

# The Lantana Mess

Photos by the author.

## A Critical Look at the Genus in Florida

By Roger L. Hammer

There is much controversy, concern, and confusion when it comes to the native, naturalized, and cultivated members of the genus *Lantana* in Florida. First of all, there are only three species that are definitely native to the state. *Lantana canescens*, or hammock lantana, is a bushy shrub with very small heads of yellow-centered white flowers. This West Indian species occurs along hammock margins of Miami-Dade County and is extremely rare. *Lantana involucrata*, or wild sage, is a bushy or upright shrub with yellow-centered white flowers that are often blushed with violet. It too is a West Indian species with a natural range that extends into Florida where it is common in the central and southern counties, including the Florida Keys. And then there's *Lantana depressa*, a variable shrub with yellow flowers that is endemic to Florida.

Roger Sanders, who studied the genus *Lantana* extensively in Florida and authored "*Identity of Lantana depressa and L. ovatifolia (VERBENACEAE) of Florida and the Bahamas*" (SYSTEMATIC BOTANY [1987], 12:[1], pp. 44-60), described three distinct varieties of *Lantana depressa*. The typical variety, *Lantana depressa* var. *depressa*, or rockland lantana, is a low-growing shrub that is endemic to pine rockland habitat of southern Miami-Dade County. *Lantana depressa* var. *floridana* is a large bushy yellow-flowered shrub that is endemic to sandy shorelines and relict inland dunes of Florida's east coast. And then there is *Lantana depressa* var. *sanibelensis*, a large bushy yellow-flowered shrub that occurs along Florida's west coast and also occasionally inland.

Richard Wunderlin included these last two varieties as synonyms of the invasive exotic *Lantana camara* in the *Guide to the Vascular Plants of Florida* (University Press of Florida, Second Edition, 2003). Earlier authors (J. K. Small, 1933; Long & Lakela, 1976) referred to them as varieties of *Lantana ovatifolia*, a species now regarded as endemic to the Bahamas. Whether they are considered to be varieties of *Lantana depressa* or varieties of *Lantana camara*, these two bushy, yellow-flowered lantanas appear to be endemic to Florida. Therefore, resource managers should treat these as endemic taxa regardless of the current taxonomic uncertainty. To avoid confusing these taxa with the typical *Lantana camara*, they will be referred to in this article, per Sanders' study, as varieties of *Lantana depressa*.



Wild lantana, *Lantana involucrata*. Drawing from Coastal Dune Plants, Gumbo Limbo Nature Center, 1991, and reproduced here with permission of the artist, Palm Beach Chapter member Penelope Honychurch Billingham.

The problem species in Florida is *Lantana camara*, which is thought to have originated in the West Indies but is now a cosmopolitan weed of tropical, subtropical, and warm temperate regions. It is highly variable with possibly as many as 650 named hybrid varieties worldwide (many of these may be synonyms). As a species, it is very complex and taxonomically confusing, and is even thought to have originated from interbreeding between two or more tropical American species. The resulting hybrids have then been variously referred to as separate species, subspecies, varieties, forms, biotypes, and cultivars. This goes a long way toward explaining its taxonomic complexity and the resulting taxonomic confusion.

*Lantana camara* is notoriously poisonous and deaths have been reported throughout its range, including Florida. The green, unripe fruits can be fatal to humans if eaten (but ripe fruits are harm-

less), and the leaves are exceptionally toxic to grazing cattle. The leaves can also cause acute liver problems to dogs. The plant is so toxic that it is banned in much of Africa to help protect valuable livestock. Getting caught with a plant on one's property in some African countries can result in fines, incarceration, and beatings. Millions of dollars have been spent searching for biological agents to control *Lantana camara* and it even has the dubious distinction of being the most studied weed in the world. In Australia, it is regarded as the most troublesome poisonous plant in agricultural areas. Curiously though, *Lantana camara*, in all of its myriad color forms, remains a very popular landscape plant in Florida and other warm regions of the United States. Perhaps gardeners disregard its poisonous properties because it thrives in dry, poor soils where other landscape plants fail, and the colorful flowers attract a multitude of butterflies.

*Lantana camara* is not only naturalized throughout much of Florida, it also has contaminated the gene pool of all three varieties of Florida's endemic *Lantana depressa* through hybridization. Indeed, it is becoming increasingly difficult to find unadulterated *Lantana depressa* because most populations have *Lantana camara* growing wild among them. The leaves of hybrids are often squared off (truncate) at the base to some degree, sometimes on only one side of the leaf blade. The flowers of hybrids open yellow but turn pinkish orange with age, and the marginal teeth on the leaves of hybrids

tend to be more numerous. Sanders' study showed that on each side of the leaf blade of *Lantana depressa* var. *depressa* there are mostly 3-10 teeth, *L. depressa* var. *floridana* has mostly 10-15 teeth, *L. depressa* var. *sanibelensis* has mostly 8-13 teeth, and the hybrids have marginal teeth numbering from 10-25 per side. *Lantana camara* has 15-30 marginal teeth per side.

