

# Training program for recently graduated veterinarians

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Comunidad Inti Wara Yassi has had the pleasure of carrying out the training program for veterinarians sponsored by Lush Cosmetics. It has been a wonderful opportunity to show the work we do to a group of three highly motivated recently graduated veterinarians. The training has been carried out in our three Bolivian rescue centres: Machia, Ambue Ari and Jacj Cuisi.

In Bolivia, there is a lack of professional knowledge in the field of wildlife medicine, which is very important because we live in a megadiverse country. At the moment, there are many issues regarding conservation here, including the deforestation and destruction of natural habitats that provoke conflicts between animals and humans in newly populated areas or areas near forests. Another very serious factor is the lack of education and awareness in the general population of environmental issues that leads to poaching, illegal trade of wildlife and keeping wildlife as pets.

Although there are laws that protect the environment and wildlife, the government takes no steps to enforce them or punish those who break the law. Training local veterinarians will help create more population awareness and give them a chance to get qualified job positions.

Comunidad Inti Wara Yassi has been rescuing and rehabilitating wildlife for 27 years, thanks to our president Tania Baltazar; that started her ride rescuing a spider monkey in 1992. Since then she has been the soul of the organization and has been behind for all actions carried out by CIWY.

Our first centre was Machía in the Cochabamba department, where Tania founded Comunidad Inti Wara Yassi. Here, we work mainly with primates but also other small mammals, parrots, reptiles and a bear. Ambue Ari was the second centre, in the Santa Cruz department. It's our biggest one and where we take care of wild felines and coatis, parrots, primates and a tapir, among others. Jacj Cuisi is the youngest centre, near Madidi National Park in the La Paz department. It is home to three pumas and is in constant evolution, with many construction projects and a place for future conservation research projects.

Our main goal is the rescue and care of all the animals that have been victims of the illegal wildlife trade; we give them a second chance of life. We focus on

their welfare because most of them arrive to our centres with many physical and mental issues due to captivity, past mistreatment, no stimulation and a lack of social interactions with their own species.

## Our vets and interns

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### The head veterinarians



**Jara Cano Vitores**  
Head vet & Director  
CCFS Machía



**Clara Salinas Pallarés**  
Head vet CCFS Ambue  
Ari 2018



**Maria Isabel Riberiro  
Pereira**  
Head Vet CCFS Ambue  
Ari 2019

### The veterinarians



**Rafael Darío  
Herize  
Colmenarez**  
CCFS Machía



**Eliana Robledo  
Vélez**  
CCFS Machía



**Karen Fierro  
Arcos**  
CCFS Machía



**Elisabete Belo  
Chambel  
Gonçalves**  
CCFS Machía

The interns



**Fidelia Yolanda Bellot  
Zeballos**



**Carol Estefania  
Rodriguez Rugeles**



**Arleth Saavedra  
Ferrufino**



**Silvia Juliana Valbuena  
Amorocho**



**Line Quispe Romero**

# Practical and theoretical lessons

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When the organisation decided to implement this project to develop recent veterinary graduates, it was necessary to establish a teaching program covering the most important areas of work in our centres. The veterinarians gathered together to decide the six most important areas (one for each month of the project) and the methods to evaluate the student's learning progression.

The program was divided into these six areas:

- Species biology and behaviour
- Management in captivity
- Animal Welfare
- Nutrition
- Preventive Medicine
- Medical and Surgical Pathology

Every month lessons and practices would be taught encouraging the students to be involved in all tasks that the veterinarians carry out in our centres.

Once the teaching program was established, we received applications from different countries in Latin America (the future idea is to focus in Bolivian veterinarians) and the selection process started.

On the 1st of October 2018 the three students selected for the first development round arrived to Machia rescue centre. These students were:

- Fidelia Yolanda Bellot Zeballos from Universidad Mayor de San Simón, Bolivian national.
- Arleth Saavedra Ferrufino from Universidad Mayor de San Simón, Bolivian national.
- Carol Estefania Rodriguez Rugeles from University of Medellín, Colombian national.

