

WHAT'S UP?

THE NEWSLETTER OF THE INTERNATIONAL CANOPY NETWORK

NALINI NADKARNI, EDITOR

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Gear for Your Good Work

Are you concerned about the safety of your climbing gear? Do you and your researchers have old rain gear that has lost its water-resistance? Do you worry that your ropes and harnesses are too used and frayed for your safety? If so, Ingrid Gordon wants to help you.

Ms. Gordon is the founder of a non-profit organization called "Gear for Good." Based in Seattle, Washington, Gear for Good's purpose is to locate and solicit donations of outdoor and climbing gear from equipment companies, then donate the gear to activists and researchers who need yet can't afford it, simply for the cost of shipping.



CrazyCreek, and Cellsafe. This keeps a steady supply of gear flowing to a diverse array of non-profits working to make the world a better place.

Over the past two years, Gear for Good has received thousands of dollars worth of gear that is now being used in the field, keeping conservationists, peace activists, and researchers safer, warmer, and drier. Now, Gear for Good would like to extend its offering of donated gear to the ICAN community.

Requesting equipment from Gear for Good is easy: simply send an e-mail to ingrid@gearforgood.org and include the following:

Your name; The name of your institution; your shipping address; the purpose for your request; your specific gear needs; any timeframe requirements

If Gear for Good can fill your needs, Ingrid will contact you with details about the equipment to ensure a match. If your requested gear isn't currently available, Ingrid can make a special request to a gear company on your behalf.

All of us at ICAN hope this service provides you and your researchers with the equipment you need to ensure your safety up in the forest canopy!

For more information, visit: <http://www.gearforgood.org>

Denise Joines; ICAN Board Of Directors/Wilburforce Foundation; denisejoines@home.com.

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Using contacts built up over her 12 years at Greenpeace, Ingrid and Gear for Good receives equipment from companies such as Outdoor Research, Maxim Ropes, Misty Mountain, Guayaki, BlueWater Ropes, CMC Rescue, Patagonia, Manastash, Mountain Hardwear, Arborwear, San Francisco Hat Co.,

The Australian Canopy Crane Research Facility

Established by three partner universities, the Liebherr tower crane at the Australian Canopy Crane Research Facility was installed in lowland rainforest at Cape Tribulation in November 1998.

Shaken but not disturbed by cyclone Rona in its first few months of existence, the crane is now in its third year of operation and performing well. During the first year, we experimented with a range of administrative and management issues. In the second year, we hired and trained our on-site staff and built the accommodations, labs, and other facilities. In this third year, we are fine-tuning all aspects of the operation and doing research. This research includes climate studies, ant and beetle ecology, floral landscapes, remote sensing and other projects examining insects, small mammals, epiphytes, palms, and other plants. In the last few weeks, we have been exploring the possibility of establishing a CO₂ enrichment project at our crane site.

The Third International Canopy Conference held in Cairns in June, 2002 provided the perfect opportunity to showcase our facility and put it proudly onto the global



Roaki Ishii and Steve Yanoviak get a lift in the Australian Canopy Crane

canopy map. As one of the many venues for the conference field trips, the organizers planned a one-day trip to the Australian Canopy Crane. This day filled up so quickly, two additional trips were conducted before and after the conference, bringing some 50 delegates to the Cape Tribulation research station. We enjoyed meeting so many people with similar

interests, and, judging from the results of the “field day assessment”, so did they. The canopy crane field trip scored 5 out of 5 from each person who attended the trip. In particular, the visitors were impressed with the quality of the facilities available and the professionalism of the staff. We thank those who ranked us so highly and for the e-mails of kind words and compliments that followed.

What are our plans for the future? Our main goal is to attract many local and international scientists to conduct research at our canopy crane site. The location itself offers unique opportunities to study a vast variety of tropical plants and animals and their interactions that are shaped by climatic regimes that are different to those elsewhere in the world. Our canopy crane facility not only offers very comfortable living and working conditions while conducting research, but Australia provides political and economic stability. This is one of our essential assets, particularly when long-term research projects are considered.

