



## New Plant Records for Asteraceae Flora of Kolhapur District, Maharashtra

D. G. Jagtap, M. Y. Bachulkar-Cholekar and V. B. Awale\*

Department of Botany, Shri Vijaysinha Yadav Arts and Science College, Peth-Vadgaon-416 112, Kolhapur, Maharashtra

\*Department of Botany, Dr. Patangrao Kadam Mahavidyala, Sangli-416 416, Maharashtra

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### ABSTRACT

The paper deals with the floral survey made in Kolhapur district. This includes 13 species of Family Asteraceae, which are new plant records and additions to the Asteraceae flora of Kolhapur district.

### INTRODUCTION

Kolhapur is the extreme southern district of Maharashtra state, which is fairly rich in plant diversity. The district is situated between latitude 17°17' and 15°43' N and longitude 73°40' to 74°42' E covering an area of 7685 sq. km. Recently, Yadav & Sardesai (2002) have published "*Flora of Kolhapur District*", comprising 2227 species of flowering plants, reported from entire District. In the flora of Kolhapur district, Family Asteraceae is among the ten dominant families and represented second rank by the higher number of species. In district flora, Asteraceae is represented by 103 species. In the present investigation 13 more species of Asteraceae have been collected by the authors from various regions of district and are reporting here for the first time for Kolhapur district. This raises the total number of Asteraceae species for Kolhapur district to 116.

### MATERIALS AND METHODS

During frequent excursions to various localities of Kolhapur district, extensive and intensive collections of Asteraceae species were made in different seasons for three years. All the specimens collected were numbered and properly processed. Identifications were confirmed at Botanical Survey of India, Western Circle, Pune and Shivaji University, Kolhapur. The voucher specimens are deposited in the Herbarium, Botany Department, Shivaji University, Kolhapur.

Following is the list and short diagnostic description of these newly recorded species, with collection number and distribution. Local names, if any, follow the citation.

*Echinops cornigerus* DC. Prodr. 6 : 525. 1838; Hook. f. Fl. Brit. India 3 : 358. 1881; Hajra in Hajra et al. Fl. India 12 : 178-179.1995, Jagtap et al. Nat. J. Life Sci. 6(3). 378-380, 2009. 'Katechumbek'.

Rigid annual herbs, 30-90 cm tall; branches covered with white cottony pubescence. Leaves sessile, 6-14 cm long, deeply pinnatifid, sinuate and spinescent, scaberulous above, dirty-white cottony pubescence beneath. Heads globose 6-7 cm in diameter on stout peduncles. Involucres surrounded by strong white bristles 2.5 cm long. Disc florets bisexual. Achenes obconic, 5-gonous, densely silky villose, 11 mm long. Pappus coroniform of many short connate bristles.

Fls. & Frts. : October-December

Distrib. : Malkapur. J.B.-3420

*Enhydra fluctuans* Lour. Fl. India Cochinch. 511.1790; Hook.f.Fl. Brit. India 3 : 304.1881; Chowdhery in Hajra et al. Fl. India, 12.384.t.104.1995.

Aquatic decumbent herbs; stems purple and rooting at the nodes, fleshy, hollow; younger parts hairy. Leaves simple, opposite, linear-oblong, fleshy, acute to obtuse, entire to subcrenate, gland dotted, sessile. Heads white-yellow, axillary or terminal, surrounded by leafy involucre bracts, sessile. Involucral bracts in 2 series, persistent. Ray florets female, in several rows, fertile. Disc florets campanulate. Achenes oblong, 4-5 mm long, compressed. Pappus absent.

Fls. & Frts. : January-April.

Distrib. : Rankala Lake, Kolhapur. J.B.-3424.

*Gynura amplexicaulis* Oliv. & Hiern in Oliv. et al. Fl. Trop. Afr. 3 : 403, 1877; Bachulkar & Jagtap, Rheedeia 19 (1&2) : 59-60. 2009. *Crassocephalum amplexicaule* (Oliv. & Hiern) S. Moore. in J. Bot. 50.211. 1912.

