

long. Fruit 1.3–1.7 mm long, medium to dark brown, generally 5-angled. Self-compatible or self-incompatible.

Paratypes (* progenies from wild achenes propagated in growth chambers). USA, California: Santa Barbara Co., Santa Barbara Island, Cliff Canyon, 5 May 1963, *Blakley 5696* (SBBG, RSA); bluff, due w of mouth of Cliff Canyon, 200 ft, 21 May 1966, *Philbrick and Benedict B66–373* (SBBG)*; bluff, halfway between Landing Cove & Cliff Canyon, 21 May 1966, *Philbrick and Benedict B66–371* (SBBG)*; canyon between Landing Cover and Cliff Canyon, 18 March 1968, *Philbrick B68–32* (CAS, SBBG); lower Middle Canyon, 22 March 1970, *Philbrick and Benedict 70–53* (SBBG); upper part of Graveyard Canyon, 27 April 1968, *Thorne 37512* (RSA); 3 July 1931, *Abrams and Wiggins 304* (DS, UC); above landing, along steps leading to Ranger's Residence, 3 July 1982, *Davis 434* (DHL)*; cliffs above Graveyard Canyon, 3 July 1982, *Davis 435* (DHL)*; upper southern margins of Middle Canyon, 3 July 1982, *Davis 436* (DHL)*; dry ridge along trail n of Ranger's Residence, 3 July 1982, *Davis 437* (DHL)*; along trail s of Middle Cliff Canyon, 3 July 1982, *Davis 438* (DHL)*; along path through desert pavement area, nw tip of island, 3 July 1982, *Davis 439* (DHL)*; west side, common, 28 May 1939, *M.B. Dunkle 8133* (DS, LAM, SBBG, UNM); just above landing platform, Landing Cove, 21 May 1966, *Philbrick and Benedict B66–356* (SBBG); east side of embayment of Cat Canyon, 28 April 1968, *Thorne 37485* (CAS, DS, RSA); north slope of Signal Peak, 4 May 1963, *Blakley 5677* (SBBG).

PHI is particularly variable in growth habit and cauline leaf morphology, and at least two distinct ecotypes are recognizable. On the windy northwest side of Santa Barbara Island, on open flats with coarse, gravelly soil, is a low-growing decumbent form with 5–10 abundantly leafy stems from the base. On the drier southeast side, in among shrubs and other vegetation in small canyons or draws, is an erect form, generally with a single stem from the base and branched above, with cauline leaves reduced upward. The two ecotypes breed true in cultivation and are indistinguishable in floral morphology.

Thirty-one percent of the plants of PHI grown in cultivation from wild achenes were self-incompatible. Self-compatible plants were poorly self-pollinating (<10% of the achenes from mature undisturbed heads were pigmented/filled).

1d. ***Malacothrix foliosa* ssp. *polycephala*** W. S. Davis ssp. nov.—
TYPE: USA, California, Ventura Co., San Nicolas Island, annual, pale yellow flowers, clay slopes about 200–300 ft elevation, above the docks scattered near the west end of the island;

colonial San Nicolas Island, 24 April 1966, *Raven and Thompson 20784* (holotype: MO; isotypes: CAS!, DHL!, DS!, JEPS!, NY, OBI!, SBBG!, UC!, US!).

Plantae annuae, 10–35 mm altae. Caulis plerumque e basi unicus, supra ramosus, ascendens vel arrectus, pallide vel mediocriter ruber. Folia superna caulina ovata, in marginibus pinnatim in 3–4 segmenta angusta plerumque dentata non crispata divisa; folia suprema triangularia, basem versus in 1–2 paria segmentorum longorum angustorum divisa, in marginibus partis $\frac{2}{3}$ distalis integra. Capitula sub anthesi diametro 2–4.5 mm, in base subcontracta. Involucrum 5–7 mm altum; phyllaria exteriora 7–15, plerumque phyllariis interioribus longitudine 2plo breviora, rubra in apice et atriora; phyllaria interiora 8–14 subrubra. Flosculi 15–17; corollae 5.3–9 mm longae mediocriter flavae; ligulae flosculorum extimorum 1.5–3.3 mm latae, trans involucrum 1.5–3.5 mm exsertae; stamina 2.9–5 mm longa; ramuli styli 0.4–0.5 mm longi. Fructus 0.9–1.3 mm longus mediocriter vel atrofuscae plerumque aequaliter 15-costatus. Autogamae et aptae se pollinare.