Much was said at the Canopy Conference about collaborative efforts between eco-tourism and science. We have taken the first steps in this direction by making arrangements with our neighbour – the Coconut Beach Rainforest Resort (Cape Tribulation) to test low impact rainforest canopy safaris. This educational program will be conducted over two afternoons every week during which 16 visitors will experience the sensation of gliding above the canopy while being informed about the canopy research that goes on at the site. We see this venture as both a positive step towards promoting canopy research and a real step towards making the canopy crane facility self-sufficient in the future.

We are actively seeking financial support in a form of various sponsorships from the commercial sector. Our ultimate goal is not only to achieve self-sustainability but to have the crane’s running costs covered from outside funding, so that we can reduce the hire costs to researchers, particularly to post-graduate students.

You can find out more about the Australian Canopy Crane at <<http://www.canopycrane.jcu.edu.au>>.

Editor’s Note: Updates on the Australian Canopy Crane will now be a regular feature in “What’s Up?”

Unknown insect order found in Namibia, and shortly before in a piece of 45 million-year-old amber

Insects, with over 1.2 million known species, represent over 80% of all living animals on earth. Many live in the canopy. Every year numerous new species are found and categorized. But the last time a new insect order was discovered was 87 years ago, in 1915.

THE DISCOVERY

Oliver Zompro, biologist and doctoral student in the Tropical Ecology Working Group at the Max-Planck-Institute for Limnology in Plön (supervisor, Prof. Dr. Joachim Adis), discovered several animals that could not be allocated to any known insect order when examining a 45-million-year-old piece of Baltic amber last year. It was subsequently described as *Raptophasma kerneggeri* Zompro, 2001 in Mitt. Geol.-Paläont. Inst. Univ. Hamburg 85: 229-261, 2001. Upon visiting the British Natural History Museum in London, Zompro was shown a spiny insect that had been collected in 1950 in Tanzania. It had been sent to the British museum 16 years earlier by the Museum in Lund/Sweden to be identified. In unidentified stick-insect material in the Berlin Museum for Natural History, Zompro finally found a similar-looking adult female, collected from Namibia at the beginning of the 20th century. Comparison with the animals in amber showed for the first time since the discovery of *Zoraptera* in 1913 and the *Grylloblattodea* (= *Notoptera*) in 1915, another insect order, the 31st [Klass, K.-D., Zompro, O., Kristensen, N. P. & Adis: Mantophasmatodea: a new insect order with extant members in the Afrotropics. *Science* 296:1456-14599, 2002].

The German postdoctoral scholarship-holder Dr. Klaus-Dieter Klass and Prof. Dr. Niels Peder Kristensen from the Zoological Museum in Copenhagen, co-authors of the *Science* article, provided support in investigating the structure

(morphology, anatomy) and in describing how the animal is distinct from previously known insect orders. Their examinations confirm that the animals represent a previously unknown insect order. However, their exact position within the system of insects has not yet been clarified. They appear to be something like a mixture between a stick-insect and a wingless preying mantis. The two species found in the museum represent the genus *Mantophasma* (body length up to 2.5 cm), the species in amber the genus *Raptophasma* (body length 1.5 cm). A more detailed description of the new insect order "Mantophasmatodea" will appear in autumn in the journal

"Zoologischer Anzeiger" [Zompro, O., Adis, J. & Weitschat, W. A review of the Order Mantophasmatodea (Insecta)].



Nymph of the "Gladiator" from the Brandberg in Namibia
(Photo © Thomas Kujawski/ASA-Multimedia, Flintbek, Germany; <kujawski@asa-multimedia.de>).