Erect perennial herbs, 120-185 cm high, glabrous with tuberous root stocks; stem angular with leaf scars. Leaves semisucculent, alternate, sessile, oblong, elliptic-lanceolate to rhomboid, 12-21 × 3.5-5.8 cm, amplexicaul, dentate, acute at apex. Heads in 2-4 clustered corbyms or lax panicles,

terminal or axillary, campanulate. Involucral bracts 1-seriate. Disc florets orange. Achenes oblong, 6 mm long, glabrous, dark brown, deeply ribbed; ribs 10. Pappus copious 13-14 mm long, white.

Fls. & Frts. : July-November.

Distrib. : Amba. J.B.-3333.

*Mikania micrantha* Kunth. in H.B.K., Nov. Gen. Sp. 4 : 134. 1820; Uniyal in Hajra et al. Fl. Ind. 12 : 356.1995. *M. scandens acut.*, C.B. Clarke, Comp. Ind. 34, 1876, non Willd.

Twining shrub, 1-5 m tall; stems terete or slightly angular at younger parts, solid or fistulosus, glabrous or puberulous. Leaves opposite, cordate-hastate, short acuminate, undulate, 3-9 × 1-6 cm, 3-5 - nerved from base; petiole 6 cm long. Heads small, 5 mm long, in corymbase panicles, homogamous, 4-flowered. Involucral bracts oblong. Anthers appendiculate. Achenes 1.5-2.0 mm long, 4-5-ribbed, glandular. Pappus hairs many, uniseriate.

Fls. & Frts. : September-December

Distrib. : Malkapur. J.B.-3426.

*Pluchea tomentosa* DC. in Wight, Contrib. Bot. Ind. 16.1834; Hook. f. Fl. Brit. India 3:272-1881; Cooke, Fl. Pres. Bombay 2 : 81.1958 (Repr.). Kumar in Hajra et al. Fl. India 13 : 155.1995; Shirodkar & Lakshmin. in Singh et al. Fl. Maharashtra 2 : 233.2001.

Shrubs, 1-4 m tall, branched; branches terete. Leaves sessile, semi amplexicaul, auricled at base, obovate, obtuse or subacute, acutely serrate, dentate 2-8 × 1.5-3.5 cm, pilose above, pubescent beneath. Heads in compound corymb 0.8-2.0 cm in diam. Involucre campanulate; outer involucral bracts short, ovate; inner linear, oblong, ciliate near apex. Receptacle glabrous. Achenes minutely angled, glabrous. Pappus reddish, minutely barbellate.

Fls. & Frts. : December-February

Distrib. : Along roadside and water logged marshy lands, Shirol, Peth-Vadgaon, J.B.-3450.

*Senecio hewrensis* (Dalz.) Hook. f. Fl. Brit. India 3 : 346. 1881; Cooke, Fl. Pres. Bombay 2: 109, 1958 (Repr.); Mathur in Hajra et al. Fl. India 13 : 256.t.78.1995; Shirodkar & Lakshmin. in Singh et al. Fl. Maharashtra 2:240.2001. *Doronicum hewrense* Dalz. in Dalz. & Gibs. Bombay Fl. 130.1861.

Herbs, annual, erect, dwarf 10-12 cm high; stems slender, branched. Leaves ovate-lanceolate, toothed or pinnatisect, 1.5-4 × 1.5-2 cm, sessile to shortly petioled, cauline leaves auricled at the base. Heads yellow, radiate, 5 mm in diam. on weak peduncles in lax corymbose cymes. Involucre campanulate, grayish green; bracts 8-10, with white scarious margins. Ray florets constantly 3. Disc

florets numerous, tubular. Achenes brownish, broader upwards 1-2 mm long, hairy. Pappus of pale brown barbellate hairs.

Fls. & Frts.: August-October

Distrib. : Grows on gravelly soil of hill slopes and in rocky crevices. Narande-Sidhhoba Hill, Peth-Vadgaon. J.B. - 3455.

*Sonchus wightianus* DC. Prodr. 7 : 187.1838. subsp. *wightianus*; Mamgain & Rao in Hajra et.al. Fl. India 12 : 321-323.1995; Jagtap & Bachulkar Phytotaxonomy 8 : 47-50. 2008. *S. arvensis auct. non.* L. Hook. f. Fl. Brit. India 3:414.1881 pp.

