

RORIPPA SENSU STRICTO

Jonsell (1968) is highly recommended as the classic monograph on *Rorippa sensu stricto*.

Rorippa causes problems for a number of reasons. First, most of the species are variable, certainly between, and, sometimes, within sites. *R. sylvestris* is particularly variable. Leaf shape can be modified by fluctuating water levels.

Second, *R. amphibia*, *R. austriaca* and *R. sylvestris* are self-incompatible, and, consequently, variably fertile. Keys based primarily on fruit may therefore be of little use in the field. *Rorippa sylvestris* is most often found with fruit absent or poorly set. With familiarity, all species can be named from leaves, flowers, and immature fruit (data for British material are given in Rich 1991).

Third, the *Rorippa islandica/palustris* split consistently causes confusion, due to the nomenclature, and due to the similarity between the species (though they are quite distinct). Formally, both taxa were included under one species, *R. islandica*. Following the split, the widespread, common species became *R. palustris* (L.) Besser subsp. *palustris*, and the rare plant scattered in the north and west became *R. islandica* (Oeder ex Murray) Borbás subsp. *islandica*. Most old records of *R. islandica* refer to *R. palustris*.

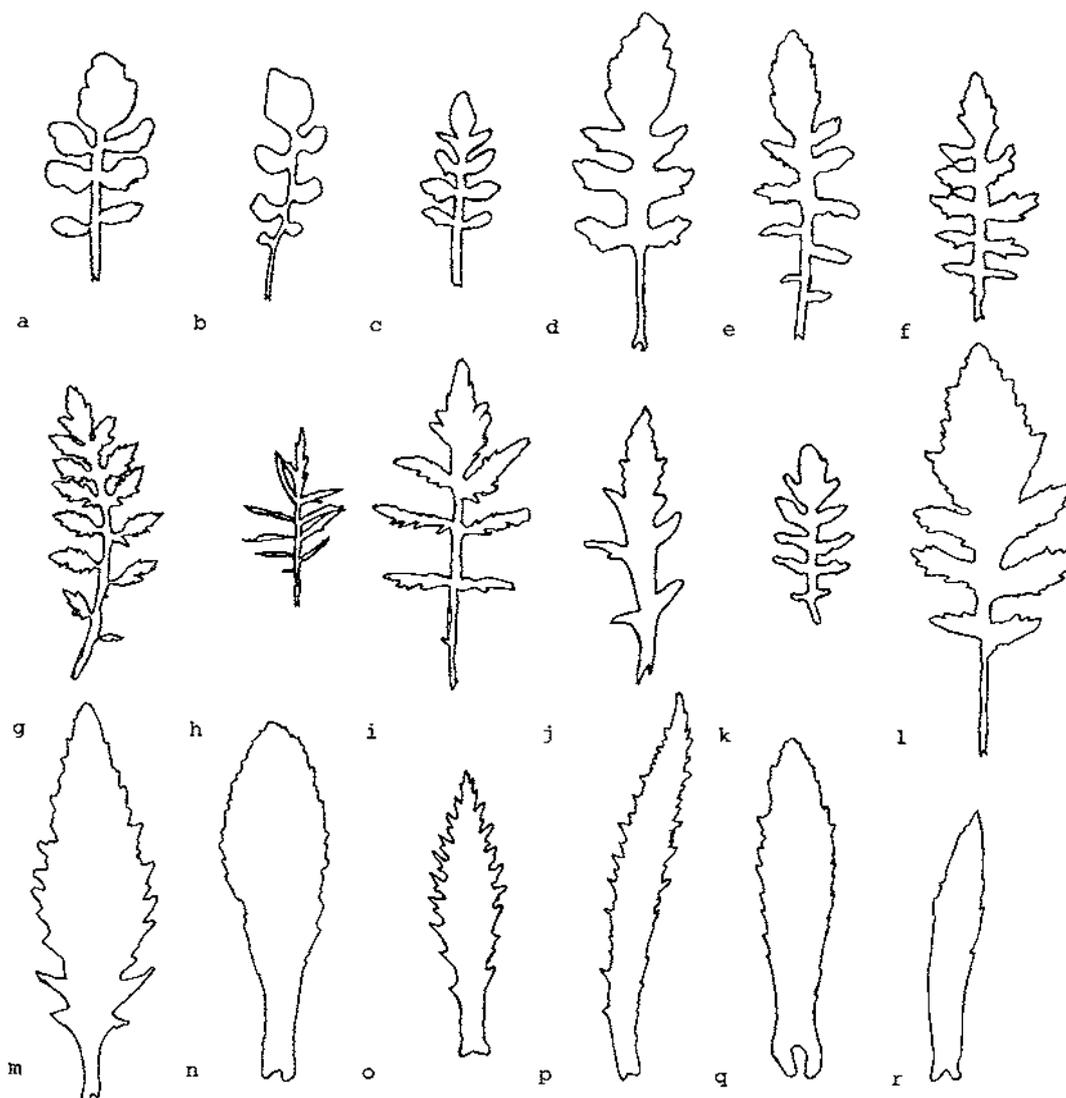
Fourth, a number of hybrids occur, which can produce some confusing local populations. The hybrids are generally intermediate, and, like the parents, variably fertile (sterility is not a good indicator of hybrid origin in *Rorippa*). Voucher specimens are required with material of the suspected parents, to help account for local variability. The following hybrids have been confirmed:

- R. amphibia* × *R. sylvestris* = *R. × anceps* (probably widespread in Britain and Ireland)
- R. amphibia* × *R. palustris* = *R. × erythrocaulis* (a few sites only in Britain and Ireland)
- R. amphibia* × *R. austriaca* = *R. × hungarica* (one site, now extinct)
- R. austriaca* × *R. sylvestris* = *R. × armoracioides* (scattered in Britain)
- (*R. sylvestris* × *R. palustris* does not occur in Britain, though it is present on the Continent.)

