ATTRACTING INSECTS FOR BACKYARD ENTOMOLOGY

DALE H. HABECK*

SYNOPSIS

Many insects can be attracted and grown in even an urban yard by providing appropriate invitations and accommodations including flowers, nest sites and ponds.

Usually when entomologists think of attracting insects, they think of baits, pheromone traps, blacklights, mercury vapor lights, and other devices that bring insects to a bedsheet or trap for capture. To the contrary, this article is about attracting insects by providing a favorable environment or accommodations for them. Once established as visitors or residents, they can be watched for aesthetic pleasure or for knowledge of their biology and behavior. This is a starter, to introduce a few concepts and ideas, and provide references for further reading and information.

Almost everyone agrees that butterflies are nice to have around—with three possible exceptions being the cabbage butterfly Pieris rapae (L.), the black swallowtail Papilio polyxenes Fab. and the bean leafroller Uranaus proteus (L.), which can cause severe damage to cabbage, carrots, and beans, respectively. There are a number of things that can be done to increase the number of butterflies in your yard. They will come for two reasons, to feed and to lay eggs. Providing food is the easiest. There are many flowers that are particularly attractive to butterflies as nectar sources (Table 1) and some plants even have common names suggesting their importance to butterflies, for example, butterfly bush and butterfly weed. “Butterfly bush” usually refers to species of Buddleja, none of which are native to Florida. These bushes are frequently planted by gardeners in Great Britain where butterfly gardening is not uncommon and much information is available about flower preferences of butterflies (Newman, 1967; Rothschild and Farrell, 1983). Of the more than 50 species of Buddleja, about 8 or 9 are or have been cultivated in Florida at one time or another (Dan Ward, pers. comm.). The most widely grown species is Buddleja davidii (Everett, 1960) which will grow to 20 feet tall but can be kept smaller by pruning. The several varieties of this plant have purple, lilac, pink, red or white flowers and plants can be propagated by seed or cuttings (Elaine Norman, pers. comm.). They tend to become spindly and sprawling unless the shoots are pinched. In Gainesville, white-flowered Buddlejas are more attractive to butterflies than the purple-flowered types (Gary Buckingham, pers. comm.).

Butterfly weed is a milkweed Asclepias tuberosa. Its yellow to orange-red flowers are attractive to many species of butterflies. Butterfly weed does best in sunny locations in well drained soils and plants can be started from seeds and/or root division. Transplanting roots from the wild is not easy.

*DALE H. HABECK is a professor in the Department of Entomology and Nematology at the University of Florida. His research interest include biology and taxonomy of immature insects especially Lepidoptera and biological control of weeds. Address: Department of Entomology and Nematology, Institute of Food and Agricultural Sciences, University of Florida, Gainesville, Florida 32611. Florida Agricultural Experiment Station Journal Series No. 6013.
TABLE 1. A SELECTED LIST OF FLOWERS ATTRACTIVE TO FLORIDA BUTTERFLIES; SEE BREWER, 1979; NEWSOM-BRIGHTON, 1983; AND PYLE, 1984 FOR ADDITIONAL PLANTS.

