

Flowers for flies

J A Webb



I'm principally a botanist, but I'm very keen on flies and I have been looking into how to encourage them in a garden, considering that many flowers they depend on are declining in the general countryside these days. Many flies need to stock up on nectar for energy and of course some, especially hoverflies, need to feed up on protein-rich pollen to produce eggs. Thus flowers for flies do not always need to be ones which produce lots of nectar, often big pollen-producers like some wind-pollinated plants, are favoured by pollen-gathering hoverflies (they even visit the anthers of grass and mugwort flowers plus catkins of wind pollinated trees like hazel, oak).



Eristalis tenax on ivy. Photo: Steve Woodward

Generally flowers for flies need to be:

- Open at the right time of year when the fly is on the wing (garden full of winter flowering shrubs is no good). The main garden hoverfly peaks tend to be in May and late July/early August, into September if the weather is favourable.
- Open and flat or with many flowers in a flat or globular head to provide a good landing platform (only bee flies with their long tongues can hover and feed at the same time).

- Have nectar exposed or down only a short flower corolla-tube. Flies do not, with exception of a few like bee flies (*Bombylius*) hoverflies (*Eristalis*, *Rhingia*, *Volucella*) tachinids (*Siphona*) conopids and some empids, have the long probosces necessary for drinking deeply hidden nectar in longer corolla-tube flowers (these are usually specialized for bees or moths)

So what can you do to feed flies in your own garden by selective planting? The Royal Horticultural Society has produced a 'Perfect for Pollinators' list (see ref.) which will give you lots of ideas, but my impression is that it is dictated by the needs of bees and butterflies. For flies, my researches and conversations with other Dipterists indicate that if space and aesthetics are no object, the simple answer would be hogweed, hogweed and yet more hogweed, but of course life is not that simple. In a garden, one needs acceptably attractive plants and of course small gardens cannot host such big tall 'thugs' in a border. It is also nice to have a succession of tasty things coming into flower throughout the year, rather than only in one month. One also needs to consider the type of soil in your garden, whether acid or alkaline, dry and free draining, or heavy and prone to water-logging and buy plants appropriately. Flowers for flies need to be in warm sunny positions to be useable, as they will not go to those in cool shade – especially important in spring. However if you do have some semi-shade and want a fly food plant there, a carpet of enchanter's nightshade (*Circaea lutetiana*) will be just great for small hoverflies of shady situations like *Neoascia* and *Syrirta*.



Phasia hemiptera (Tachinidae) enjoying hogweed (*Heracleum sphondylium*) Photo: Steve Woodward

Border Perennials

Fly-friendly small spring flowers for a border? Well it has got to be primroses, cowslips and lungwort (*Pulmonaria*) in full sun for the bee flies *Bombylius* and *Rhingia* hoverflies. These can also make use of spring bulb flowers such as grape hyacinth (*Muscari*) and bluebells. Anemones provide only pollen, but this may attract spring hoverflies. *Rhingia* can also use bugle (*Ajuga*) flowers and this can come in pretty variegated leaf ground cover varieties.



Rhingia campestris on red campion *Silene dioica*. Photo: Steve Woodward

Small perennials for the front of the border? Anything with open flowers in a cluster for easy landing and short corolla tubes with abundant nectar – sedums (stonecrops), marjoram, mints and thymes are good. Saxifrages of all sorts have small open starry flowers with exposed nectar that would enjoy such a position. For medium height in a hot sunny position, what about garden varieties of the common yarrow (*Achillea millefolium*). These come in every shade from the normal white flowers through sugar pink to yellow and are a good mid-summer nectar source used by flies.

