

tute, for his interest and to the Indian Council of Agricultural Research for providing the necessary facilities.

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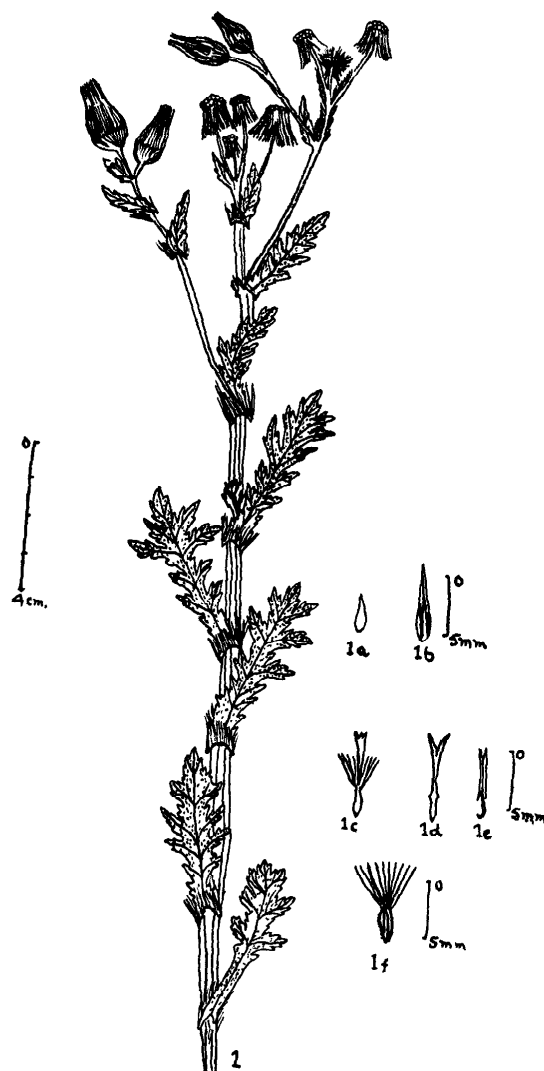
SENECIO VULGARIS LINN.—A FAST SPREADING EXOTIC WEED OF CROP FIELDS AND ORCHARDS OF KASHMIR

The genus *Senecio* Linn. (Compositae) is probably the largest of the plant genera with about 1200 species, distributed almost all over the world (Bailey 1958). Hooker (1875) listed 63 species under the genus from the Indian subcontinent. During the field collections the author has collected specimens of another species viz. *S. vulgaris* Linn. which has not been recorded from any part of India. This species is said to be native of Europe and a common weed in various parts of the world. It is probably a spontaneous introduction in Kashmir and has naturalized under temperate type of climate. It occurs as a common weed in all types of fields spreading fast throughout the valley.

Since the plant has neither been fully described nor illustrated in any of the existing Indian floras, it has been felt to fill this gap.

Senecio vulgaris Linn. Sp. Pl. 867. 1753;
Polunin in Fl. Europea 449. 1969.

Annual or biennial herbs up to 30 cm in height. Stem erect branched, sometimes angled, sparingly hairy with cottony long hairs towards the apices of the branches. Leaves mostly cauline, alternate, 2.0-4.5 cm long, pinnatifid, irregularly and deeply cut into somewhat oblong lobes; lobes toothed, somewhat thick; bases auricled, mostly glabrous and sometimes hairy. Flower heads corymbose, yellow, up to 1.5 cm long, slightly broader at the base and tapering towards the apex; peduncles 0.5-4.5 cm long, somewhat cottony. Involucral bracts 2-seriate, outer ones 6-10 up to 4 mm long, black-tip-



Senecio vulgaris Linn.

Figs. 1-1f: 1. A flowering branch. 1a. Outer involucral bract. 1b. Inner involucral bract. 1c. A disc floret. 1d. An ovary with style. 1e. A stamen. 1f. An achene.

ped; inner ones 15-20 up to 1 cm long, narrowly lanceolate, margins membranous, glabrous, acute, persistent, recurving after dehiscence. Flowers homogamous, ligules 0. Disc-florets hermaphrodite with 3-5 fid corolla tube, anthers syngenesious and sagittate inside the corolla tube; style truncate protruding out of the corolla tube. Achenes up to 5 mm, linear, ribbed along the length, slightly hairy on the ribs; pappus white, longer than the achenes.

Specimen examined: RRL Campus, Srinagar, 30.4.1970—Kaul 140 (Herb. RRL, Srinagar).

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SAPOGENINS OF *SOLANUM SEAFORTHIANUM* ANDR.

Solanum seaforthianum Andr. is a woody climber. It is cultivated as an ornamental plant, for its beautiful bluish-purple flowers, in the temperate regions of the country. Earlier workers (Manske, 1968) have reported presence of alkaloids in different parts of this plant. The present work revealed the presence of tigogenin and gitogenin in the fruits and traces of tigogenin in the leaves.

The well defatted fruits (340 gm.) were extracted exhaustively with alcohol and the alcoholic extract was concentrated and divided into ether soluble and ether-insoluble fractions. The ether-insoluble material was hydrolysed with 5% alcoholic hydrochloric acid and the solid obtained on removal of alcohol was freed from the acid and chromatographed over neutral alumina. Two crystalline fractions were obtained from the eluates.

Fraction I (2.8 gm), was obtained from benzene: petrolether (1: 1) eluates and was crystallised from acetone in white micro-needles, $C_{27}H_{44}O_3$ m.p. $210^\circ C$, $[\alpha]_D -70^\circ$ ($CHCl_3$); acetate, m.p. $210^\circ - 211^\circ C$, $[\alpha]_D -80^\circ$ ($CHCl_3$). On oxidation fraction I afforded a crystalline ketone, $C_{27}H_{42}O_3$ m.p. $211^\circ C$.

This ketone showed positive Zimmermann colouration for 3-keto group. These properties of the compound and its derivatives are in good agreement with those of tigogenin and its derivatives suggesting their identity. It was substantiated by mixed m.p. and identical I. R. spectra with an authentic sample of tigogenin.

Fraction II (2.2 gm), was obtained from benzene eluent and was crystallised from acetone in white micro-needles, $C_{27}H_{44}O_4$, m.p. $262^\circ - 263^\circ C$, $[\alpha]_D -78.5$ ($CHCl_3$); acetate m.p. $240^\circ C$, $[\alpha]_D -108^\circ$ ($CHCl_3$). On oxidation fraction II gave an acid $C_{27}H_{42}O_6$, m.p. $246^\circ C$; this acid on methylation gave a methyl ester m.p. $132^\circ - 133^\circ C$. The above properties agree well with those reported for gitogenin and its derivatives. The identity was established by mixed m.p. and identical I. R. spectra with an authentic sample of gitogenin.

Similarly from the leaves negligible amount of tigogenin was isolated.

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