Joachim Adis sent photographs of the two animals found in museums to scientists and museums around the world, with the request for searches in collections for further material. Dr. Eugène Marais, National Museum in Windhoek, sent the researchers information about two similar-looking animals that had been

found in Namibia in 1990 and 2001. The two specimens that were sent to Plön represented two further new species of a third new genus and, at the same time, confirmed that representatives of the new insect order had survived to the present day - over a period of at least 45 million years.

RESEARCH EXPEDITION TO THE BRANDBERG

In January 2002, a scientific cooperation agreement was signed between the Namibian National Museum in Windhoek and the Max-Planck-Institute for Limnology (Tropical Ecology Working Group; headed by Prof. Dr. W.J. Junk) in Plön, in which the Namibian government gave the

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two partners to the agreement exclusive rights to research and document the new insect order for a period of six years.

The first scientific expedition of an international entomologist group to Namibia took place from 28th February to 19th March 2002 to look for a species not yet described on the Brandberg mountain in the Erongo province. One adult animal and two larvae had been found by Prof. Dr. Roger Butlin and Ms. Kathy Meakin in between animal material of Malaise traps exposed in the canopy of *Acacia* trees as part of a project between the University of Leeds (England) and the Museum in Windhoek between 1998 and 2000. The specimens were sent to Plön for taxonomic evaluation and received the working name "Gladiator", so called because of its similarity to the armored fighters in the film of the same name. The nearly 2,600 m high inselberg has long been famous for its endemic animal species. The Brandberg region is a Namibian National Park and there are plans to propose it for UNESCO's World Heritage programme because of its unique rock drawings. The area may be entered only with permission, which is particularly important for the protection of the new insect order from biopiracy. The international team was also successful in finding living "Gladiator" animals on the Brandberg and of the genus *Mantophasma* in the Erongo province. Scientists believe that the new insect order might occur in the canopy on other inselbergs around the globe.

The animals collected in Namibia are now in the climate chambers of the Max-Planck-Institute for Limnology. First DNA analyses are being undertaken in the molecular biology laboratories of the University of Leeds in England (Prof. R. Butlin) and Brigham Young University in Provo, USA (Dr. M.F. Whiting) to clarify the exact position of the *Mantophasmatodea* order in the insect family tree.

For further information, contact:

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<http://www.sungaya.de/mantophasmatodea>

Biodiversity in the canopy of neophytic tree species (Douglas-fir, Red Oak) in central European forests

Neophytes (newly planted species) are said to have a negative influence on the biodiversity in the invaded ecosystems (Ashbourne & Putman 1987). Thus the cultivation of neophytic tree species in forestry is controversial (Otto 1993; Müller & Stollenmaier 1994). However, reliable data on the

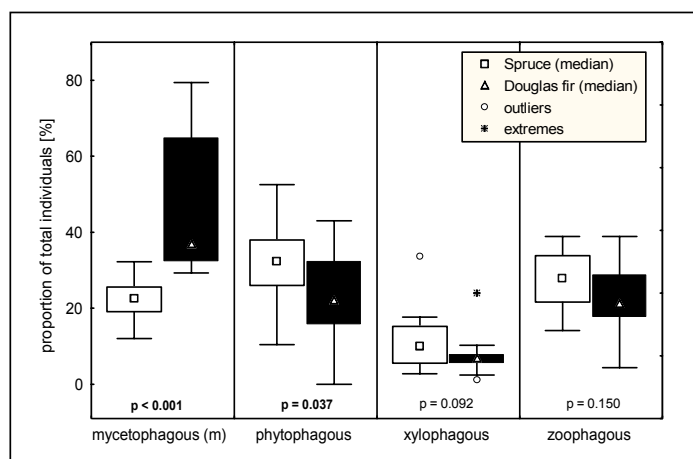


Figure 1: Comparison of the proportions of four guilds of beetles in Douglas fir and spruce in Douglas-fir-dominated stands. (m) means mold. Given p-values are result of an u-test.

zoological biodiversity in the canopy of neophytic tree species are still missing.