Taller perennials for middle to back of a border? I suggest for later summer flowering hemp agrimony (*Eupatorium*) is a must (good for butterflies as well). Ornamental members of the Apiaceae (Umbelliferae) are a big draw. This family of plants is extremely important for flies in the wild (see 'Hoverflies of Surrey' by Roger Morris and see how often they are mentioned as being visited). If you don't fancy hogweed, what about tall, elegant, ferny-leaved fennel (*Foeniculum*) with its yellow flower clusters (and you can eat the leaves) also garden angelica is very pretty but ever so tall (wild angelica is almost as pretty and much shorter). If you want to go for the really enormous, try *Ferula communis*, you will need binoculars to actually see if there are any flies on the flowers up high. Umbellifer (Apiaceae) family herbs like lovage, coriander, parsley and chervil, will all produce those flat plates of tiny white nectar-rich flowers that flies love to land on (if you don't eat all the leaves and let them actually flower). Alexanders (*Smyrniolus atrum*) is a herb introduced by the Romans that is the first umbellifer to flower in spring for very early flies. Ivan Perry finds the most amazing variety of flies, including rare tachinid flies, on his bush of perennial 'shrubby hare's-ear' (*Bupleurum fruticosum***) in his garden. This is an umbellifer with large flower heads of tiny yellow-green flowers which rival hogweed for nectar production. Of course Ivan lives next to some wonderful habitats in Cambridgeshire that produce the exciting tachinids as they provide the plants that feed their Lepidoptera hosts, but you

never know what special flies might be just round the corner in your neighbourhood looking for a good dinner.

Continuing thinking about the Apiaceae, if you have a largish garden, how about a patch of common cow parsley (*Anthriscus sylvestris*) for an early spring bite for the flies. If you can't have such a wild area why not look into a plant I'm very interested in trialling - a pretty pink garden variety of the greater burnet saxifrage, which is normally white-flowered and is used by flies in damp calcareous grasslands, but has become rare as a wild plant in my area. If you put its garden variety name '*Pimpinella major* Rosea' into any search engine, you will come up with photos and lots of suppliers of potted plants. Pretty blue sea holly (*Eryngium*) of all sorts seem very useful as well, later in summer. Here, rather surprisingly, I have a good word for that 'gardener's bane' plant known as ground elder (*Aegopodium*). It is a creeping perennial thug with rhizomes that are the very devil to eradicate from a border once it has a hold. However, as an umbellifer, it has heads of tiny white flowers very attractive to flies out in May. In my local fen in Oxford city, there are often no flies to be found at this time by sweeping the fen vegetation which is mostly rushes and sedges. All the flies breeding in the fen are to be found on the nectar-rich large patch of ground elder flowers on an adjacent drier bank (where they have spread out from previous dumping of waste garden rubbish). I read that one can buy a prettier variegated-leaved garden variety of ground elder which is less invasive. Worth a try in a confined area like a large tub, perhaps sunken in the border in a good sunny spot?



Chrysogaster solstitialis hoverflies enjoy ground elder (*Aegopodium podagraria*). Photo: Judy Webb

Flies in the wild go for knapweeds and thistles (*Centaurea* and *Cirsium* spp.). These are perfectly attractive plants with purple daisy-type flowers for growing in the garden. Don't forget that if you do that you may attract lovely tephritids like *Urophora* spp. to actually breed in the flower-heads. Big-flowered thistles like musk thistle or woolly thistle are attractive enough for a garden. Spear thistle is a biennial, so might be tolerated for one year on an allotment in a way that the perennial pest creeping thistle would not be. Sow thistles (*Sonchus* spp.) are also useful 'weeds'. Daisy-type flowers that are similar to the common wild oxeye daisy (*Leucanthemum*) are good (but why not have a mini meadow full

of buttercups and wild oxeye daisies in a sunny corner?). Plants in the Scabious family are also useful with attractive lilac/purple flowers (*Knautia* and *Scabiosa* spp.). Devil's-bit Scabious (*Succisa*) is a useful late summer flowerer, when the only other thing out in late summer to early autumn are michaelmas daisies (*Aster* spp.). These last are useful for flies, -but I cannot bring myself to plant them, as I spend such a lot of time pulling them out of my local nature area where they are thugs, having escaped from gardens and are romping away in a monoculture, excluding native, useful, earlier-flowering plants. Good for a garden where they can be controlled more easily. The yellow-green flowered spurges (*Euphorbia* spp.) are sometimes used as ground cover. There are short and tall flowered versions, but all have open flowers with exposed nectar and are used by hoverflies. Mallows, Lavateras and hollyhocks (*Alcea*) produce such an abundance of pollen in open flowers they must surely be useful to pollen-consuming hoverflies, but I have no observations on this and would welcome input from other people with views on these plants.

