

## **Final report of the project:**

### **CONTINUING WITH THE: “INTEGRATED STRATEGY FOR THE RESTORATION AND CONSERVATION OF EPIPHYTIC ORCHIDACEAE EN THE SOUTHEAST OF MEXICO”**

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## **INTRODUCTION**

The southeast of Mexico includes the two most biodiverse states in the country, Chiapas and Oaxaca. The region of Soconusco, in Chiapas state in the extreme southwest of the country, is a biodiversity “hotspot”, we have the second richest region for orchid diversity in Mexico, and all, or part of, three Biosphere Reserves (“El Triunfo”, La Encrucijada”, “Volcán Tacaná). The generation and dissemination of knowledge concerning the presence, distribution, ecological requirements, sustainable management and dangers that threaten our native flora and fauna is vital. We must combine that with the training and motivation of young people in general, and community leaders inhabiting priority and protected areas in particular, to increase our chances of preserving not only the plants, but also their ecosystems and the integrity of human populations for the next generations.

Deforestation, destruction of ecosystems and illegal extraction, fueled by over population, poverty, market priorities and trends, misguided or corrupt government-funded programs, and above all a lack of a realistic long-term vision common to all human nations and populations are the principal causes of orchid extinction in southeast Mexico and the rest of the world. To survive, many of our orchids now depend upon inaccessible areas or being just too small and “ugly” to attract the attention of traffickers and enthusiasts. A further aspect, and particularly important in the southeast of Mexico, is the question of coffee production. The original traditional coffee plantations, with their fantastic diversity of native trees that were left standing to shade the coffee plants, provided a safe haven for virtually all of the elements of the original biodiversity, from microorganisms and small insects, to birds, mammals, bryophytes, herbs, lianas and other epiphytes. During almost one and a half centuries, extensive areas of traditional coffee plantations maintained the livelihoods of the people and at the same time maintained environmental and climatic integrity; all that is now being eroded, and the orchids that had adapted to living on the coffee plants and shade trees are disappearing.

Faced with extinctions of this magnitude, the response of the scientific community has usually been to complete lists of species and carry out the mass propagation of charismatic species, neither of which really addresses the fundamental problems

and thus have limited impact. There have been considerable advances in the knowledge base regarding taxonomy and phylogeny, some aspects of ecology, and the commercial production of orchids, but despite all that investment, positive action and results have been few.

I have been working in the southeast of Mexico for 29 years, starting with research into the biological control of the coffee berry borer, where I became very interested in the potential of the coffee agroecosystem for biodiversity conservation. From 1998, I have been working on various aspects of the ecology, conservation and sustainable exploitation of orchids, culminating in the design of an **Integrated Strategy for the Restoration and Conservation of Epiphytic Orchidaeeae in the Southeast of Mexico**, which consists of the following activities:

1. **The Living Collection of the Orchids of Soconusco**, maintained in two sites at different elevations (80m and 1,100m) represents a safe place long term for the conservation, study and propagation of native orchid species. In collaboration with a taxonomy specialist from Oaxaca and various students, we have published the definitive list of the orchids registered in the Tacaná-Boquerón region which is designated as a priority conservation area by CONABIO (National Commission for the Knowledge and Use of Biodiversity), and which comprises a major part of the Soconusco region. Examples of approximately 65% of the 325 species registered for the Soconusco region are maintained in the living collection. Of the remaining 35%, many are probably now extinct in the region, as we have never seen them; some are epiphytes that have proved impossible to maintain within the environmental conditions available in the two sites where the living collection is housed, and most are terrestrial species, a subgroup to which I have not dedicated much time.

This regional orchid collection has been selected by the committee of the 23<sup>rd</sup> World Orchid Conference 2020 (Taiwan) as one of 30 collections to be included in a commemorative book, "World Orchid Collections".