Plants annual, 10–35 cm tall. Stems generally solitary from the base, branched above, ascending to erect, pale red to medium red. Upper cauline leaves ovate, margins pinnately parted into 3–4 narrow, often toothed, not crisped segments; uppermost leaves triangular, parted near the base into 1–2 pairs of long narrow segments, margins of distal $\frac{2}{3}$ entire. Heads 2–4.5 mm wide at anthesis, base somewhat tapered. Involucre 5–7 mm high; outer phyllaries 7–15, generally $\frac{1}{2}$ the length of the inner, red with darker red tips; inner phyllaries 8–14, reddish. Florets 15–70; corolla 5.3–9 mm long, medium yellow; ligules of outermost florets 1.5–3 mm wide, exserted 1.5–3.5 mm beyond the involucre; stamens 2.9–5 mm long; style branches 0.4–0.5 mm long. Fruit 0.9–1.3 mm long, medium to dark brown, generally evenly 15-ribbed. Self-compatible and self-pollinating.

Paratypes (* progenies from wild achenes propagated in growth chambers). USA, California: Ventura Co., San Nicolas Island, flats above ravine area between Tranquility Beach and Corral Harbor, 30 May 1986, *Davis 468* (DHL)*; above Tranquility Beach near NAVFAC, 30 May 1986, *Davis 469* (DHL)*; along Tufts Road, 30 May 1986, *Davis 470* (DHL)*; near triangulation point east of Tule Creek, 11 June 1969, *Philbrick and Benedict B69-184* (SBBG); west Jehemy Beach, 10 June 1969, *Philbrick and Benedict B69-171* (SBBG); mesa, between Celery Creek and pond, 10 June 1969, *Philbrick and Benedict B69-135* (SBBG); between Elephant Seal and Dutch Harbor, 24 April 1966, *Raven and Thompson 20784* (DHL, CAS, etc.); near w end of island, 24 April 1966, *Raven and Thompson* (DHL, etc.)*; Sewage Canyon, 12 March 1977, *Smith s.n.*

(DHL)*; near center of the island, 13 March 1977, *Smith s.n.*
 (DHL)*; near mouth of Celery Canyon, 28 July 1965, *Forman 80*
 (US); west of Tule Canyon, 4 July 1978, *Wier and Beauchamp s.n.*
 (UC); area on the ridge, April 1897, *Trask 108* (MO, UC, US).

Only self-compatible plants were found in progenies from wild seed or from intrataxon crosses. A majority of plants were strongly self-pollinating (>70% of the achenes in undisturbed heads were pigmented/filled).

Because of natural hybridization between INC and POL, it is becoming difficult to distinguish between pure POL and hybrid plants in some areas on San Nicolas Island, particularly on the northwest or west sides adjacent to the ocean.

2. *Malacothrix indecora* Greene. Bulletin of the California Academy. 2:152. 1886.—*Malacothrix foliosa* var. *indecora* E. Williams, American Midland Naturalist 58:507.—TYPE: USA, California, Santa Barbara Co., Santa Cruz Island, July and August 1886, *E. L. Greene s.n.* (holotype: CAS!; isotypes: DS!, GH!, MO!, ND-G!, NY!, UC!, US!).

Plants annual, 2–15 cm tall, generally mat-like. Stems several from the base, branched above, green to pale red, essentially glabrous, arachnoid in leaf axils. Basal leaves obovate, 2–5 cm long, 0.5–1 mm wide, somewhat fleshy, obtusely 4–8-lobed. Cauline leaves similar to basal leaves but somewhat reduced upward. Heads 2–7 mm wide at anthesis, base rounded. Involucre 6–8 mm high; outer phyllaries 22–32, generally ovate, nearly as long as the inner, 1.1–4.2 mm long, 0.4–1.7 mm wide, green to red-tinged, slightly constricted below the obtuse tip, hyaline/scarious margins <0.3 mm wide; inner phyllaries 19–23, linear-lanceolate, 5.2–7.2 mm long, 1–1.8 mm wide, green, tips of alternate ones often paler green, hyaline/scarious margins <0.3 mm wide. Florets 22–81; corolla 4–8 mm long, greenish yellow; ligules of outermost florets 1.5–2.5 mm wide, exserted 1.3–3.3 mm beyond the involucre; stamens 3.4–5.4 mm long; style branches 0.2–0.5 mm long. Fruit 1.2–1.6 mm long, narrowed at the base, the apex truncate and slightly constricted, dark brown, 15-ribbed and 5-angled; outer pappus none. Self-compatible, and self-pollinating. $2n=14$.

Representative specimens (* progenies from wild achenes propagated in growth chambers). USA, California: Santa Barbara Co., San Miguel Island, Twin Harbor on indian mound, 18 July 1939, *Williams 87* (POM); mesa above sea, 19 April 1932, *Hoffmann 692* (UC); n of mouth of Willows Canyon, 19 April 1932, *Hoffmann 694* (UC, LL); rocky knoll opposite Prince's Island, 19 April 1932, *Hoffmann s.n.* (SBBG); seaward edge of coastal flats just n of mouth of Willow Canyon, ca. 50 ft, 20 July 1995, *Junak and Williams*