Presenting ….

M E A D

Past … Present … Future

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Quick Overview

Past 1

Timeline

– History: An American Perspective

- History: An African Perspective

Present 2

- **Commercial Meadery Practices**
- **Honey and Bees Current report**
- **Honey Analysis – taste single varietals**

Future 3

- **A Global Perspective**
- **UC Davis Honey Pollination Centre**
- **-Marketing tipping point?**
- **You**

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Timeline Fermented Beverages

10,000 BC

Africa 20.000 – 40.000 years ago

Fermented Beverages 7000 BC

China: Jiahu **Undisclosed fermented beverages: signature molecules proving wine made from** rice, honey and hawthorn

Wine 6000 BC

Georgia (Persia)
1st appearance of wine

Beer 3900 BC

Mesopotamia (IRAN) Poem discovered honoring Goddess of Beer – oldest recipe

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Theories

African Origins: elephant migration knocked over trees, bees nest in stumps, rain + natural yeast in honey = mead

Honey hunters fought bees and bears, no Tupperware to store, animal skins, rain + yeast in honey = mead

Fact: Bees will repossess honey. Hunters stored honey under water, deep dark caves. Water + honey + mead

Migration of mead from “African” continent northwards

Neolithic cave paintings show hunters making drink from honey

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Past … An American Perspective

European honey bees successfully landed East Coast USA 1622, straw skeps on Mayflower type vessels. Similar to other invasive species fled to wilds, referred to as "White man's flies" by Native American Indians

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USA Honey Bee Colony Numbers

- Around 2004 USA Beekeepers started experiencing high colony losses over fall/winter. Average annual loss rate increased to 30% and seems to be stabilized there
- However, around 75% of beekeepers do not experience this rate of loss
- 25% experience higher losses and inflate the average

Challenges Facing Honeybees

Mites

Parasites

Zombees

Zombees: flies infest bees with eggs, when eggs hatch, bees display Zombie like behavior

Forage Food

Less food to forage

Stress - Crop Pollination

Commercial hiring of bees to pollinate huge crop farms

Pesticides

Chemicals

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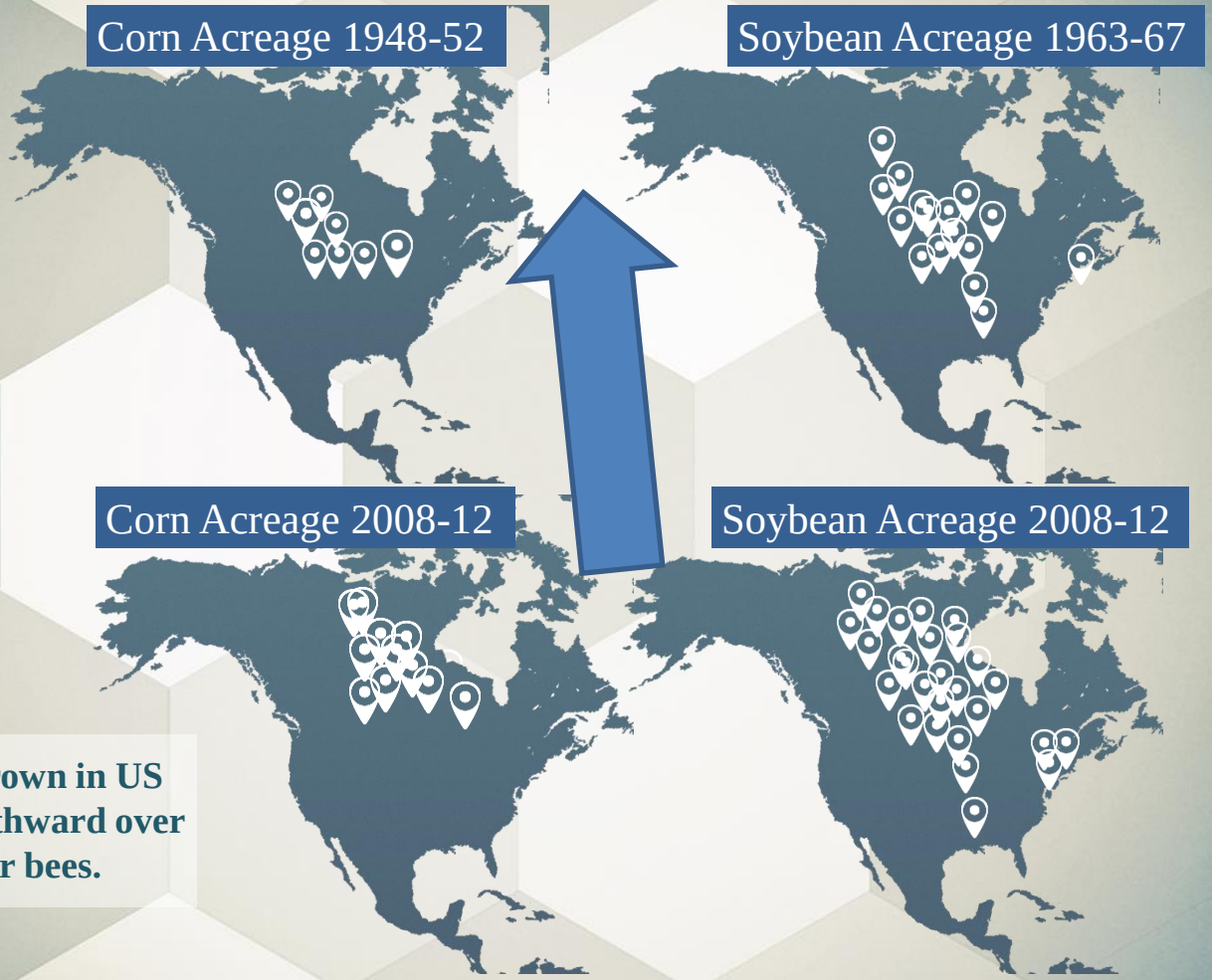
Future: Challenges Climate Change



