

europas de *Rorippa*, se diferencia por sus pedicelos fructíferos, siempre muy breves.

Se trata de una especie muy variable, dentro de la cual STUCKEY (*l.c.*) y ROLLINS (*l.c.*) admiten siete variedades de compleja identificación. La descripción aquí presentada está basada en los materiales herborizados en Galicia y, parcialmente, en el que pudo cultivarse en Madrid a partir de sus semillas, todos los cuales parecen coincidir mejor con la variedad típica (MADRID: Madrid, culta ex sem., V/VI-1999, Juan B. Martínez-Laborde 620, MA 629085, 629086).

Las plantas de la población hallada pasan la temporada invernal en forma de roseta, y al llegar la primavera se alarga el tallo, muy ramoso desde la base, y florece; la antesis se prolonga hasta finales de verano. Luego el tallo se hace totalmente procumbente y pierde las hojas basales. Las semillas obtenidas del ejemplar recolectado en 1997 se sembraron en Madrid en agosto de 1998 y germinaron abundantemente. Las plantas así obtenidas vegetaron durante el otoño e invierno, florecieron también en primavera y se agostaron a comienzos del verano.

Esta población fue detectada en 1996, y desde entonces parece ir en aumento, tanto en número de individuos como en superficie colonizada, aunque hasta ahora solo ocupa una extensión de unos

200 m a lo largo de la línea de orilla (en más de 9 km de longitud del embalse). Como en otras especies de origen americano que se han propagado cerca de la costa atlántica española, su introducción ha podido deberse tanto a la actividad humana directa o indirecta (potenciada por la mayor frecuencia de viajeros transatlánticos) como a las migraciones de aves acuáticas. Las semillas de *R. curvisiliqua* no presentan rasgos estructurales adecuados para la zoocoria, ni se ha podido detectar en ellas la emisión de muclago en contacto con el agua, pero se ha observado que muestran una marcada adherencia a las superficies húmedas, notablemente persistente luego en seco, que podría facilitar la ornitocoria.

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SENECIO PTEROPHORUS DC., A NEW ALIEN SPECIES IN THE EUROPEAN MAINLAND

ESP, *BARCELONA: Montcada i Reixach, 31TDF3193, Ripoll river bank, 150 m, 1-XI-1998, *I. Afán*, BCC. Riells del Fai, 31TDG3516, Solell del Bertí, 17-VI-1998, *J. Pino*, BCC. Sant Adrià de Besòs, 31TDF3586, Llera del riu, 30-VIII-1996, *J. Pino*, BCC. Montseny, 31TDG5722, sobre Gorg Negre de Gualba, V-1997, *C. Gutiérrez*, BCC. *TARRAGONA: Vinyols, 31TCF3454, Riera d'Alforja, explotació d'àrids, 26-VI-1999, *J. Pino*, BCC.

Senecio pterophorus DC. is an erect, semi-lignose shrub (fig. 1) which grows up to 2 m high. Is a chamaephyte basipetal branch-shedder (ORSHAN, *Plant pheno-morphological studies in Mediterranean type ecosystems*: 210-211. 1989) whose new branches appear below inflorescences but not from the lower parts of the plant. Leaves lanceolate. Stems are annual and develop at their apex a great number of small (up to 15 mm in diameter) yellow capitula which are grouped in a corymbose-paniculated inflorescence (HARVEY & SONDER, *Flora Capensis: Cape Colony, Caffraria & Port Natal* 3: 386. 1865).

The species is indigenous to the province of Natal in South Africa (WELLS & *al.* in *Mem. Bot. Survey S. Africa* 53: 471. 1986). It has also been introduced in the British Isles in Europe, where it colonizes several disturbed habitats (STACE, *New flora of the British Isles*: 739. 1997). The species has also been found in a large number of localities in the Besòs and Tordera basins in the provinces of Barcelona and Girona (Catalonia, NE Spain) since 1995. In spring 1999, a new location was identified in the Riudecanyes basin in the province of Tarragona, 150 km from those of Barcelona. All these localities have been previously documented for the European mainland. Most of them are located in the lower Besòs catchment, including the Besòs, the Ripoll and the Tenes rivers. As a result of a degradation processes due to the proximity to the metropolitan area of Barcelona, the river bed is occupied by ruderal herbaceous communities made up of *Silybum marianum*, *Artemisia verlotiorum*, *Hordeum murinum* subsp. *leporinum*, *Piptatherum miliaceum*, *Rumex* sp. pl., *Hirschfeldia incana*, *Arundo donax* and a large number of minor species,

