



International Flutterings

INTERNATIONAL ASSOCIATION OF BUTTERFLY EXHIBITORS AND SUPPLIERS

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IABES news from the board

Board minutes by Uli Hartmond and Cheryl Tyndall

On January 21, the board (including the outgoing and new members) and the IABES staff held their first (phone) conference of 2014 to elect the association's officers and to discuss business items.

The **new board members Elizabeth Heizmann from the Philippines and Michael Buckman from Georgia, USA**, were welcomed to the group. With many thanks, Ko Veltman from the Netherlands was released of his board role as the secretary, and the board elected **Cheryl Tyndall** from Canada to serve as the new **secretary**. **Gerlinde Blaes** of Germany agreed to serve as the new **vice president** of the association, taking over that office from outgoing board member David Goh of Malaysia. **Jacob Olander** of Ecuador was reappointed **treasurer**, and **Uli Hartmond** of North Carolina, USA, will remain **president and chairman of the board** for one more year.

First order of business was accepting the **2013 financial report** by the treasurer (summary attached). The financial situation of the association appears in good shape and the support of various activities as proposed in the previous board meeting seems secured (e.g., conference sponsorships and conservation project). For more details on funding (and progress) of the Homerus project, please see the updated report in this issue that was provided to the board by Caspar Bijleveld of Switzerland.

The board reviewed the initial numbers of **membership renewal**. While Lauren Williamson of Texas, USA, reported of a few minor issues with our new Paypal pay option, renewals seemed to be on track and we seem to be able to welcome some members that lapsed last year. It is vital to have renewals completed by **mid March** to allow design and production of the latest edition of the member poster (in form or a map again). **We would like to encourage all members to consider that deadline!**

Chantal Derungs Jakob of Switzerland provided an overview on her work on the **web page and Newsletter**. It remains a huge challenge to get members to contribute content or articles. Lauren and Marisca Kuyper, Netherlands, were tasked with calling on our members individually, and to ask for updates from your institution. Michael agreed to help with the website and thanks to Lauren, our **Facebook** presence has markedly improved.

A significant portion of the meeting was spent again to discuss the **IABES conferences**. Gerlinde reported that the European conference is confirmed for the last week of October in France. While mostly intended for the European members, proposals for presentations are invited from every member.

It was also decided that this year the US members will have two chances to meet. One would be in Florida in November in conjunction with the Intl. Butterfly Breeder Association. The opportunity to visit exhibits and nurseries in south Florida will provide a great venue for our US exhibitors. However, it seemed important to also utilize the opportunity to be present at the Invertebrate in Education and Conservation Conference, in July in Arizona. Lauren is leading the effort and discussions with the organizers to coordinate a round table or session.



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IABES news cont.

Locations for conferences in the following years are still to be determined, but the board at its last meeting had voted to meet at a breeder location in 2015, at a US/American exhibit in 2016, and at a European exhibit in 2017, before meeting again at a (tropical) breeder location in 2018. This may not preclude small local gatherings of e.g., the German exhibitors or the US members in intermittent years, but would put IABES' larger conferences on a 3-year rotation. For 2015, Beth Heitzmann offered to submit a proposal to meet in the Philippines. Stay tuned for more details and a call for presentations after the conference committee meets in early March.

IABES conferences and meetings in 2014

IABES European conference 2014 in Alsace, France

The conference will be hosted by Martin and Béatrice Bueche of Jardin des Papillons in Hunawihr, France.

Conference dates:

Monday, 27th to Friday, 31st of October 2014

Post-conference tour dates:

Saturday and Sunday, 1st + 2nd of November

Conference venue and accomodation:

Hôtel Nid de cigognes, Ostheim

Registration fees: approx. 520€



Call for presentations

Please send us the titles of any presentations you plan to make at the IABES European conference 2014 as soon as possible. In addition, the conference committee invites the members of IABES to deposit proposals of interesting topics, which could be covered by guest speakers.

Please send your presentations and proposals to mgblaese@web.de.

IABES session at IECC

IABES will be hosting a session with three papers at the Invertebrates in Education and Conservation Conference (IECC), which is to be held from the 22nd to 26th of July in Rio Roco, Arizona.

Members of IABES are welcome to join the conference and contribute further presentations.

IABES conference in conjunction with IBBA in Florida

IABES will also be holding a three day conference in conjunction with the International Butterfly Breeders Association (IBBA) in Fort Lauderdale, Florida from the 12th to 15th of November 2014.

Members of IABES are welcome to join the conference and contribute further presentations. This conference can easily be combined with a visit to the many interesting local butterfly exhibits and nurseries.

