Building tree protection linkages with Mozambique: Report on a survey undertaken from 3-17 July 2010.

There has been a significant increase in commercial plantation forestry in Mozambique in recent years where especially species of Eucalpytus have been planted. However, the country does not currently have the expertise to deal with tree health problems that affect plantation forest trees. As part of a process to resolve this need, Silvia Mausse-Sitoe, from the Eduardo Mondlane University in Maputo, joined the Forestry and Agricultural Biotechnology Institute (FABI) in early 2010 to undertake research towards an M.Sc in Plant Pathology, with a specialization in tree pathology. As part of her training at FABI, a survey of plantation forestry areas in Mozambique was undertaken. Information obtained during this survey, and her subsequent research, is of importance not only to Mozambique, but also to South Africa and other nearby countries. This is because pests and pathogens do not recognize geographic borders and problems that appear in one country, often rapidly spread to neighbouring countries. In addition, early knowledge of potential disease threats is of significant importance in the management of tree pests and diseases.

On Saturday the 3rd of July, Prof. Jolanda Roux, Silvia and fellow Fabians, Marc Bouwer and Gudrun Dittrich-Schröeder, departed from Pretoria (Fig. 1a) on a two week long survey trip including native and introduced (Eucalypt) trees in the Manica, Sofala, Zambezia and Nampula Provinces of Mozambique. Plantations, where South African companies are involved, were visited as well as those belonging to private international companies and the Mozambican government to gain an overall impression of the current pest and disease problems in Eucalypt plantations in these areas. Samples were also collected from native Myrtales (especially species of *Syzygium*), since research conducted in FABI has shown that the Eucalypt stem canker pathogens, *Chrysoporthe austroafricana* and *Chr. cubensis*, have most likely originated from related trees in this order.

Just under 5000km were covered during the survey, including travel on fantastic newly built tarmac roads and some rather rough dirt and previously tarred roads that have become degraded. Some nights were spent camping, including in local villages, (Fig. 1C) while on other nights the team was hosted by forestry companies under somewhat more luxurious conditions. Occasionally local hotels were used and even though they did not always have hot water, the high temperatures of Mozambique, at least in comparison to the chilly Pretoria at the time, ensured that this was not a problem. It was also interesting to spend one night at a Catholic Church that was kind enough to house the group. During the day the team spent time looking for diseases and pests (Fig. 1E,F; Fig. 2A,B), while at night a significant portion of time was spent on processing the samples collected during the day (Fig. 1D).

Figure 1: (A) Off to an early start on the 3rd of July 2010, Silvia Mausse-Sitoe, Marc Bouwer, Jolanda Roux, Gudrun Dittrich-Shroeder, (B) Keeping trees healthy near Ribaue, (C) Camping in the village of Galinha, (D) Processing samples till late at night, (E) Silvia with our first positive Cryphonectriaceae sample from native *Syzygium guineense*, (F) Marc and some of the very amused spectators we attracted during sampling.

While the focus of the survey was to search for pests and diseases, some fantastically beautiful scenery was also enjoyed (Fig. 2C,D,E). The Zambezia and Nampula Provinces of Mozambique are characterised by incredible inselbergs, jutting from the landscape (Fig. 2C). Mozambique also has a number of large rivers, including the Zambezi (Fig. 2D), and mountains in excess of 2000m high (Fig. 2E). The team also sampled some of the locally grown tea, in Gurue, local beers and the famous Zambezi style chicken. This is not to

mention the prized fresh water prawns. For the most part, food during the day included the Mozambican bread (pao), cashew nuts and fresh fruits and snacks.

The team returned to Pretoria on the 17th of July after a very successful research trip. The two weeks of survey generated more than sufficient material to occupy Silvia (and others) for the remainder of the year. There is no doubt that this will also provide valuable information that can be applied to promoting the sustainable growth of plantations and the health of native forests in Mozambique and its southern African neighbours. The group owes a debt of thanks to foresters, forestry companies, Eduardo Mondlane University, Almeira Sitoe and others who assisted with the logistics for the trip. Without their help this would not have been possible.

