



# SAMUT-SARI

The quarterly newsletter of the Philippines-Netherlands Biodiversity Research Programme for Development in Mindanao



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## Researchers validate research results to communities

The community validation meetings conducted on 26 February to 10 March 2005 once again exemplified the participatory and collaborative nature of the Biodiversity Research Programme (BRP). The purpose of the validation meetings is to present to the community the results of the different studies and to affirm the "truthfulness" of the data presented.

As an important part of the research process, community validation meetings were held in various barangays in Misamis Occidental, which were study sites of the BRP research projects. These were: Mansawan and Lake Duminagat in Don Victoriano, Toliyok, Tabuk Norte and Villaflor in Oroquieta City, Mamalad in Calamba, Kauswagan and Tipolo in Plaridel, Peniel and Danlugar in Lopez Jaena, and Small Potongan in Concepcion. Barangay officials, representatives of the different sectors in the community, and a number of local researchers participated in the activity.

The BRP Site Coordinator started off the meetings with a brief explanation of the history, nature, and objectives of the BRP. After which a representative from each of the studies presented their data, their preliminary analysis, and their recommendations. At the end of each presentation, the participants were asked in an open forum whether they agreed or disagreed with the data presented, and were given opportunity to express their own concerns and

recommendations for biodiversity conservation and sustainable resource use. It is noteworthy that the people are aware of the importance of biodiversity conservation. In fact, in each of the validation meetings, the people

provide livelihood projects. Others requested for training and/or seminar on organic farming and integrated pest management.

Posters highlighting important research



BRP researchers present the results of their research study for validation of the local communities within the research area in the Mt. Malindang environs.

enumerated a number of ways to conserve biodiversity in their respective barangays. However, poverty and lack of other means of earning a living prevent them from applying these conservation practices in their everyday lives. Consequently, one of the recommendations of the communities was for the Programme to

results were strategically posted in the venues to facilitate understanding of the concepts discussed in the validation meetings. Some handouts and brochures were also disseminated to the participants for greater appreciation of the results of the studies. ▀ *RIYAdan and GDRivera*

# The Status of Insect Biodiversity in the Philippines<sup>1</sup>

Victor P. Gapud

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Member, Philippine Working Group

The main difficulty of assessing the status of insect biodiversity research in the Philippines is attributed to a number of factors: (1) Species Richness where more than 22,000 insect species creates an almost unwieldy task for local specialists; (2) Species information is scattered largely in foreign literature in foreign languages; (3) Information beyond original taxonomic description is very little; (4) Hardly any comprehensive monitoring at regional level had hardly been done; (5) Competent persons able to perform the groundwork are very few; and (6) Regulations on field collections are stringent, often cumbersome (e.g., Wildlife Act).

In a setting of having to deal with thousands of arthropod species, the handful of current experts on limited groups simply cannot satisfy the demand for biodiversity research in the Philippines. Among the few are: Dr. Clare R. Baltazar (UPLB, retired) on parasitic wasps, butterflies and moths; Dr. Alberto T. Barrion (International Rice Research Institute, retired) on spiders; Dr. Grace Barroga (UPLB) on chrysomelid beetles; Dr. Venus J. Calilung (UPLB, retired) on aphids; Dr. Victor P. Gapud (UPLB) on damselflies, bugs and others; Dr. Irineo L. Lit, Jr. (UPLB) on mealybugs, scales and ants; Dr. Leonila C. Raros (UPLB) on mites and ticks; Dr. Cecilia P. Reyes (Emilio Aguinaldo College) on thrips; Dr. Stephen G. Reyes (UPLB) on bees and wasps; Dr. Wolfram Mey (Humboldt) on caddisflies; Mr. Colin Treadaway (Germany) on butterflies, skippers; Dr. Herbert Zettel (Vienna Museum) on aquatic bugs; and Dr. Oliver Zompro (Max Planck) on walking sticks and leaf insects.