On the 1st of October 2019 the selected students for the second round arrived to Machía rescue centre. These students were:

- Silvia Juliana Valbuena Amorocho from Universidad pedagógica y tecnológica de Colombia, Colombian national
- Line Quispe Romero from Universidad Mayor de San Andrés, Bolivian national

Participants were divided between our centres after their introduction to the program and explanation of the rules. In the first period, Carol Rodriguez and Arleth Saavedra were assigned to Machia and Fidelia Bellot to Ambue Ari. During the second period both interns, Line Quispe and Silvia Valbuena were assigned to Machía. None of them were sent to Jacj Cuisi full time because we don't have a veterinarian established permanently there at present but all the interns

switched centres for one month. Carol was selected to go to Jacj Cuisi for one month together with our vet Jara. Arleth's rotation was in Ambue Ari and Fidelia's was in Machía. During the second period, Silvia and Line did their rotation in Ambue Ari. The inter-centre rotation was important so that the interns could learn about different species, working with different protocols and different environments.



The interns arriving to CCFS Machía

## Machía Rescue Centre

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### **BIOLOGY AND BEHAVIOUR OF THE SPECIES**

The first teaching block was about the biology of the species that are located at Machía. Our biologist, Raquel Ballesteros gave a speech about the main characteristics of neotropical animals and their biological differences, using examples of the species we have.

After that, a practical activity was scheduled so our interns could fulfil their own research project of a chosen species located within the centre. Each gave a speech explaining the biology and ecology of two different species. For example, Carol focused on coatis and white fronted capuchin monkeys and Arleth on macaws and yellow footed tortoises.



*Carol talking about biology and ecology of White fronted capuchin monkeys*

With this activity, the interns could learn more about the animals we take care of. This is very important because vets are in charge of animal welfare and to provide good welfare it is important to know how an animal lives and behaves, so we can make their enclosures similar to their natural environments.

## **ANIMAL BEHAVIOUR**

Ethology is a very important field in wildlife medicine because most of the animals rescued from the illegal trade or those that have been kept as pets arrive to our centres with many mental health issues. That is why is so important to recognise their abnormal behaviours, know how to measure them and how to treat them.

On this occasion, our veterinarian Jara gave a speech about clinical ethology. Jara explained the basis of the animal behaviour, why captive animals kept in poor conditions acquire behavioural issues and how to improve them through environmental enrichment.



*Jara giving the speech about clinical ethology*

Jara also gave a lecture about environmental enrichment and how to implement different types of enrichment to improve the welfare of our animals.

The interns gained the skills of how to measure behaviour and were asked to choose one of our animals and trace its behaviour for a month. The first week was spent filling out a general observation sheet, generating the range of behaviours they wanted to evaluate during the second week. In the third week they performed observations focused on the chosen behaviours and during the fourth week they evaluated the prevalence of damaging behaviours with statistical analysis. Arleth chose an individual squirrel monkey and Carol chose an individual brown tufted capuchin monkey. During the second period, Silvia and Line focused on evaluating the behavioural changes of the capuchin monkeys located in the area named Earth before and after creating some new sensorial enrichment devices.

### **RECEPTION, SECURITY AND SCAPE PROTOCOLS**

In this case, our vet Darío gave a speech about reception, security and escape protocols. During the talk Darío explained the importance of having a good reception protocol for an incoming animal because depending on whether it is a baby or an adult and has been kept in captivity or was a free animal, the management and the quarantine period changes. Darío also talked about working security and how to react when an escape occurs, what to do and different escape security levels. This is really important because the interns not only need to be ready for an emergency but to also be ready to monitor that volunteers are following safety protocols. Finally, Darío showed the interns the CIWY official registry forms and how to fill them.



***Darío while giving his speech about reception, security and escape protocols***

For practical lessons, the interns participated in a small escape simulation and helped filling out some registration forms with different information such as coprological test results and deworming routine information.



*Carol and Arleth helping filling some forms*

## **CLEANING AND DISINFECTION PROTOCOLS**

The next formative lesson was about cleaning and disinfection protocols that are very important when working with captive animals because it is the way we prevent spreading parasitic, bacterial, viral or fungal disease. The interns were taught the different kind of disinfectants and cleaning products and which to choose in different situations.

