

## THE THREATENED FOREST REMNANTS OF DOM, BAMENDA HIGHLANDS, CAMEROON

NFS Kew Symposium Paper 2

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**Summary.** This presentation seeks to present work towards a conservation checklist of the Community Forest of Dom, Bamenda Highlands, North West Province, Cameroon. The forests are classed as submontane and include a number of threatened plants, including the critically endangered *Newtonia camerunensis*.

The "Wet Tropics Africa Team" of the Royal Botanic Gardens Kew has been working in collaboration with the National Herbarium of Cameroon for over ten years to produce Conservation Checklists for botanically important or threatened areas of Cameroon. The Mount Cameroon conservation checklist (1998) has been our model. Mount Cameroon is one of the few places where natural vegetation exists from the coast to sub-alpine elevations



**Fig. 1** The ANCO nursery with George Ngangong, chief nurseryman, in discussion with Marcella Corcoran, one of Kew's specialist horticulturalists. ©Y. B. Harvey

and includes one of only three locations where annual rainfall exceeds 10 m per annum. So far five checklists have been produced and the Darwin Initiative has provided funding for a further three, one of which is to be a Checklist of the Community Forest of Dom. We are looking to do similar



work in Guinea and Gabon.

Dom is located in the Bamenda Highlands of North West Province, Cameroon, which themselves form part of the Cameroon Highlands. The Cameroon Highlands run from Bioko and Mount Cameroon in the south, northwards to Tchabal Mbabo and then continue eastwards as the Adamoua area, following a geological fault line. It has been estimated that 96.5% of the original forest cover of the Bamenda Highlands above 1500m altitude has been lost (Harvey et al. 2004).

A Bamenda-based NGO called ANCO (Apiculture and Nature Conservation Organisation) requested our help with the forest of Dom in 2004. ANCO is a member of WHINCONET (Western Highlands Nature Conservation Network), a consortium of NGOs. WHINCONET was founded in 2002 and is an organisation recognised by the Cameroon government. Its objectives are to enhance biodiversity conservation and poverty alleviation by sustainable management of natural resources through networking. Kew has been asked, by NGOs within WHINCONET, to survey many of the remaining forest fragments within both North, West and South West Provinces. With the guidance of the surveys, WHINCONET will then choose the most interesting areas, in terms of diversity, endemism



Fig. 2. figure 2: *Gnidia glauca* © Y. B. Harvey

and numbers of threatened taxa present, to conserve. Owing to insufficient resources, it is not possible to save all areas. The consortium is currently headed by Mr Paul Mzeka who runs ANCO. ANCO seeks to support local communities protecting their forests. One of their projects is a nursery, of approximately 400 sq.m and during early 2005 this contained an estimated 30,000 plants, including *Prunus africana* and the threatened taxa, *Newtonia camerunensis*, *Dovyalis cameroonensis* and *Eugenia gilgii* with funds from RBG Kew. Seedlings are transplanted to reforest areas. In fact the Dom community were the recipients of *Prunus* seedlings in June 2005. Seen in figure 1 is George Kangong, chief nurseryman, in discussion with Marcella Corcoran, one of Kew's specialist horticulturalists. Marcella, in the Spring of 2005, spent time training ANCO staff in tropical horticultural techniques.



Dom is in Noni subdivision (under Bui division) near its capital Nkor. Its forest came to wider attention when the people of Dom appealed to the Bamenda Highlands forest project (since closed) for help in managing the forest, and achieving community status, some years ago. ANCO began taking up this challenge early in 2005 with NC-IUCN assistance. ANCO suggested to Kew that it would be useful to survey the forest, and so three botanical survey visits were made in April/May 2005, February/March 2006 and September 2006, by combined RBG Kew/YA/ANCO teams.



Fig. 3. Forest destruction at Dom. © Y. B. Harvey

In a community forest, forest management includes both forest conservation activities and sustainable use of natural resources. It is owned and managed by the local population that allow both conservation and sustainable use of the natural resources in the forest (i.e. harvesting of medicinal plants, hunting and bee-keeping). In Cameroon, the law on community forestry dates from 1994 (No. 94/01, 20<sup>th</sup> January 1994). Management includes keeping an eye on various designated taxa. For plants in submontane areas this will include *Gnidia glauca* (figure 2), a tree usually seen in regenerating forest and an indicator of positive changes in the forest; on the other hand, *Pteridium aquilinum* (bracken) is seen as an indicator of negative change since it grows in forest open spaces, many of which are created by man-made fire.

Discussions with the Divisional officer in Nkor appear to show a direct link between deforestation (figure 3) and an erosion of water supplies. Reduction in the dry season flow of water, which he attributes to forest clearance in Noni, had resulted in 300 women appealing to him for help. It appears that Noni "landgivers" who were traditionally accepted to have the right, had given out tracts of forest to Nso farmers in the North, in return for a tithe on the resultant crops. The Divisional Officer expressed the high value that he placed on forest conservation, not just for watershed protection, but also to conserve rare species that might be of use for future generations. He has been very active in visiting the forest at Dom and in chairing meetings of the forest management committee.