In wild habitats there is a 'nectar gap' in late July/August which is admirably filled for flies by that often reviled plant ragwort (several *Senecio* sp). Nothing to stop you having plenty of ragwort in your garden in your mini-meadow if you want! The daisy bush from New Zealand (*Olearia haastii*) flowers exactly in that August gap and I wonder if it is popular with flies? Personally I quite like the alien Oxford Ragwort (*Senecio squalidus*) as a sunny border plant as it has bigger flowers and starts flowering earlier than other ragworts, here in Oxon as early as April and certainly by May.



Syrirta pipiens on ragwort (*Senecio* sp.) Photo: Steve Woodward.

Garden Ponds

Even if your pond is very small, how about some water plantain (*Alisma plantago-aquatica*) as a tall emergent and some floating frogbit (*Hydrocharis morsus-ranae*). Their open small 3-petalled white flowers are both visited by hoverflies and ephydrids. What about my personal favourite pretty emergents – the arrowhead (*Sagittaria*) with large white open flowers and the flowering rush (*Butomus*) with clusters of open 3-petalled pink flowers. Marsh Marigold (*Caltha*) with its large buttercup-style flowers would also be good for the pond edge along with the water forget-me-not (*Myosotis scorpioides*). Creeping jenny (*Lysimachia nummularia*) perhaps in the garden golden-leaved version, could creep over the damp paving around such a pond and if in sun, will produce

abundant open yellow flowers used by flies. Common valerian (*Valeriana officinalis*) or marsh valerian (*V. dioica*) will attract flies in any marginal marsh/bog garden, but the all-time winners for such a positions have to be wild angelica (as good as hogweed) and water mint (*Mentha aquatica*) with lilac flower heads late in the year - loved by all sorts of flies, perhaps combined with the cheerful yellow button-shaped daisy-type flower heads of fleabane (*Pulicaria*). Meadowsweet (*Filipendula*) will supply abundant pollen but no nectar. Fool's water-cress (*Apium nodiflorum*) is an umbellifer much used by flies in wild ditches and ponds, so nothing to stop you putting it in your garden pond along with white flowered water-cress from the brassica family. All the dolichopodids and ephydrids from your pond will love those.



Every pond should have water mint (*Mentha aquatica*) [top] and fleabane (*Pulicaria dysenterica*) with the Marmalade fly *Epsirphus balteatus*. Photos: Judy Webb

Allotments or Vegetable Gardens

On the allotment, why not allow some of your un-harvested carrots, celery and parsnips to grow up and flower ? – these umbelliferous plants have flowers that are some of the most favoured by flies in wild habitats. As these are biennials, if you want more instant results in one year, why not buy some carrots with green tops in a shop and actually plant them out in a border – they will then grow flowers that year. Un-harvested cabbage, broccoli or cauliflower should be left to go to seed where the yellow four-petalled flowers can be used by flies. A clump of chives produces abundant spherical purple flower heads that are much used and what about a patch of wild ramsons with their white globular flowerheads for flies and delicate garlic-scented leaves for salads? Do you have a bindweed problem on the allotment? Perhaps don't eradicate it all, but leave some in a hot sunny portion where it will flower abundantly with those pretty pink trumpets and attract hoverflies. How about leaving the poppies that pop up as weeds? These produce only pollen (no nectar) but the pollen is abundant as a reward to pollinators, so they will be good for hoverflies which can be attracted to lay eggs on your crop plants and then their larvae can usefully consume lots of greenfly and blackfly. The best plant sold as a hoverfly-attractant for allotments or for organic farming to control aphids is the scorpion weed, *Phacelia tanacetifolia*. This is a tall annual, flowering continuously from July to September in with curled racemes of pretty blue-lilac flowers. Once the hoverflies are attracted to this plant they are very likely to lay eggs on the aphid-infested crop plants nearby and their larvae will consume the pests. I'm sure it will be good for other flies as well as hovers, but I would welcome some feed-back on this from gardeners. If you have room for soft fruit, blackberries have flowers much used by flies in mid-summer and red currants and black currants have small green flowers useful for early flies.