Since 1999, we have been the first group in Central Europe to comparatively study the arthropod fauna in the high canopy of indigenous and introduced forest trees in different localities in old growth forests. Several sites throughout Southern Bavaria, Germany, have been studied. Single rope climbing technique was the appropriate method for accessing the canopy. Comparisons of the arthropod faunas has been performed by one flight interception trap per tree crown. Currently, results of sampling during the vegetation period from April to October over two years (1999 and 2000) are available. Main target groups are beetles (Coleoptera), bugs (Heteroptera), and lacewings (Neuropteroidea). Beside these, mosquitoes and flies (Diptera) and Hymenoptera are determined at least to the family level.

Table 1: Number of individuals sampled on Pedunculate Oak and Red Oak. Higher values (in bold) indicate significant differences.

| INDIVIDUALS | Pure stand | | Mixed stand | |
|-------------------------------|-----------------|---------|-----------------|---------|
| | Pedunculate Oak | Red Oak | Pedunculate Oak | Red Oak |
| All arthropods | 24916 | 9289 | 19133 | 16255 |
| beetles | 1564 | 858 | 1221 | 1174 |
| restricted to deciduous trees | 554 | 155 | 411 | 262 |
| true bugs | 307 | 407 | 347 | 213 |

Introduced Douglas-fir (*Pseudotsuga menziesii*), is of great economic interest for forestry due to its rapid growth and excellent wood characteristics. It was compared to indigenous spruce (*Picea abies*). Under natural conditions in lowland forests, spruce is a secondary species. Its growth has been intensively increased by forestry during the last centuries.

Six Douglas-fir and six spruce trees have been studied in each of three forest situations: a) dominated by Douglas-fir (60–90%), b) dominated by spruce (around 70%), c) dominated by beech (*Fagus sylvatica*) (60–80%).

Results for Douglas-fir-dominated and spruce-dominated stands indicate that there is a subtle change in the composition of Coleoptera from spruce to Douglas-fir (Fig. 1). Aphidophagous beetle species were more numerous on Douglas-fir, which seems to be due to the high density of *Gilletteella*

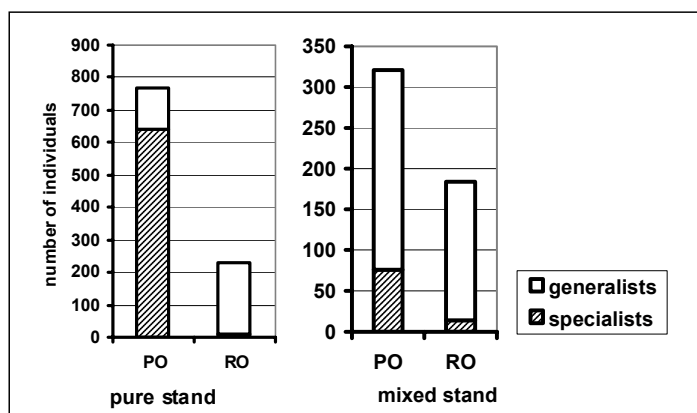


Fig. 2

coleyi, an introduced Douglas-fir aphid. Mycetophagous beetles with a preference of molds had a higher proportion in beetle assemblages on Douglas-fir, which seems to rely on the large amount of dead wood in the canopy of Douglas-fir: this is completely missing in spruce. In contrast, phytophagous beetles revealed a

higher proportion on spruce. In forests dominated by deciduous trees, a less distinct pattern was found. For further information see Gossner (2002) and Gossner & Simon (2001, 2002).

Table 2: Number of species sampled on Pedunculate Oak and Red Oak. Higher values (in bold) indicate significant differences.

| SPECIES | Pure stand | | Mixed stand | |
|-------------------------------|-----------------|---------|-----------------|---------|
| | Pedunculate Oak | Red Oak | Pedunculate Oak | Red Oak |
| All beetles | 177 | 146 | 169 | 142 |
| restricted to deciduous trees | 65 | 49 | 75 | 59 |
| True bugs | 39 | 24 | 30 | 13 |

The other comparison deals with indigenous Pedunculate Oak (*Quercus robur*) and American Red Oak (*Quercus rubra*). This study was performed at two different sites in southern Bavaria. At each of both sites, six Red Oaks and six Pedunculate Oaks have been studied. At one site, both tree species were intermingled, at the other one pure stands of Red Oak and Pedunculate Oak have been studied.