IABES international conference 2015

The IABES conference committee welcomes any proposals to host the 2015 IABES international conference. So far Elisabeth Heitzmann from Flora Farm in the Philippines has expressed her interest in hosting the conference. Should any other institution wish to do so, please contact the committee (mgblaese@web.de) by the End of March 2014.

IABES Treasurer's report 2013

Presented by Jacob Olander

20 January 2014, IABES Board Meeting

Overview

The year 2013 began with initial total assets of \$47,403, of which general membership funds accounted for \$20,948.80 and the Conservation Fund \$26,454.

IABES ended the year 2013 (to 31 December 2013) with \$57,524 in total funds, of which \$23,980 were in general membership accounts and \$33,545 in the Conservation Fund

Total income from memberships in 2013 totaled \$12,395.

The majority of expenses was to cover costs of Secretaries and management of the website and newsletter, with a total expenditure of \$7964.

Revenues exceeded outlays for the general membership accounts, resulting in an increase of \$3031 (14.9%) in assets in general membership accounts.

Revenues also exceeded outlays for the conservation account, resulting in an increase of \$7091 (26.8%) in assets in the conservation account.

Funds in the US are held in a Wells Fargo checking account and Wells Fargo savings account. Funds in Europe are held in two accounts with Sparkasse Koblenz (Germany): one for general membership funds and a separate account for the IABES Conservation Fund.

IABES Membership Funds

Income:

Income was derived almost exclusively from membership fees in 2013, with a total of \$12,395 received in 2013 membership fees and sponsorships.

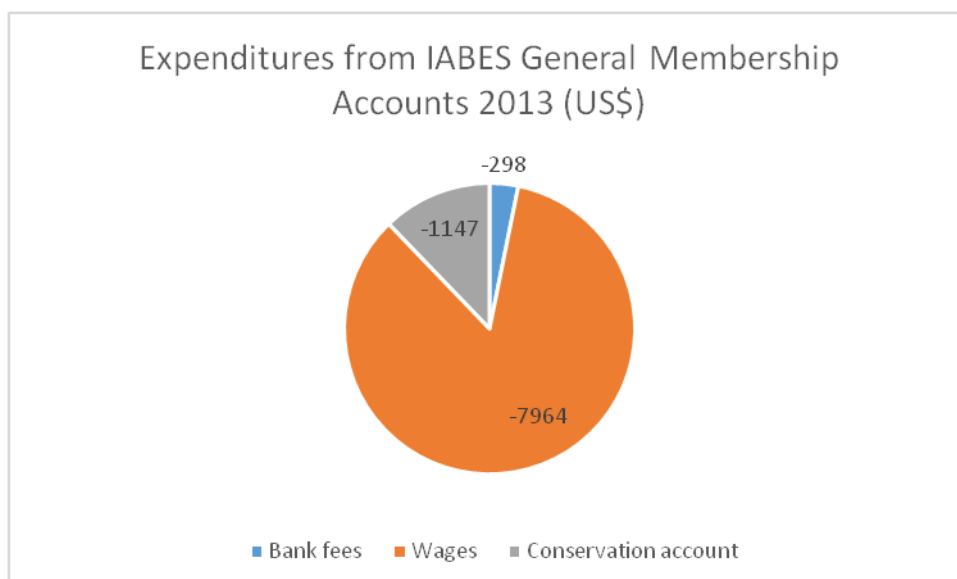
Of total income:

\$6730 was from members paying into the US account (54%)

\$5665 was from members paying into the European account (46%)

Expenses:

Expenses totaled \$9,410 in 2013, broken down as follows



IABES Treasurer's report 2013

Contribution to Conservation Fund: The Board of Director's in its 12 September 2013 meeting ratified that 10% of annual membership income would be contributed to the conservation fund. This transfer was made on 8 November 2013.

Conservation Fund

The Conservation Fund continues to support the Homerus project in Jamaica through the International Tropical Conservation Fund. One transfer of \$7602 was made to ITCF in 2013 in support of the work on Homerus in Jamaica, while \$13,660 was received in contributions from the Rotterdam Zoo.

Outlook for 2014

IABES begins the year 2014 with a healthy financial position. Assuming that revenue from membership remains stable and that basic expenses remain constant IABES would close 2014 with approximately \$25,000 in the general membership fund.

In its 13 September 2014 meeting the Board established a target of a minimum reserve of \$10,000 to be maintained in its accounts. With this in mind, in principle IABES should have approximately \$15,000 in funding available to support ICBES and/or staffing or other special projects.

The full version of the Treasurers report can be found in the login section of the IABES website.

Image of the month: original picture board



Jan and Janneke Kienjet (to the right) sent us this image of their very original picture board at their exhibit „Vlinders aan de Vliet“ in the Netherlands.

