

REPORT ON FIELDWORK, DONE IN THE PROGRAMME ONCHOCERCOSES LABORATORY, NGAOUNDERE (CAMEROON), AUGUST 2015

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After my Bachelor degree in biology it was clear that I'll continue my studies with a focus on parasitic diseases. The wide field in parasitological studies carried out at Tübingen made this university to the best place for my Master studies. It didn't take long till I was confronted with the possibility of joining a parasitological field excursion to the research-station of PD Dr. Renz in Ngaoundéré, Cameroon. From the first second on I was very excited about the idea seeing myself in an African research-station dealing with parasitological issues and research questions.

Alfons Renz and his team welcomed me warmly at their weekly Cameroon-Seminar under the leadership of Babette Abanda. During this seminar I had the first impressions about what Cameroon is like. I was enjoying deep views into cultural, historical, political, but also health organizational aspects of the Cameroonian society. Besides the seminar, Dr. Renz invited me to his lecture and practical 'Vectorbiology and Epidemiology' which gave me the needed biological background to feel myself well prepared for the work on vectors of tropical parasites. The course rose my interest about the work in Cameroon and gave me - in contrast to most of the other parasitological courses I had so far – a clear impression about the importance of the vectors of parasitic diseases and their control. In addition to this, I and two other students were introduced in the laboratory methods we'll use in the research station in Cameroon by a two-weeks practical in molecular parasitology methods under the leadership of Albert Eisenbarth and Babette Abanda.

Besides the biological aspects of this excursion and the preparation for the projects we were working on, Cameroon itself was a big adventure. Even travelling by bus or train through the manifold landscape was all the work worth. The Adamawa region presented us all its



Daily lunch with my supervisors Albert Eisenbarth (middle) and Babette Abanda (right). A good opportunity for short briefings.

beauty and color diversity of the rainy season and delivered every day new and fascinating things to see.

After our arrival at the Programme Onchocercoses Research Station of the University of Tübingen the local team welcomed us very warmly and gave us immediately the feeling of being at home. The compound was for us like a small bubble in the middle of the busy capital of the Adamawa region. A beautiful garden, a comfortable guesthouse and the night watch with his dog gave us the feeling of being secure.

In a spacious main lab with clean benches as well as in the new *in-vitro* and molecular labs, all the utensils you might need are available. A big team of local staff is always willing to help out, so that nothing was missing to let us begin with our research work. We were always flexible with our projects and were able to organize ourselves in work and time.

My project itself was a successful mix of field and lab work. My objective was to prove the occurrence of pathogens in Cameroonian ticks. These ticks were collected from the project cattle herd of DFG-IRAD which is used for epidemiological monitoring. Additional samples came from the nearby slaughterhouse. I was lucky that I had the possibility to get a thorough impression of the field work with cattle and to learn about the other field projects, for example collecting *Simulium* vector-larvae from the nearby breeding sites.

Using molecular genetic methods I aim to prove the presence of *Borrelia* and *Anaplasma* bacterial pathogens in tick vectors. In addition, I used a simple but genial method called 'Bärmann technique' to search for infectious larvae stages of *Onchocerca* species in potential vector ticks (*Amblyomma* and *Boophilus* spp.). I learned what it needs to optimize molecular techniques and the enthusiasm was immeasurable when I found my first positive samples for *Anaplasma* and *Borrelia*. However, these are first preliminary results and now I am curious about the subsequent genome sequencing which I want to carry out in Tübingen to



At left: me preparing ticks for their further Bärmann analysis (escape of infective *Onchocerca* larvae);
At right: my project presentation to local students and PhD students at IRAD Wakwa

identify the species and strains of these bacteria. Even though there were no positive results with the Bärman technique during my stay in Ngaoundéré, I am very happy to introduce a local worker at the research station to the method who will continue the screening.

One of my highlights during this excursion was unquestionable the opportunity to present my work on tick vectors and their disease pathogens to students from the local Ngaoundéré University and to PhD students working at the DFG-project partner-institution, the Regional Center of IRAD at Wakwa. (Institut de Recherches Agronomiques pour le Développement). This institution is collaborating with the University of Tübingen since more

than 20 years. In the present COBE ('Can Onchocerciasis Be Eradicated?') project, financed by DFG, DAAD and the Erwin-Riesch-Stiftung, our partners are Prof. Daniel Achukwi, scientific director of IRAD Yaoundé and Dr. Manchang Kingsley Tanya, Head of the animal health section of IRAD Wakwa. My warm thanks also go to them for permitting me to work with the COBE-IRAD cattle herd.



Me with a new born calf of the COBE-IRAD cattle herd

All in all I am proud of being part of this project. I will never forget that I had the possibility to experience this challenging adventure to work in the field in tropical Africa. For this reason I want to extend my special thanks to PD Dr. Alfons Renz and his team who made this excursion possible. Furthermore, I can rightly recommend this experience to everybody who is curious about Africa, its parasites and arthropod vectors.



At left: Programme Onchocercoses lab with workers and students.

At right: male *Amblyomma* tick which were used for the Bärman technique