Our collecting teams typically are comprised of personnel from the NGO that we work with. In the case of Dom, this is Kenneth Tah, staff from the National Herbarium of Cameroon, and guides from the local village. The forest fragments are reached on foot via a network of paths. Forests are generally clinging to very steep, mountainous slopes. Specimens are gathered in polythene bags prior to being placed in a plant press during frequent stops. With the permission of the Fon, a significant number of Noni plant names were gathered, including local uses, it having been agreed with him that these could be incorporated in our proposed checklist. The Fon was particularly keen that this aspect of the traditions of the Noni people would not be lost.



Fig. 4: *Newtonia camerunensis* © B. J. Pollard

The submontane forest at Dom has the world's largest known population of the critically endangered *Newtonia camerunensis* (figure 4). This is a submontane and montane forest tree, known only from Cameroon's Bamenda Highlands and Bamboutos mountains. *Newtonia camerunensis* is threatened by forest clearance for timber, firewood and in the case of Dom, small-scale agriculture. Other critically endangered plants seen were *Eugenia gilgii*, *Chassalia laikomensis*, *Psychotria moseskemei*, *Oxyanthus okuensis* and *Dombeya ledermannii*. The endangered *Allophylus conraui* was also encountered.

The edges of the forests were marked by populations of the 2m+ high, white flowered *Lobelia columnaris*; *Clematis villosa* subsp. *oliveri*, an erect perennial herb to about 60cm, with solitary white flowers to 5cm diam.; the large leaved *Solanecio mannii*, a shrub reaching 7m, that, although

widespread in Africa, is quite distinct as there are very few large-leaved Asteraceae occurring in the Cameroon Highlands; the 2m tall bulb, *Drimia altissima*; another showy



bulb, *Scadoxus multiflorus* with a red star-burst style inflorescence; and *Gnidia glauca* (see figure 2), the 15m high tree with 5cm diam. flower heads.



Fig. 5: Community Forest of Dom (dry season). © Y. B. Harvey

Within the forests, along with the endangered taxa listed above, were many trees and shrubs, including the showy red-flowered *Kigelia africana* whose fruits are shaped like a salami; the 2m shrub, *Psychotria psychotrioides*, found in forests throughout much of tropical Africa; also in the Rubiaceae, *Cuviera longiflora*, a tall 8m shrub that was swarming in ants; the

aroid, *Anchomanes hookeri*, the rarer of the two taxa known to occur in Cameroon; and *Tabernaemontana* sp. nov., a Cameroon endemic also found within Bali Ngemba, one of our checklist areas, with pleasantly aromatic flowers, many of which carpeted the forest floor.

In the three brief visits made so far, (figures 5 & 6 show seasonal differences in vegetation) over 350 collections have been made, and numerous sight and photographic records have been taken. It is hoped that the checklist will be published by 2010 as part of a joint Kew and National Herbarium of Cameroon, Darwin Initiative supported project (no. 15034). So far, our expeditions have shown Dom to have the biggest living collection, in terms of numbers present, of the critically endangered *Newtonia camerunensis*, and for this reason alone, it is likely to be one of the forests chosen by WHINCONET for conservation.

As mentioned earlier, the checklist production follows a pattern. There will be several plant collecting trips made to the specific area at different times of the year to capture the flowering and fruiting stages of the plants present. Several duplicates are made of each collection. At the time of collection, all field books are entered into a specimen database and labels are produced. The top-set of specimens will remain at the National Herbarium of Cameroon (this is one of the conditions of our research permit, and agreement between our two institutions). The second set of specimens are sent to Kew where they are identified



by family and/or regional specialists. These identifications are subsequently added to the specimen database. Then begins the checklist production phase. The checklists have a number of introductory chapters before the species list. Species accounts are compiled and downloaded from the database (the database has an ever expanding "folder" of species descriptions), and these make the bulk of the checklist. The checklist is compiled in an alphabetical arrangement: species within genera, genera within families and families within the groups Dicotyledonae, Monocotyledonae, Pinopsida, Lycopsida (fern allies) and Filicopsida (true ferns). All species listed within this part of the checklist will have an IUCN rating, following IUCN 2001 criteria. An important introductory chapter includes full Red-data assessments of the most vulnerable species present in the area, along with management suggestions.



**Fig. 6: Community Forest of Dom (wet season). © M. Cheek**

The checklists are distributed within Cameroon to government bodies, local government offices, NGOs, interested parties and local schools. However important the information within, a book is likely to sit on a shelf gathering dust. As a consequence, many people living in the areas may not have access to this printed source. As an effective, yet



inexpensive form of publicity, our team prepares posters for plants found to be of high conservation status that occur within the checklist area. They are distributed to government bodies, local government offices, NGOs, and placed in areas where people congregate, such as schools, restaurants, bars and hospitals.

### REFERENCES

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