Erect perennial herbs, with long cylindric rootstock; stems 80-130 cm tall, glandular hairy. Leaves 7-37 × 1.5-7.5 cm, with acute or mucronate apex, spinous toothed, lanceolate auricled; cauline leaves narrowly oblanceolate with toothed auricle, amplexicaul; uppermost leaves lanceolate, with acute apex, with toothed auricle. Heads cylindric, broadly campanulate, 1.2-2 × 1-2 cm, erect, densely pilose glandular hairy, often mixed with white woolly tomentum at the base; peduncle long, glandular hairy. Involucral bracts many seriate. Florets many; ligules yellow. Achenes brownish, elliptic 3-4.5 mm long, transversely rugose. Pappus white 6-10 mm, copious, many seriate.

Fls. & Frts.: Throughout the year

Distrib.: Grows along gutter walls. Kolhapur city and Bhogavati. J.B.-3399.

*Sonchus wightianus* subsp. *wallichianus* (DC.) Boulos in Bot. Not. 125:197.1972; Mamgain & Rao in Hajra et al. Fl. India 12:323. 1995; Japtap & Bachukar Phytotaxomy 8:50.2008. *Sonchus wallichianus* DC. Prodr. 7:185.1838.

Stems glabrous. Heads densely white tomentose.

Fls. & Frts.:April-November.

Distrib.:Grows along old walls and streams. Kolhapur city. J.B.-3398.

*Spilanthes ciliata* H.B.K. Nov. Gen. et. Sp. Pl. 208. 1820; Chowdhary in Hajra et al. in Fl. India 12 : 409, 1995; Jagtap et al. Life Sci. Bull. 7(1):25-26. 2010 'Akkalkhara'.

Decumbent, annual herbs, 20-40 cm tall; stems terete, purple tinged. Leaves opposite, ovate or deltoid, obtuse to acute, 2-4 × 1-3 cm, base truncate, narrowed into petiole; margins serrate with purple tinge; petiole 4-15 mm long. Heads dark yellow, rayed, subglobose, conical, axillary solitary or terminal with 2-3 heads in lax panicle, 1.0 cm across. Involucral bracts 2-seriate. Ray florets 9-11; corolla ligulate. Achenes black, trigonous, glabrous, ciliate along margins. Pappus absent. Disc florets many, bisexual; corolla tube yellow, 5-lobed. Achenes brownish-black, oblong, truncate at apex with short beak, laterally compressed,

strongly corky margined, ciliate along the margins. Pappus with 1 long bristle.

Fls. & Frts.: August-December

Distrib. : Bhogavati, Kurukli. J.B.-3432

*Spilanthes radicans* Jacq. collect. Bot. Chem. Hist. Nat., 11(3):1714. 1804; Sivaraj & Mathew in Anc. Sci. Life, 3 : 169. 1984; Chowdhary in Hajra et al. Fl. India, 12:412.1995; Jagtap et al. Life Sci. Bull. 6(2) : 193-194. 2009. "Pandhara Akkalkhara".

Erect annual herbs, 30-60 cm tall; stems teret, sparsely hairy. Leaves opposite-ovate, 3.5-12 × 2-7 cm, rhomboid, dentate; petiole 0.5-2.0 cm long. Heads discoid, globose, 7-8 mm across on slender peduncle. Involucral bracts 2-seriate, broadly ovate. Ray florets absent. Disc florets numerous, bisexual. Corolla white, tubular. Achenes dimorphic; marginal achenes trigonous, margins densely ciliate, brownish black; pappus 2-3 awns; central achenes flat, ciliate on margins; pappus 2- awns, unequal, 2 mm long.

Fls. & Frts. : October-January

Distrib.: Amba, Bhogavati. J.B.-3377.

*Spilanthes uliginosa* Sw. Nov. Gen. Pl. Scu. Prodr. Descr. Veg. Ind. Occ.110.1788; Sivaraj & Matthew in Anc. Sci. Life 3:169. 1984; Chowdhery in Hajra et al. Fl. India 12: 412.1995.

