

Guinea Jan 2018, Combined Workshop and Fieldwork Report.

Martin Cheek with Denise Molmou, 31 Jan. 2018.

Copies: 1) Saïdou Doumbouya MEEF-COSIE, 2) Dr Magassouba, UGAN-C-HNG, 3) Yaya Diallo Guinee-Ecologie, 4) BID, 5) Darwin Initiative, 6) Charlotte Couch, conseillère technique de HNG (Darwin Initiative).

This mission in Guinea combined:

1. Leading two workshops for the BID-funded project (Martin Cheek):
 - a) Citizen Science workshop for Fouta Djallon at Labe over 2 days.
 - b) IUCN Red listing and SIS workshop at UGAN-Conakry for Guinean conservation NGOs, Ministry Environment, University students, with regional participation from Ivory Coast and Senegal. Over 4 days.
2. Fieldwork to unexplored areas of Guinea, focussing on one of the least studied and most threatened of the Guinea IPA vegetation types: waterfalls (Cheek & Molmou). Covering parts of Fouta Djallon (Moyenne Guinée) and Littoral (Guinée Maritime) areas including portions of the catchment areas of the Bafing (12-16 Jan inclusive), Konkouré (upper: 17-19 Jan; mid: 27-29 Jan.) and Kilissi rivers (21 Jan.).

Itinerary.

8th Jan. Cheek travels London-Conakry.

9th Jan. At Université Gamal Abdel Nasser, Conakry, Herbarium National de Guinée. Meetings with Dr Magassouba, DG of HNG, and his staff. Arrange equipment, materials and personnel for mission, receive ordre de mission.

10th Jan. Car (HNG driver Fabert Thea), HNG Botanist and Darwin project Herbarium technician Denise Molmou (with child Delphine and support assistant Lucienne Molmou), travel Conakry-Labe, meeting Mlle Conte of Guinée-Ecologie (workshop co-ordinator). Meet Abdoulaye Balde (Pular speaking Masters student, BVDD UGAN-HNG). Saala Hotel.

11th Jan. Labe. After meeting the Governor of Labe Region (includes many Prefectures) we meet the Prefet of Labe, explaining our mission. Both stamp our ordre de mission.

Workshop part I.

Meeting room of Prefecture in town centre. 18 invitees mainly from Fouta. Translation from French into Pular by Abdoulaye Balde. Presentation of the 12 conservation priority indigenous plant species of Fouta Djallon (species unique to Fouta, or more or less globally restricted to the Guinea Highlands). Explanation of distinctive characters, vegetation types and global importance of each species using species-specific, purpose-developed A3 full-colour posters. Invitees are requested to search for new sites for these species, making specimens as evidence, and for verification and identity. These records to be added to GBIF. Training given in how to make herbarium specimens and record basic data. Invitees self-arranged in pairs, where possible, and each pair given a data recording sheet, plant press, rubber press belts, folded newspapers for drying specimens and blotter. Discuss why these species are high priorities and how discovery of new sites can reduce their risk of extinction if used to manage their survival.

Meeting at office of Wild Chimpanzee Foundation in Labe, with M. Antoine. As managers of the new Moyenne-Bafing Parc National, they seek our assistance in characterising vegetation types and in

inventorying plant species present, especially any threatened species which might be present. This is needed for a management plan.

12th Jan. **Fieldwork: Labe. Labe-Touge-Bafing River on National Highway.**

Meeting with Prefet of Touge to discuss mission, and our study of plants at waterfalls. He informed us of the sites of 5 waterfalls in his Prefecture, and that a French hydrological team was in the area at present, studying them. We continued to Koukoutamba village in order to study its gallery forest, and also the plant communities at a nearby waterfall. At this season Bowé and wooded grassland vegetation are dry, and often burned, making characterization difficult. However, in the afternoon, we began a species list of those which could be readily identified. Arriving at the village, we arranged to stay in 3 houses, and to hire a cook, Mme Diallo, and guide Abdoulaye Diallo for the duration of our stay. Reconnaissance visit to the gallery forest near the village, our target. In the evening I met with the Doyenne of the village and his three heads of visitor welcome to explain our interest.

13th Jan. Koukoutamba. We spent the day characterizing species present in a 250m long band of gallery forest in the vicinity of the river Bafing. At this point the vegetation is in three distinct strips, dependent on position on the river bank. We recorded dominance, height range, local names and uses of each species, taking voucher specimens when identification was not 100% certain.

14th Jan. Falls above village. Surveying along the north bank of the falls, characterizing frequency, diversity and identification of species a) in the falls themselves, b) seasonally inundated rheophytic shrub and tree communities. The falls contain diverse Podostemaceae. This is to be the site of future hydro dam we were told by the community.

