The Africanized honey bee and its success in the Americas

David W. Roubik
Smithsonian Tropical Research Institute
Balboa, Republic of Panama

"A honey bee exists that controls *Varroa* mites, eliminates small hive beetles [*Aethina*], forages for all its own food, makes tons of honey, reproduces prolifically, and thrives without treatments or interventions" —R. Jacobsen, author of "Fruitless Fall", 2008

"Yeah, but it's not the story of why the AHB was successful colonizing the Americas"—D.W. Roubik, right now

FOOD, FOOD, FOOD— The honeybee in Africa, the origin of *Apis mellfiera*, is pursued relentlessly by small and large predators; its food sources are 'boom or bust'. In terms of natural selection, that leads to highly mobile colonies and evasive queens, opportunistic nesting, amazing recruitment, powerful colony defense, and a 'cut and run' strategy—if the micropredators and parasites persist, or if a large predator overturns defenses, nests are rapidly abandoned. Further benefits of small nests and nest abandonment are rapid reproduction and thwarting pest buildup. On the other hand, the AHB is not free of the floral season that allows bee reproduction— it does not reproduce often, and its swarms may be tiny. Small, well protected nest sites are the rule, in mature forest. Outside of forest— anything goes, including colony amalgamation or 'megaswarms', then 'cut and run'. To rephrase: the AHB colony takes all it can, then gets by however it may, and often leaves— making it an aggressive version of *Apis cerana* or even *A. florea*, and a contemporary of *Apis dorsata*. The contrast with Meliponini could not be greater—whose communities are truly organized, and endure, as trees in a forest. Sustainable beekeeping in apiaries? Surely you're joking. Robbing and feeding and pest prevention are the modus operandi. Opportunistic beekeepers are friends of similar opportunistic bees. All that is fine, and is 'sustainable' — if it pays well enough. And all the above (except meliponines) are highly migratory (until biodiesel runs out, for lack of pollinators)…