As a result of the collective efforts of local and foreign experts in the Biodiversity Priority Setting in 2000 sponsored by Conservation International (CI) - Philippines, initial databases for Philippine Arthropods have been prepared. To date, species databases of the following groups have been submitted: (1) Acarina (mites and ticks) by L.C. Raros; (2) Araneae (spiders) by A.T. Barrion; (3) Pygmy locust, *Misythus* (Tetrigidae) by V.P. Gapud; (4) Ephemeroptera (mayflies) by V.P. Gapud; (5) Odonata (dragonflies and damselflies) by V.P. Gapud; (6) Phasmatodea (walking sticks and leaf insects) by O. Zompro; (7) Isoptera (termites) by V.P. Gapud; (8) Thysanoptera (thrips) by C.P. Reyes; (9) Aphids (Homoptera: Homoptera) by V.J. Calilung; (10) Mealybugs and Scales (Homoptera: Homoptera) by I.L. Lit, Jr.; (11) Lacebugs (Homoptera: Tingidae) by V.P. Gapud; (12) Aquatic Bugs (Homoptera) by H. Zettel (Austria) and V.P. Gapud; (13) Treehoppers (Homoptera: Membracidae) by V.P. Gapud; (14) Pachyrhynchine weevils (Coleoptera: Curculionidae) by V.P. Gapud; (15) Hispine beetles (Coleoptera: Chrysomelidae) by M. Ballentes; (16) Philippine Butterflies (Lepidoptera: Rhopalocera) by C.R. Baltazar and C.G. Treadaway; (17) Atlas Moths (Lepidoptera: Saturniidae) by W.L. Naessig (Germany); (18) Caddisflies (Trichoptera) by W. Mey (Germany) and C.R. Baltazar; (19) Craneflies (Diptera: Tipulidae) by C.R. Baltazar and V.P. Gapud; and (20) Digger Wasps (Hymenoptera: Sphecidae) by S.G. Reyes.

The current inventory of Philippine insects includes about 21,000 species in 6,185 genera and 499 families, with an

overall endemism of 69.8%. Of these, the neuropteroids (beetles, twisted-winged flies, antlions, lacewings, owlflies) account for 35.7% of total insect species, followed by the panorpoids (flies, fleas, butterflies, moths, caddisflies - 29.3%), the Hymenoptera (ants, bees, wasps - 14.3%), the hemipteroids (barklice, thrips, lice, planthoppers, leafhoppers, cicadas, true bugs - 14.2%), the orthopteroids (grasshoppers, katydids, crickets, pygmy locusts and crickets, preying mantids, stick insects, earwigs, stoneflies, termites, roaches, webspinners - 4.8%), the palaeopterans (mayflies, damselflies, dragonflies - 1.5%), and the rest (0.25%) (Fig.1).

Of the 27 insect orders known to occur in the Philippines, just five orders account for 89.4% (18,715 species) of the total insect fauna, which are dominated by the Coleoptera (beetles - 35.2%), the Hymenoptera (ants, bees, wasps - 14.3%), the Lepidoptera (butterflies, skippers, moths - 13.85%), the Diptera (two-winged flies - 13.8%), the Hemiptera (bugs, cicadas, planthoppers, leafhoppers, treehoppers - 12.25%) (Fig. 2). The other 22 insect orders account for only 10.6% of the total insect fauna.

In the recent past, there has been a growing interest among entomologists in adopting the proposed biogeographic zones of the Philippines used for birds and mammals to selected groups of insects which exhibit relatively high species richness and levels of endemism. As has been proposed, the

<sup>1</sup>Seminar presented at the Department of Entomology, Central Mindanao University (CMU), Musuan, Bukidnon, 26 November 2004.