Results indicate a completely impoverished fauna on Red Oak compared to the indigenous oak species (Tables 1 and 2). In pure stands, the number of individuals and the number of species were significantly reduced on Red Oak. A similar pattern occurred in the mixed stand, but significant differences were found only in the species number of beetles restricted to deciduous trees and in true bugs, which indicates a mitigating influence of the mixed-stand structure.

The most impressive result was the almost complete lack of phytophagous oak specialists within the beetles on Red Oak, irrespective of proportion of mixture (Fig. 2). Generalists were indifferent (Gossner 2002).

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GLOBAL CANOPY PROGRAMME UPDATE

PREMIER OF QUEENSLAND PLEDGES US\$27,000 FOR THE LAUNCH OF PHASE II OF THE GLOBAL CANOPY PROGRAMME

Phase II of the Global Canopy Programme attracted government backing at its launch at the 3rd International Canopy Conference in Cairns, Australia in June. Peter Beattie, Premier of Queensland pledged US\$27,000 towards the Australian canopy crane research site's involvement in the GCP. This is a significant gesture that provides the GCP with government support for the first time. This sets an important precedent for other governments to commit to forest canopy research in the Convention on Biological Diversity's work-plan on forests.

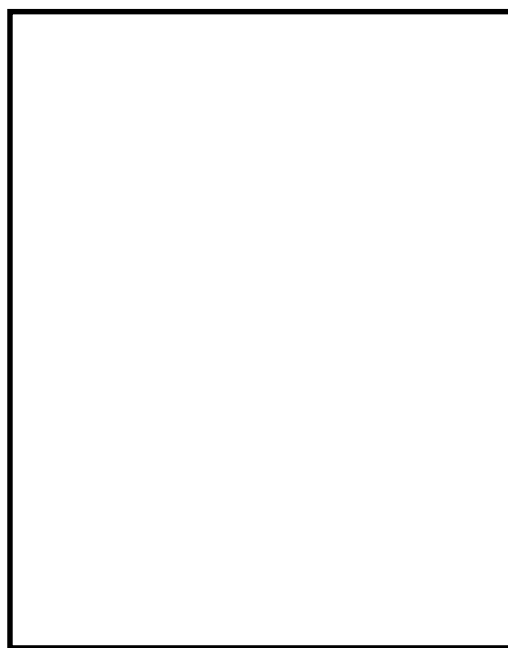
Further funding was announced by Andrew Mitchell during his keynote speech at the conference. The Rufford Foundation, which has provided funding for Phase I of the GCP, has pledged US\$140,000 toward phase II which will establish projects in the field within the GCP CORE project areas, that have been developed in Phase I.

The GCP also attracted media attention at the conference; Andrew was interviewed on ABC Radio about "The Future of Life in the Rainforest Canopy" and on a local television station which broadcast to Queensland.

LAUNCH OF THE GLOBAL CANOPY HANDBOOK

The Global Canopy Handbook was successfully published in just six months, in time for the launch in Cairns. Many orders have already been received. Andrew Mitchell presented a copy to Premier Beattie. The book presents details on all the current techniques available for investigation of forest canopies, from monkeys, climbing ropes, walkways, tower cranes, balloons to aircraft and satellites. It also includes information on the kinds of scientific research being undertaken using these access techniques on plants, arthropods, vertebrates, remote sensing, ecophysiology, using volunteers, and data management.

