

XII. WWF KIKORI CATCHMENT DEVELOPMENTAL PROJECT, PAPUA NEW GUINEA ORCHID SURVEY

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The World Wildlife Fund (Kikori Catchment Developmental Project, Papua New Guinea) has commenced field surveys of the Orchidaceae in the Lake Kutabu and Mt Bosavi areas of Papua New Guinea. The main purpose of the survey is to get a more accurate assessment of the orchids in the region. In a previous survey based on data collected along transects within the region, the total orchid flora appeared to have been underestimated due to a lack of knowledge in the recognition and identification of these plants. A major component of the project therefore was to work jointly with two national botanists, L. Balun, Senior Lecturer, Bulolo University College, and O. Jebia, WWF Botanist, and train them to recognise and identify the orchids encountered in the field.

The survey area is biologically rich with diverse tropical rain forest at 800–1400 m altitude on the Papuan fold belt geological region on the southern slopes of the Southern Highlands. Currently it is an area of major economic significance to Papua New Guinea containing major oil and natural gas fields. Much of the forest within the region is in a pristine state with minimal clearing and agriculture evident. The ease of access to various habitats within the region either by road, boat, or air, makes it an ideal situation to conduct research to assess biodiversity in this part of Papua New Guinea.

Local landowners in the region of Mt Bosavi have also made a request to the WWF for an orchid survey of the area to assess their content and possible impact from the long-term sustainable use of the forests.

FIELD WORK

Field work in the study area was recently undertaken (28 June–7 July 2001) by a team of four botanists comprising Balun, Clements, Harris, and Jebia. The main purpose of the study was to locate, identify, and compile an inventory of the orchids found within the various habitats encountered within the region. To facilitate identification of the species seen specimen(s) in flower were collected as herbarium vouchers, the primary set to be sent to LAE and any duplicates to CANB. Where no flowering material was found, a small representative sample of living plants was collected for subsequent cultivation in both the Botanic Gardens of Lae and Canberra under controlled environmental conditions in glasshouses. When these plants will flower they can be identified and vouchers made.

Modern approaches to systematic botany more and more rely on fresh material wherever possible and this is particularly so for many orchids where important characters are obscured or not preserved in dried herbarium specimens or those preserved in spirit. The

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flowers of many orchids last only one day and so they are rarely collected simply because they are not seen during the time of a particular survey. In addition, leaf material of vouchered collections was taken in the field for DNA analysis stored in plastic bags with silica gel. It is hoped that by these means a more complete and accurate assessment of the orchid flora of the Lake Kutabu region will result.

RESULTS

As stated above, the principle expected outcome from this survey is to establish an inventory of the orchids of the Lake Kutabu area, based on scientific collections with vouchers in LAE and CANB. These will then be available to scientists and interested parties under the guidelines set out by these institutions. They could be borrowed by kindred institutions throughout the world for further study.

Initial assessment suggests that many species are undescribed and will require formal botanical description once their identity is ascertained. These descriptions will be made jointly with Balun with the holotype to be deposited in LAE and any duplicates at CANB. In this way the people of Papua New Guinea are advantaged and remain in control of the situation. This is in direct contrast to the situation that exists for many recently described PNG orchids which have been done entirely by overseas botanists based mostly on plants smuggled out of PNG and cultivated in the USA and some European countries, and where the type specimens are lodged in overseas institutions and not in LAE.

Most importantly, there is real chance here for indigenous PNG botanists to take up research on PNG orchids and to determine the species diversity of orchids within PNG. It is our estimate that there may be as many as 5000 species of orchids in PNG which means many of them are yet to be discovered and described. It is to be hoped, through cooperative studies/surveys of the present kind, that a serious program of scientific research on PNG orchids will arise.