2. **The Program for the Conservation and Sustainable Exploitation of the Orchids of Southeast of Mexico**. The program includes training and long-term assessment for orchid management, and one or more of the following activities: the creation of UMAs (see below for explanation); the construction of reception areas and orchid galleries to receive and cultivate rescued orchid plants; the setting up of selected sites for the restoration of orchid populations, and the training and organization of orchid rescue brigades. In rural communities, I have trained people to rescue orchids thrown to the ground by winds, rain, pruning and tree-felling. They select the healthy plants, clean and divide them and place some in the orchid galleries and the rest in the restoration sites, which may be forest fragments or traditional coffee plantations. We currently manage two **UMAs**, which translates to "Units for Environmental Management" and refers to the Mexican legislation that deals with the sustainable exploitation of flora and fauna in danger of extinction (listed in the NOM-ECOL-059). One of the UMAs is situated in the Biosphere Reserve "El Triunfo" and they make crafts from orchid flowers to help supplement

their income. The other UMA is situated in the Biosphere Reserve “Volcán Tacaná” and the orchid gallery and CaféOrquídea plots form part of their ecotourism activities.

I have had proposals for the propagation of two endangered species of orchids accepted by the committee of the 23<sup>rd</sup> World Orchid Conference 2020 (Taiwan): *Rhynchostele uroskinneri* (Lindl.) Lindl. and *Cuitlauzina candida* (Lindl.) Dressler & N.H. WILLIAMS.

The 2017-18 support from SDCOS enabled me to initiate a further three projects and, with mostly excellent results.

3. I set up the **Brigade for the Conservation of the Orchids of Southeast Mexico**. With SDCOS funding, I selected 26 of the 140 interested young people from various southeastern Mexican states; these were split into two groups and on separate dates, each group came to Tapachula for an intensive week of practical and theoretical training. Of those originally trained, there are now 14 young people working as a diffuse and fully interconnected and supportive network to promote orchid conservation and train local groups in communities situated in important and sensitive areas in southeast Mexico. The 12 youngsters who received training but have not been able to continue as active members of the Brigade, are now working as teachers or in non-profit organizations, and carry with them the knowledge, experience and motivation shared during those initial training sessions.

We decided on a strategy of organizing annual group events, with the young brigadistas taking turns to host an event in their home area. In December 2018, we all went to Chetumal in Quintana Roo, where Jonathan Santiago de la Cruz has set up an excellent orchidarium in the Jardín Zoológico Payo Obispo. We invited local people to attend talks and practical demonstrations and the brigadistas shared experiences concerning their projects. For this event, we received a small amount of funding, the brigadistas paid their travel expenses, and I paid the rest; however, that meant that 5 of the youngsters could not afford to attend. (Program annexed in previous report)

For this second proposal, we planned an event in Oaxaca, with Silvino López Hernández as host, and included the expenses in a proposal sent to CONACyT-“Vocational training and opportunities for young people”. However, Mexico is going through tremendous upheavals with austerity and anti-corruption measures, and at national level most of us had our proposals rejected (previously, most events were accepted for funding). We then postponed the event and held it, with a reduced budget, in January 2021.

I am amazed at the commitment, creativity, enthusiasm and capabilities of this group of young people; the results have greatly exceeded expectations. They have been promoting the Brigade on the radio and television and in a variety of events. They have designed and completed audiovisual tools and have been offered support for a 120 minute video of our activities. Three have carried out their

obligatory University work experience with me, and have carried on to study their M.Sc. in my project.

4. I completed and published the guidebook: **¡Orquídeas en Peligro! Guía de manejo sustentable en el Soconusco**

This book is a simple, practical but novel approach to orchid conservation and sustainable management, aimed at a wide audience, but particularly campesinos living in rural areas who have coffee plantations and natural forest areas within their community territories.