Scorpion weed (*Phacelia tanacetifolia*) a favourite with hoverflies. Photo: Judy Webb

Annuals for the edge of a sunny border or corner of an allotment? All sorts of weeds of the scented and scentless mayweed type of open daisy flower (*Tripleurospermum* & *Matricaria* spp.) should be left. Feverfew (*Tanacetum parthenium*) is also very good, along with annual candytuft (*Iberis*). Forget-me-nots (*Myosotis* spp.) are pretty and attract hoverflies like *Platycheirus* and *Syritta*. In full sun the proper perennial chamomile (*Chamaemelum nobile*) is useful as it has attractive grey-green scented leaves and white daisy flowers which can be used for herbal tea (or preferably leave them for flies).

Lawns

What about a fly-friendly lawn? Well, I have been trying that for some years. A mix of native species with the mowing relaxed a little at flowering time is working quite well. Yes, encourage celandines and buttercups of all sorts (*Ranunculus* sp for e.g. *Cheilosia* hoverflies) and common daisies and dandelions, but what I have also added are mouse ear hawkweeds (*Pilosella officinarum*). This spreads by runners, loves mowing and produces a flush of lemon yellow dandelion type flowers in early summer. It is very drought tolerant so good for a hot dry lawn. Also good in this situation are the other dandelion look-alikes of cat's ear and various hawkbits (*Hypochoeris* and *Leontodon*) especially the late summer autumn hawkbit, *Leontodon autumnale*. Plantains are thought of unattractive flowers that are wind pollinated, but the hoary plantain (*Plantago media*) is scented and has flower spikes with attractive lavender-coloured filaments to the anthers, so is designed for insects. I have seen hoverflies feeding on the pollen. Some speedwells like lawns and flowers of the germander speedwell (*Veronica chamaedrys*) is liked by hoverflies e.g. *Baccha* and *Melanostoma* spp. I'm hoping to be able to introduce the meadow saxifrage (*Saxifraga granulata*) to the lawn in future years and see what likes that. All these lawn things will need the mowing relaxed for a bit around June to flower abundantly, but will survive regular mowing at all other times.

Shrubs

Shrubs I have found to have flowers very attractive to flies include dogwood (*Cornus* spp.) and hawthorn (*Crataegus* spp. but not the ornamental double-flowered, go for the wild type). Privet and elder flowers are used but don't seem so popular and my impression is that there are a lot of common garden shrubs that are not useful, for instance – oleaster (*Elaeagnus*, flowers in winter) japonica, kerrya, snowberry, forsythia, berberis, hydrangea, griselinia, hebe, aucuba, escallonia, fuchsia, buddleia ... there are loads. It is not that these are completely unused, maybe some people have seen the odd fly on e.g. buddleia (especially big hoverflies) it is more that they are bulky and take up a lot of space, which in a small garden would be better used for a really good fly-friendly shrub (like the shrubby hare's-ear mentioned previously). Rhododendron and azalea flowers can be visited by flies, but are not hugely attractive. Think about these that follow. Why not find room for a couple of small native spindle (*Euonymus europaeus*)? This has a profusion of small green flowers with exposed nectar for flies and you have the benefit of the attractive pink/orange berries later for birds. Other white and yellow variegated *Euonymus fortunei* shrubs used for ground cover have similar flowers so I expect them to be useful as well. Small yellow-flowered members of the rose family in the genus *Potentilla*, like tormentil, silverweed and cinquefoil are used by flies in the wild, so shrubby *Potentillas* (varieties of *Potentilla fruticosa*) are useful in a garden context. Other useful garden

shrubs are species of *Viburnum*, *Cotoneaster* and *Pyracantha* and shrubby yellow-flowered relatives of ragwort (*Brachyglottis*). Single roses can be useful, but fully double roses are of no use to any insect*. Rosemary and lavender seem unattractive as they are definitely bee-plants. Shrubby St John's worts (*Hypericum*) don't seem much good and especially not that ground cover one with the fibre-optic lamp stamens known as Rose of Sharon (*H. calycinum*). If anyone thinks I'm I'm wrong, please let me know. Also let me know if you have a really good shrub for flies.