The interns were shown all the cleaning and disinfection protocols in the centre and they helped carrying out the cleaning routine.



*Arleth helping with the cleaning routine*

## **DESIGN AND RECONDITIONING OF ENCLOSURES**

As a practical lesson, reconditioning of enclosures was included because it is part of a good animal welfare. It is important to know the captivity requirements of the species we are working with, to be able to give them more stimuli. The interns helped with the reconditioning of the quarantine enclosures for every species and also, the squirrel monkeys' enclosure.



*Arleth reconditioning the squirrel monkeys' quarantine enclosure*

Comunidad Inti Wara Yassi

## **ENVIRONMENTAL ENRICHMENT**

As explained in the clinical ethology speech, animals in captivity have many behavioural requirements to achieve good welfare. This is even more important in animals that show abnormal behaviours due to chronic high stress levels in their previous lives.

The vets and interns held a workshop with all the volunteers to show them how to prepare different enrichment items (sensorial, food, structural).



*Our vets conducting the enrichment workshop*



*Legolas, one of our white fronted capuchins enjoying his food item*

## **NEONATAL MANAGEMENT**

During the first period, the arrival of two South American racoon cubs was the best opportunity to explain their management and nutrition. The interns helped the vets with the preparation of their daily milk, feeding, and stimulation to help defecation and cleaning.

During the second period the interns had the chance to learn about the management and nutrition of three baby opossums and a young insectivorous bat.

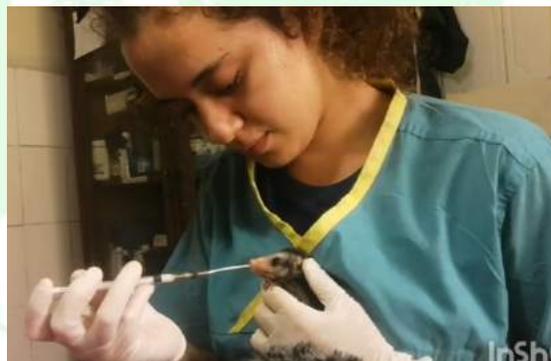
Learning how to manage and feed cubs/babies is very important when working in rescue centres because there is a constant influx of very young animals due to the interaction between humans and wildlife. How we feed and manage them is vital for the future welfare of these animals because when a strong imprinting with humans occurs, it will cause future socialisation problems and other mental

health issues. Therefore, managing their captivity properly helps the animals have more natural behaviours in the future.

Is important too to adapt the milk we give to every species and to every stage of the animal to help them grow healthy.



*Carol helping feed the raccoons*



*Silvia helping take care of the three opossums*

## **RELEASE OF WILDLIFE**

Sometimes there is local wildlife received that has been displaced from their habitat due to human interaction (sometimes found on the roads or near peoples' houses). These animals are free wildlife so they are completely capable of being relocated after a health check. Sometimes the animals are injured due to car collisions, starving, infections or wounds from being attacked by dogs or humans. They remain under vet care until they are 100% healed.

The vets and biologist taught the interns the very strict release protocols. On a few occasions we had the opportunity to relocate three toed sloth bears deep into the jungle, that people mainly found crossing roads. Carol, Arleth, Silvia and Line helped with these procedures. They were showed the best places to free the animal and the proper way to do it.



*Carol and Rusber releasing a sloth*



*Silvia helping releasing another sloth*

## **ANIMAL HANDLING AND PHYSICAL RESTRAINT**

During their 6 months stay in both periods, the interns had the responsibility to visit the different management areas with the vets. They helped Jara, Darío and the other vets with the daily animal checks for those under treatment. In the meantime, the vets taught them about animal management and handling because sometimes it was important to check animals closely.



*Arleth walking to one of the management areas*

For vets it is very important to know how to handle wildlife and how to do a correct restraint both for safety of the vets and that of the animal. It can be a stressful moment for the animal but sometimes it is necessary. That is why it should be done quickly and safely.



