



Beekeeping in Senegal

**A Peace Corps Volunteer's
Experience with Beekeeping in the
African Sahel**

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A Brief Introduction

- Hobby Beekeeper since 2005
- Lucky first year!
- Up to 11 hives in 3 locations in Batesville, VA
- Beekeeping “show and tell” at Charlottesville Montessori School
- Retook County Class in 2008
- Beekeeping class at TJACH - “The Haven”
 - Donated last remaining hive to The Haven Community Garden



Why I Joined the Peace Corps

- Learned about Peace Corps at an early age & always wanted to join
- Timing was right
- Mid-career
- Wanted to give back
- Wanted to speak Spanish
- Interested in travel
- Thought my business experience and beekeeping skills might be an asset



The Application Process

- **Joining the Peace Corps is a commitment and getting through the process takes a lot of patience and perseverance.**
- **A lot of time can pass between the different stages:**
 - **Application**
 - **Interview**
 - **Nomination**
 - **Medical Clearance**
 - **Invitation**



Nomination → Invitation

- May 2009 – Application
- Aug 2009 - Nominated to Central/South America
 - I continued studying Spanish and wondered which country I would be assigned.
- Mar 2010 – Medical Clearance obtained
- Jul 2010 – Invited to serve in.....



Where I ended up

-Senegal, West Africa!! (*with a departure date in 6 wks*)
- Um, no longer connected →
- Flexibility is key!
- Beekeeping is part of the program goals in both of these regions, some are considered primary projects, others secondary.



My Assignment

- **Community Economic Development**
 - Enhancing business growth and job creation through business advising
 - Program focused on four niches:
 - **Agricultural and forestry products transformation***
 - Ecotourism development
 - Artisanal goods manufacturing and exportation
 - Private sector-led solid waste management and composting
 - Enabling a new generation of Senegalese entrepreneurs, through youth business education

***beekeeping falls here and can also be categorized within the realm of food security**

What Did I Do? (Primary Work)

- Taught youth business /English classes (Elem & HS)
- Introduced appropriate technologies
 - Paper Briquette Press
 - Rocker Pump
- Developed an environmental education program
- Consulted with local Artisans
- Developed Peace Corps Gender & Development and Diversity programs





Beekeeping in Senegal

- First – Where is Senegal?



Beekeeping in Senegal

- Second – Where was I?



Diourbel, Senegal

Beekeeping in Senegal

- Third- Where are the bees in Senegal?



Shaded relief map during the rainy season

My first intro to African Bees

David Campbell blogged about an adventurous camping trip that turned disastrous

Casey, Sheila, David, & David
Kedougou, Senegal
January 2010



What I Learned After I Arrived

- I did not live in an area of Senegal that is ripe for beekeeping, or agriculture, or livestock, or.....
- Most people are scared of bees
- A lot of beekeeping is done in trees
- Honey often tastes like smoke and/or ferments easily due to unorthodox honey robbing practices.
- Drone = Faux Bourdon (Fake Bumblebee)



West African Honeybee

- *Apis mellifera adonsonii*.
- *The primary* characteristics of these bees are:
 - Slightly smaller and darker than European bees
 - moderately high honey production
 - a defensive temperament
 - a tendency to abscond
 - *Not surprising characteristics for bees that have been "hunted" for millennia.*
- Not "Africanized" Killer Bees



African Crops Pollinated

- Sisal
- Papaya*
- Squash
- Pumpkin
- Cucumber
- Oil Palm*
- Citrus*
- Watermelons
- Avocado
- Broad beans
- Figs
- Guava
- Jujube
- Mango
- Cabbage
- Onions
- Peppers
- Coconut
- Cotton*
- Eggplant

* Indicates a good source of nectar, as well.



Beehives in Senegal

- The four main types of hives used are:
 - The traditional hive
 - “Improved traditional” hive - for example the Kenya top-bar hive
 - The modern imported hive – the Langstroth hive
 - The modern local hive - the Vautier hive
- *Plus! The ever-stylin’ coiffure*



Traditional Hive

- ***Advantages***

- Made of easily obtainable materials such as straw or tree trunks.

- ***Disadvantages***

- The hives are fragile and allow moisture build-up on the inside.
- The bees can be attacked by pests, which often provoke absconding.
- Smoke and fire are used to harvest honey, thus destroying hive and lowering the quality of honey.
- Only 3 - 8 kg of honey per harvest.



Kenyan Top Bar Hive

- ***Advantages***

- Beekeepers can harvest good quality honey without destroying the colony;
- These hives are easy to make using simple materials: wood, straw or bamboo covered with clay.

- ***Disadvantages***

- These hives are easily destroyed by bush fires;
- The hives are light weight and therefore easily stolen;
- If the hives are made out of wood they can be expensive to build.