1. Key to Main *Rorippa* Taxa

The following notes apply to the key: Petal and sepal lengths refer to the fresh material, and must be measured in mature flowers (freshly opened flowers have smaller petals, which continue to grow after anthesis). The annual species occur as isolated individuals, which are easily uprooted. The perennial species either root from the lower nodes (e.g. *R. amphibia*), or form patches by spreading underground rhizomes (these are described as stolons in CTW). Lower leaves of *R. amphibia* may be pinnatifid if submerged, but these differ markedly from the upper leaves, and usually do not persist. Descriptions of leaves apply to leaves on the main flowering stem(s) (side shoots are more variable). Length of fruit includes the style. The commonest hybrid, *R. amphibia* × *R. sylvestris*, is also included.

Plant Crib 3



Middle stem leaves of (A-C) *R. islandica* s.s., (D-F) *R. palustris*, (G-I) *R. sylvestris*, (J-L) *R. × anceps*, (M-O) *R. amphibia*, (P-R) *R. austriaca*. (Not to scale.)

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|----|---|---------------------------------|
| 1. | Petals ± equalling sepals in length (petals 1.0-2.8 mm, sepals 1.1-3.0 mm) | 2 |
| 1. | Petals 1.4 or more times as long as sepals (petals (2.2-)2.8-6.0(-6.2) mm, sepals 1.8-4.3 mm) | 4 |
| 2. | Perennial with spreading rhizomes | Apetalous <i>R. sylvestris</i> |
| 2. | Usually annual, rhizomes absent | 3 |
| 3. | Most fruits held swept to one side; seeds finely colliculate (see also below) | |
| | <i>R. islandica</i> (Oeder ex Murray) Borbás sensu stricto | |
| 3. | Fruits held around the stem; seeds coarsely colliculate | <i>R. palustris</i> (L.) Besser |
| 4. | Middle stem leaves pinnatisect to pinnatifid, lobed more than half way to midrib (Figs. g-i and j-l); auricles absent or small and inconspicuous (less than half width of the stem) | 5 |
| 4. | Middle stem leaves simple, margin entire, toothed or shallowly lobed to half way to midrib (Figs. m-o and p-r); auricles conspicuous or small (rarely absent) | 6 |

Plant Crib 3

5. Fruits 9-22 × 1.0-1.2 mm but variably fertile; style of fruit 0.5-1.0(-1.2) mm; pedicels ascending to spreading; middle leaves equally deeply lobed at base and apex (Figs. g-i) *R. sylvestris* (L.) Besser
5. Fruits 3-10 × 1.2-2.5 mm but variably fertile; style of fruit (0.8-)1.2-2.5(-3.0) mm; pedicels usually deflexed; middle leaves deeply lobed at base, more shallowly lobed at apex (Figs. j-l)
R. × anceps (Wg) Rchb.
6. Immature ovaries and valves of fruit circular; fruits c. 3 mm long; pedicels usually ascending to spreading
R. austriaca (Crantz) Besser
6. Immature ovaries and valves of fruit elliptic to oblong; fruits (2.5-)3-6 mm long; pedicels usually spreading to deflexed
R. amphibia (L.) Besser

2. *Rorippa islandica* / *R. palustris*

Rorippa islandica has spread markedly since the early 1990s (cf. Chater & Rich, 1995), and is now widespread in the west, on reservoirs, riversides, and, sometimes, as a weed in pavements and farmyards.

	<i>R. islandica</i> s.s.	<i>R. palustris</i>
Habit	Usually prostrate or ascending	Erect
Petals	1.0-1.5(-1.7) mm	(1.4-)1.7-2.7(-2.8) mm
Fruit	Usually held hanging to one side (rarely all round stem)	Held spreading around stem
Seeds	Pale, finely colliculate	Dark, coarsely colliculate

The instant jizz character to tell it apart from *R. palustris* is that the fruits are usually held swept to one side. The most reliable is the sculpturing of the seed surface (colliculate refers to the low, rounded swellings on the seed surface), which, unfortunately, requires microscopic examination with comparative material. Voucher material, therefore, need only consist of a few fruit, with ripe (pale brown) seed (the valves of the fruit dehisce whilst they are green). The other morphological characters given in the Table are, taken together, reasonably diagnostic, but still require confirmation from seed.

- References** Chater, A. O. & Rich, T. C. G. (1995). *Watsonia* **20**: 229-238.
Jonsell, B. (1968). *Symb. Bot. Upsalienses* **19**: 1-222.
Rich, T. C. G. (1991). *Crucifers of Great Britain and Ireland*. BSBI, London.

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