SDCOS offered US\$1,580.00 for this activity, which translated to Mex\$32,000, of which \$12,000 were paid to the illustrator, leaving \$20,000 for the printing of the book. With that amount, and to be able to print in color and obliged to print a minimum of 150 books, the number of pages had to be reduced significantly and that implied small print and no spaces between paragraphs. The book was originally designed for campesinos, with large print and “bite-sized” units of information, to facilitate assimilation of the information by a population not accustomed to books, textual information, etc. The idea for this current proposal is to print 100 examples with that original format, to be given to the campesinos working with us in the various activities of the “Integrated Strategy for the Restoration and Conservation of Epiphytic Orchidaceae in the Southeast of Mexico”.

One of the techniques that has proven useful for motivating campesino participation has been the invention of common names for all the orchids. In Soconusco region there was no vocabulary to describe orchids, no verbal way of distinguishing between one species and another and, therefore, no way to accumulate or share information related to specific species. This book includes all of the common names chosen by the people themselves, or if inspiration failed, by me.

The book also includes a link to access the image database containing photographs of all the orchid species that have been found by project members in the Soconusco region. Many of the photographs are of poor quality, and the database will be continually updated, where possible, while continuing to be accessible using the same link; the file is maintained by ECOSUR.

5. **CaféOrquídea** is a proposal to create a commercial category of organic, orchid-friendly coffee, which is also friendly to other groups of epiphytes and biodiversity in general. This will be integrated into the Integrated Strategy. SDCOS funded the first attempts to set up CaféOrquídea plantations, including training workshops and planting native trees and tall, open, epiphyte-friendly coffee-bushes. Results were excellent for half of the plots worked and we continue to work with those people and hope in the near future to extend the program to more areas and establish a brand and a superior price. (See below for more details)

However, in some cases, new government programs, particularly “Sembrando Vida”, which promises to pay campesinos a high monthly wage during several years to participate in tree planting programs, have hindered the results for the CaféOrquídea project and the possibility of developing new UMAs. These “promises” have provoked the felling of virgin forest and the shade trees in coffee plantations, to be able to justify the claim for the need for reforestation, entry into the program and receipt of the monthly wage. With that, rare and endangered orchids have appeared for sale on the streets of Tapachula, having been taken from the felled trees. This, and other programs, such as the “modernization” of coffee production have meant that many campesinos have also abandoned programs and projects aimed to develop sustainable and self-sufficient options, particularly in the natural protected areas managed by CONANP. Both programs include paying wages, and thus prove irresistible to the coffee producers who will do anything in exchange for money, no matter how little, and how short term the offer might be, and without considering the viability or justification for the proposed activities. In one community, a further distraction was the offer of substantial sums of money in exchange for sale of their lands for mining (in a Biosphere Reserve!!).

However, various coffee producers continue with the CaféOrquídea program, which I hope to expand, and I am also planning to initiate a parallel program for lowland orchids, CacaoOrquídea.

## A. WHAT ARE THE GOALS OF YOUR PROJECT?

This second proposal consists of a request for US\$6,316 to finance a continuation of two of the activities supported by SDCOS as part of the 2017/18 proposal, and which are part of the Integrated Strategy for the Restoration and Conservation of Epiphytic Orchidaceae in Southeast Mexico.

Goal 1. Publish 100 examples suitable for campesinos and fieldwork, of the guidebook: **¡Orquídeas en peligro! Guía de manejo sustentable en el Soconusco**. Mex\$60,000 (approx. US\$3,160)

Goal 2. (here I have updated the places and dates, which had to be changed due to the pandemic)

A. Meeting and Workshop of the **Brigade for the Conservation of the Orchids of Southeast Mexico**, in Ixtlán, Oaxaca. January 2020.

\$30,000 (approx. US\$1,578)

B. Meeting and Workshop of the **Brigade for the Conservation of the Orchids of Southeast Mexico**, in Mérida, Yucatán. December 2021.