15th Jan. Surveying pyrophytic plants, and those few others in reproductive state in the Bowé and woodland area west of the Bafing, within the boundaries of the PN, along the road to Tougé.

In the late afternoon, we arrived at Idia, so as to visit the Bageta Falls early next day. We stayed in the Maison d'accueillir, hiring a cook and guide, Ibrahim Balde. In the evening we explained to our hosts, including the chief and council, our interest and requested a guide and information on access to the falls next morning.

16th Jan. Trekking for 4-5km through grassland and woodland with loose surface ironstone (team leader fell, bruised ribs) we then spent 1.5hrs surveying along the bank of the Bageta falls which contained diverse Podostemaceae. They are to be the site of future hydro dam we were told by the community of Idia. Returning to the village, we eat lunch, packed and set off, reaching Labe. Hotel de Saala.

17th Jan. Labe

BID workshop part 2.

16 of the 18 invitees had returned, representing 7 teams (all the teams from Mamou had decided to combine), having had four days to collect specimens. The results of each of the teams was reviewed in public and scored out of a possible 5 points for a) quality of the species (e.g. 1+ non-indigenous invasive, 5= one of the 12 target species of Fouta); b) quality of the specimen (damp and badly presented = 1, flat and dry, both surfaces of leaf showing = 5; c) quality of data recorded, 1= highly incomplete; 5+ specimen numbered, correlating with number on form, name and contacts of collector given, also locality, local name (if any) and additional data.

Clearly, almost all the teams had made an effort and had attempted to collect the 12 target species. However, only team 8 succeeded in collecting one of these: team 8 with *Uapaca chevalieri*. Most other teams had collected *Uapaca togoensis* or *U. heudelotiana*, believing them to be this species in error. This specimen and its data were retained for incorporation into HNG and K, and addition to the GBIF offering through the BID project. Equally several other specimens which, while not among the target species, were of interest, potential new records for Guinea, or with potentially new

associated local names and uses. One plant is troublesome in killing stock when eaten and the invitee that brought it was anxious to know its scientific name and other uses.

Several of the target species were known not to be identifiable at that season since not in flower. Therefore invitees were told to retain their presses and forms, and to collect specimens later should they discover them, in the manner in which they had been trained, and then to contact Dr Magassouba, head of HNG, so that they could eventually be confirmed (or not) by botanists at HNG and K. Medals were presented to the discoverer of the target species (team 8 = Abdoul Giradou Diallo) and Diallo Diaouda (team 2) overall winner on points.

Stories and pictures were taken and tweeted by Denise Molmou of HNG.

18th Jan.

Darwin project Waterfalls fieldwork 1

Labe-Chutes de Saala-Pita. Leaving Abdoulaye Balde at Labe, we arrived at Chutes de Saala, met by one of the atelier invitees, Diallo Alpha, who lives nearby. We spent 1.5-2 hrs targeting waterfall plants especially the diverse Podostemaceae, which had been detected on a previous visit in June when they were dead.

Returning to Pita, packing baggage, we continued to Pita to visit the Prefet, finding the building all but empty. Our ordre de mission was cacheted by the Environment Officer after we had explained our intention to visit Chutes de Kinkon, site of two globally unique species, *Stonesia fascicularis* and *Inversodicraea abbayesii*. After checking into hotel of Mme Barry (road to Dalaba) we visited the falls, now a hydroelectric barrage. They are protected by a military checkpoint, but our Ordre de Mission gave us access without a charge. After inspecting the falls in detail, and also the rapids above the falls, we found that both these species were absent. Four other species of the family were present above the falls. A possible record of *Pitcairnia* on the sandstone cliffs of the gorge proved to be a *Gladiolus*.

Apart from the hydro project, other Podostemaceae-negative factors recorded were a) nutrient input into the headwaters from laundry and sewerage uses and b) mud, due to run-off. These were indicated by heavy algal growth and by mud deposited on the rocks of the stream.

19th Jan. Pita-Kambadga Falls-Dalaba

The Kambadga Falls is downstream of the Kinkon, with a larger volume of water. As the Kinkon and Saala, are noted touristic sites. Ibrahima Bah was our guide for the two hours we surveyed the falls, finding two main Podostemaceae. We found indications that these falls also are set to become a hydro project. Here we discovered a new site also for *Uapaca chevalieri*.

