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NOTES ON CENTRAL AMERICAN GRASSES, I

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THIS SERIES of papers will include notes and descriptions of new species, based primarily on collections of the author, Louis O. Williams, and P. C. Standley in Honduras. Specimens of other Central American countries will be considered when they are pertinent to the flora of Honduras.

***Bouteloua Williamsii* Swallen, sp. nov.**

Perennis; culmi caespitiosi, erecti, 80-90 cm. alti; laminae 10-20 cm. longae, 1.5-2 mm. latae, planae, attenuatae, pilosae, marginibus scabrae; racemi 9-12, divergentes, inferior 4 cm. longus; glumae acuminatae, in carina scabrae, prima 3.5-4 mm. longa, secunda latior, 5-6 mm. longa; lemma 5 mm. longum, bifidum, basi dense villosum, arista centrali 3 mm. longa, aristas lateralibus 1.5 mm. longis; lemma secundum paulo reductum aristas 5-6 mm. longis; palea lemmate longior, dense pubescens.

Perennial; culms in small clumps, erect, rather slender, 80-90 cm. high; leaves mostly crowded toward the base, the upper internodes elongate; culm sheaths much shorter than the internodes, sparsely pilose; blades mostly 10-20 cm. long, 1.5-2 mm. wide, flat, attenuate becoming flexuous and filiform toward the tip, pilose on both surfaces, the margins scabrous; inflorescence 17 cm. long, composed of 9-12

spreading spikes, the lowermost 4 cm. long, the upper ones becoming shorter; glumes acuminate, scabrous on the keel, the first 3.5-4 mm. long, the second broader, 5-6 mm. long; lemma of lower floret 5 mm. long, densely silky-villous at the base, otherwise glabrous, the tip bifid, the slender teeth about 1 mm. long, the awn 3 mm. long, the lateral awns 1.5-2 mm. long; palea slightly exceeding the lemma, densely pubescent between the keels; upper floret somewhat reduced, the awns 5-6 mm. long, the lateral ones arising about $1/3$ from the base of the lemma; anthers 2 mm. long.

TYPE in the U. S. National Herbarium, N^o 2.044.038, collected on open rocky hillsides near Las Mesas, Dept. El Paraíso, HONDURAS, alt. 900 m., October 2, 1949, by *Louis O. Williams* (N^o 16902).

Additional material examined: HONDURAS: Dept. Morazán: Vicinity of Las Mesas, *Swallen* 11384, 11385, 10736; Suyapa, *Swallen* 11293; El Zamorano, *Swallen* 10770. Dept. El Paraíso: El Limonal, road to Yuscarán, *Swallen* 10847.

Superficially *B. Williamsii* resembles *B. radicata* (Fourn.) Griffs. but is readily distinguished by the densely pubescent palea. The former also has the second glume longer, 7.5-8 mm., lemmas nearly glabrous at the base, and a strong, hard, rhizome-like base.

Pentarrhaphis annua Swallen, sp. nov.

Annual; culmi graciles, 15-25 cm. alti; vaginae glabrae, superiores internodiis multo breviores; ligula ca. 0.5 mm. longa, dense pilosa; laminae 1.5-5 cm. longae, 1 mm. latae, planae, supra papilloso-pilosae; racemus 1-3.5 cm. longus, spicis 3-8 appressis vel divergentibus 8-10 mm. longis; setae infra spicas 3-4 mm. longae in parte inferiore pilosae; gluma secunda 3 mm. longa, minute bifida, inter dentes aristata, arista 1 mm. longa; lemma primum 4 mm. longum, in parte inferiore longi-pilosum, 3-lobatum, lobo centrali bifido; aristae scabrae, 4-5 mm. longae; antherae 1 mm. longae; lemma secundum paulo reductum, glabrum.

Annual; culms slender, erect, somewhat geniculate at the nodes, 15-25 cm. high; sheaths glabrous, the upper ones much shorter than the elongate internodes; ligule about 0.5 mm. long, densely hairy; blades 1.5-5 cm. long, 1 mm. wide, usually flat, rather thick, papillose-pilose on the upper surface; racemes 1-3.5 cm. long, terminal and sometimes axillary, composed of 3-8 appressed or spreading spikes; spikes 8-10 mm. long including the awns; bristles subtending

the spike (first glume and prolonged rachis) 3-4 mm. long, pilose in the lower half with long spreading hairs; second glume 3 mm. long, minutely bifid, bearing a relatively strong awn from between the lobes, about 1 mm. long; lemma of lower floret 4 mm. long, long-pilose on the lower half, the lateral lobes narrow, entire the central broad, deeply bifid, the lobes subacuminate; awns stout, scabrous, 4-5 mm. long; nerves of the palea extending into short awns; anthers white, 1 mm. long; upper floret somewhat reduced, similar to the lower, but the back of the lemma glabrous.