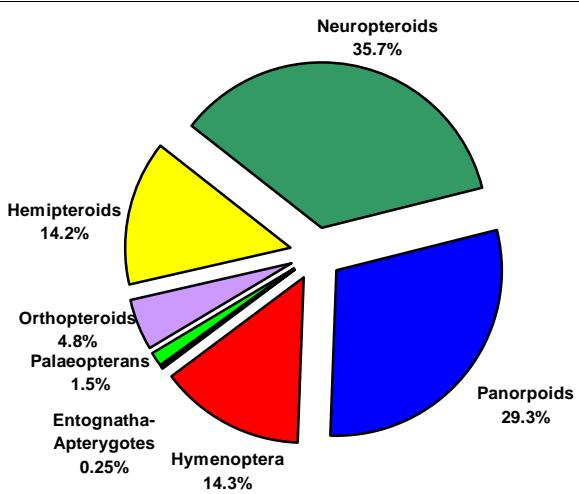


Fig. 1. Species representations of Philippine insects (After Gapud and Baltazar, 2001).

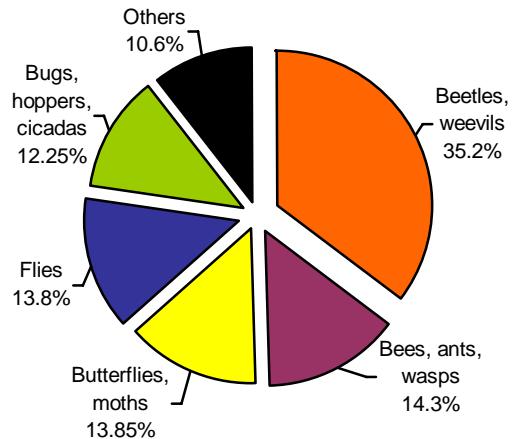


Fig. 2. Relative proportions of five dominant insect orders out of 27 orders (After Gapud and Baltazar, 2001).

Philippines is currently divided into six biogeographic zones: (1) *Greater Luzon* – Luzon, Batanes, Polillo, Catanduanes, Marinduque; (2) *Greater Mindoro* – Mindoro Island, Lubang Island; (3) *Greater Palawan* – Palawan, Busuanga, Dumaran, Cuyo, Balabac, (4) *West Visayas* – Sibuyan, Masbate, Romblon, Panay, Negros, Cebu; (5) *Greater Mindanao* – East Visayas and Mindanao; and (6) *Sulu-Tawi-Tawi*, Jolo, Sibutu, Sanga Sanga, Bongao.

The best known Philippine insects that have been used for validation of these



Fig. 3. *Lamproptera meges* Zincken (10 Asian subspecies, with two Philippine subspecies).

biogeographic zones are the butterflies and skippers which comprise 890 species and over 900 subspecies with an overall species endemism of 39.3%, a relatively low level owing to the numerous subspecies within species which would often include distribution ranges outside the Philippines, as exemplified by swallowtails (Papilionidae) (Fig. 3).

The ornately colored pachyrrhynchine weevils would be potentially excellent for biogeographic studies, considering their high species richness (352 species) and endemism (over 95%) (Fig. 4). However, knowledge of this group has not gone beyond the descriptive level and many species especially in Mindanao have remained undescribed, including those from Mt. Malindang (Fig. 5).

Of similar biogeographic interest are the Odonata, especially the damselflies (Zygoptera) which include 186 species,

of which 85.5% are Philippine endemics. Majority of endemic damselflies are residents of forested streams and brooks, especially the endemic genus *Risiocnemis* (37 species) and *Drepanosticta* (many undescribed endemics) (Fig. 6). It is very likely that a considerable number of species of these two genera remain to be discovered in many parts of Mindanao, including the Malindang area.

Similarly, the waterbug veliid genus *Rhagovelia* (Fig. 7) appears to be useful for biogeographic studies in the Philippines. Already more than 60 species with many island endemics in different parts of the Philippines, Herbert Zettel of Vienna Museum in Austria keeps discovering new species in every island he visits (Zettel, pers. comm.). He is amazed at the species richness of this group of waterbugs. At the same time, he is alarmed by the increasing rate of pollution of Philippine rivers and streams, which could endanger the existence of not only this group but other waterbugs as well.

