

BUTTERCUP BUSHES (SENNA SER. COLUTEOIDEAE, CAESALPINIACEAE)

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Buttercup bushes, which in other countries are more usually known as "senna", are very common in Auckland's suburban gardens; small short-lived warmth-loving trees of rather careless growth they might well do to symbolize our "mock subtropics", with their abundance of golden blossom well into winter then falling into partly-leafless broken-podded disarray.

Senna has until recently (Irwin and Barneby 1982) been treated as part of the very large genus Cassia. The series Coluteoideae (a name ultimately referring to the likeness of the pod to a length of large intestine) is composed of twenty species of Central and South America, where they are widespread in natural and induced vegetation. The long-cultivated ornamental species readily become weeds and are now thoroughly at home in warmer places round the world. With respect to this naturalization, it is curious that despite being members of the legume superfamily, sennas do not develop root nodules.

Irwin and Barneby's monograph, one of the great works of modern taxonomic scholarship, provides the definitive basis for the identification and naming of these plants. In Flora IV (1988) Colin Webb has three naturalized taxa; Senna multiglandulosa (formerly Cassia tomentosa) and S. septentrionalis (C. laevigata) with scattered localities mostly in the North Island, their hybrid S. x floribunda, which is noted as having been collected wild at the Auckland Zoo.

Although these three sennas are common in Auckland gardens natural seedlings are very infrequent. The only population I know of is at Gribblehurst Park, where until recently there were two old plants of S. x floribunda at the foot of a bushy slope. Directly underneath at the lawn edge is a swarm of parental and recombinant-type plants, seemingly all having sprung up in the same season two or three years ago. There are a very few other wildings in the vicinity. Perhaps the seeds in the soil here were disturbed by a deeper-than-usual incursion of the mowing machine.

As cultivated, S. x floribunda is a relatively uniform taxon, probably being the F₁ cross. Recombinant forms are grown but seem not to be as vigorous. S. x floribunda is immediately distinguishable from its parents by its intermediate-shaped leaves (oblong-elliptic), which are to some degree pubescent. A slightly lowered fertility makes the seed set irregular, so the pods become contracted at intervals. Some of the recombinant plants seem not to make any seed at all.

The fourth taxon that I have illustrated is Senna pendula var. glabrata, previously usually known as Cassia coluteoides (e.g. Symon 1966) or C. corymbosa. It is the most common Auckland garden senna, having the advantages of the largest flower, more compact habit, and a negligible formation of fruit.

In South America S. pendula is a vastly variable species but our material almost all belongs to the one clone, known in the trade as Cassia corymbosa 'John Ball'. It has rounded leaflets widest above the middle, with distinctive orange margins and a patch of pubescence in the basal angle below. There is only a single club-shaped gland on the petiole, between the proximal leaflets (the other 3 taxa have a pointed gland between all except the distal pair). This plant is very prone to fold its leaflets in dull windy weather.

Its flower is notable for the way in which the largest pair of stamens curve out then up and inwards, rather like the controls of an aeroplane.

The lower central anther is shrunken for much of its length. (Senna stamens are a study in themselves; there is an upper flattened "signalling" set and a central "feeding" set in addition to the "pollinating" set of three, the only ones shown in my illustrations).

In Australia S. pendula var. glabrata is recorded by Randell (1988) as extensively naturalized in coastal areas of northern New South Wales, apparently having increased since Symon's (1966) assessment. In Auckland a few malformed pods are made usually late in the season, but I have never found seed.

I have seen a single plant of what appears to be another variant of S. pendula var. glabrata (Gardner 6056, not illustrated). It differs from cv. 'John Ball' in its more pointed less obovate leaves and stamens hardly curved in the transverse plane.

Two other species in the series, S. bicapsularis and S. corymbosa, are commonly cultivated overseas. Both are like S. pendula in having only a single leaf gland. The former has 2-4 pairs of obovate leaflets, pedicels less than 1 cm long and a shrunken lower central anther; the latter has 2-3 pairs of lanceolate leaflets and a plump lower central anther. Specimens collected by Max Goodey from perhaps the one plant in a Mt Eden garden (AK 151044, 149321) I believe are of S. corymbosa.

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- A. Senna septemtrionalis (Viv.) Irwin & Barneby
Leaf x 0.45; flower (part) showing disposition of style and lower three stamens x 1.4; lower central anther x 7; pod x 1
 - B. S. multiglandulosa (Jacq.) Irwin & Barneby
Leaf x 0.45, basal leaflet junction with gland x 2; flower (part) x 1.4; lower central anther x 7; pod x 1
 - C. S. x floribunda (Cav.) Irwin & Barneby
Leaf x 0.45; flower (part) x 1.4; lower central anther x 7; pod x 1
 - D. S. pendula (Willd.) Irwin & Barneby var. glabrata (J. Vogel) Irwin & Barneby
Leaves, the lower one "asleep" x 0.45, apical leaflet x 1, basal leaflet junction with gland x 2; flower (part) x 1.4; lower central anther x 7; pod x 1, inflorescence with two imperfectly-developed pods x 1