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Names</th>
<th>Native Status$^1$</th>
<th>Primary Flowering Period$^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>annual phlox</td>
<td><em>Phlox drummondii</em></td>
<td>yes</td>
<td>A</td>
</tr>
<tr>
<td>blazing star</td>
<td><em>Liatris spp.</em></td>
<td></td>
<td>P</td>
</tr>
<tr>
<td>butterfly bush</td>
<td><em>Buddleja spp.</em></td>
<td>no</td>
<td>P</td>
</tr>
<tr>
<td>butterfly weed</td>
<td><em>Asclepias tuberosa</em></td>
<td>yes</td>
<td>P</td>
</tr>
<tr>
<td>glossy abelia</td>
<td><em>Abelia grandiflora</em></td>
<td>no</td>
<td>P</td>
</tr>
<tr>
<td>goldenrod</td>
<td><em>Solidago spp.</em></td>
<td>yes</td>
<td>P</td>
</tr>
<tr>
<td>ironweed</td>
<td><em>Vernonia spp.</em></td>
<td></td>
<td>P</td>
</tr>
<tr>
<td>lantana</td>
<td><em>Lantana camara</em></td>
<td>yes</td>
<td>P</td>
</tr>
<tr>
<td>pickerelweed</td>
<td><em>Pontederia spp.</em></td>
<td>yes</td>
<td>P</td>
</tr>
<tr>
<td>shrimp plant</td>
<td><em>Bolopeperone guttata</em></td>
<td>no</td>
<td>P</td>
</tr>
<tr>
<td>Spanish needle</td>
<td><em>Bidens pilosa</em></td>
<td>yes</td>
<td>A</td>
</tr>
<tr>
<td>thistles</td>
<td><em>Carduus spp.; Cirsium spp.</em></td>
<td>yes</td>
<td>B</td>
</tr>
<tr>
<td>tick-seeds</td>
<td><em>Coreopsis spp.</em></td>
<td>yes</td>
<td>P</td>
</tr>
<tr>
<td>tithonia</td>
<td><em>Tithonia grandiflora</em></td>
<td>no</td>
<td>A</td>
</tr>
<tr>
<td>zinnia</td>
<td><em>Zinnia elegans</em></td>
<td>no</td>
<td>A</td>
</tr>
</tbody>
</table>

$^1$P = perennial, B = biennial, A = annual. This may vary with the location and particular species.

$^2$Sp = spring, Su = summer, F = fall. This may vary with location and particular species.

because of the deep tap root and not worth trying. Both seeds and root starts can be purchased from commercial nurseries (Lyons, 1983).

Many other flowers are attractive to butterflies including some that are commonly grown in gardens. Zinnias, especially the single varieties, are particularly attractive. Single marigolds have also been reported as good butterfly plants but single varieties are seldom grown anymore and the butterflies are only occasional visitors to the hybrid varieties (Hannah, 1984a, b). Some other flowers that are attractive include asters, calendula, coreopsis and various other composites, azaleas, bergamot, honeysuckle, phlox, and verbena.

Some common wildflowers (or weeds according to some) attractive to butterflies include thistles, ironweed, pickerelweed, Spanish needle, milkweeds and lantana. Thistles and pickerelweed primarily bloom in the spring, pickerelweed in the summer and ironweed and goldenrod in late summer and fall. Lantana and Spanish needle bloom throughout the season and both are especially good butterfly plants. *Bidens* has sticky seeds and thistles, of course, are very pricky, and most homeowners want neither in their yard.

Obtaining wildflower seeds may be a problem. Lowery (1984) reported that seeds of only 10 species of native wildflowers of Florida were available from seed companies. Most of the available wildflower seed mixes include a few native Florida species, and many others that are not native but that may naturalize in Florida.

Lantana, a shrubby perennial that blooms freely throughout the season, is one of the best butterfly plants for Florida. Its flowers come in a variety
of colors, and plants are easily started from cuttings. One drawback is that the plants, especially the berries, are highly toxic to children.

The list of flowering plants attractive to butterflies is long and varies from spring to fall. Some bloom throughout the growing season, while others flower for only a short period. As a result, some butterflies have different preferred flowers through the year. Information on flower preference is sketchy. Flower preference is not only related in part to proboscis length of the butterfly, but also to flower characteristics such as color, relative abundance of the flowers, flower height above ground and even the position and shape of the flower on the plant (Opler and Krizek, 1984). Nectar composition may also influence butterfly feeding (Baker and Baker, 1975).

Although butterflies will visit your yard to utilize the available flowers, they will move on unless their host plants—those on which their larvae can grow—are available. Providing host plants for butterflies is sometimes domestically unpopular because the species involved are often considered weeds that are undesirable. Another problem relates to the fact that only about 9% of the butterfly species in the eastern U.S. are polyphagous, and will use several different plants; 43% are monophagous and use only one host plant, while 48% are oligophagous and feed on but a few closely related plants (Opler and Krizek, 1984). Since polyphagous species may utilize only one host species in each part of its range it is obvious that a number of different plants would have to be cultivated to provide hosts for even a few species of butterflies.