In the last 15 years or so, studies on Philippine moths have flourished in Europe, particularly at the Senckenberg Museum in Frankfurt, Germany, with



Fig. 4. *Pachyrrhynchus congestus* Pascoe, Cordillera region.



Fig. 5. An undescribed *Pachyrrhynchus* from Mt. Malindang.

Dr. Naessig as lead specialist. Of the many moth families, the atlas moths (Saturniidae), although with only 23 Philippine species (69.6%), are of great interest owing to their large body size (Fig. 8) and the occurrence of most species at high elevations.

Philippine caddisflies (Trichoptera) exemplify the relatively poor state of our knowledge of Philippine insects. In 1990, C.R. Baltazar reported 94 species (83% endemism). In the last 15 years, Europeans led by Wolfram Mey (Humboldt University) have increased this number to 319 species, 96% of which are endemic to the Philippines. Considering their importance as indicators of the quality of Philippine rivers and streams, local knowledge of caddisflies is practically non-existent.

Our knowledge of Philippine stick and leaf insects has similarly but slowly increased with the work of Oliver Zompro (Fig. 9), with 207 species (86.5%), although many more species remain undescribed, which when completed may reach 300 species.

A little group of pygmy locusts

(Orthoptera: Tetrigidae) belonging to the endemic genus *Misythus* is of interest because of their potential use in biogeographic studies. Not all species have been accounted for especially those from Mindanao (Fig. 10). These examples of high species endemism of Philippine insects clearly demonstrate the rich natural heritage at our disposal awaiting more serious biogeographic,

ecological, and systematic studies. Considering the constraints to insect biodiversity research in the Philippines, we can only seize every opportunity to move on and do the best we can with the available resources. Initiatives such as those of the BRP for Mt. Malindang are a step in the right direction. We only need to exert serious efforts into ensuring that the insect biodiversity information generated from this area can be useful for other areas. We can only hope that initiatives such as those of the BRP can be multiplied several times in different parts of the Philippines to slightly improve insect biodiversity research. Furthermore, it is safe to say that insects of Greater Luzon are much better known than those of Greater Mindanao.

As for Mindanao, as well as other Philippine biogeographic zones, the following are recommended:

- (1) Initiate or continue systematic inventories of selected insect groups, e.g., butterflies, damselflies, waterbugs, weevils, stick insects, Orthoptera groups, moths, caddisflies, with emphasis on species richness and levels of endemism;
- (2) Establish distribution ranges of these selected groups and initiate biogeographic analysis;

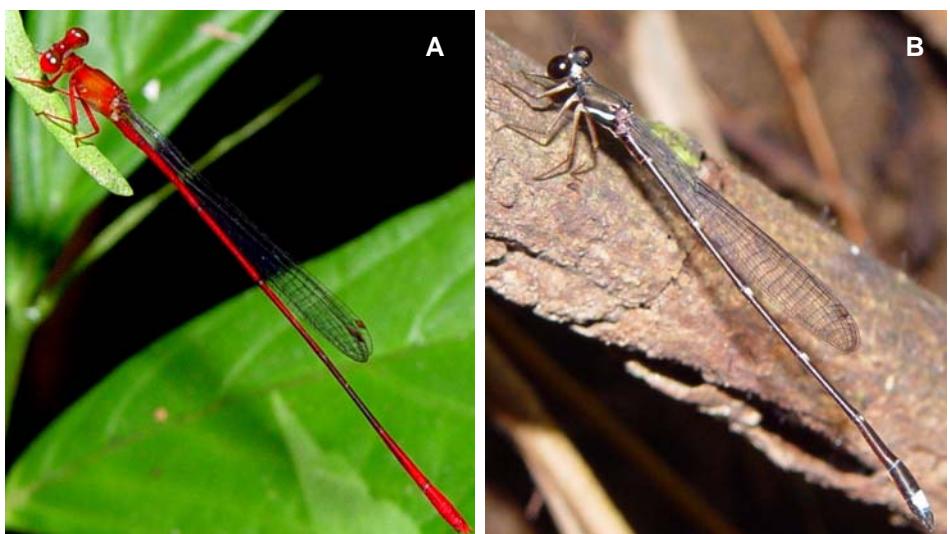


Fig. 6. Endemic damselflies. (A) *Risiocnemis flammea* (Selys), Greater Mindanao. (B) undescribed *Drepanosticta*, Bacnotan, La Union.