many of which are alien invaders (PINO, *Acta Bot. Barc.* 46: 6-16. 1999). In contrast, several other localities correspond to coastal ranges such as the Montseny and the Bertí, in the higher river basins outside urban areas, and concentrate in native shrublands affected by wildfires in 1994. In these communities the major species are *Rosmarinus officinalis*, *Rubus ulmifolius*, *Cistus albidus*, *C. salvifolius*, *Dorycnium pentaphyllum*, *D. hirsutum*, *Brachypodium retusum*, and *B. phoenicoides*.

Population dynamics

Populations growing in river beds and shrublands exhibit major differences in their size-structure. River populations are dominated by large plants, with more than 65% of individuals reaching

a basal diameter of 70 cm or more. Shrubland populations exhibit an opposite pattern, with 72% of individuals corresponding to seedlings and less than 5% of plants achieving a basal diameter of 50 cm or more. Moreover, mortality rates also seem to differ between these two habitats, since the proportion of dead plants in river and shrubland populations is 25% and 40% respectively.

The size-structure of plants might reflect contrasting timing of invasion between river and shrubland populations. Those in the Besòs river bed have been known since 1995 when they were already dominated by large plants, which suggests that colonization occurred many years ago. In contrast, shrubland populations seem very young, because of their size-structure is dominated by seedlings and also because they are limited to burnt areas in 1994, suggesting that colonization took place after fire. Contrasting mortality rates and seedling proportions in river and shrubland localities also indicates variations in population dynamics. Shrubland populations seem to be unstable and related to fire episodes. The abundance of gaps after fire disturbance permits the establishment of large seedling populations, but increasing interference caused by the subsequent recovery of the shrubland community probably limits their survival to a few years. In contrast, river populations seem to exhibit more stable dynamics, with few opportunities for seedling establishment, but also higher survival of adult plants over time. Monitoring programs of field populations and experimental studies were initiated in 1999 in several river and shrubland populations in order to elucidate the population dynamics of the species and possible variations between habitats (AFÁN, *Introducción al estudio de los mecanismos de invasión de dos especies alóctonas del género Senecio (S. inaequidens y S. pterophorus) en Cataluña*, MsC Thesis, University of Barcelona. 2000).

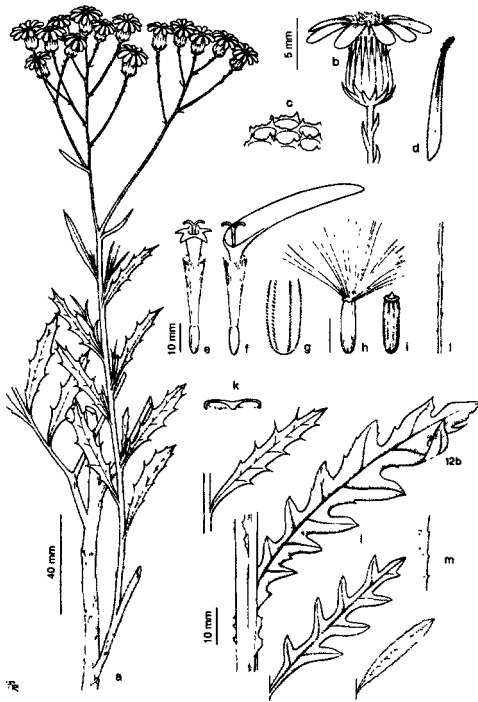


Fig. 1.—Details of *Senecio pterophorus* DC.: a, flowering stem; b, capitulum consisting of actinomorphic disc florets in the center and irregular ray-florets at the margin, attached to the receptacle is an involucre of bracts in 2 series; c, scaly bracts surrounding florets; d, detail of a bract; e, disc floret; f, ray-floret showing the inferior ovary, and the corolla surrounded by the hairy pappus; g, detail of the ovary, showing the longitudinal ribs; h, mature fruit with the attached pappus; i, mature fruit without the pappus; j, enlarged view of a pappus hair; k, transversal section of a leaf, showing tomentose beneath; l, leaf variability; m, detail of the fine denticulate margin.

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