

DIAGNOSES OF NEW DELISSEA SPECIES (LOBELIACEAE)

HAWAIIAN PLANT STUDIES 162

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The new types are in the Bishop Museum, Honolulu.

*Delissea acuta* sp. nov. Frutex est, caule simplici laevi, petiolis 10-16 cm longis glabris, laminis 18-28 X 6-11.3 cm glabris lanceo-ovalibus acutis basi cuneata marginibus crenatis, racemis 4-12-floriferis glabris, pedunculo 1-2 cm longo, pedicellis 7-15 mm longis, dentibus calycis 0.3 mm longis deltoideis, corollis 20 mm longis glabris cum vel sine tumuli lateralibus, antheris superis 7 mm longis. Typus: Oahu I., Kawaiiki Ditch Trail, H. St. John 21,368.

*D. angusta* sp. nov. Arbor 6 m alta est, ramis glabris, petiolis 2.5-6 mm longis pilosulis, laminis 14-18 X 2-3.2 cm oblanceolatis duploserratulis infra in nervis pilosulis, cymis 4-5 cm longis 5-6-floriferis pilosulis, pedunculo 2-2.8 cm longo, pedicellis 12-15 mm longis, lobis calycis 4-5 mm longis lanceolatis ciliatis, corollis 35 mm longis glabris, antheris superis 6 mm longis. Typus: Maui I., Haleakala, Maunawainui Gulch, 4,900 ft elev., K. Kepler 46.

*D. angustior* sp. nov. Frutex glaber est, caule 1.3 m longo simplici, petiolis 4-7 cm longis, laminis 23-27 X 7-8.5 cm oblanceolatis denticulatis, racemis 4-5 cm longis 13-17-floriferis, pedunculo 18-20 mm longo, pedicellis 10-13 mm longis, lobis calycis 2-2.5 mm longis lanceo-linearibus, baccis 9-10 mm longis. Typus: Hawaii I., Pahole Stream, J. Davis 688.

*D. globosa* sp. nov. Caulis 1 m altus simplex est, petiolis 2.5 cm longis puberulis, laminis 32-48 X 7-9.5 cm oblanceolatis subacuminatis serrulatis basi cuneata puberulis, pedicellis 15 mm longis 4-5 cm longis ligulatis hirsutis, corollis 8-9 cm longis pilosis albis, antheris superis 14 mm longis. Typus: Maui I., Iao, C. N. Forbes 106.M.

*D. hanaensis* (St. John) comb. nov.

Cyanea hanaensis St. John, *Phytologia* 62: 433-436, fig. 1, 1987.

*D. inflatispinosa* sp. nov. Frutex est, caule 1.4 m alto simplici hirsutulospinoso, petiolis 2.5-6.5 cm longis hirsutulis spinosis, laminis 25-41 X 8.5-9 cm oblanceolatis lobatis supra pilosis spinosis infra nervis hirsutulis spinosis, inflorescentia 8-12 cm longis pedicellis 15-23 mm longis hirsutulis, lobis calycis

3-4 mm longis subulatis. Typus: Hawaii I., Laupahoehoe, Kilau Stream, L. W. Cuddihy 989.

*D. kawelaensis* sp. nov. Frutex est, petiolis 3-6 cm longis glabris, laminis 13-21 X 2.7-3.7 cm ligulatis serrulatis acutis infra midnervo pilosulo, racemis 6-7 cm longis 7-floriferis, lobis calycis 2.5-3.5 mm longis lanceolatis, corollis 25-27 mm longis glabris, antheris inferis 6 mm longis. Typus: Molokai I., East Kawela Gulch, S. L. Montgomery.

*D. kipahuluensis* sp. nov. Frutex est, ramis glabris, petiolis 4-7 cm longis puberulis, laminis 33.5-37 X 14-18 cm in aspectu ellipticis sed pinnatevel bipinnate partitis serrato-dentatis infra nervis pilosulis, racemis 5-6 cm longis glabris, pedicellis 7-10 mm longis in fructu lobis calycis 14-16 mm longis ligulatis. Typus: Maui I., Kipahulu, C. N. Forbes 1,730.M.

*D. kohalaensis* sp. nov. Planta glabra est, petiolis 5-6.5 cm longis, laminis 20-21 X 9.8 cm obovatis subacuminatis basi cuneata, racemis glabris 9-11-floriferis, pedicellis 10-15 mm longis hirsutulis, lobis calycis 3-4 mm longis lanceolatis, corollis 37 mm longis, antheris superis 9 mm longis. Typus: Hawaii I., Waipio Valley, H. L. Lyon.

*D. latior* sp. nov. Frutex est, petiolis 4 cm longis puberulis, laminis 30-32 X 10.5-11 cm oblanceolatis serrulatis basi cuneata puberulis, racemis 8-9 cm longis 4-7-floriferis hirsutulis, lobis calycis 11-12 mm longis ellipticis emarginatis, corollis 33.5 mm longis purpureis pilosis. Typus: Maui I., Hanaula, K. M. Nagata & B. Kimura 1,924,

*D. Lyonii* sp. nov. Petiolis 3 cm longis glabris, laminis 25 X 6.5 cm oblanceolatis subintegribus supra aculeatis infra glabris, pedunculo 1.5 cm longo, pedicellis 12 mm longis hispidulis, lobis calycis 2.5-3 mm longis oblongis hirsutulis, antheris superis 7 mm longis. Typus: Maui I., Kailua, H. L. Lyon (Rock no.) 10,258.