*Darío showing the interns how to properly restrain a psittacine bird to conduct a health check*



*Jara showing the interns how to properly handle and restrain a tortoise to deworm it*



*Carol and Arleth participating in the catching and handling of a macaw*

## **PREVENTIVE MEDICINE**

Preventive medicine is one of the pillars of modern medicine, as it is better to prevent a disease than treat it once it has affected the animal. The costs of parasitic diseases in an animal (tissue injury, decreased intestinal absorption, malfunction of the immune system, improper development etc) can be extremely high to the point that it can kill them. Another important fact is that these parasites can not only affect our animals, but can also be passed on to wild animals. Most of our animals come from human houses where they were kept as pets. Many of them lived with domestic animals or livestock, so they sometimes carry parasites that are not common or are even non-existent in wild

populations so that could cause severe diseases in wildlife and kill whole populations.

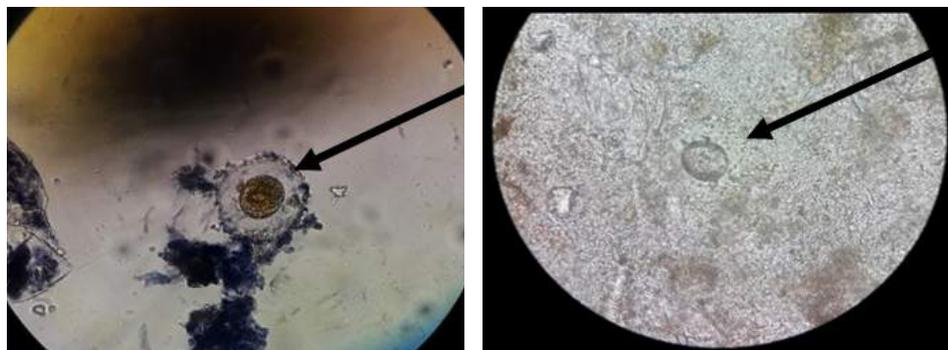
The vets taught the interns how to perform the coprological test and how to deworm the animals choosing the best antiparasitic drug for every case.



*The interns checking the coprological test under the microscope*



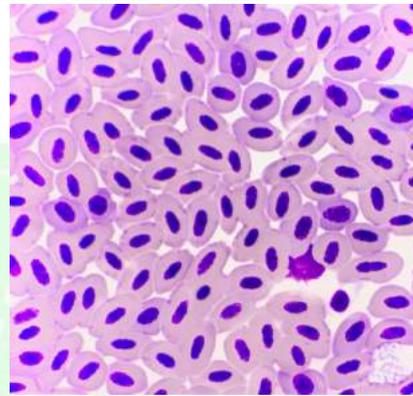
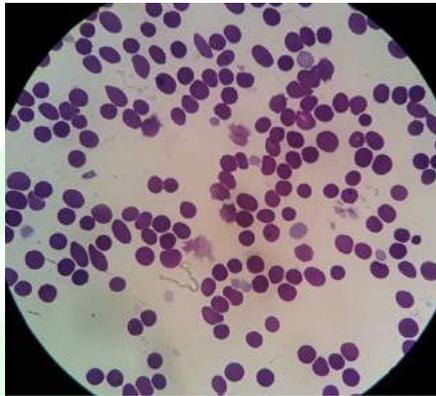
*One of the interns preparing the coprological test*