Maps show amount grown in US counties and shift northward over time. Less foraging for bees.

Data US Dept Agriculture

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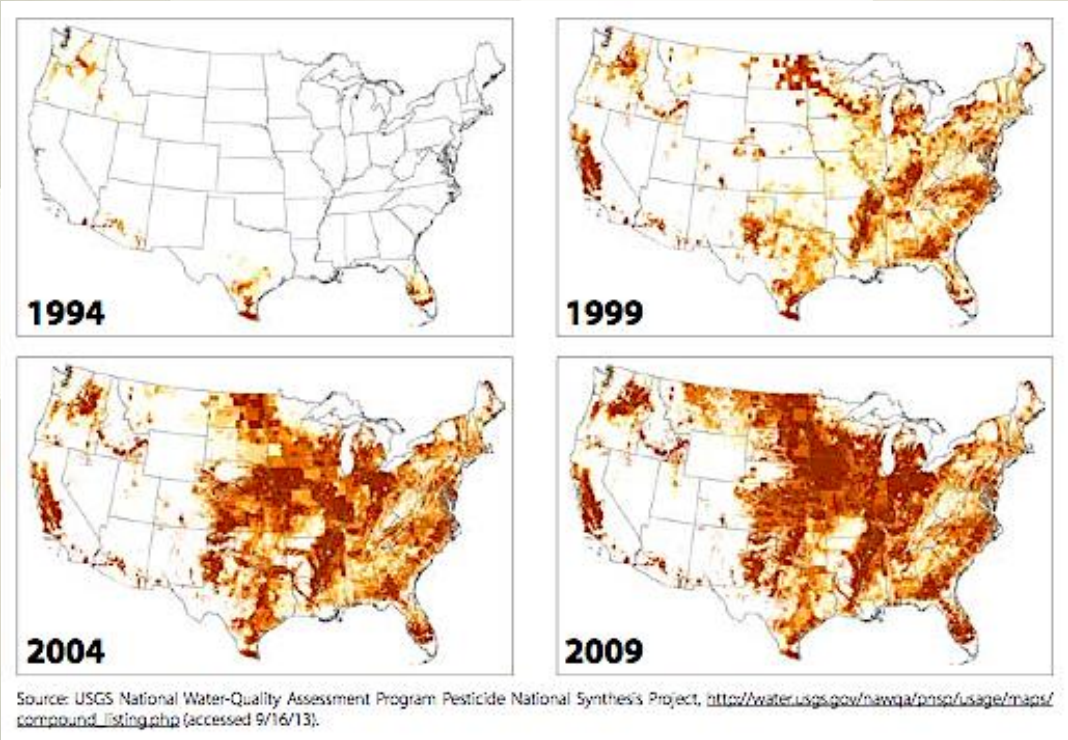
Imidacloprid (in neoniconoids class) use on farms. Darker color indicates greater quantity used per square mile



Source: USGS National Water-Quality Assessment Program Pesticide National Synthesis Project, http://water.usgs.gov/nawqa/pnsp/usage/maps/compound_listing.php (accessed 9/16/13).