\$30,000 (approx. US\$1,578)

Total Mex\$120,000 = approx. **US\$6,316**

## B. WHAT METHODS WILL YOU USE TO ACHIEVE YOUR GOALS?

To fulfill its goals, the Program for the Conservation and Sustainable Exploitation of the Orchids of Southeast of Mexico involves training, hands-on experience and long term accompaniment. We aim to promote awareness, organization, independence and autonomy within the groups to break the cycle of dependence upon government or any other type of handout, incentive or inducement. We have now been working for several years on that basis.

The guidebook, **¡Orquídeas en peligro! Guía de manejo sustentable en el Soconusco**, aims to serve as a companion for campesinos, students and enthusiasts working towards orchid conservation. The guidebook presents material covered in the training sessions, in a visual and easily digested format, which will also be suitable for those who have not participated in the training sessions. The information is based on years of experience working in protected areas and rural communities in the Soconusco region, and research carried out on key topics. This second version will offer exactly the same information, but in a format specifically aimed at campesinos (as originally planned) who have had limited access to formal education. This format used larger letters and spaces between the paragraphs, making it more relaxed and accessible for rural communities who have not received much formal education.

The **Brigade for the Conservation of the Orchids of Southeast Mexico** decided on a strategy of organizing annual group events, with the young brigadistas taking turns to host an event in their home area. We hope that there will be opportunities for the host to continue working with those that attend the event. We invite local people to talks and practical demonstrations and the brigadistas shared experiences concerning their projects. The first event was carried out in Chetumal in Quintana Roo, where Jonathan Santiago de la Cruz has set up an excellent orchidarium in the Jardín Zoológico Payo Obispo. For that event, we received a small amount of funding, the brigadistas paid their travel expenses, and I paid the rest; however, that meant that 5 of the youngsters could not afford to attend. For this second proposal, the original planned event in Oaxaca was cancelled due to an unprecedented lack of funding at national level, for science and technology. We then planned the event, on a reduced scale, for January 2020 and the next event, to be hosted by Marco López Hernández in Champotón in the state of Campeche, in July or August of that same year, was changed to Merida, Yucatán to be hosted by Camilo Vallejo Cardoz (Marco left the Brigade, and pandemic conditions meant we had to wait).

In this way we are slowly covering key areas in southeast Mexico, offering a unique experience to local people from all walks of life; we hope to make orchid conservation a tangible and realistic goal for everyone. There are practical demonstrations, and talks on a variety of topics, many by the young brigadistas themselves, which will serve to motivate the young people that take part in our events.

## C. HOW DOES YOUR PROJECT RELATE TO OUR OBJECTIVES, AS STATED ABOVE?

### 1. Protect orchids in the wild

I feel there are two main routes towards orchid conservation, and for any other conservation or environmental issue. One is to inform, convince and involve the participating and affected parties to collaborate and make a difference. The other is to inform, convince, involve, and possibly sanction the consumers and drivers of negative actions (individuals, industry, commerce, governments, etc.). The second option is particularly non-viable and even dangerous in Mexico due to vested interests and corruption and the fact that the law is totally ignored by all sides; there are no stable, respected, legal mechanisms that can be used to solve these problems.

We can, however, work with rural people who manage large areas of land, and many of whom still have an affinity for, and empirical knowledge of nature and environmental issues, despite heavy pressure exerted by the government and multinationals to eradicate all common sense, independence, tried and tested knowledge, and long term vision.

Part of the strategy involves helping people to derive a sustainable use from orchids, not as a primary income, but as part of a process of diversification of income generation. We hope, in this way, to contribute to reversal of the disastrous modern trend to encourage previously subsistence farmers to depend upon a single highly technified crop, and abandon all their tried and tested strategies for subsistence and self-sufficiency in rural areas.

The guidebook and continuing outreach by the **Brigade for the Conservation of the Orchids of Southeast Mexico**, form part of the **Integrated Strategy for the Restoration and Conservation of Epiphytic Orchidaceae in the Southeast of Mexico** to achieve precisely that outreach to rural communities and other influential groups, to make orchid conservation a viable option.