Fig. 7. *Rhagovelia lutzonica* Lundblad, Luzon.

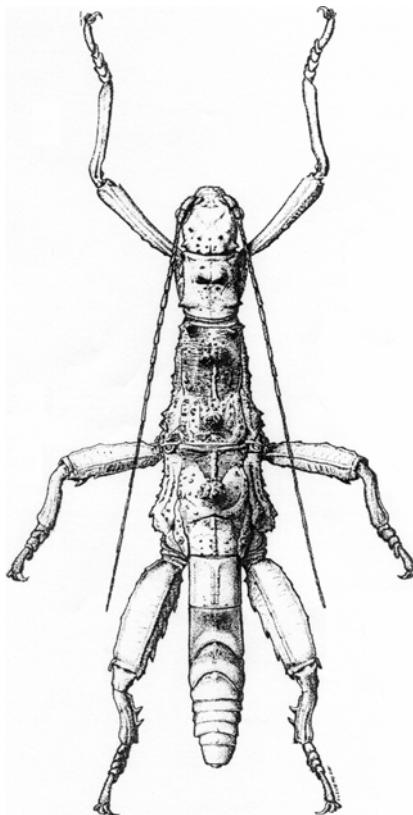


Fig. 9. *Theramenes mandirigma* Zompro & Eusebio, Secondary forest, Alcoy, Cebu.



Fig. 8. *Antheraea larissa philippinensis* Treadaway & Naessig, Banaue.

- (3) Build up systematic collections, facilities, equipment, and manpower in selected institutions with systematic capability;
- (4) Identify indicators of habitat quality, especially forest cover, open or shaded streams, montane areas, etc.;
- (5) Generate baseline data on selected insect groups in protected areas or areas with high species endemism;
- (6) Document endangered endemic species within or outside protected areas;
- (7) Promote life history studies of selected groups for biodiversity conservation; and
- (8) Develop modules, displays, exhibits, and fora for awareness campaigns on insect biodiversity and its importance. ▀



Fig. 10. *Misythus* sp. near *jubatus* Hebard, Mt. Malindang.

*Landscaping and Locating...from page 7*  
and all the identity symbols and culture markers through the IPRA is, in all likelihood, resting on an “alleged community of culture” when put against its operationalization. The ongoing cultural “reawakenings” or “revivals” of indigenous communities and the claims of identity and assertion of indigenous peoples like the Subanen, in effect, maybe taken as vindication for the historic years of disenfranchisement and deprivation of control of their traditional homelands.

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# Landscaping and Locating Identity in the Mt. Malindang Diaspora<sup>1</sup>

(Part 2 of 2)

Alita T. Roxas<sup>2</sup> and Levita A. Duhaylungsoc<sup>3</sup>

## CONTINUITIES AND TRANSFORMATIONS

Don Vic from the 1990s to the present is characterized by the intensification of agricultural production that radically resulted in changes in the production system and social structure and relationships, particularly among the Subanen. Reciprocity between and among Subanen and Bisaya still persists and they share seedlings and onion bulbs for their cash-cropping.

However, what used to be distinctly Subanen communities are now replaced by an ethnic mix of population. It is only in Brgys. Lake Duminagat and Nueva Vista that a Subanen cultural identity is still distinguishable. The relatively high density of households in Nueva Vista is one reason why new migrants preferred Gandawan to the more accessible Nueva Vista; the other reason is the relative abundance of cultivable lands in Gandawan. The difficulty in accessing Brgy. Lake Duminagat, as well as its cooler weather and stronger winds, make Brgy. Lake Duminagat a poor choice for settlement to new in-migrants.