Two “sweepstake” plants that might be considered for rearing butterflies are Cassia spp. and Passiflora spp. Cassia spp. are host plants for several species of sulphur butterflies and Passiflora spp. are hosts for 3 species of heliconid butterflies in Florida. These include the gulf fritillary Agraulis vanillae (L.) which breeds throughout Florida on Passiflora, the zebra butterfly Heliconius charitonia (L.) which breeds throughout most of the peninsula, and the Julia butterfly Dryas iulia (Fab.) which is limited to the southern part of the state.

Attracting and rearing butterflies has a relatively long history. In 1913, a short-lived journal appeared entitled “The Butterfly Farmer” (McGlashen, 1913). In recent years, several authors (Brewer, 1979; Kulman, 1977; Newsom-Brighton, 1982, 1983; and Pyle, 1984) have published excellent articles on butterfly gardening. Most of their information is more applicable to the northern U.S. than to Florida. However, the principles involved in establishing butterfly gardens are similar and only the plants and butterflies may differ. Establishing a successful butterfly garden in Florida will require careful observations of flower preferences by local butterflies and planting plants on which the caterpillars can develop. Identification of butterflies has been made easier with the recent publication of two books (Pyle, 1981; Opler and Krizek, 1984).

Flowers also attract bees, wasps and other insects. A list of flowering plants attractive to these insects would far exceed the list of those attractive to butterflies. Recent research by Dr. Reece Sailer (Dept. of Entomol. and Nematol., Univ. FL) has centered on two plant species that are very attractive to a wide variety of insects, particularly Hymenoptera. Fennel Foeniculum vulgare (Mill.) and a buttonweed Spermacoce verticillata L.
are both annuals that can be grown almost anywhere. Observations can be made on the number of species attracted to each species, the relative numbers of each species, their diurnal activity and their behavior on the flowers as well as predaceous actions that some will make in the area.

As with butterflies, special considerations must be given nesting areas to encourage various insects to stay in the area. Nesting sites for bees and wasps can be provided by tying short pieces of hollow stems in bundles and hanging them in trees or shrubs or by boring deep holes in blocks of wood. Many cavity-nesting species will utilize these cavities for their brood. Parker and Torchio (1980) have summarized techniques for managing wild bees on a large scale, but many of the methods will also work on a small scale.

Garden pools are another way of attracting insects to your yard. Even a small pool 10'-15' long and 5'-6' wide will create a habitat that will attract aquatic insects either temporarily or permanently. The addition of a variety of aquatic plants to the pool will provide cover and perching and oviposition sites, as well as food for insects, and increase their numbers proportionally. The margins of the pool can be planted with cattail, papyrus, water primrose, pickerelweed and other plants. Most aquatic plants have one or more insects associated with them. Unless the pool is far from natural bodies of water, aquatic insects will eventually find it. Others can be collected and released in the pond. Not all will survive but many will.

Pools can be constructed in various ways using concrete, PVC lining, or complete one piece fiberglass pools can be purchased (Ledbetter, 1982; Seitz, 1983; Swindells, 1984; Warchus, 1982). For best growth of plants, a pool should be in a sunny location. It is also desirable to elevate the pool slightly above grade level to prevent flooding and silting.

Water lilies are commonly planted in garden pools. There is a wide variety of colors available in both day and night blooming types. One medium to large lily can be planted for each square yard of surface area (Warchus, 1982). Oxygenating plants such as Anacharis, Sagittaria or Vallisneria will help provide oxygen. Floating plants, including water lettuce, water hyacinth, water fern, water velvet and duckweed can be added, but must constantly be checked to prevent them from taking over. The addition of snails and fish is also a good idea, though the presence of fish and frogs will result in fewer aquatic insects, it will also make the pool more natural.

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LITERATURE CITED