If you would like a copy of the Global Canopy Handbook, you can buy it on the GCP webshop at <<<http://www.globalcanopy.org/shop>>>. Alternatively you can contact Katherine Secoy at <k.secoy@globalcanopy.org>. The Global Canopy Programme thanks all those who contributed and worked so hard on the handbook.



Andrew Mitchell presenting Premier Beattie with a copy of the Global Canopy Handbook

BLOOMFIELD CANOPY WORKSHOP

Directly after the 3rd International Canopy Conference the GCP held a workshop at Bloomfield Lodge in Cape Tribulation National Park. Costs were generously met by Trailfinders, a UK travel company. At this meeting, members of the GCP Steering Committee and invited guests discussed the future of the GCP. Among the many decisions that were made was the proposal for a review paper on the major elements of forest canopy science, written by leaders in this field on forest canopy research.

The paper aims to highlight the forest canopy as an arena in which it is essential that issues of global sustainability are addressed, and in which key ecological and global change questions must be investigated in order to provide an unbiased view of biospheric and atmospheric systems. The paper will be submitted to either *Nature* or *Science*.

Another workshop product was the Cairns Declaration. The 'Cairns Declaration on Forest Canopy Research', declared by the participants of the workshop, calls for "governments to implement their obligations in the Convention on Biological Diversity Work-plan on Forests by offering support and encouragement to the Global Canopy Programme", and "calls on funding agencies and the donor community to offer financial assistance to implement the Global Canopy Programme". It also "invites scientific institutions to join the Global Canopy Programme to conduct research within its framework". Full text of this document can be found at <http://www.globalcanopy.org/news>.

Another decision made at the workshop was to establish the national and international investments that are now being made in canopy science around the world, including major infrastructure investments such as canopy cranes, COPAS, Radeau des Cimes, walkways, and towers. The GCP will send out a questionnaire to collect these facts. The committee felt that the added value of the GCP was to coordinate these investments and leverage them to attract further funding for canopy science.

GLOBAL CANOPY PROGRAMME AT ASSOCIATION FOR TROPICAL BIOLOGY CONFERENCE IN PANAMA

Katherine Secoy (GCP Programme Co-ordinator) and Nell Baker (GCP Programme Development and Fundraising Officer), attended this meeting along with 600 other participants from around the world. Initial discussions were held with Nalini Nadkarni, and Dr. T. Ganesh and Dr. M. Soubadra Devy, from the Ashoka Trust for Research in Ecology and the Environment (ATREE), India, about installing a canopy research facility in the Western Ghats, India. Drs. Ganesh and

Soubadra will investigate possibilities further, including what potential interest there is from the Indian research community. With the help of the GCP they will create a proposal for two canopy walkways; one to be used as a research facility. and the other as a potential ecotourism project. Should these facilities generate enough interest, this could also be a potential location for a canopy crane facility.



Participants from top row, left-right: Dieter Anhuf, William Foster, Sarah Boulter, Pierre Charles Dominique, Martin Freiberg, Wilfried Morawetz, Claire Ozanne, Cristian Samper, Stuart Pimm, Nigel Stork, Joe Wright, Roger Kitching. Bottom Row: Katherine Secoy, Geoffrey Parker, Andrew Mitchell, Dave Shaw and Tohru Nakashizuka

Further information on the Global Canopy Programme:

ICAN-Global Canopy Program; Halifax House, University of Oxford; 6/8 South Parks Road, Oxford OX1 3UB, United Kingdom; Phone: +44 (0) 1865 271036; Fax: +44(0) 1865 271035; <k.secoy@globalcanopy.org> <a.mitchell@globalcanopy.org>; <http://www.globalcanopy.org>.

Editor's Note: Updates on the Global Canopy Programme will now be a regular feature in "What's Up?"

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Although data analysis is still in progress, some conclusions can be drawn from our study:

1. Arthropod fauna on Red Oak follows an expected pattern with an impoverished fauna;
2. Impact on biodiversity in forests by neophytic trees may be subtle, as in Douglas-fir, with unknown consequences if density of Douglas-fir cultivation increases;
3. Foresters must be aware of the consequences of cultivation of neophytes, not only on biodiversity, but also with regard to other ecosystem effects such as invasiveness and changes in soil quality (see Bürger-Arndt 2000).