Volucella pellucens on guelder rose (*Viburnum opulus*). Photo: Steve Woodward

Trees

What trees are best for flies? If you are talking about early to midsummer flowering my answer would be lime, lime and yet more lime – native small-leaved lime or large-leaved lime (*Tilia* spp.). If you could manage one tree of each species, there will be abundant nectar and pollen from mid-June (large-leaved lime flowers first) into July (small-leaved lime). You can extend the dinner for flies if you plant the later-flowering Crimean lime (*Tilia euchlora*, which flowers later in July). Sweeping the accessible regions of three species of lime flowers in my local nature park has produced the most amazing variety of flies, with rare hoverflies like *Criorhina* spp. (must be some good rot holes nearby) and hordes of tiny hybotids in the genus *Platypalpus* (that is if you can fight your way past the numerous bees, wasps and beetles that are also feasting on the flowers). Bee-keepers note that the lime is known as the 'honey-tree'!



Common Lime (*Tilia x europaea*) Photo: Steve Woodward

At other times of the year one can feed flies by planting trees of single-flowered (**not double***) *Prunus* species – blackthorn, plum, cherry and cherry plum for early hoverflies and bee flies. Later, apples (*Malus* spp.) pears (*Pyrus* spp.) and rowans and service trees (*Sorbus* spp.) are all useful to some degree. Maples (*Acers*) like field maple, sycamore and Norway maple produce yellow-green flowers with abundance of nectar in spring to early summer that are highly attractive to flies. Early spring-flowering willows (*Salix* spp.) produce catkins with abundant nectar (and pollen, but **only** on the **male** trees) which can be extremely important for early flies – if you have room only for one, how about a small male pussy willow in a sunlit corner? – can be pruned to keep it small. A later spring-flowerer that is useful to flies is the holly tree (choose male or hermaphrodite versions to make sure pollen available).



Bombylius major enjoys single wild cherry flowers. Photo: Judy Webb

One interesting thing about some trees and other plants is that they have so much attack by sap-sucking aphids (e.g. blackfly and greenfly) that there is usually a good coating of honeydew actually on the leaves. This is especially noticeable with sycamore and lime trees (don't plant a lime tree over where you park your car). This honeydew is dried sugary secretion of the aphids and attracts a lot of flies. I think it may be very important in areas or at times of year where there are not many suitable flowers. I have seen flies attracted to nettle leaves and when I looked closely, the nettles were covered in aphids and the flies were feeding on the honeydew drops which had accumulated on the leaves just below the aphid colonies. Adults of the fungus associated platypezid flies never visit flowers, but spend a lot of time rushing about on leaves and feeding on honeydew there. Perhaps one could help flies by leaving aphid infestations alone to generate honeydew and putting the insecticide spray away!

Climbers

This is simple – the best has got to be ivy, but not in that boring non-flowering evergreen vegetative sheet version that covers shady borders and is a thug that excludes more useful plants, **but** the excellent sort of ivy that is allowed to climb up a wall or fence in the light so it can **flower** – we all know how important ivy flowers are to late summer flies (and butterflies like red admirals) as it has little green flowers with exposed nectar drops. It really does not matter what type of ivy one has – all manner of variegated and interesting leaf shape ornamentals will do, the important thing

being that they are allowed to get up into the light and **flower** (non-flowering ivy can actually be a suffocating thug in a border, see below). For a small garden I would advise against the very large rampant sorts like *Hedera colchica* and go for a more delicate small-leaved ivy that is less work to control each year and get it growing up something, not covering the ground. One must not forget the benefit a fence covered in ivy is in terms of hibernation sites for insects and nest sites for birds. What about other climbers? Honeysuckles and jasmines have the nectar down too long a tube for the generally shorter tongues of flies to get at (these flowers are good for moths). Wisteria is bee adapted and I've never seen any flies using spectacular passion flower (*Passiflora*) but the small unspectacular, greenish, open flowers of Virginia creeper or Boston ivy (*Parthenocissus* sp) and the vine (*Vitis vinifera*) certainly look to be fly-adapted. How about an ornamental grapevine for flowers and fruit? *Clematis* spp. of all sorts have open flowers with abundant pollen, so they may be attractive to hoverflies, but I have only noted these on the flowers of wild clematis.



Myiathropa florea on Ivy (*Hedera helix*) flowers. Photo: Steve Woodward

Time for a change?