*D. molokaiensis* sp. nov. Frutex 1.6-2.6 m altus eramosus glaber est, petiolis 1.8-7.3 cm longis, laminis 8.5-17.5 X 2.3-5.2 cm subcoriaceis ellipticis subacutis serrulatis basi cuneata, racemeis 4-5 cm longis 5-11-floriferis, pedunculo 2-3 cm longo, pedicellis 6-8 mm longis, lobis calycis 0.2-0.3 mm longis deltoideis, corollis 23 mm longis purpureis, antheris superis 5.5 mm longis, baccis 8 mm diametro. Typus: Molokai I., Pipiwai Gulch, S. Perlman 502.

*D. muriculata* sp. nov. Petiolis 7-8 cm longis puberulis, laminis 28-29 X 9.2-9.5 cm oblanceolatis obtusis denticulatis basi cuneata supra nervis muriculatis infra puberulis, inflorescentia 6-8-florifera, pedunculo 1.5-2 cm longo, pedicellis 1-2 cm longis glabris, lobis calycis

8-13 mm longis ligulatis apice bifido, corollis purpureis in alabastro 5.5-6.5 cm longis. Typus: Maui I., Wai Anapanapa, B. Harrison xi/22/73.

*D. nemorosa* sp. nov. Frutex 3 dm altus epiphyticus est, calule hirsutulo, petiolis 15 mm longis puberulis, laminis 15-21 X 4.5-6 cm ellipticis subacutis serrulatis basi cuneata puberulis, racemis 3-4 cm longis 7-8-floriferis, pedunculo 1 cm longo, puberulo, pedicellis 2-3 mm longis puberulis, lobis calycis 2.5-3.5 mm longis lanceolatis puberulis, corollis 25 mm longis albis puberulis, antheris superis 4 mm longis puberulis. Typus: Hawaii I., Kilauea Forest Reserve, L. Cuddihy.

*D. olokuensis* sp. nov. Frutex 1.3 m altus est, petiolis 13.5-14 cm longis glabris, laminis 34-47 X 13-15 cm ellipticis subintegribus basi cuneata infra in nervis hirsutulis, racemis 10-10.5 cm longis 5-7-floriferis hirsutis, pedicellis 16-20 mm longis, lobis inferis calycis 4.5-5 mm longis ovatis acutis, corollis 45 mm longis albis glabris, antheris superis 10 mm longis glabris. Typus: Molokai I., Olokui plateau, P. K. Higashino & R. A. Holt 9,466.

*D. puberula* sp. nov. Frutex 2.6 m altus ramosus est, novellis puberulis, petiolis 7-11 mm longis puberulis, laminis 7.6-12.3 X 1.7-2.1 cm oblanceolatis serrulatis basi cuneata infra puberulis, cymis 4-5 cm longis 5-floriferis puberulis, pedicellis 9-11 mm longis, lobis calycis 2.5-4 mm longis lanceolatis, corollis 35 mm longis puberulis, antheris superis 9.5-11 mm longis. Typus: Maui I., Haleakala, Manawainui Gulch, K. Kepler 48.

*D. sessilis* sp. nov. Frutex 3 m altus eramosus est, foliis 44-45 x 8-10 cm sessilibus glabris oblanceolatis, cymis 13 cm longis 4-floriferis glabris, pedunculo 14 mm longo, pedicellis 10-12 mm longis, lobis calycis superis 12-13 mm longis deltoideis, corollis 10 cm longis obscure purpureis, antheris superis 20 mm longis. Typus: Maui I., Kipahulu Valley, P. K. Higashino & R. A. Holt 9,398.

*D. subobtusa* sp. nov. Frutex 3-6 dm altus ramosus puberulus est, petiolis 15-22 mm longis puberulis, laminis 17-21 X 4.2-6.2 cm ellipticis subintegribus puberulis, inflorescentia 3.5-5 cm longa 9-17 florifera puberula, pedunculo 8-12 mm longo, pedicellis 4-7 mm longis, lobis calycis 2-2.5 mm longis lanceolatis puberulis, corollis 18-20 mm longis albis puberulis, antheris superis 4 mm longis. Typus: Hawaii I., Kilauea Forest Reserve, J. Davis 397,

*D. waikamoensis* sp. nov. Frutex est, novellis hirsutulis, petiolis 2-2.7 cm longis puberulis, laminis 19-26 X 4.4-6.7 cm oblanceolatis denticulatis basi cuneata infra puberulis, racemis 4.5-5 cm longis 4-9-floriferis, pedunculo 6-10 mm longo puberulo, pedicellis 4-6 mm longis puberulis, lobis calycis 6-7 mm longis subulatis

puberulis, corollis 3.5-3.7 cm longis puberulis, antheris superis 6 mm longis hirsutulis. Typus: Maui I., Waikamoi, J. F. Rock 8,806.

D. waikoluensis sp. nov. Frutex 2 m altus eramosus glaber est, petiolis 7-14 cm longis glabris, laminis 25-40 X 9-15 cm oblanceolatis basi cuneata infra nervis pilosulis, racemis 6-10 cm longis 5-9-floriferis hirsutulis, pedunculis 2.5-5 cm longis, pedicellis 15-25 mm longis, lobis calycis 3.5-5 mm longis ovatis. Typus: Molokai I., Waikolu Valleu, H. St. John 23,390.