*Some of the most common parasite eggs found in coprological test*

## CLINICAL ANALYSIS

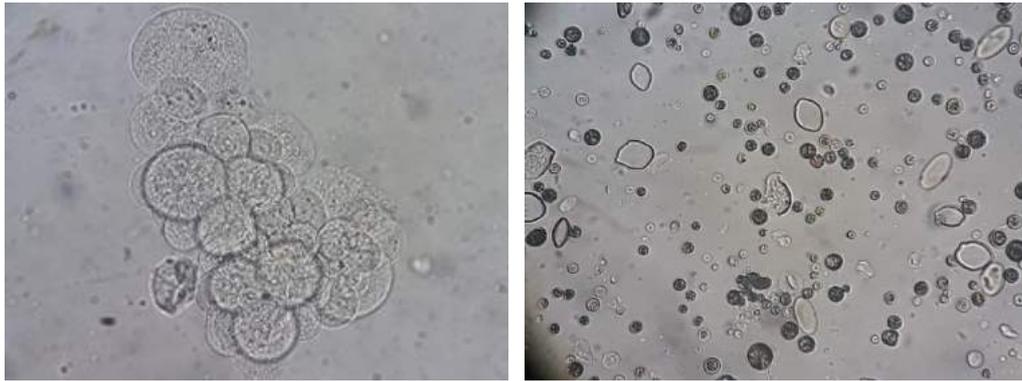
During both periods, our interns have been learning and practicing how to get biological samples and how to process clinical analysis like urine tests, blood tests, cytologies and trichograms.



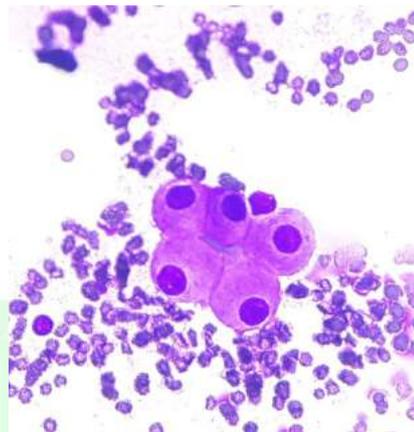
*Showing the interns different kinds of blood cells under the microscope, primate left, psittacine bird right*



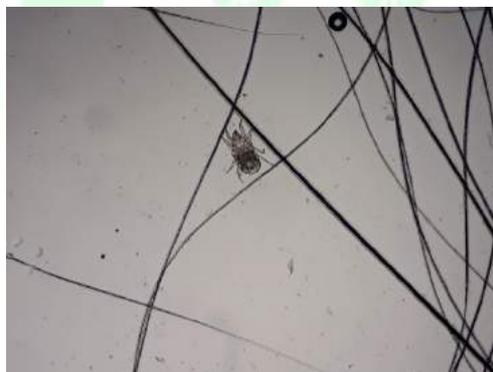
*Darío showing the interns how to process a urine sample*



*How urinary sediment looks under the microscope*



*Anesthetizing one of our pumas for taking a renal cytology and how it looks under the microscope*



*The interns found a mite checking a trichogram under the microscope*

The interns learnt how important clinical analyses are to accurately diagnose different animal illnesses and how to interpret them, differentiating what is normal or physiological and what is pathological.

In addition, the interns were trained to choose the best treatment options for every case depending on the results of every analysis.

## **CLINICAL PATHOLOGY, ANAESTHESIA AND SURGERY**

During their stay, the interns had the opportunity to increase their knowledge in wildlife clinical pathology. They have seen many clinical cases in which the vets showed them how to diagnose, which clinical analysis and imaging to use in every case and how to interpret them. Finally they have learnt the different types of treatment there are and how to choose them for every case.

To take samples from some animals, is important to sedate/anesthetize the animal. The interns learnt the different anaesthesia protocols we use at CIWY depending on the species and the health status of each animal. Sometimes the only treatment available is surgical intervention so the interns learnt about anaesthesiology, how to measure vital signs on an anesthetized patient, the best surgical approaches and which suture patterns to use in every case. The vets also taught them how to treat the animals during the postsurgical period.



***Darío checking a small parrot that arrived to the centre with a broken wing.  
Darío showed the interns how to properly bandage on birds***



***Line helping the vets with the weekly health checks***



*Carol helped Jara with an abdominal surgery on a capuchin monkey. Arleth was the anaesthesiologist in this case*



*Carol helped Jara with a caudectomy on a capuchin monkey. Arleth was the anaesthesiologist in this case*



*Fidelia helped Jara during the anesthesia of a spider monkey to perform an ultrasound exam*



*Silvia attending Jara's explanation about abdominal ultrasonography and she also was in charge of assessing the animal vital signs during the anaesthesia*



*Silvia helping take a X rays of a tortoise in Villa Tunari's hospital. Note that this option is not always available due to hospital politics.*



*Line helping Jara placing a cast on a coati's fractured leg*

## AMBUE ARI RESCUE CENTRE

Comunidad Inti Wara Yassi

### **PARASITOLOGY**

Running faeces tests regularly and checking them for parasites allows us to find parasites before they cause symptoms. Our animals live in big enclosures in the middle of the jungle and most of them have access to the area around their enclosures, and some of them regularly hunt wild preys that can carry parasites or other diseases. So, they can frequently be exposed to parasites, which is why it's so important to look for parasites regularly.

