Project Update: August 2016

This research has been about making choices at the right time and about flexibility, which took time to learn. My *modus operandi* consists on visiting each focus household once a month to check on guatila plants, talk, and to work on my research instruments. I put too much time to taking care of guatila plants, and although that served to show my commitment to farmers and how important the plants were to me, care time was not correlated to plant development. I have not been able to conduct the planned bee observations and pollination experiments. I switched gears and surveyed bees in the farms I work in. I made a late start and the conditions of this first sampling phase were irregular, so I am conducting a second bee survey (July-August 2016). I just finished conducting household economic surveys and, during the next three weeks, I will be conducting workshops with the community in the municipality.

Although we are still determining the identities of bees sampled during the first semester of the year, I have a general account of what we found in the first bee survey: we collected 529 individuals and registered 856 observations. Intentionally, we did not collect *Apis mellifera,* neither *Trigona fulviventris,* which are widespread, abundant and really distinctive species in the study area. Although I do not know how valid this is, we also registered *Eulaema, Xylocopa* and *Paratrigona* bees when we could not catch them, also because of their distinctiveness. In the lab we have registered 83 morphospecies. I will conduct analysis with this data once the second bee survey ends. I will test whether bee diversity changes across localities is influenced by local habitat configuration and landscape structure, and I will analyse patterns of change in species richness and abundance across localities and agricultural management regimes.

I am working with four people assisting this research. I work with a geographer to conduct the GIS analysis corresponding to my research question relating landscape structure and (now) bee diversity. The analysis is almost ready. We still discuss land cover classification, which has been challenging given the high degree of habitat complexity and heterogeneity, and we also need to include two farms recently introduced to the study (after two households decided to leave the study following an abrupt land use change). I also work with three taxonomists in determining bee identities in the lab. Progress on bee ID has been slow and we predict we will not be able to identify to species a good percentage of individuals because they may be new to science (as a good percentage of bees in Colombia are). My local assistants are two smart ladies who help me conduct vegetation, bee and social surveys. It has been really interesting and valuable to have their feedback on the social survey and on the whole project. Overall, we have worked on the following activities:

With focus households (n=16 for each instrument):
- Agricultural calendars.
- Semi-structured interviews on land uses; knowledge about bees; satisfaction; perceptions on conservation and development.

- Food consumption charts and interviews.
- Household economics.
- Social cartography: economic activities, risks and vulnerabilities, and proposed solutions by local communities in Anolaima.
- All the time, with all actors: Participant observation.

On farms
- Landscape analysis (partial) (n=16).
- Vegetation structure surveys (n=13. Still three pending because of unexpected problems) Floral resources and bee diversity surveys (n=16).

My plans could not be completed as expected so I'm staying for a longer time in the region to obtain all the data I need to answer my research questions. I will finish conducting fieldwork by October 2016. However, I have started organizing and analysing data obtained from the above-mentioned activities. While in the field, I would like to design a medium-term conservation strategy to promote bee presence in Anolaima. I have discuss some of the information with local beekeepers and we have dreamt with designing a game for kids (hopefully using a transmedia strategy) to divulgate findings and embrace citizen science to build a floral calendar for the region. I hope local beekeepers are good partners at designing this strategy and that they would be principal actors when implementing it.
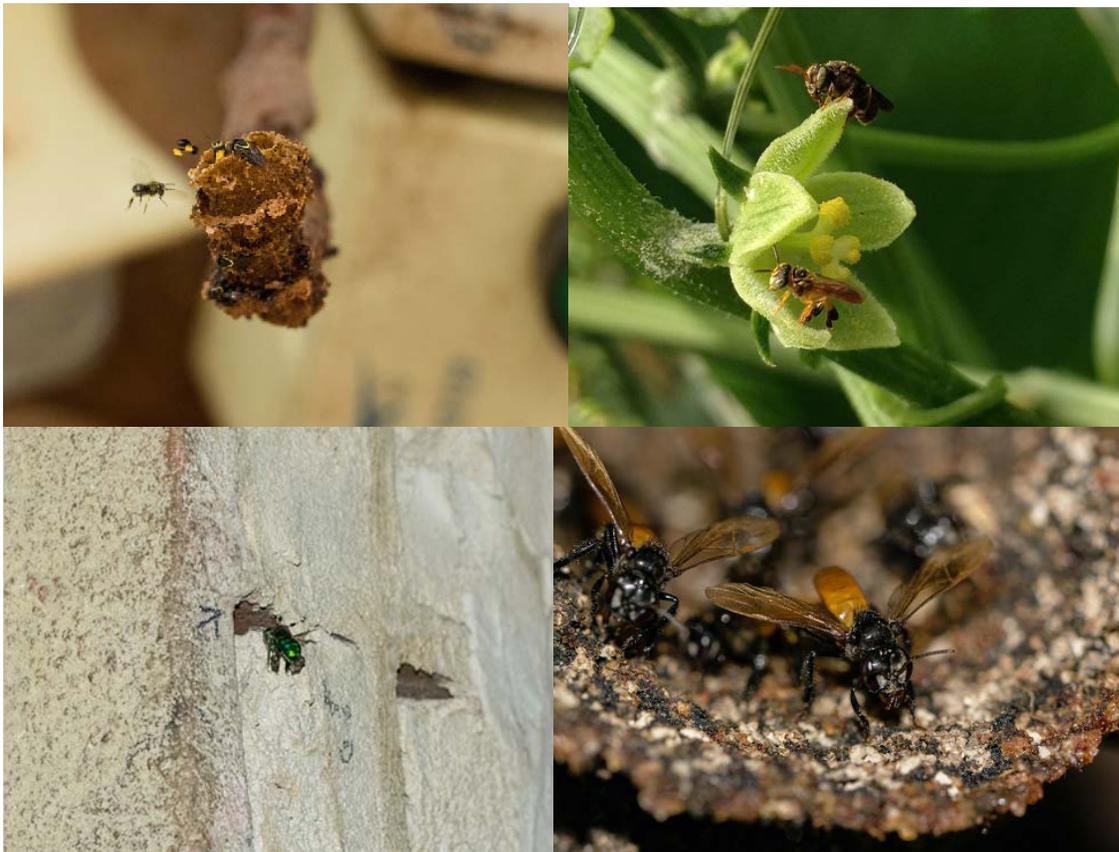
Left to Right: Co-existence; Screen Shot 2016-06-02 at 10.27.30 PM; *Euglossa* sp & *T. fulviventris*