Herbs upto 30-50 cm high, creeping or sometimes erect, rooting at nodes; stems subglabrous or scabrid-pilose. Leaves ovate-elliptic, obtuse, attenuate, entire or undulate, 1.5-6 × 1-3.5 cm glabrous; petioles 1-1.5 cm long. Heads radiate, ovoid or subglobose, 4-6 × 3-5 mm, ovoid at maturity. Peduncles 1-4.5 cm long. Involucral bracts 5-8, uniseriate. Ray florets usually 5; corolla with 2-3 rounded lobes at the apex. Disc florets many. Achenes dimorphic; marginal ones trigonous; central ones laterally compressed, margins sparsely ciliate. Pappus of 2 unequal bristles; absent in ray achenes.

Fls. & Frts. : March - September

Distrib. : Grows near Jaysingrao lake, Kagal. J.B.3331.

*Tithonia diversifolia* (Hemsl.) A. Gray in Pres. Amer. Acad. Arts 19:5. 1883; Chowdhery in Hajra et al. Fl. India 12 : 416, f. 118. 1995; Shirodkar & Lakshmin in Singh et al. Fl. Maharashtra 2:266. 2001.

Undershrubs 2-3 m tall. Leaves alternate deltoid, 3-5-lobed, acuminate with attenuate base, serrate, 7-30 × 7-20 cm, shortly hispid hairy above. Heads solitary on long peduncles, heterogamous. Involucral bracts many, 3-4 seriate, oblong-ovate. Ray florets 7-14, yellow, linear, bi or trifid at apex. Disc florets numerous, yellow 5-lobed. Achenes black, obovoid, trigonous. Pappus of 2-3, membranous scales.

Fls. & Frts.: October - March

Distrib.:Along roadsides, Washi, Parite. J.B.-3374.

*Youngia japonica* (L.) DC., Prodr. 7:194. 1838; Mamgain & Rao in Hajra et al. Fl. India 12 : 329.1995. *Prenanthes japonica* L. Mant. Pl. 107. 1767.

Annual herbs with white latex; 15-75 cm high. Stems fistular, glabrous; Leaves mainly radical, many, rosulate, oblanceolate, 4-16 × 1-4.5 cm; cauline leaves few, 0.6-2.5 × 0.4-0.5 cm linear or lanceolate. Heads cylindrical, 5-8 × 2-3 mm, yellow, in less branched cymose corymb; peduncles slender. Outer involucral bracts ovate; inner linear-lanceolate, broadly cylindrical. Ligules yellow or orange yellow. Achenes dark reddish brown, angular, 10-ribbed, 2-3 mm long.

Fls. & Frts. : September-March

Distrib. : Grows on shady hill slopes. Malkapur J.B. - 3427.

*Youngia pseudosenecia* (Vaniot) C. Shih Fl. Republ. Polularis Sin. 80(1): 151, pl. 36, f. 2.1997. *Lactuca pseudosenecia* Vaniot, Bull. Acad. Int. Geogr. Bot. 12 : 320, 489. 1903. *Youngia japonica* subsp. *elstoni* (Hochr.) Babcock & Stebbins in Carn. Inst. Wash. Publ. 484 : 98.f.29.1937; Mamgain & Rao in Hajra et al., Fl. India 12 : 329. 1995.

Annual herbs with white latex, 20-60 cm high. Stems minutely grooved, fistular, puberulous. Leaves mainly radical, many, rosulate, oblanceolate, 4-10 × 1-3 cm; cauline leaves few, smaller, 0.6-1.4 × 0.4-0.5 cm, linear. Heads cylindrical 5-7 × 2-2.5 mm, in more branched cymose corymb; peduncles slender. Outer involucral bracts ovate; inner involucral bracts linear-lanceolate, narrowly cylindrical. Ligules yellow or orange-yellow. Achenes dark reddish-brown, angular, 10-ribbed, 2-2.5 mm long. Pappus white, 2.5-3.0 mm long.

Fls. & Frts.: September-February

Distrib.: Malkapur. J.B.-3430.

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