Should any other institution have a interesting and inspiring picture board, please send us a photograph, we'll post them all on the IABES Website.

Members feature: Butterfly Habitat, Six Flags Discovery Kingdom

Interview with Rich Kelson

Who are you?

I am a native Californian, went to college at U.C. Berkeley, majoring in entomology, and later attended U.C. Davis for 3 years of graduate work. In June, 1988, I read an article in the newspaper about a butterfly house opening in Vallejo. Butterfly houses were completely novel back then, and I was curious about its operation, so I called the park (then Marine World Africa USA) to learn more about it. They said to come visit and we will give you a tour! So I met Bill Meeker (Assistant Director of Land Animals) and Alvin Ludtke (Entomologist). Turns out that Alvin had attended the last meeting of the Lepidopterists' Society, where I had given two presentations, so he was familiar with my background. Also, they needed help and wanted me to work there. So that's how my association with Butterfly Habitat started. Six years later Alvin left to pursue other interests so I was promoted to "Entomologist".



Describe your exhibit in your words:

The park is located on the NE side of San Francisco Bay, about a one hour drive from S.F. Originally all animal exhibits and shows, rides were incorporated starting in 1994 when Six Flags took over management of the park and eventually purchased the park. So, in addition to butterflies, we have other terrestrial animals (giraffes, lions, tigers, elephants, alligators, birds, etc.), marine animals (dolphins, seals, walruses, sharks), as well as rollercoasters and other rides. Something for all age groups and interests! The philosophy of our animal attractions is education through entertainment. Many of our guests are from urban or inner city areas; some kids have never seen a live butterfly before. We have an organized tour called "Back Stage Safari", but most people enjoy just walking through the habitat, being immersed in tropical butterflies, occasionally glancing at the several educational graphics along the path. We hope not just to educate, but to instill a deep appreciation of tropical environments, and ultimately, a conservation mentality. There is also a graphic illustrating 15 endangered or extinct butterflies of the S. F. Bay Area. This puts local relevance to the conservation theme.

The house dimensions are 50' x 100' x 20' high. There is a winding path, two ponds, and a waterfall. We have a gift shop and outside butterfly gardens. Staff includes an intern that assists me, plus help from the bird dept., aquarium dept., park facilities and maintenance, and a landscape company.

There is a large "Explorer Guide" contingent that monitors Butterfly (one person at each door) as well as other exhibits in the park.

The exhibit first opened in May, 1988 and was the first major butterfly house in the western USA. Attendance initially was two million per year. We still get about one million visitors to the butterfly house. Unlike some of the houses around the world that opened more recently, a lot of the environmental controls are not automated and are still operated manually. We have added a drip irrigation system. In 1997, vestibules were added to the entrance and exit and a room was constructed to house the pupae.



Members feature cont.

When we first opened, no one knew the best way to ship the pupae, store or attach the pupae. We tried about 4 different shipping companies, ultimately none were adequate, so for a while the packages were sent by air freight and we went to SFO to broker them ourselves. I won't go into all the details but the shipping process has changed many times since then! We also tried several methods of attaching the pupae and eventually settled on a hot glue gun method that has been refined over time. As for storing the pupae, initially they were put in small wood cages on small stands, scattered several places around the butterfly house. This method was difficult to monitor but the ants loved finding them! Next a cabinet was built to house larger custom made cages with Plexiglas fronts. Finally, the cabinet was incorporated into a room built around it for excellent containment, record keeping, sanitation, etc. This continues to be one of the highlights of a visit, as the guests can see butterflies hatching through the windows as well as the colorful and unusual pupae.



What do you like about your job?

There are many enjoyable aspects to my job: working with a group of outstanding, knowledgeable and supportive people; knowing that visitors are gaining an appreciation of and some basic info about our gossamer-winged friends; seeing adults reminisce about their own younger years; and finally meeting all sorts of fascinating people that visit. I've actually learned a lot about butterflies from people who visit. Perhaps they ask a question that I need to research, or recount their experiences with butterflies, or have extraordinary careers and occupations as well.

What do butterflies mean to you personally?

Besides their attractiveness and diversity, they also represent special places, plant communities and habitats, that are each unique. Looking for butterflies in a new environment and locale is kind of like prospecting for gold.

Which is your favourite butterfly species?

To be fair and impartial, I like them all! To pick one fascinating example of a local species, the Moss Elfin, it is found only on steep slopes (or cliffs) of a mountain near my residence. It flies for only a few weeks in early spring, and has intricate wing patterning when freshly emerged. Otherwise, it is a dull small brown butterfly (moth-like) that no one ever sees!