To get an estimation of gains and losses within the arthropod community in Douglas-fir and Red Oak after their introduction to Europe, we would like to perform a comparative study (using our sampling method) on the faunistic composition of arthropods as a whole (beetles, lacewings, and true bugs in particular) in the regions of origin. Thus, we are looking for a collaborator who would like to do an (at least) one-year study, receiving our flight interception traps for installation in tree crowns of either Douglas-fir or Red Oak. If there is interest, please send an e-mail to either of the following addresses:

Martin Gossner, Dr Ulrich Simon. Chair of Land Use Planning and Nature Conservation, Technical University Muenchen-Weihenstephan, Am Hochanger 13, 85354 Freising, Germany. sim@lwf.uni-muenchen.de, and Martin.Gossner@lrz.uni-muenchen.de

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WEBSITES

Global Forest Watch

A series of new reports released last month by World Resources Institute's Global Forest Watch "concludes that vast areas of remaining intact or old-growth and primary forests are being degraded as the result of unsustainable development practices". Analysis of forest cover maps and land use practices for several countries is provided in summary form, along with links to full reports that can be downloaded. The site also has a Data Warehouse where users can download maps for their own analysis. Visit <<<http://www.globalforestwatch.org/english/index.htm>>>.

From the Scout Report, copyright Internet Scout Project 1994-2002. <<<http://www.scout.cs.wisc.edu>>>.

Nature Picture Library

The Nature Picture Library offers viewers free online access to thousands of high-resolution photographs in its database. Containing images of flora and fauna in settings of every variety, the Nature Picture Library is a graphic resource for those in search of images of the natural world. Images can be purchased for direct downloads or can be stored online for free by registered users in lightboxes of their own design. The picture library allows registrants to create and store as many as fifty lightboxes for online consultation. <<<http://www.naturepl.com/frmsns.html>>>.

From the Scout Report, copyright Internet Scout Project 1994-2002. <<<http://www.scout.cs.wisc.edu>>>.

Friends of Opal Creek is a non-profit organization with a mission to inspire understanding of ancient forest ecosystems through education and interpretation, and to work with others in the stewardship of the natural, historic and cultural values of the Opal Creek Wilderness and Scenic Recreation Area. Friends of Opal Creek, (a non-profit 501(c)3 organization), was founded in 1989. The initial purpose was to gain protection of the Opal Creek watershed for future generations to study and enjoy. FOOC maintains and stewards the Opal Creek Education Center at Jawbone Flats, a rejuvenated historic mining town in the heart of the 35,000 acre old-growth forest watershed of the Opal Creek Wilderness and Scenic Recreation Area. We are located on the west slope of the Cascade Mountains, one hour east of Salem, Oregon and approximately two hours from Portland, Eugene, and Bend. <<<http://www.opalcreek.org>>>.

ANNOUNCEMENTS/MEETINGS

Association for Tropical Biology (ATB/British Ecological Society (BES) Joint Meeting and Symposium on “Biotic Interactions in the Tropical”, 7-10 July 2003, University of Aberdeen, Scotland. The three-day meeting will comprise morning plenary sessions on Biotic Interactions and afternoon sessions for contributed papers. A fourth day will be dedicated to a workshop on Research Priorities in Tropical Biology. The organizers are currently soliciting suggestions for topics for symposia within the Biologic Interactions theme of the meeting or related to other topical themes within the realm of Tropical Biology. All suggestions will be considered by the organizing committee and a draft program constructed early in 2002. Contact *David Burslem* <d.burslem@abdn.ac.uk>, *Michelle Pinard* <m.a.pinard@abdn.ac.uk>, or *Mike Swaine*, m.swaine@abdn.ac.uk>.