The population growth has resulted in the decrease of traditional size of cultivated lands from four to six to the current average of two hectares only per household, further constrained by the legislations pertaining to the Mt. Malindang Park. Majority though has less land to till. Lands in Mt. Malindang Park are state-appropriated. Lands cultivated by households are therefore usufruct. To the Subanen, the lands are *inangkon*, most of them “inherited” from parents who were early settlers. Male and female offsprings have a right to “inherited” land. Families who have earlier settled

in the Mt. Malindang Park have larger usufruct lands.

Swidden farming has been replaced with sedentary and monocrop farming system and the Subanens now begin to treat land as individual property as they could no longer open new frontiers. This outlook is also being strengthened by the NIPAS Act, which stipulates that those who have been using the land five years prior to its approval shall be regarded as tenured migrants. Local compradors and loans operations, previously alien to Subanen culture, prop the current agriculture production system.

The *pamuhat* or rituals are seldom resorted to nowadays, and only a few perform these and the rare performances would skip the previous offerings or *paghalad*, or would tone this down due to the increasing difficulty of accessing these offerings. There are a very few who reported using inorganic fertilizers and pesticides and yet perform rituals, saying that nothing would be lost in combining the modern ways with the traditional. This, they say, would ensure a good harvest, as they believe that success of crop production cannot be attributed only to the soil or the absence of pests. The spirits are still believed to take care of unforeseen factors. Others fear retribution once the *pamuhat* is completely set aside. The once functional and meaningful cooperative system, *hunglos*, is perceived no longer practical in favor of hired labor when necessary. They generally attribute the impracticality of the *hunglos* to the unpredictability of the weather and not necessarily to the changed production system.

In the mid-'90s, there emerged in

Mansawan a Bisaya-based religious group called Piniling Nasud, which recruited more Bisaya to Gandawan and Nueva Vista enticing them with abundant and fertile land in the area. Rock Christ, another religious grouping scattered across Zamboanga del Norte, similarly engaged in recruitment of more migrants into the area. Local Subanen were also drawn into these groups. Subanen who have been brought to these sects have therefore shifted to a monotheistic religious belief that contrasts with their traditional beliefs in several deities. There is also the practice of folk Catholicism or the combining of prayers and rituals, as is being done by members of the Katolikano, another religious grouping coined from “Catholic” and *kano* which means ritual.

Cebuano has replaced Subanen as the lingua franca. Even Brgy. Lake Duminagat Subanen who understood but did not speak Cebuano in the past have also shifted their lingua franca to Cebuano. Use of Subanen language today is generally confined to the baylan during the *pamuhat*. It is not uncommon now for the third generation members of Don Vic communities to ask their parents not to speak Subanen, especially in the presence of Bisaya. This is not out of respect for the Bisaya, however, but out of the apparent lack of cultural identification with Subanen dialect, “*ulaw magistorya’g binukid*” (It is shameful to

<sup>1</sup>Abridged version of the paper presented to the Philippine Studies Association, 17-19 September 2004, Golden Pine Hotel and Restaurant, Baguio City.

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*Landscaping and Locating...from page 6*

speak using the dialect of the mountains).

Wearing of the Subanen traditional attire has been confined to the holding of the *pamuhat*, and only by the baylan. It has become a “costume” in the sense that it is worn only during festivities, for the purpose of dancing. A claimant of the Certificate of Ancestral Domain (CADC) from Mialen even referred to the Subanen traditional attire as their “uniform” when they attend CADC meetings or Subanen gatherings, adding that “*Maayo mi tan-awon ana sa litrato*” (“It is good to see us in that attire in pictures”). Clothes are now commonly *ukay-ukay* or used clothing from abroad, which are sold in the Nueva Vista *tabo-an* and in the sidestreets of Oroquieta. The *ukay-ukay* clothing, with its affordable cost, somehow reduces the discomfort associated with keeping the Don Vic settlers warm. It is quite a sight to see Subanens wearing the *Amerikana* or western coat, as well as winter apparel

during the cooler or rainy days.