2013 Homerus report is out

By Caspar Bijleveld, Homerus project coordinator



SAVE HOMERUS!

Homerus Swallowtail & Cockpit Country Conservation Project (HSCCCP-JAMAICA)

It is with pleasure that we have posted the 2013 Homerus report from Jamaica under the log-in section of the website. The report describes in detail what activities took place in the field, the general background of the current state of Cockpit Country and, last but not least, what will be done in 2014. The research carried out so far is crucial to understand the exact distribution of Homerus, and is essential if we are to save the westernmost forest areas of Cockpit Country.

Please consider joining the project! Research in the field, monitoring of deforestation and keeping an eye on the development of bauxite mining costs 25,000.- US\$ per year. Without IABES' support, it would all be impossible!

IABES Membership renewal

By Marisca Kuyper and Lauren Williamson, IABES membership secretaries

This is a reminder for those members who haven't yet renewed their membership for 2014: we kindly ask you to pay your membership fees as soon as possible. Payments can also be made through PayPal. For questions please contact our secretaries Lauren Williamson lwilliamson@hmns.org or Marisca Kuyper m.kuyper@zoo-emma.nl

If you're interested in a free decal with IABES logo for you facility please contact us.

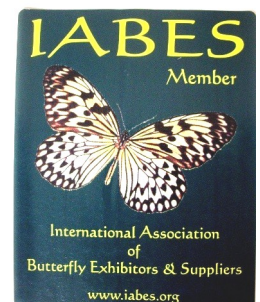


Photo contest for IABES website

By Chantal Derungs Jakob, IABES webmaster

In the coming months I plan to add new attractive features to the new IABES website. Amongst other things I would like to replace the image of the small peacock on the homepage by a more representative image of a tropical butterfly in natural surroundings if possible in combination with some visitors admiring it. The image should be horizontal and any visitors on the image should either be non-recognizable or have been asked for their permission to publish the image.

Please participate!

Should you have a suitable image, please send it to me by the 31st of March 2014 (derungs.jakob@sunrise.ch). All images will be placed in the login section of the website and the winner will be determined by a members ballot.



The 7 wonders of the world of insects

Photonic insects - beauty, versatility, energy saving with little chemistry

By Enzo Moretto

Esapolis Director, the Museum-Insectarium of the Provincie of Padova

Scientific Director of the Butterfly Arc's Butterfly House

Member of the National Council of the Friends of the Earth

There are many species of insects with spectacular colors and forms making them look like magnificent jewels. Looking beyond the beauty of these beings, you will be amazed to discover the underlying genius principles bearing potential for a better sustainability, energy efficiency and invention of new clean technologies in our human world.

What is the secret of the beauty of this weevil beetle from New Guinea?



What are the fantastic reflexes of the Neotropical Morpho Butterfly hiding?



Why are there beetles that seem to be made of silver or gold?



Esapolis located in Padova, Italy, is one of the worlds largest insectariums. It is known as the exploratory of the MicroMegaMondo of Butterfly Arc which includes the historical Butterfly House of Montegrotto Terme. Esapolis displays many beautiful small animals (also live ones), mostly insects and their relatives, as well as important museum collections. One of them is a silkworm collection, including an extraordinary library, a huge collection of silk cocoons, silk fibers of cultivated and wild silk moths and other invertebrates and further evidence of the silkworm industry of the 19th and the early 20th century. Furthermore the insectarium presents educative, entertaining and interactive exhibitions and activities. Esapolis has now inaugurated a new section featuring the stunning beauty of certain species of insects, in particular butterflies and beetles, and the emotions generated by their amazing jewel-like shapes and colors.



The 7 wonders of the world of insects

Each of the presented species, including some of the rarest in the museums collections, represents a group defined in the exhibition as one of the “7 Wonders of the Insect World.” Of course it is very difficult to make a ranking of this kind, but all visitors agree that the species exhibited are very special and show aesthetically beautiful aspects of nature. So much beauty is not devoid of important insights for science and technology. All the colors of these wonderful specimens are generated by different structures called “photonic crystals”, which become visible through interference with light.

The armor of these insects is known to be made of chitin: a semitransparent substance, primarily a nitrogen-containing polysaccharide and the principal component of arthropod exoskeletons. The nano-structures in the chitin, such as ridges, pits, spheres, hexagons, plates combined with the order in which they are arranged result in the optical properties. Because of their tiny size, smaller than the wavelength of visible and ultraviolet light, these structures produce fantastic effects of interference and iridescence in an endless variety. **The reason?** Camouflage, sending signals to con-specifics, reflecting or capturing the sun's heat, highlighting special characters in males, scaring away predators, etc.