### 2. Establish and maintain organizations that protect orchids and orchid habitat

The Program sets out to form responsible and informed groups of people who have the interest, capacity and commitment to intervene in the decline of orchid populations within their community lands, which in this proposal, in all cases are areas of importance for the conservation of biodiversity in general, and orchids in particular.

The long-term assessment, or accompaniment, will ensure that the participants receive constant encouragement, help and advice to overcome obstacles, as well as occasional, small investments for materials etc.

### 3. Conduct studies related to orchid conservation

Linked to this strategy, myself, students and collaborators continue to carry out, and seek funding for, various studies to understand key aspects of orchid ecology and physiology, including: propagation *in vitro*; acclimatization of *in vitro* plants; assisted *in situ* germination; orchid pests and diseases; interactions with mycorrhizae-forming endophytic fungi.

### 4. Educate the public about conservation in general, orchid conservation in particular, and encourage public participation in conservation

The basis of the **Integrated Strategy for the Restoration and Conservation of Epiphytic Orchidaee in the Southeast of Mexico** is education and hands-on experience. We offer basic, essential information that is easy to assimilate and which relates directly to local realities. We hope that the experience of learning about the natural environment and orchids in particular, rescuing orchids and restoring populations in their communities will be an important experience for the participants, which could also serve as a model for other threatened or over exploited elements of the biodiversity.

#### D. HOW WILL THE REQUESTED FUNDS BE USED TO FULFILL YOUR PARTICULAR NEEDS?

I applied for funding with a total of US\$6,316, to be divided up as follows:

Goal 1. Publish 100 examples suitable for campesinos and fieldwork, of the guidebook: **¡Orquídeas en peligro! Guía de manejo sustentable en el Soconusco**. Mex\$60,000 (approx. US\$3,160).

Goal 2.

A. Meeting and Workshop of the **Brigade for the Conservation of the Orchids of Southeast Mexico**, in Ixtlán, Oaxaca. January 2020.

The money will be spent on accommodation and food for the 14 (or less, they are not always free to attend) Brigadistas and Anne Damon, coffee break for the participants, and fuel for daytrips. \$30,000 (approx. US\$1,578). The Brigadistas will pay their travel expenses.

B. Meeting and Workshop of the **Brigade for the Conservation of the Orchids of Southeast Mexico**, in Mérida, Yucatán, in December 2021. The money will be spent on accommodation and food for the (or less) Brigadistas and Anne Damon, coffee break for the participants. Instead of using money for fuel for daytrips, which were not possible, that money was spent on travel expenses, to ensure Brigadistas could attend. \$30,000 (approx. US\$1,578). The Brigadistas will pay part of their travel expenses.



## E. HOW WILL YOU EVALUATE THE SUCCESS OF YOUR PROJECT?

Goal 1. Publish 100 examples suitable for campesinos and fieldwork, of the guidebook: **¡Orquídeas en peligro! Guía de manejo sustentable en el Soconusco.**

After distributing this second version of the guide to our collaborators, by means of informal interviews, we will evaluate the levels of acceptance of the guide and positive changes in attitudes and actions. *We have not been able to distribute many books, due to pandemic restrictions, and, therefore, so far, have not been able to evaluate the response.*

Goal 2.

A. Meeting and Workshop of the **Brigade for the Conservation of the Orchids of Southeast Mexico**, Oaxaca. January 2020.

B. Meeting and Workshop of the **Brigade for the Conservation of the Orchids of Southeast Mexico**, Yucatán. December 2021.

At the end of both events we will issue a questionnaire to evaluate various aspects of the activities offered, and six months later we will evaluate whether the participants have become involved in activities inspired by what they had learnt with us. The results will be included in the final report submitted to SDCOS.