Past … An African Perspective

Eastern Cape, South Africa:
Khoi-San/Xhosa :originators

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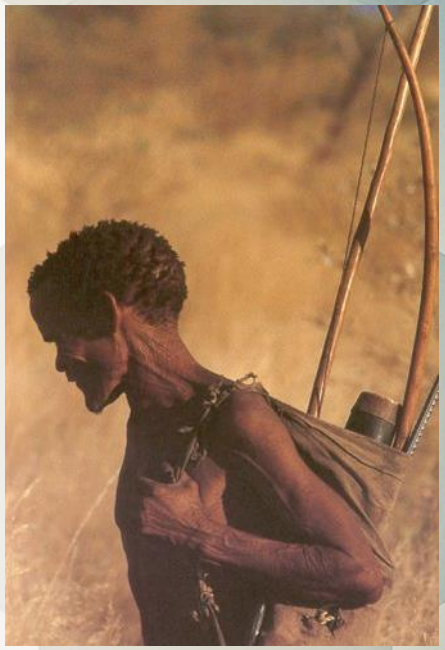
A cave painting from the Salem area, 15 km outside Grahamstown in South Africa. The picture shows a Khoi-San honey gatherer reaching up and removing honeycombs from a beehive on a cliff. The painting is believed to be 500-1000 years old.

Photograph courtesy of Dr J. Binneman, Archaeology Department, Albany Museum, Grahamstown.

Khoi-San

- One of most ancient peoples on earth
- Predominant tribe in Africa – today the Bantu tribe is the dominant tribe believed to have migrated from West Africa, intermarriage btwn these 2 tribes not uncommon, culture passed on
- Rock art of Khoi-San frequently features honey gatherers



- isiXhosa language incorporates many of the elements of the Khoi-San including the use of clicks
- Another major influence was the migration of the Afrikaans people who moved up from Cape Colony in 1700’s
- Khoi-San in South Africa are either Xhosa speaking or Afrikaans speaking and much of traditional knowledge has passed into language and culture

karee/kari/karie

Khoi-San word for mead

Van Shaik English/Afrikaans Dictionary

(Kritzinger *et al.*1981):

*"**Mead** - heuningdrank, karie, mee."*

Xhosa

Influence of Khoi-Sanon Xhosa is evident

***“iQhilika** n. beer made from honey, mead”*

A New Concise Xhosa-English Dictionary, McLaren 1978

***“iQhilika** n. Kh. !Kharib, liquor brewed from honey. The art of making this beer was acquired from the Khoi….”*

The Greater Dictionary of Xhosa, Pahl *et al.* 1989

Kari/iQhilika in the literature

Karee/kari is made by mixing honey, water and the roots of plants of the genera *Trichodiadema*, *Euphorbia* and *Anacampestros*, known as *karriemoer*

which are added to provide yeast

Sounds like mead

Juritz (1906 p. 40) noted that '*Eqilika*' produced by peoples within the present day Eastern Cape region of South Africa was an intoxicating beverage and

that "…this beer is very potent, and one teacupful is sufficient to capsize the strongest." – usually consumed 12 hours after making

African Elephant Tree Stump Theory

Mead can be made by nature, without the intervention of man (Acton &

Duncan 1984) reports a Mr J vanVreden, in the South African Defence Force (SADF) who took part in the invasion of the southern regions of Angola in the early 1980s. He detailed that during the build up to the spring rains hundreds of bee swarms would move through the baobab savannah. The upper region of an older baobab is frequently hollow, and swarms would settle here. The spring rains would come and the hollow would fill with water, driving the bees from the honeycombs as they became submerged. If the correct amount of rain fell, the honey would mix with the rainwater and turn to mead as the hive rotted.

The San hunters who served in the SADF as trackers took great pleasure in finding such mead caches. The finding of such natural mead is likely to have inspired many a honey gatherer in ancient times to duplicate the effects that created the mead in the tree. With time and trial and error the sophistication of this mead making process would have advanced.

African Recipes

TANZANIA: Honey sold in comb to prove not diluted…local custom is not to remove honey comb, integral part of celebration customs. Ancestral gourds are passed from brewer to son.