Photonic crystals range from “simple” systems in nano-sheets (over 200) of different thicknesses and hydration grades, to striations and micro-reflective canyons, and to three-dimensional matrices of nanospheres, hexahedrons or lacunae arranged in para-crystalline structures similar to those of opals. In insects many photonic systems have been identified and in many cases they occur in a combined form.

What does science prove on “the ecology” of these structures?

Scientists are looking for something that has the same properties as the crystals, while being less hard and more ductile. And perhaps, when we think of diamonds, less fragile than these, but with the same great refraction and maybe less expensive and reproducible with combinations of materials that form lattices that are not on the molecular scale (order of a billionth of a millimeter), but for example about one fourth of the length of visible light (from 380 to 760 nm, which is of the order of hundred of thousands of a millimeter.) This would result in more efficient optical fibers, computers that base their operation on light instead of electrons with enormous energy saving potential, space and speed increase (which becomes, in fact, photonics). Other applications range from paints to solar and photovoltaic panels that would take advantage of a sunlight concentration and a wider range of usable wavelengths.

But how old are the photonic technologies of insects ?

Paleontology reveals surprising facts, for example in a study by Mary McNamara of the School of Biological, Earth and Environmental Science at the University College of Cork North Mall, Ireland. She also made beautiful images of fossils of moths and beetles almost 50 million years old and already carrying iridescence colors!



The 7 wonders of the world of insects

Scientists have speculated that insect chitin, in certain types of fossilization, could last for 2 billion years! This is a prediction, as the oldest chitinous beings appeared on earth around 540 million years ago. Some of these, dated back to the beginnings of the primary age, surprisingly still retain traces of chitinous armor. This means that “photonic insects”, if properly stored as in the collections of museums, would last practically forever. We can therefore assume that the first iridescent colorations in insects are very old.

A great message to help reduce environmental pollution

For many insects as well as for us colors are essential. Without them much of the vision of the world that we know would disappear. To produce colors man has to use chemical processes and energy demanding pollutants. Each of these colors is the result of the interaction between the molecules in the pigments and light. For this reason insects, such as beetles, had to “invent” colors that were not the result of pigments. The production of colors would otherwise have been limited to the resources available from plants. The evolution of these metabolic processes would have been complex and would have taken a lot of time, a factor that may not have been compatible with sudden changes in the environment. For example: two colors that are trivial to us, but that are essential for insects, namely green for camouflage and white for the reflection of the sun's heat, are missing in the palette of pigments produced by adult beetles and therefore are produced through photonic systems and light interference.

What is the genius, the eco-logicity and therefore the usefulness for us?

The insects chitin armor, which is originally transparent and polarizing, generates all the colors through the way in which it is assembled. The manipulated light produces polarized reflections, which are not only linear but sometimes also helicoidal. In some cases, the superposition of transparent lenticular scales enhances the desired optical effect, and in others, adding pits or ridges to the surface of the armor removes the refractive brilliance to generate more mimetic colors.

The helicoidal systems with polarized light were found in the armor of gold and silver beetles that live in the pristine cloud forests of Costa Rica. While their wonderful coats make them look like jewels in a collection, in their natural environment they work like the suit of invisibility of the famous alien of the movie Predator. The reflective structure, which at times resembles a fractured mirror, takes on the insect images and colors of the surrounding environment.

If we adopted the same technologies used by photonic insects we could, among other things, build colorful objects with little or no pigments, in which all the color we need can be produced by nano-manipulation of simple organic structures, transparent and polarizing. This would result in a drastic reduction of pollution and the energy required to generate colors and discard them, increase their persistence over time and preserve their biodegradability.

To learn more about this subject and admire the jewel insects you are invited to visit the new exhibition of Esapolis “The 7 Wonders of the World of Insects.”

For more information:
www.micromegamondo.eu
 Tel +390498910189
info@butterflyarc.it



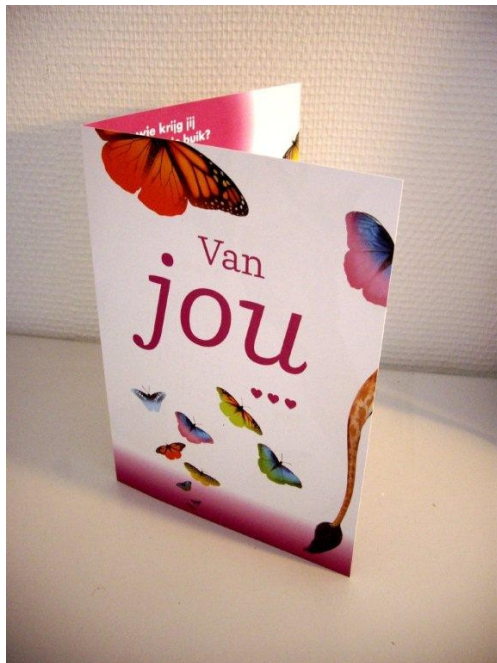
Be my Valentine at Emmen Zoo butterflyhouse