Questionnaire:

1. What were your expectations of this event?
2. Were those expectations met, or not? Please explain.
3. Have you previously received environmental education courses?
4. Have you previously participated in other conservation activities?
5. What did you learn that you did not know before?
6. What did you feel was the main message or impact of the event?
7. Which of the talks did you find most interesting?
8. Which of the activities did you find most interesting?
9. Have you changed any of your habits or attitudes as a result of this event?
10. Will you organize or participate in activities that promote orchid and ecosystem conservation in the future?
11. Do you have any complaints about the organization of the event and the presentation of the talks and activities?
12. What is your primary activity, or job?
13. Please tell us your age.
14. Do you have any suggestions to help us improve the activities and impact of the **Brigade for the Conservation of the Orchids of Southeast Mexico**?

*For both events, due to pandemic restrictions assistance was poor and we did not use this questionnaire.*

## F. HOW WILL YOU PUBLICIZE THE RESULTS OF YOUR PROJECT?

All three goals, and the support requested, are themselves aimed at publicizing the results of the various activities carried out as part of the Integrated Strategy for the Restoration and Conservation of Epiphytic Orchidaceae in the Southeast of Mexico, some of which were financed by the first SDCOS support.

The book will be offered free to all present and future participants in the Integrated Strategy and Brigade members who propose, or are already, working in conservation projects in rural communities. The first version will be distributed amongst the academic community, including interested students. (Please note that I am not allowed to sell the books).

The two events for **Orchid Conservation Brigade of Southeast Mexico** offer the perfect opportunity for sharing our mission, achievements and knowledge, as we continue to motivate rural communities, students and the general public to participate in the conservation of our orchids and their ecosystems. However, the pandemic has virtually cancelled all such activities.

We will publish our results in newspapers, exhibitions, workshops, academic conferences and various Facebook accounts (ECOSUR, various universities, the individual accounts of the Brigadistas, the UMA en Mapastepec, etc.).

Goal 1. Publish 100 examples suitable for campesinos and fieldwork, of the guidebook: **¡Orquídeas en peligro! Guía de manejo sustentable en el Soconusco.**

After distributing this second version of the guide to our collaborators, by means of informal interviews, we will, eventually, evaluate the levels of acceptance of the guide and positive changes in attitudes and actions.

Goal 2.

A. Meeting and Workshop of the **Brigade for the Conservation of the Orchids of Southeast Mexico**, Oaxaca. January 2020.

I had a Columbian student, Jennifer Tatiana Villamizar Cagua working with me during this period, and she accompanied us during the event.

The workshop was presented in the following places:

29 January: Municipal Auditorium of Ixtlán de Juárez, Oaxaca.

30 January: Ecotourism Centre "Ecoturixtlan", Ixtlán de Juárez, Oaxaca.

31 January: Municipal Auditorium of Santa María Yahuiche, Ixtlán de Juárez, Oaxaca.

At different times during the event, people for the following local groups participated:

- Groups of children from local schools.
- Students from the Sierra Juárez University
- The committee for communal assets, Ixtlán de Juárez
- Municipal officials from Ixtlán de Juárez
- The municipal security committee, Ixtlán de Juárez
- “Ecoturixtlan”, community business
- Members of the Santa Catarina Lachatao community
- UZACHI, Union of Zapotec Forestry Communities
- Comité Comunitario de Protección al Ambiente de Ixtlán

Presentations of the Orchid Conservation Brigade:

1. Adelmi Pérez Pérez – Chiapas (Comalapa).  
B.Sc. Sustainable Agricultural Innovation. M.Sc. candidate ECOSUR.  
“Rescue and conservation of the orchid flora of El Pacayalito, Amatenango de la Frontera, Chiapas”.
2. Camilo Vallejo Cardoz – Quintana Roo (Mérida).  
Student, B.Sc. Biology.  
“Orchids of the Yucatan Peninsula”.
3. Derly Domínguez López – Chiapas (Las Margaritas).  
B.Sc. Community Development. M.Sc. student Chapingo.  
“Environmental education; orchids and agroecology in communities of Las Margaritas”.
4. Diana Molina Ozuna – Chiapas (Teopisca).  
B.Sc. Biology. M.Sc. student ECOSUR  
“Rescue of orchids and conservation talks and activities in Tuxtla Gutiérrez”
5. Jonathan Santiago de la Cruz – Quintana Roo (Chetumal).  
B. Sc. Biology.  
“Acclimatization and establishment of three orchid species in the Orchidarium of the Zoological Garden Payo Obispo”.
6. María Juana Martínez Santiago – Oaxaca (San Vicente Lachixío).  
B.Sc. Biology.  
“Orchid conservation in rural communities en the Mixteca region”
7. Liliana Pablo Hernández – Oaxaca (Huamelulpan Tlaxiaco).  
B.Sc. Forestry.  
“Extension and workshops for orchid conservation in Huamelilpan”.
8. Montserrat Castellanos Ramírez – Mexico City.  
B.Sc. Biology. M.Sc. student UNAM.

A: Advances and potential for urban environmental education and orchid conservation in Mexico City”

B: “Environmental Management Units (UMAs) as an option for the sustainable management of orchids”.

9. Silvino López Hernández – Oaxaca (Santiago Huajolotitlán)

B.Sc. Biology.

Candidate M.Sc. ECOSUR

“Monitoring of stomatal aperture of leaves of 30 species of epiphytic orchids to determine photosynthesis type”.

10. Sinhué Ascona Mora – Oaxaca (Guchicovi).

B.Sc. Human Geography

“Rescue of orchids from cattle ranches”.

11. Anne Damon – Chiapas (Tapachula).

Ph.D. Biological Sciences.

A: “Biology, ecology and sustainable management of epiphytic orchids”.

B: “Experiences in technical assessment of Environmental Management Units (UMAs) for orchids”.

Everyone participated in the practical workshop on the last day of the event.



*Rescatando*  
**ORQUÍDEAS**  
*para nuestro futuro*

**Inauguración** 29 de enero • 10 am

del **29** al **31**  
de **enero**  
de 10 am a 4 pm

Talleres, charlas,  
demostraciones  
y exposición fotográfica

**¡Únete y trae a tu familia!**

Lugar: Municipio de Ixtlán de Juárez (a una hora de la ciudad de Oaxaca, tomando la carretera rumbo a Tuxtepec).



B. Meeting and Workshop of the **Brigade for the Conservation of the Orchids of Southeast Mexico**, Mérida, Yucatán. December 2021.

We were offered a space in the Animaya Zoological Park for the event.

This event was the first for our new member, Dra. Aucencia Emeterio Lara, currently working with us as a postdoc,

Programa de actividades

**Sábado**

**18 de diciembre de 2021**



<b>Hora</b>	<b>Evento</b>	<b>Impartirá</b>
<b>9:30 hrs.</b>	Presentación y bienvenida.	Brigada de Conservación de Orquídeas de México
<b>9:40 hrs.</b>	20 años de conservación de orquídeas en el Soconusco, Chiapas.	Dra. Anne Ashby Damon
<b>10:30 hrs.</b>	El colorido atuendo de la Selva Tuxtleca: Orquídeas del bosque seco tropical.	Biól. Diana Claudia Molina Ozuna
<b>11:20 hrs.</b>	Rescate de orquídeas silvestres mediante la propagación por semillas in vitro en condiciones rústicas, en la región el Soconusco, Chiapas.	Ing. Adelmi Aureliana Pérez

***Coffe Break***  
**12:10- 12:40 hrs**

\*Cupo limitado debido a las medidas sanitarias por COVID 19, uso de cubrebocas y certificado de vacunación obligatorio.