TYPE in the U. S. National Herbarium, N^o 2.076.680, collected on bare rocks, El Limonal, road to Yuscarán, Dept. El Paraíso, HONDURAS, October 18, 1951, by Jason R. Swallen (N^o 10.861).

Additional specimens examined: HONDURAS: Dept. El Paraíso Swallen 11.340.11.370; Standley 28.921. COSTA RICA: Dept. Guanacaste: Anderson 1363.

This species is readily distinguished from *Pentarrhaphis scabra* H. B. K. and *P. polymorpha* (Fourn.) Griffs., by the annual habit. *P. scabra*, which also occurs in Honduras, is a densely tufted perennial, the slender culms arising from a dense cluster of curled blades, these glabrous or nearly so on the upper surface; the spikes average smaller than in *P. annua*, and are more distant on the raceme; and the anthers are 1.5 mm. long.

Lasiacis glabra Swallen, *sp. nov.*

Culmi 2+m. alti, glabri; vaginae internodiis subaequalibus multo breviores, marginibus plus minusue ciliatae; ligula inconspicua, 1 mm. longa; laminae 12-15 cm. longae, 4-5 cm. latae, glabrae; rami floriferi solitarii, simplices vel sparse ramosi; paniculae 17-28 cm. longae, ramis solitariis distantibus adscendentibus, non dense floriferis; spiculae 3-3.5 mm. longae, virides.

Main culm more than 2 m. high, glabrous; sheaths usually much shorter than the subequal internodes, glabrous, more or less ciliate on the margins, the lower ones bladeless; ligule inconspicuous, 1 mm. long; blades 12-15 cm. long, 4-5 cm. wide, slightly asymmetrical, glabrous; flowering branches solitary, elongate, with usually numerous, short, equal internodes, simple or sparingly branching, the blades somewhat reduced; panicles 17-28 cm. long, the solitary, rather distant branches stiffly ascending; spikelets 3-3.5 mm. long (rarely 4 mm.), green, not crowded.

TYPE in the U. S. National Herbarium, Nos. 2.076.931, 2.153.497, and 2.153.498, collected on moist shady banks near Río San Francisco, road to Danlí, Dept. El Paraíso, HONDURAS, November, 1, 1951, by Jason R. Swallen (N^o 11193).

This species is probably closely related to *Lasiacis ruscifolia* (H. B. K.) Hitchc., but the plants are completely glabrous except for the somewhat ciliate sheaths, and the elongate flowering branches are simple or only sparingly branching.

***Lasiacis velutina* Swallen, sp. nov.**

Culmi usque ad 2.5 m. alti, glabri, sparse ramosi, vaginis quam internodiis multo brevioribus; rami floriferi solitarii, simplices vel ramosissimi; vaginae breves, internodiis longiores, dense pilosae; ligula inconspicua; laminae ovato-lanceolatae, usque ad 6 cm. longae, 1.8 cm. latae, velutinae; paniculae 3-6 cm. longae, angustae, axillis, ramis, et pedicellis dense pilosis; spiculae 3-4 mm. longae, appressae, virides vel purpureae.

Main culm to 2.5 meters high, glabrous, sparingly branching, the sheaths much shorter than the internodes, the blades early deciduous; flowering branches usually solitary at the nodes, nearly simple or repeatedly branching, the sheaths short, overlapping, densely pilose; ligule inconspicuous; blades ovate-lanceolate, somewhat asymmetrical, as much as 6 cm. long, 1.8 cm. wide, but usually smaller, densely velvety pubescent on both surfaces; panicles 3-6 cm. long, narrow, partly inclosed in the sheath, the axis, branches, and pedicels densely pilose; spikelets 3-4 mm. long, appressed, green, tinged with purple.

TYPE in the U. S. National Herbarium, N^o 2.076.656, collected on road to San Antonio from El Zamorano, Dept. Morazán, HONDURAS, October 17, 1951, by Jason R. Swallen (N^o 10834).

Additional material examined: HONDURAS: Dept. Morazán: Río del Gallo, near El Jicarito, about 2 km. from El Zamorano, Swallen 11008; Quebrada de las Burras, between Suyapa and Tegucigalpa, Molina 1811; Río de la Orilla, vicinity of El Zamorano, Standley 24173. Dept. El Paraíso: Between Mata Indio and Lizapa, Molina 4051.

The panicles in *Molina 4051* are 12 cm. long, exserted, with ascending branches, the short branchlets and pedicels closely appressed.

This species is readily recognized by the velvety foliage, densely pilose panicle axis and branches, and the small appressed spikelets.