With a little spring in the air and almost Valentine's day Emmen Zoo sent a colorful cart to all her season ticket holders. On the front of the cart the following text : "From you... and on the inside: I get butterflies in my stomach" People are invited to visit our butterflyhouse together with their Valentine. When the visitors take the cart with them to our butterflyhouse and rub one of the butterflies on the cart, a Lavender scent comes free. Hopefully to attract the butterflies and with their help make them irresistible for their Valentine!

That the butterflyhouse is a romantic place for visitors is clear. Last month we had a request from a visitor to propose his girlfriend in our butterflyhouse. We arranged a special guided tour for them. It started as a common tour, but in the garden hung a huge text with the girlfriends name "Will you marry me". His very surprised girlfriend luckily said yes. Flowers, tears and a ring followed. We'll wait and see if they decide to marry in our garden as well! The butterflyhouse is also popular as a place to take the pictures of weddings. Always green, sunny and colorful, and of course full of butterflies.

I'm interested if other members do have special arrangements or pictures from weddings or proposals in their butterflyhouses?

If you like to share them please sent them to m.kuyper@zoo-emmen.nl or derungs.jakob@sunrise.ch



Butterfly Education and Awareness Day

Join butterfly enthusiasts from around the world for the 4th annual Butterfly Education and Awareness Day (BEAD) sponsored by the Association for Butterflies (AFB). Butterfly conservation has never been more important and this day is a great way to way to educate and engage your visitors about the joy and rewards of butterfly gardening and habitat restoration. Visit the Association for Butterflies website for more information about suggested activities and to order the 2014 Butterfly Education and Awareness Day commemorative bead for year round sale. <http://afbeducation.org/butterfly-education-and-awareness-day>

Questions can be directed to Lori Harris (708) 601-1080.

Raising Atlas Moths: A Quick Host Plant Comparison

By: Celeste Poorte, Rearing Coordinator at the Cockrell Butterfly Center

Atlas moths (*Atticus atlas*) make superb additions to the Cockrell Butterfly Center. During the day, they spend most of their time motionless, clinging to the side of a tree or other surface. Visitors can thus get up close, to intimately study these creatures, and can clearly observe their fat, furry bodies, fuzzy antennae, and teddy bear like expressions.

We occasionally receive Atlas moth cocoons from the Philippines and Thailand. When a male and female emerged from their cocoons around the same time, we took the opportunity to breed and raise this species of moth. The newly emerged male and female were placed in a flight cage in the greenhouses on the top level of the museum parking garage. They paired the very first night they were together. During mating, the moths remained coupled for several hours. Then, over the next three days, the female laid approximately 150 crimson eggs, placing them indiscriminately along the walls and edges of the flight cage.

Atlas moth larvae are generalists. Hoping to determine which of several possibilities would be the best food for our caterpillars, we searched the literature for recorded host plants. We chose four that we had available, including Camphor Tree (*Cinnamomum camphora*), Vitex (*Vitex trifolia purpurea*), Mahogany Tree (*Swietenia mahoganii*) and Sweet Potato Vine (*Ipomoea batatas*). Gathering the eggs, we divided them among four plastic containers lined with moist paper towels and ventilated with tiny holes poked in the lid, each containing a different kind of leaves.

The eggs took 10 days to hatch. The hatchling larvae were covered in pale protuberances and had black heads. After eating their eggshell, the tiny caterpillars began eating the provided foliage. Once the caterpillars were feeding reliably, they were moved to netted cages containing potted plants, so the leaves would be constantly fresh.