Programa de actividades

**Sábado**

**18 de diciembre de 2021**



<b>Hora</b>	<b>Evento</b>	<b>Impartirá</b>
<b>12:40 hrs.</b>	Orquídeas comercializadas en el Estado de México y su efecto en la conservación: un caso de estudio de <i>Laelia autumnalis</i> (Lex.) Lindl.	Dra. Aucencia Emeterio Lara
<b>13:30 hrs.</b>	Divulgación sobre el conocimiento de orquídeas a través de la lengua Zapoteca y Mixteca como estrategia de conservación.	Biól. María Juana Martínez Santiago
<b>14:20 hrs.</b>	Divulgación de las orquídeas de la Península de Yucatán: avances y perspectivas sobre el conocimiento de la orquideoflora regional.	E. de Biól. Camilo Vallejo Cardoz
<b>Durante el evento.</b>	Recorridos guiados del Jardín de epífitas en el zoológico a partir de las 10 a.m.	Brigada de Conservación de Orquídeas de México

\*Cupo limitado debido a las medidas sanitarias por COVID 19, uso de cubrebocas y certificado de vacunación obligatorio.

Programa de actividades

**Domingo**

**19 de diciembre de 2021**



<b>Hora</b>	<b>Evento</b>	<b>Impartirá</b>
<b>9:40 hrs.</b>	Bienvenida y presentación de ponentes invitados.	Brigada de conservación de orquídeas de México
<b>9:50 hrs.</b>	Educación ambiental y orquídeas de Chiapas.	Dra. Anne Ashby Damon
<b>10:40 hrs.</b>	Conservación de orquídeas en el PIMVS Tumben Kuxtal de Nolo, Tixkokob Yucatán.	M en C. José Adrián Cimé Pool
<b>11:30 hrs.</b>	Educación Ambiental en el Centro de Conservación de la Vida Silvestre ANIMAYA.	Biól. Claudia Ham Vega

***Coffee Break***  
**12:30- 13:00 hrs**

\*Cupo limitado debido a las medidas sanitarias por COVID 19, uso de cubrebocas y certificado de vacunación obligatorio.



Programa de actividades

**Domingo**

**19 de diciembre de 2021**



<b>Hora</b>	<b>Evento</b>	<b>Impartirá</b>
<b>13:00 hrs.</b>	UMAS y PIMVS para el Manejo Sostenible de orquídeas en México: Retos para la conservación.	Biól. Montserrat Castellanos Ramírez
<b>13:50 hrs.</b>	Jardines Botánicos como oasis para especies: fuentes de conocimiento y mar de oportunidades.	Biól. Silvino de Jesús López Hernández
<b>14:40 hrs.</b>	Un vistazo a las orquídeas de la Península de Yucatán: Presentación de infografías.	E. de Biól. Camilo Vallejo Cardoz
<b>15: 00 hrs.</b>	Taller práctico de cultivo de orquídeas y clausura del evento.	Brigada de Conservación de Orquídeas de México
<b>Durante el evento.</b>	Recorridos guiados del Jardín de epífitas en el zoológico a partir de las 10 a.m.	Brigada de Conservación de Orquídeas de México

\*Cupo limitado debido a las medidas sanitarias por COVID 19, uso de cubrebocas y certificado de vacunación obligatorio.

We proposed to issue a questionnaire to evaluate various aspects of the activities offered, and six months later to evaluate whether the participants had become involved in activities inspired by what they had learnt with us. However, in both cases there were relatively few participants.



ANEX. A SAMPLE OF PHOTOGRAPHS FROM THE TWO EVENTS.

IXTLÁN, OAXACA. January 2020.



Groups of school children receiving talks and activities in Municipal Auditorium of Ixtlán de Juárez.



Exhibition of photographs of orchids





Workshop in the “Ecoturixtlan” park, and advice for improving the conditions for their epiphyte collection.



Montserrat Castellanos.  
Municipal Auditorium of Santa María Yahuiche, Ixtlán de Juárez



MÉRIDA, YUCATÁN, December 2021



Rented house in Mérida



Our space in the Animaya Zoo, with a few epiphytes planted nearby.



Diana Molina



Aucencia Emeterio



María Juana Martínez



Camilo Vallejo



Invited speaker, José Adrián Cimé



Invited speaker Claudia Ham