Continuing to Dalaba, we found the hotel almost fully booked, and the Prefet offices empty, due to a Ministerial visit (Min. of Energy and mines) coinciding with imminent local elections. Having arranged to meet atelier invitee Abdou Giradou Diallo (AGD) to view his *Uapaca chevalieri* forest, we were delayed by lack of knowledge of the area and arrived late at 4pm, finding that a vast gathering of over 100 people had been gathered since 2pm, including imams, notables and the members of the Association Locale des Conservateurs de la Nature (ALCN) which has committed to protecting this forest. After explaining the reason for our visit and the importance of their work for conservation in Fouta, and receiving the benediction of the notables, we proceeded with AGD and three forest guards of MEEF, to a portion of the forest where we observed a stand of 11 *Uapaca chevalieri* trees and where regeneration was apparent, with several seedlings 1 m high shown to us by AGD. Apart from this the area had many grassy openings in which cattle were ranging, evidence of fire invasion (carbonised trunks of some trees) and there was an absence of other Fouta montane forest species such as *Trichilia djalonis*, which we had hoped to see. However, we began a species list and collected some samples of potential true forest species. It was excellent to see this community effort protecting a rare indigenous forest species of Fouta and its habitat.

20th Jan. Dalaba-Conakry. Visiting the Prefet a second time, we were introduced to the (unwell) Gards de Corp of the Prefet, who explained that all other officials were out due to the Ministerial visit. He requested and was provided with a photocopy of our ordre de mission, and we explained the nature of our visit, requesting permission to collect seed for the HNG and K seedbank of the Dalaba global endemic *Vernonia djalonensis* having witnessed it in fruit in passing earlier. The soldier, Abdoulaye Delamou who had escorted us to the Prefet's residence would accompany us to collect that seed it was agreed. Four bags of seed were collected before we departed for Mamou, Kindia (visit to Prefet) and Conakry.

21st Jan. With the DG of HNG, Dr Magassouba, and her Excellency the British ambassador to Guinea and her husband, we returned to Kindia to visit Grandes Chutes de Kindia source of two historically globally unique Podostemaceae species *Inversodicraea pygmaea* and *Stonesia gracilis*. The site has since been converted to a hydroelectric dam and the falls were no longer dramatic as a consequence, moreover such running water as there is heavily contaminated with mud and algae since the site is used as a major laundry and toilet area. No species of Podostemaceae were found despite an extensive search by four persons over one hour.

Just to the south, a series of rapids with white water were found to be densely covered by what is tentatively identified as *Stonesia heterospathella*. Continuing to the Kilissi headwaters, source of drinking water for Kindia, we noticed two other species of Podostemaceae before returning to Conakry.

22-25 Jan. BID-funded IUCN Red listing and SIS workshop at UGAN-Conakry. This four day red listing workshop was for Guinean conservation NGOs (Guinee-Ecologie, Guinee-Biodiversite and COMBO), Ministry Environment, University students, with regional participation from Ivory Coast and Senegal after it was made known to the nascent WARLAP group (W African Red List Authority, Plants). The Ivory Coast representative obtained their own funding, while the Senegalese lady, Fatima Diang Diop had prior SIS expertise and was invited to be a co-trainer, providing SIS capacity building. Her expenses were funded by the BID programme. Modifications were made to the programme prepared for the workshop according to the abilities of the invitees discovered on the first day.

Mass georeferencing of Guinean plant specimen data by the team at UGAN-HNG is well advanced thanks to the BID-Guinee programme. The rationale for this work is to supply data for Red list conservation assessments to support a Red Data Book for Guinea and the Guinea IPA (Important Plant Areas) project, funded by the Darwin Initiative, UK Government. The objective of the workshop was to familiarise and train the UGAN-HNG team, and other project partners in Guinea in how to use the georeferenced specimen data to make conservation assessments, focussing on threatened species using the IUCN global standard, and moreover, exposing the invitees to the SIS system of IUCN which IUCN require to be completed before accepting assessments for review and potential inclusion on www.redlist.org. The SIS system is open only to those who have completed an online course, requiring typically several days to complete, and which is a special challenge in West Africa where internet connectivity is often poor. Therefore the emphasis of the course was to bring participants to a full understanding and competence with the redlisting categories and criteria, to the point where they could independently make an acceptable assessment of the risk extinction of a species using data provided. Firstly teaching was given in the use of terms for the categories and criteria. A test at the end of the first day gave disappointing results, 50% of the invitees scoring 2 or less from a possible 10, and only one person reaching 100%. Therefore the second day began with a repeat of the training, more emphasis to address the points at which so many had fallen, and a second test, where all scored more than 5 out of 10, and the majority were in the 6-10 range. Invitees were then divided into four teams of 4-5 persons. Real-life exercises were then given, teams working together to assess three Guinean species and to present and defend their conclusions. By