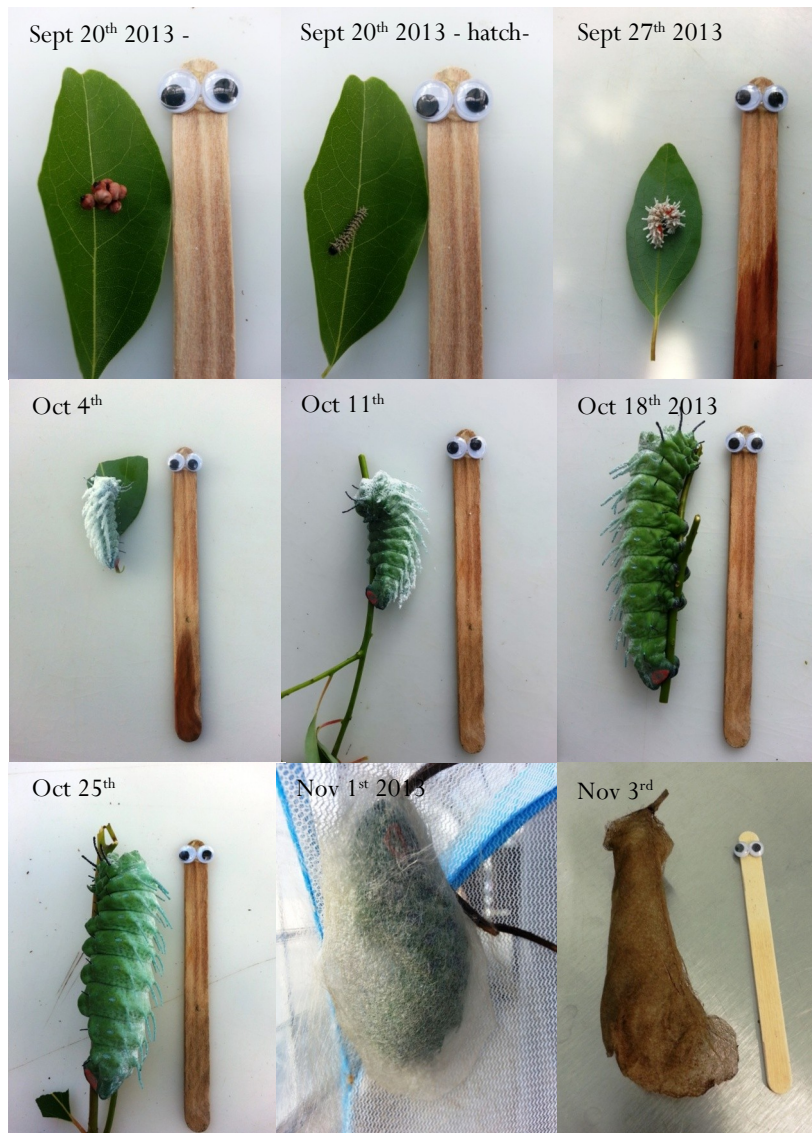
The caterpillars hatched on a Friday (Sept 20th). To track their weekly growth and development, we took a photograph of them each Friday thereafter. It quickly became obvious that the caterpillars on Camphor were thriving - they grew bigger and faster than their siblings on the other plants (the pictures shown below are of larvae fed on Camphor). In each photograph, larvae were placed next to a standard sized Popsicle stick, fondly known as Size Reference Ralph, to track their relative growth.

The caterpillars fed on Vitex and Mahogany Tree did well. They didn't get quite as large as their counterparts on the Camphor but they grew rapidly and formed cocoons within the same week. The caterpillars on the Sweet Potato Vine initially seemed to be doing equally well but it became apparent after the 2nd instar that they were not flourishing. The caterpillars were smaller and weaker than all the others. One by one they were dying. By the fourth instar the last survivor remained – it was about 1/3rd the size of caterpillars on the Camphor. Perhaps a different variety of Sweet Potato Vine would have been a better host plant.

The caterpillars took six weeks from hatching to pupation. They ate voraciously, becoming soft and fleshy to the touch, and were a pale blue-green color. Their backs were covered in a Mohawk of tubercles with a thick, waxy, flaky coating. By six weeks, having reached their maximum size, the caterpillars were almost as long as Size Reference Ralph and were quite pudgy. The sequential pictures show the dramatic changes in the larvae, followed by the start of silk spinning and finally a complete cocoon. Once they finished their cocoons, the larvae pupated inside. We then gently moved the dried cocoons to the emergence chamber inside the entomology hall of the Butterfly Center.

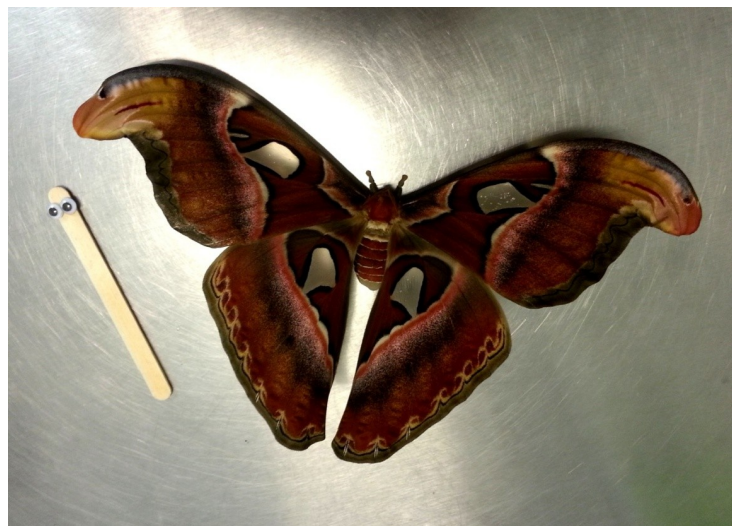


Atlas moths cont.