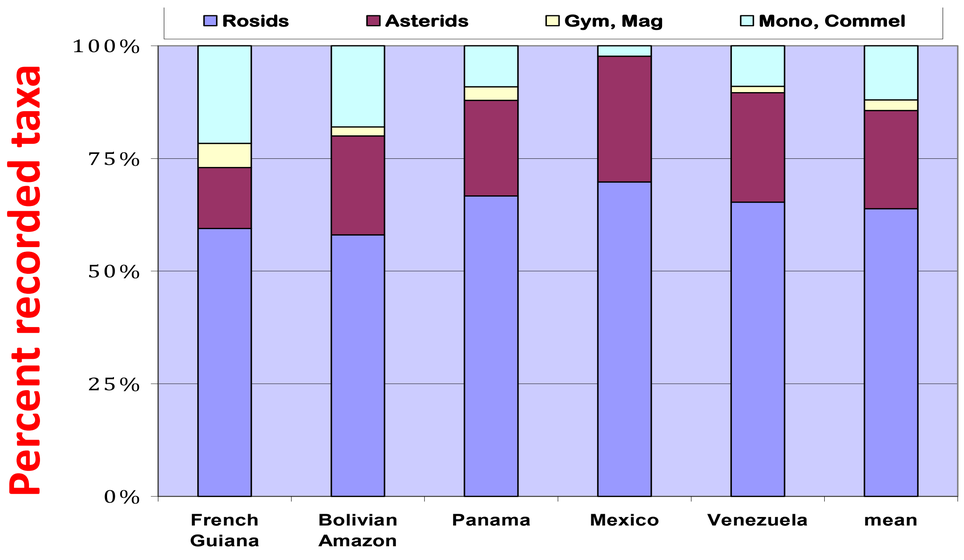

California almond pollination using the European Western hive bee


Panama beekeeping with Africanized bees

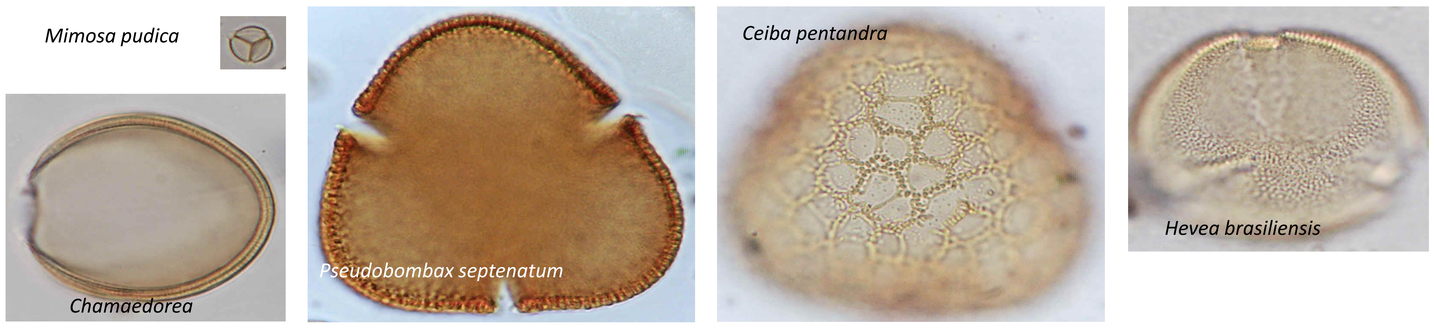
Photos courtesy Eric Tourneret, 2014

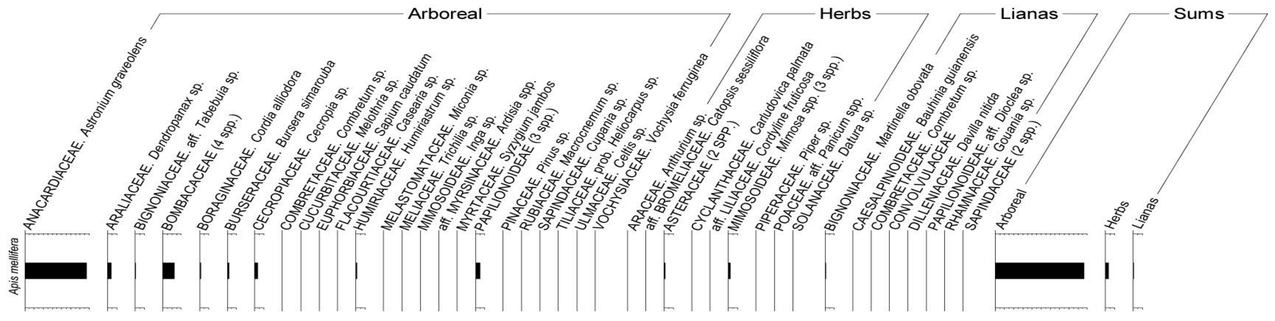
RESOURCES, RESOURCES, RESOURCES—You are what you eat— a scavenger on the fat of the tropical forest— trees that larger animals pollinate, particularly the nocturnal ones, and small and dense flowers that stingless bees normally use. Oh yes, if flowers occur in a large amount, such as a cultivated plot or a roadside, then it is even more of a resource bonanza, and the honeybee communication system reaches its potential. Obvious generalities— Rosids (NOT asterids): nectarless, densely flowered, dioecious, weedy, and wind-pollinated or vertebrate pollinated (*Zea, Cecropia*, *Mimosa pudica*, *Pseudobombax*, palms…a few of the 25% local taxa used). Often they are canopy flowers or at edges, in deep forest.

Africanized honeybee phyletic flora choice



Our potential state of knowledge on what the bee really wants





MAJOR CONCLUSIONS: 1) Although they certainly have not ruined beekeeping, they have ruined industrial pollination (before it even started), 2) they provide a backup system for wild pollinators, and even improve wild pollinator resources (feed their enemies), 3) they compete most strongly in depauperate habitats, where they excel, 4) they are, unlike counterparts—stingless bee colonies, true vagrants or, if you wish, opportunists, and 5) they are strongly tied to buildings and human landscapes where they can nest readily and are more prolific, but exist in the remote areas of all national Parks and Forests, where nothing like them has existed before. They are now de-facto pollinators of most crops.

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