Imported Hives (Langstroth)

- ***Advantages***

- Can produce up to 30kg of honey.
- Colony manipulation for rearing a calmer more productive bee
- Comb can be reused

- ***Disadvantages***

- Difficult for African farmer to manage therefore swarming common
- Termites and hard rains can damage
- This type of hive is expensive in Senegal (US\$80-100);
- A honey extractor is needed to separate the honey from the comb (a US\$500 investment in Senegal!).



Vautier Hive

- ***Advantages***

- Easy to make locally
 - One hive box made of cement, with up to 22 combs side-by-side.
- No stacking of supers
 - One can easily harvest perhaps 5 combs on the far left and 5 on the far right without disturbing the queen or brood.
 - You don't have to lift supers full of honey as in a vertical hive where supers can weigh up to 35 Kg.

- ***Disadvantages***

- You can't extract honey from and replace the comb.



Figure 1. Cross-section of the Vautier hive

Honey Harvesting

- **U.S. – Harvest during day**
 - Harvesting usually takes place midday when most of the fields bees have vacated the hive
- **Africa– Harvest at night**
 - Wild hive robbing
 - Top Bar Hives- take out bars of honey until you begin to see brood, then replace bars with new ones with the beeswax bead at the top
 - Very important to clear the area of farm animals and people for a few days after the harvest.
 - The bees will attack anything nearby.
 - Multiple stings can kill a horse or cow.
 - Tethered animals are at higher risk.



My Beekeeping Experience

- Abdou Seck – Bandia, Thies



Abdou Seck



Tournée in Southern Kaolack

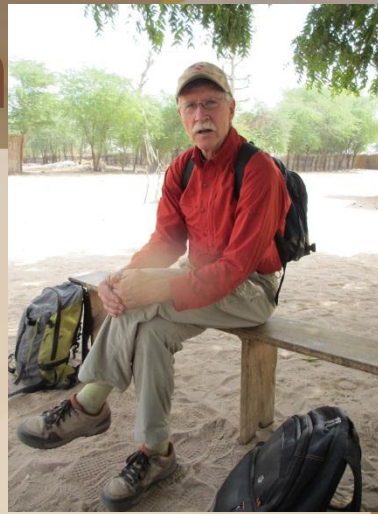


My Beekeeping Experience

- Jerry McGahan



Jerry McGahan



Developing Better Genetic Traits

- **Using 2 hives to make 3**
 - Identify aggressive and/or low-production hive (A)
 - Identify gentler and/or high-production hive (B)
 - Set up a new stand (C)
- **The Process**
 - Move Hive A to Stand C
 - At the newly vacated stand A, construct new hive with capped brood from hive A and eggs and young brood from hive B (shake bees from those frames to avoid taking the queen).



Developing Better Genetic Traits

- **The Process, cont'd**
 - Field bees from hive A (which is now sitting on stand C) will populate the new hive.
 - Ensure all three hives have honey supplies
 - Check the new hive in 5 wks for a new queen (capped worker brood present). If not, add a frame with eggs from B again.



Honey Robbing in Sakagne

- **Andrew Oberstadt**
 - Health Volunteer
 - Media Specialist



Honey Robbing in Sakagne



Box Day in Sokone

- Casey McDermott – Sokone, Fatick



Honey House Makeover

- A grant-funded project in Sokone, Fatick



PC Beekeeping Specialist

- **3rd Year Volunteer position**
- **Promote beekeeping in Senegal**
 - Tamba, Kolda, and Kedougou regions
 - train volunteers and local counterparts
 - work with the Gambia beekeeping program
 - research best practices and build relationships with Senegalese governmental institutions and NGO's that work in the sector and/or the region
 - Work with USAID's food security program.



Dialacoto, Tambacounda



Chelsea Kincheloe

Ancillary Apiculture Projects

- Entrepreneurial work with established beekeepers:
 - Marketing, product placement
 - Accounting, bookkeeping
- Tradesmen
 - Tailors making bee suits
 - Carpenters making hive boxes and frames
- Youth Groups
 - The importance of pollination
 - Hive society – working together
 - Craft projects



References

- **Beesfordevelopment.org** –
“Appropriate Hive Design from West Africa: Sustainability in Senegal – The Vautier Hive”
- **David Campbell’s blog** –
stayinggroundedontherun.blogspot.com
- **Abdou Seck** – beekeeper in Bandia
– miellerielebandia@hotmail.fr
- **Boubacar Cisse** – Directeur, Union Nationale de Apiculteurs du Senegal – boucire@hotmail.com
Jerry McGahan –beekeeping consultant -
arleeart@blackfoot.net; American Bee Journal, April 2012