Australia and Japan Make Final Decisions on Kyoto Protocol

On June 4, 2002, Japan ratified the Kyoto Protocol, a treaty designed to address some of the suspected causes of global warming. Japanese Prime Minister Junichiro Koizumi said in a statement, “The Kyoto Protocol marks a significant step to strengthen an international framework to deal with climate changes. Japan hopes other states will ratify it quickly so that the pact takes effect soon.” By Wednesday, June 5, Australia rejected the protocol, with Prime Minister John Howard saying, “It is not in Australia’s interests...for us to ratify the protocol would cost us jobs and damage our industry.” See: Science and Environmental Policy Update for June 17, 2002. A Bi-Weekly Publication of the Ecological Society of America. Visit the ESA website, including the SEPU archive, at: <<<http://esa.sdsc.edu/>>>.

New issue of Conservation Ecology available

The Society of Conservation Ecology is pleased to announce the publication of Volume 6, Issue 1 of *Conservation Ecology*. This issue of *Conservation Ecology* presents a number of interdisciplinary papers that tackle a variety of issues ranging from habitat modeling and conservation to sustainable tourism. Also featured are a series of articles that make imaginative use of the web to convey scientific information (Ralf Yorque Memorial Competition - “Making the Complex Simple on the Web”). Finally, they present 15 short discussion pieces that offer feedback on articles published in the current issue as well as previous issues. They encourage thoughtful feedback on current and past articles. Use the “Respond to this article” feature at the bottom of each article

to make a comment or initiate a discussion. <<<http://www.consecol.org/Journal/vol6/iss1/index.html>>>.

Asia Pacific Association of Forestry Research Institutions (APAFRI) Conference

APAFRI’s upcoming conference “The Seventh Round Table Conference on Dipterocarp” will be held in Kuala Lumpur from 7-10 October 2002. Visit the website: <<<http://www.apafri.org>>> and follow the “News Flash” link.

Contact: *APAFRI Secretariat, c/o Forest Research Institute Malaysia (FRIM); Kepong, 52109 Kuala Lumpur, Malaysia; Phone: +60-3-6272 2516; Fax: +60-3-6277 3249.*

JOBS

OTS Academic Director

The Organization for Tropical Studies, a consortium of 65 universities and research institutions, invites applications for a senior leadership position. The academic director oversees a growing portfolio of field-based courses in Costa Rica, Brazil, Peru, Panama, Mexico and South Africa for graduate students, undergraduates, and professionals. Responsibilities also include programmatic fund-raising and administering a research fellowship program. Applicants should hold the Ph.D. and have at least five years of relevant education experience. The position is based at OTS’ North American office at Duke University and reports directly to the OTS CEO. For further information see <<<http://www.ots.duke.edu>>> or contact OTS. Please send: (1) letter of application with details of administrative and educational experience, (2) curriculum vitae, and (3) names and contact information of three references to Dr. Gary Hartshorn, OTS President and CEO, Box 90630, Durham NC 27708-0630.

CONTRIBUTE TO WHAT’S UP?

The International Canopy Network (ICAN) is currently seeking articles and information for the upcoming issue of What’s Up?, set for publication in December, 2002. ICAN accepts articles, meeting and workshop announcements, related website addresses, and citations. Contributions can be sent via e-mail attachment, fax, or snail mail. Articles up to 1500 words are accepted (WORD format preferred) and graphics are welcomed. The deadline for submissions is November 15, 2002. For further information, please contact the ICAN office:

David Franklin, Outreach Coordinator/Editorial Assistant; (360) 866-6788; <canopy@evergreen.edu>.

RECENT CITATIONS IN CANOPY SCIENCE

[Ed. note: Since there is no central journal on canopy science, it is useful to publish citations on canopy studies in the recent literature. Some of the papers listed below were obtained from ICAN subscribers sending in reprints; most were discovered through weekly literature searches on Current Contents on Diskette (CCOD).

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