#### **MOUNDS OF GOLD**

The low-growing lantanas with yellow flowers most often seen in cultivation in Florida are *Lantana camara* hybrids, and are sold under such trade names as 'Gold Mound,' 'New Gold,' 'Gold Rush' and 'Banana Yellow.' To achieve the low, mounding or trailing growth habit, *Lantana montevidensis* is sometimes used as a parent in hybridizing (although some cultivars of this species in Florida appear to be sterile). This South American species has a trailing growth habit and white-centered lavender flowers but, through crossing and back-crossing with *Lantana camara*, a number of colorful hybrids have been achieved for the nursery trade. Hybridization often results in sterility, which is good for gardeners because sterile plants are more floriferous, and good for the environment because they cannot escape cultivation. Bijan Dehgan of the University of Florida, Institute of Food & Agricultural Sciences (IFAS) found, for instance, that 'New Gold' is not only male sterile but also practically female sterile. His research has also showed that many other lantana cultivars are sterile as well.

The greatest confusion and controversy exists in the yellow-flowered trailing or mounding plants that are sold in the Florida nursery trade. 'Gold Mound' is the plant that is most often sold to an unwitting public as Florida's endemic *Lantana depressa* var. *depressa*. 'Gold Mound' appears to be sterile and has cheery golden yellow flowers that practically cover the plant. As its cultivar name implies, it forms mounds of stems that spread outward from the central trunk. 'Gold Mound' is now, however, giving way in popularity to 'New Gold,' a cultivar selected out of a research trial at Texas A & M University because of its advertised "seedless nature, long and profuse bloom period, compact growth form, and relative cold hardiness." At maturity, 'Gold Mound' and 'New Gold' reach 18-24" tall and 3-4' wide or more.

Another low-growing hybrid called 'Cream Carpet' has yellow-centered creamy white flowers that become solid white. And then there is 'Banana Yellow,' a hybrid with two-toned yellow flowers that turn creamy white with a yellow center.

#### **TROUBLE IN PARADISE**

When asked by the editor to research lantanas in Florida for this article, my intent was to finally lay to rest whether or not *Lantana depressa* var. *depressa* is, in fact, cultivated in Florida. After visiting a number of large wholesale and retail nurseries in Broward and Miami-Dade counties that grow lantana, each nursery had what they call *Lantana depressa* var. *depressa*, but many of the plants had obvious differences—not only from nursery to nursery, but also within the same batch of plants labeled *Lantana depressa*. Some had very coarse teeth along the leaf margins while others had very shallow serrations (almost scalloped). Many had leaves that exceed the size limits of true *Lantana depressa* var. *depressa* and I never saw a single fruiting plant in any nursery.

The nurseryman who was the most adamant about the correct identity of his *Lantana depressa* stock showed me plants with yellow-centered creamy-white flowers. Surprisingly, a search for *Lantana depressa* on the Internet revealed quite a number of nurseries advertising this very plant, which, if I had to make an educated guess, is

'Cream Carpet.' I also recall seeing this plant being sold at Florida Native Plant Society state conferences by nurseries that specialize in Florida native plants. Whatever it is, it certainly is not native to Florida. One other nurseryman who was "pretty sure" that he was growing *Lantana depressa* var. *depressa*, had rows of bright yellow-flowered plants with very fine serrations on the leaf margins that looked practically identical to the leaves of *Lantana montevidensis*. It was definitely a hybrid of some sort—perhaps a *Lantana montevidensis* cross with some form of *L. camara*. Yet another nurseryman opined that the original material of his stock plants of *Lantana depressa* var. *depressa* was "wild collected in Broward County" which, incidentally, is well outside its natural range in Florida. Also, because of the widespread contamination of the *Lantana depressa* var. *depressa* gene pool in Miami-Dade County pine rocklands, nurserymen who claim to have gotten their stock plants from the wild within its natural range may actually have collected material from hybrids.

My most disturbing discovery on the Internet was a University of Florida, IFAS, website that reported their Spring 2003 Field Trials for *Lantana depressa* var. *depressa*. There were five photographs showing the growth rate of the plant, but the problem is that what they were growing turned into a very bushy white-flowered plant that looked to be around 4 feet tall. So if IFAS researchers can misidentify a lantana they are testing, it is not surprising that there is so much confusion in the nursery trade.