Egg to cocoon in Atlas Moths. Pictures were taken one week apart next to Size Reference Ralph. Pictures courtesy of Lauren Williamson, entomologist at the CBC.

Then we waited. Atlas moths may eclose from their cocoon in as little as 3 weeks but can sometimes take several months. The first Atlas moth of our batch of cocoons emerged on Dec 17th, almost 3 months after hatching from the egg. It was a large female, with a wingspan of just over 10 inches. As you can see, Size Reference Ralph was dwarfed by her!



Our first Atlas moth to emerge, on Dec 17th 2013. Pictures courtesy of Lauren Williamson, entomologist at the CBC.

Patron Members



Imagine walking through a lush tropical rain forest amidst flowers and trees, ponds and a trickling waterfall with butterflies flying overhead and all around you in their own natural paradise. This is a dream come true at The Butterfly Farms in St Martin and Aruba. Within large meshed enclosures you can see hundreds of real exotic butterflies flying freely, a beautiful display of the most spectacular species from all over the world...

- Entrance includes a free return pass for the duration of your vacation!
- Open all year, daily Aruba 8-30 am - 4-30 pm (last tour starts at 4pm) St Martin 9-00 am - 3-30 (last tour starts at 3pm)
- Guided tours run all day, they last for approximately 15 to 20 minutes and you are welcome to stay for as long as you like. Photography and video no problem!
- Each Farm has a great shop selling a huge selection of butterfly-related gifts and souvenirs. Refreshments are available in the shady cafes outside. Parking and restrooms on site.

Flagship Members



Let us take you on a journey into a little tropical paradise, to palm and banana trees, to trickling waterfalls and the colorful flourish of exotic butterflies from South America, Africa and Asia. Discover the Chinese Atlas-moth, whose wing span measures about 25 cm, as it sleeps away the day undisturbed by the bustle around him. Or the blue Morpho of Brazil, floating through the air majestically.

In a second pavilion, the "caterpillar house", you can find tiny butterfly eggs, hungrily munching caterpillars and expertly camouflaged cocoons. The little Chinese Dwarf quails, whose chicks are barely larger than a bumble bee, the turtles diving into the water and the mysterious iguana are a constant source of delight to our visitors.

Our small insectarium is home to tarantulas, snakes and other exotic pets. No matter what the weather, the daytime, if spring, summer or autumn, the Butterfly Garden is always an experience for our visitors young and old, a paradise for nature-lovers and hobby photographers. Come along and join us on a walk around this unique attraction!



Butterfly Dan's has been supplying to the Butterfly industry for over 21 years.

Butterfly Dan's goal is to provide our customers with the best value and increased varieties. Our commitment to quality and value has helped us to become a leader in supplying butterfly pupae to exhibits in the U.S. and Canada.

Our exhibitors range from Natural History Museums, zoos, and tourist attractions such as Walt Disney World.



Discover the fascinating world of nature in all its arrays: experience a colorful ballet of exotic butterflies flying freely around you, observe the secretive creatures of night, watch rainbow toucans and indigenous butterflies, arthropods with amazing forms and woolly pigs working as landscape architects. Let us take you on an exciting journey at Papiliorama in Kerzers!



At our butterfly Park in Lelydorp, located a short distance from the capital city of Paramaribo, a beautiful and enchanting world of butterflies awaits you. In a serene nature rich environment, a multitude of colorful butterfly species surround you while you enjoy a variety of attractions and learn all there is to know about their fascinating process of metamorphosis. During your visit to Neotropical Butterfly Park you will also explore our insect museum, a hand painted 360° panoramic view of typical Surinamese landscapes and a guided tour through the breeding facilities of Neotropical Insects. You will be delighted to see that aside from butterflies, the farm also breeds local land turtles and snakes.

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IABES has a new Facebook page:

<https://www.facebook.com/IABES>

This is a great way to keep up with current events in the organization, share photos, papers, and any other useful information.

Find us on Facebook and “like” us!

PLEASE CONTRIBUTE

The next edition of the International Flutterings will appear at the end of April 2014. Please remember that this publication is only possible with the help of IABES members.

Thank you for submitting articles by the **15th of March** to Chantal Derungs Jakob (derungs.jakob@sunrise.ch).

AND CONTACT US WITH YOUR QUESTIONS

Do you have any questions concerning IABES? Send us an e-mail and we'll be glad to help you:

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