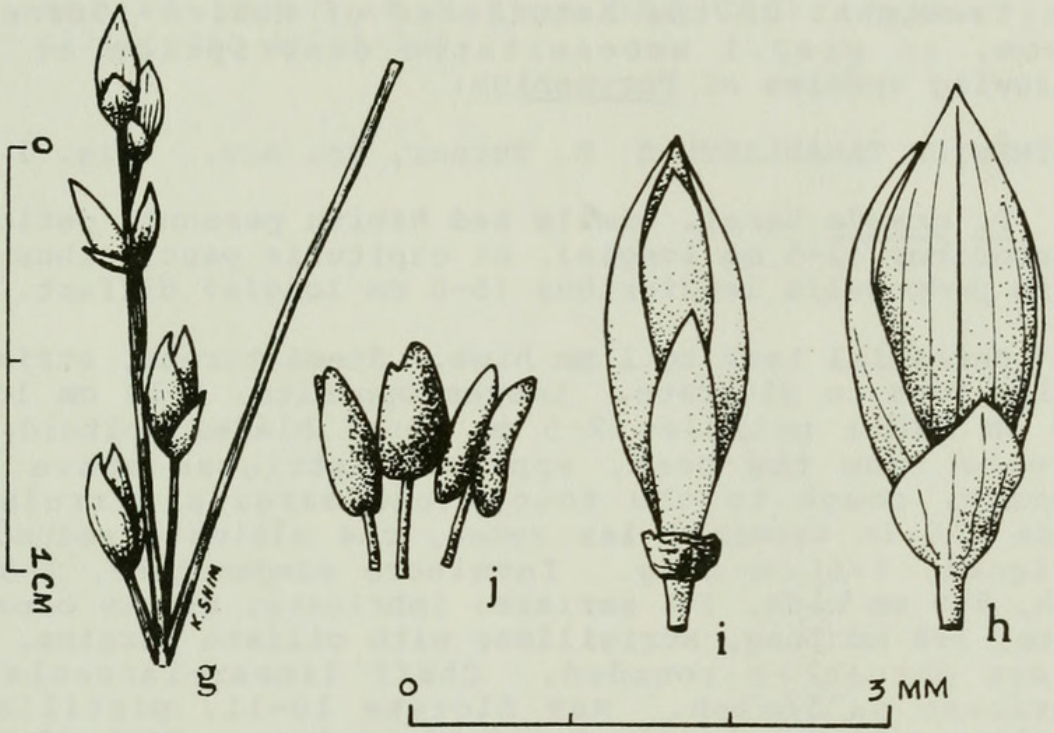


Fig. 21. *Panicum Wilburii* St. John



St. John, Harold. 1987. "Diagnoses of Panicum species (Gramineae). Hawaiian plant studies 49." *Phytologia* 63, 368–395.

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