ETHIOPIA: The herb *geisho* (*Rhamnus prinoides*) added as part of recipe. *Geisho* is cultivated as commercial crop largely flavoring *tej* . Not added to initiate fermentation and after use is fed to donkeys.

KALAHARI: San Tribe make drink from honey, herbs and sections of social weaver nests (dry grain filled dung)

KENYA: Mixture water, honeycombs (with brood and pollen) and segments of dried loofa fruits – source of initial yeast inoculation

ZAMBIA: "Sweet beer' mixture maize, mead, water, honey and root of Rhynchosia insignis - perennial hervaceous shrub, known as mulava or mulaba Majority Zambian honey used for stronger wala wa ndoka or wala wa kasolu social gatherings - important as itrises the beekeeper's status. Mead barter currency .

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Local USA Perspective

- Continuous fermentation based off Dr. Garth Cambray's patent – Honeymaker Maine
- Moonlight Meadery: Non-pasteurization and use of Ozone water to aid fermentation time
- Intro of Nitrate to speed fermentation 2 weeks
- Sap House Meadery: Small batch, aged
- BNektar: Low ABV, carbonated kegging

Honey Report 2014
USA & Canada

California Almond Bloom 10 days ahead of schedule

Canada significant lower yields than prior year

2013 NASS summed up 2013 honey crop at 149 million pounds at record high prices, Raw $2.12 / lb. Nearly 1/3 of entire yield produced in just 2 states: North and South Dakota.

Average yield up 1% to 56.6 lbs

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Honey Report 2014
South America

Argentina crop off to very slow start due to weather conditions – finishing on average crop

Brazil, also off to slow start impacted early shipments of organic honey, which were virtually non-existent

Demand intense prices increasing on par with USA honey prices. Brazil organic honey almost same as Argentine white and extra light amber, significant change as organic honey prices lagged previous years.

Pricing level at historically high prices

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Honey Report 2014
Asia/India

Vietnam remains predominant supplier to US market for amber honey

Vietnamese beekeepers shifting their foraging areas resulting in increased production but honey is darker due to changes in nectar sources

India crop delayed, shipments late prices increasing

Shippers working hard to move India crop to USA as quickly as they can to avoid intense heat of India summer, which darkens honey reducing value

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Future: Global Perspective

- Innovation of technologies could revolutionize industry.

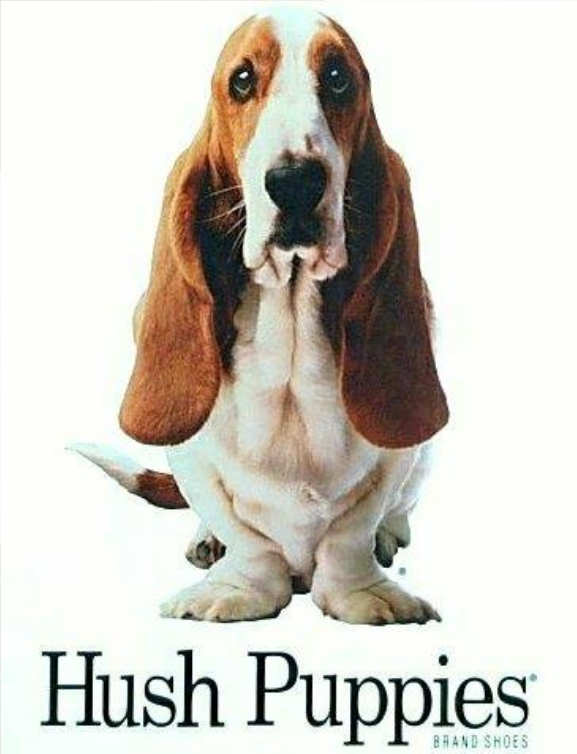
Back to the Future

- Mead industry poised to ride the wave currently experienced with Cider
- Collaboration
- Research, scientific evidence
- Quality, consistency, innovation, tipping point

UC Davis Honey & Pollination Centre

- Robert Mondavi UC Davis mead course
- Research
- Validation of mead as category

Ahhhhhhhhhhhhhh!!!!



Here's What you can do

- Grow flowers that help feed bees
- Become a beekeeper
- Make and perfect your own mead
- Submit your mead to Mead Free or Die in August 2014
- Join AMMA (American Mead Makers Association)
- Support your local meadery
- Support us Ask for it! Demand it!
- Donate to: Bee & Honey Research @UC Davis Honey & Pollination Centre; Crowd fund a meadery; support charity of funding beehives to impoverished areas to aid in self sufficiency

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