Despite the apparent weakening of the Subanen tradition, there persists a determined effort to claim their ancestral domain. The Mialen Subanen have filed for a CADC with the DENR in 1998. A similar claim is filed with the NCIP as Don Vic Subanen. As in many indigenous communities who have parallel experiences with the Subanen, contemporary claims on territory are made through their claims of ancestry (Resureccion 1998, Duhaylungsod in press).

## **CONCLUSION**

Territoriality, as a focal basis for establishing and maintaining cultural identity and from which resources for physical survival are drawn, has been historically tenuous for the Subanen of Mt. Malindang. Their land-based aspirations have been continuously linked up with confrontations with invaders to their traditional homelands,

including the State. While there is recognition of their ancestral domain surrounding and within the state-declared National Park, they remain in a marginalized position vis-à-vis their resources. Even within the more interior Subanen communities, the state declaration of Malindang as a national park has rendered their hold on their lands precarious, given the defined prohibitions and guidelines. As a consequence, their indigeneity and cultural identity as Subanen that presumably should have distinctively separated them from the other ethnicities that settled in their traditional homelands, have been progressively weakened. Cultural differences and the sense of cultural distinctiveness appear to be fast eroding, especially amidst current realities where new forms of threats to their culture are continuously emerging.

Given the contemporary context of the Subanen communities described in this paper, the enshrinement of indigeneity

*continued on page 5*

# 1st Quarter 2005 in a Nutshell

BRP researchers gathered on 4-6 February 2005 in Cagayan de Oro City for the 9<sup>th</sup> Quarterly Researchers Integration and Planning Meeting. The meeting was devoted to the drafting of the final technical reports of each research study.

Drs. Anton Stortelder and Aart van den Berg of ALTERRA Green World Research visited Central Mindanao University (CMU), Musuan, Bukidnon and Mindanao State University-Iligan Institute of Technology (MSU-IIT) on 17-23 February 2005 for the vegetation analysis, reproduction of thematic maps, and analysis and integration of data for the flora study.

The Local Advisory Group (LAG) met on 16 March 2005 in Orosieta City, Misamis Occidental. The members of the LAG stressed that BRP should focus on coming up with conservation measures and policy recommendations based on the research results of the different projects to sustain the goals of the programme.

The Philippine Working Group (PWG) met on 15 February 2005 at SEARCA, College, Laguna to discuss the integration and consolidation of the results of the different studies of the Master and Open research projects to come up with a general view of the biodiversity in Mt. Malindang and its environs.

Dr. Levita A. Duhaylungsod conducted two Orientation-Seminars on the Participatory Programme Evaluation System (PPES) on 21-22 February at CMU, Musuan, Bukidnon and University of the Philippines-Mindanao, Davao City to present and discuss the contents of the PPES Project Report and User's Handbook to BRP researchers and research staff.

A writeshop for the vertical integration of the BRP Master and Open research projects was conducted on 18-20 March 2005. Members of the Philippine Working Group (PWG), project leaders, and resource persons from each research project worked together to come up with an integrated report for each Master Project (TEMP, AMP, SEC) following the framework for landscape ecology.

Ms. Filma C. Calalo, BRP Process Documentor conducted focus group discussions and key informant interviews with BRP researchers, research staff, and members of the local community, focused on the learnings gained by the project participants from their BRP experience.

The PPES Project Report and User's Handbook were submitted to the Netherlands Development Assistance Research Council (RAWOO) in March 2005.

BRP researchers submitted their final technical reports to the Joint Programme Committee (JPC) on 31 March 2005.

**SAMUT-SARI** is the official publication of the BRP. Its name was derived from the Pilipino term for biodiversity which is "samu't-saring uri ng buhay." *Samu't-sari* means variety.

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