What border flowers take up space and are not good for flies? Well, anything that is mainly adapted for other pollinators like bees and moths i.e. tobacco (*Nicotiana*) with its really long corolla tubes. Flowers in the Fabaceae (pea/bean/vetch/clover) family have specialized closed flowers that are generally in need of the strong arm tactics which only bees and wasps can apply to prize open the petals to get at the nectar. Most weak-armed, delicate-bodied flies cannot open up these flowers like strong bees can (with the noted exception of a few largish hoverflies). Thus the following garden flowers are pretty useless as fly-attractants: lupins, sweet peas, everlasting sweet pea, broom, gorse, laburnum, snapdragon, toadflax, foxglove, sidalcea, delphinium, monk's hood (*Aconitum*) and others. Flowers in the dead-nettle family (Lamiaceae) are more commonly bee-adapted with long corolla tubes and nectar thus out of reach (except for the likes of *Rhingia* and those already mentioned). The really long-corolla ones like Sage and other *Salvias*, woundworts (*Stachys*) Jerusalem Sage (*Phlomis*) obviously cannot be used, but short-tubed mint and oregano (marjoram) are great for flies. Also not useful are garden busy lizzies, although other members of the family like balsams (*Impatiens*) can be used by some flies, including the alien plant Himalayan Balsam, which is

romping away and changing so many of our river corridors and wetlands. Please don't grow that though, as it may spread from your garden to the wild and cause problems. Begonias of all sorts are useless. Campions seem used only by the likes of *Rhingia* and other pinks and carnations are equally unattractive, along with irises and most of the lily family. Ericaceous things like bell-heathers (*Erica*) and *Pieris* are not much good but wild ling (*Calluna vulgaris*) is enjoyed by flies in summer. Large garden pelargoniums seem useless, but small wild versions of the geranium family like herb robert (*Geranium robertianum*) are used. I've never seen any fly using the big-flowered or open-flowered bell flowers, like Canterbury bells (*Campanulas*). Trees that are not very attractive (except to some early hoverflies) include all the wind-pollinated sorts with no nectar such as ash, hazel, beech, oak, birch, alder.

So what would the worst garden for fly foods be? Full of those easy-maintenance conifers that are prostrate, evergreen mats, or tall cupressus 'Leylandii' hedges casting dense shade, with only winter-flowering heathers, *Ericas* and similar plants. Or with mainly ferns, shaded, non-flowering ivy mats and other evergreen ground cover like rose of Sharon. I see plenty of 'low maintenance' borders like this in municipal plantings and despair for flies and other insects. Beds can be full of shrubs that flower only in winter, when no flies are around like *Viburnum tinus* and oleaster (*Elaeagnus*) or wind pollinated things like sea buckthorn (*Hippophae*). Or one could even have a very pretty flowery garden full of only bee- or moth-adapted flowers and not realize you are starving the flies.



No insects enjoy double cherry flowers! Photo: Judy Webb

Away with all that kind of plant and get in some good fly-food plants instead when you take your spring trip to the garden centre! Also if you find any plant in your garden that has flowers that are a real winner with flies, I would be very pleased if you would let me know. I have just received a packet of *Bupleurum fruticosum* seeds as a birthday present, so I'm looking forward to growing them and conducting the Oxfordshire 'Tachinid attraction trial'! More information on flower visiting by flies is to be found in the latest edition of the Dipterists Handbook in the article by Martin Speight and if you are interested in pollination and pollinators of

all sorts, I recommend the New Naturalist book on this topic by Proctor, Yeo and Lack.

*Double flowers of all sorts are where the extra petals in the middle are modified stamens that no longer produce pollen. Thus they are poor pollen-food for flies, they also do not produce as much nectar as the single flower versions.

** Thompson & Morgan stock the seeds, but plants available in garden centres

References

Morris, R. K. A, (1998) Hoverflies of Surrey, Surrey Wildlife Trust

Proctor, M, Yeo, P. & Lack, A. (1996) The Natural History of Pollination, Collins
New Naturalist Series No 83

RHS Perfect for Pollinators list http://besthabitats.com/wp-content/uploads/2011/05/RHS_Pollinators_PlantList_V1.pdf

Speight, M D. 'Flower-visiting Flies' in Dipterists Handbook, (2nd Ed.) 2010,
Edited by P J Chandler



Stratiomys chameleon on Angelica

Judy Webb
Email: judy.webb@virgin.net