#### **DON'T SHOOT THE MESSENGER**

Because the low-growing, yellow-flowered lantanas in cultivation vary so much in leaf characteristics, growth habit, and other dissimilarities, I remain very skeptical whether or not pure unadulterated *Lantana depressa* var. *depressa* is being cultivated in the mainstream Florida nurseries. Roger Sanders' study showed that *Lantana depressa* is diploid and Florida populations of *Lantana camara* are tetraploid. A 2003 management status report by the Australian Centre for International Agricultural Research showed that several varieties of *Lantana camara* in Australia are triploid, one is diploid, and one is pentaploid. In order to clear up this mess in Florida, genetic testing needs to be conducted, not only on wild populations of lantana, but cultivated material as well. Then, and only then, could nurseries and their customers be confident that what they are growing, selling, and purchasing are truly native plants.

But there's still another problem. Simply because a plant is native to Florida does not mean that native-plant enthusiasts and native-plant nurseries should be propagating and disseminating Florida native plants well outside of their natural range. Remember that native plants can escape cultivation too. Take, for example, West Indian Mahogany (*Swietenia mahagoni*) and Royal Palm (*Roystonea regia*), which are both native to parts of southern Miami-Dade County but have now escaped cultivation (often from street plantings) outside of their historic natural range within the county. They now have to be controlled in natural areas by resource managers.

So consider this: *Lantana depressa* var. *depressa* is endemic to pine rocklands of southern Miami-Dade County and, therefore, should not be propagated in commercial quantities for sale and distribution all over Florida, much less in Texas, Arizona, and elsewhere. The Institute for Regional Conservation, based in Miami-Dade County, is even promoting the concept of planting species that are native to your Zip Code, which would go a long way





*Lantana depressa* var. *depressa* photographed in the wild on Long Pine Key in Everglades National Park. It is endemic to southern Miami-Dade County pine rocklands.



*Lantana depressa* var. *floridana* photographed in the wild on Key Biscayne in Miami-Dade County. It is endemic to eastern coastal Florida and inland relict dunes.



*Lantana camara*, a species believed to be of hybrid origin that is now widespread in warm regions of the world. Naturalized in Florida, widely cultivated, and used to create many colorful hybrids. The two color forms in the photo are from separate wild plants in Florida.



'Cream Carpet,' a *Lantana camara* hybrid that is often erroneously sold as Florida's endemic *Lantana depressa* var. *depressa*. Note the 2-toned flowers.



'Gold Mound,' a very popular *Lantana camara* hybrid that is the most controversial lantana in Florida because it is widely offered as the endemic *Lantana depressa* var. *depressa*. The good news is that it's sterile.



'Banana Yellow,' a *Lantana camara* hybrid that is relatively new to the Florida nursery trade. Note that the flowers change from 2-toned yellow to white with a yellow center.

toward keeping native plants within their natural range in Florida.

Because there is so much confusion and controversy in the nursery trade over what is *Lantana depressa* var. *depressa* and what is not, native-plant enthusiasts and nurseries specializing in native plants should avoid low-growing, yellow-flowered lantanas entirely and use the widespread native *Lantana involucrata* or some other suitable species instead.

I realize that this opinion will not be popular among the many fine members of the Association of Florida Native Nurseries but there are a lot of lantanas being sold as Florida natives that are clearly not, and there appears to be no indisputable distinction between the plants being sold as *Lantana depressa* var. *depressa* and the known *Lantana camara* hybrids. So if you are a native-plant aficionado, it is better to err on the side of caution when it comes to this lantana mess. ✨

*Lantana montevidensis*, a trailing species native to South America. It is naturalized and cultivated in Florida and used in hybrids for the nursery trade.



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And what a mess it is. We asked Dr. Richard Wunderlin, University of South Florida Institute of Systematic

*Lantana involucrata*, one species that doesn't seem to have an identity or heritage problem.

Botany, how to sort out all the "native" lantanas now sold in the nursery trade. He referred us to Roger Hammer as the individual who had "done the most work [research] on this." Roger has, in turn, done his usual excellent job, although few may be pleased with the bottom line. On the other hand, perhaps we can look forward to increased availability of



*Lantana involucrata*, a West Indian species that is common in central and southern Florida, mostly along the coast.



*Lantana canescens*, a very rare West Indian species restricted in Florida to only a few hammocks in Miami-Dade County.

## Cordia

### BLOOD-BERRY OR BUTTERFLY SAGE?

These photos show how *Cordia globosa* got its traditional common name, blood-berry (not very pretty but much better than some of the rather crude names given to another common cordia in Florida, *C. sebestena*, now thankfully known to most of us as Geiger tree).

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## Discovering Florida's Ethnobotany



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