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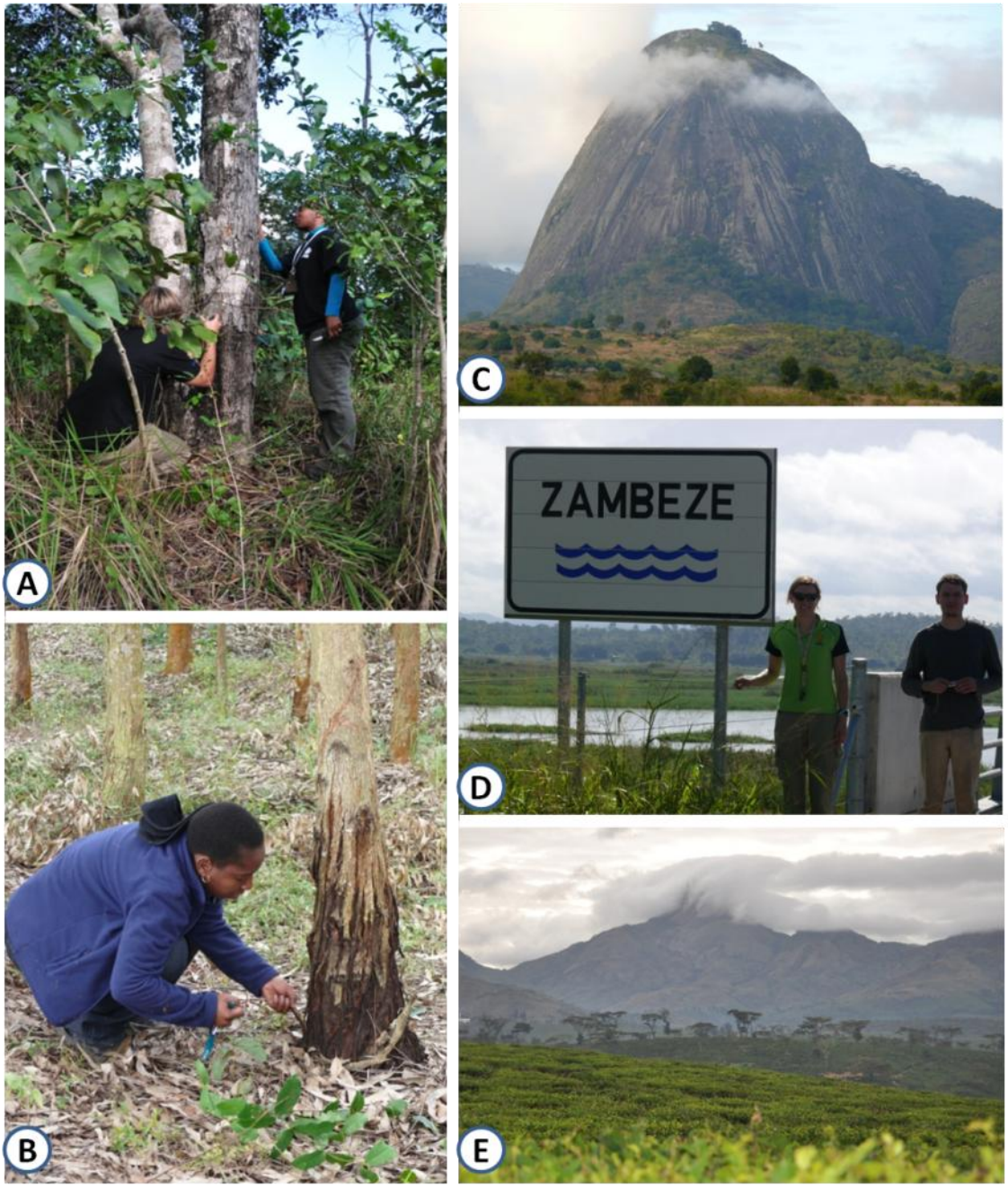

Figure 2: (A) Searching for Cryphonectriaceae on a native *Syzygium* tree, (B) Silvia looking for *Chrysoporthe* fruiting bodies on a eucalypt with symptoms of Chrysoporthe canker, (C) One of the many magnificent granite hills we saw in the Zambezia and Nampula Provinces, (D) crossing the mighty Zambezi, (E) tea plantations and the beautiful mountains around Mt. Namuli and Gurue.