the second half of Wednesday, all teams were consistently producing reliably competent assessments. Teaching was then given in Geocat, software especially useful for plants, which draws upon point data from georeferenced specimens to calculate quantities critical to making assessments under criterion B, the criterion most adapted to assessments of plant species. Invitees were then given a set of data for a species that had not yet been assessed in the last 10 years, *Inversodicraea abbayesii* (Podostemaceae). Outcomes were satisfactory. The invitees were then shown how (once IUCN allows access) data is filled on the SIS system, a tortuous and idiosyncratic piece of software. In practice the main trainer loaded this data into SIS in the evening. IUCN were requested to add the names to SIS for the Guinea working set of all participants, so that they could be given credit for their efforts as “Facilitators/Compilers” and appear on the official redlist website together with the species assessment.

Each team was then given data for an additional species to assess: *Inversodicraea pygmaea*, *I. pepehabai*, *Stonesia fascicularis* and *S. gracilis*. Following that *Napoleonea alata* and *Lipotriche felicis*. In total, seven new assessments were completed by the team to satisfactory standards. The trainer will load these into SIS (since access is restricted to those who have passed an online training course, and since it must be in English, which none of the participants have competence in).

The course finished with a presentation on Regional Assessments by Fatima Diang Diop. She then led a discussion on the needs for redlisting, and the real threat of plant species extinctions that faces us unless action is taken.

The event concluded with presentation of certificates to the attendants by the British Ambassador to Guinea, Catherine Inglehearn, and a senior representative of the Minister of Research, Innovation and Higher Education, with the Dean of UGAN-C.

Both opening and closing ceremonies, together with stories on imperilled Guinean plant species, were featured multiple times on the National Television station, RTG.

26 Jan.

Darwin Waterfalls Fieldwork 2

With the team leader, Denise Molmou and Fabert Thea (Driver), joined by DG of HNG (observer), the Darwin fieldwork for waterfalls was set to continue. The focus was on 4 sites on the mid Konkouré River and affluents around 40km N of Kindia on the Télimélé rd., notoriously in bad condition. It was on this road, while viewing potential tracks around a lorry that had overturned on a steep slope, blocking the road, that the expedition leader was injured in the ankle by a rock projected from the spinning wheels of a vehicle attempting to move uphill in the opposite direction. An x-ray at Kindia hospital showed that no bones were broken, although walking was not possible, so the mission returned to Conakry.

27 Jan. The mission to the Konkouré falls was relaunched with Gbamon Konomou (HNG) supporting D. Molmou (now team leader) and F. Thea. By the end of the day they visited the sous-prefet at Bangouya, near the falls, and had visited target 1 with the assistance of a guide, Ibrahim Sylla, suggested by the sous-prefet. Stayed the night at Maleya village. Cuisiner was M'mah Sylla.

28 Jan. The mission continued, visiting targets 2 and 3, also visiting falls near Lambasoso village, river Mayonkoure an affluent of the Konkoure before returning to Conakry, overnighing en route at Coyah. They discovered three specimens of Podostemaceae, but found the water level still too high to expose likely additional species present, so it is recommended to visit in another month when levels are lower. And reaching HNG early 30 January.

29 Jan-2 Feb. The specimens being dried, they were divided between HNG and K, and a list drawn up to expedite an export permit for the latter against the ordre de mission from UGAN-C-HNG dated 9 Janvier 2018. The Certificate D'Origine number to export specimens to Kew was issued by Mamadou Bella Diallo and Namory Keita of MEEF on 31 Jan. 2018.

Conclusion. The expectation is that of the 11 falls visited, all but three have never been sampled before for Podostemaceae or other waterfall-specific species. After identification at Kew, numerous new records for Guinea, rediscoveries of lost species, and discovery of new, likely threatened species for science is expected. As a result of the fieldwork, it was found that almost every waterfall visited is set to become a hydro-electric project, apart from those where one already exists, in which case local (and possibly global) extinction of Podostemaceae species seems to have occurred.

Samples were collected against voucher specimens of two fibre species, *Cochlospermum* and *Gnidia*, and one resin (Rubiaceae) for analysis as part of the future GCRF grant. One sample of seeds was collected for the seedbank at HNG and at Kew: the threatened *Vernonia djalonensis*.

Summary of specimens collected (see separate list)

Cheek 18925-18995 70 numbers

Molmou 1670-1685 15 numbers

Balde 389-415 39 numbers

Total 125 numbers

END

Pictures of the mission



Identification of species at the second day of Labe workshop



Seed collecting at Dalaba of *Vernonia djalonensis*.



Example of Podostemaceae from the Konkoure waterfalls.