We taught our interns the importance of preventive medicine, how to take samples and run tests looking for parasites. We also discussed the most important parasites by species and treatment options.

### **ANAESTHESIA AND ANALGESIA**

The first talk was given by our vet Clara and was about Anaesthesia and Analgesia. The focus of the talk was the importance of a balanced anaesthesia,

good analgesia techniques as a part of animal welfare, and monitoring during anaesthesia and recovery.

These skills are especially important in Ambue Ari because more of our animals there are elderly, so they can suffer chronic pain and might need anaesthesia for medical checks, which is likely to be riskier due to age. Being able to detect pain and/or changes in vital signs before, during and after anaesthesia can be lifesaving.

Whenever we put an animal under anaesthesia, we take different samples to assess their health status. So before the surgeries, our vets taught the interns how to correctly take samples (including urine, blood, skin and fur), then during the procedures the interns could take all the samples.

We anaesthetised one of our pumas for a general medical check-up, abdominal ultrasound and blood and urine collection. Fidelia participated actively in all the stages of anaesthesia from preparing to post-procedure monitoring.



***Puma Leo under anaesthesia. Fidelia was evaluating vital signs while Clara prepared all the material to take samples.***

During the second period, Silvia had the chance to participate during the anaesthesia of a jaguar to take blood samples and to perform a nail trimming.



***María and Silvia performing the anaesthesia***

When working with wild animals, anaesthesia and immobilisation for any procedure is always a challenge. We taught the interns how to immobilise and hold different species of animals. We made our own darts, practiced blow darting and learnt how to use a crush cage.



*Clara explaining to Fidelia how to check vital signs during the anaesthesia of an ocelot. Jara was in charge of doing the ultrasound exam*



*Clara and Jara giving a darting workshop*

## **PATHOLOGY**

The interns were taken to the different animal management areas and taught how to check the animals depending on their management, given some tips on how to identify symptoms and were taught the most important diseases per species, treatment options and prognoses.

## **SURGERY**

Clara Salinas also taught the interns how to perform neutering and spaying techniques and basic principles of surgery.

Practice included the selection of products and calculation of dosages for spaying a female domestic cat and for the treatment of an infected canine of an old puma. During both procedures, intern Fidelia participated in the monitoring of vital signs, evaluation of pain and recovery from anaesthesia.



*The intern checking vital signs of a cat after spaying*



*Clara cleaning deep wounds under anaesthesia of a wild sloth that just arrived*

## **HYGIENE AND DISINFECTION**

As at Machia, in Ambue Ari the theoretical basis and practice of cleaning and disinfection protocols were taught day to day. Lowering or avoiding the risk of food intoxication or food contamination with bacteria is essential to keep our animals healthy. For that, keeping all surfaces (especially the ones used for processing or cutting food) and water and food bowls clean and disinfected is necessary. It is also necessary to properly disinfect all the enclosures, platforms that the animals use and animal houses. Different protocols and their effectiveness were discussed.

## **QUARANTINE, ENCLOSURES, NEONATES**

Interns also took part in designing and reconditioning the enclosures of some animals during their quarantine period or after it. It was a practical and theoretical approach to that learning topic. The students were involved in the entire process of designing and preparing the enclosures according to the species that were going to be held, as well as taking care of neonates and young individuals of different species.

Most of the animals that arrive to our centres are very stressed, have been physically and/or mentally abused and have been kept in small cages without access to direct sunlight, proper food, enrichment, or veterinary care. Making their lives better is one of our priorities. For that we need to make sure that they pass a quarantine period in which we take different samples to assess their health status, their stress levels, whether they have parasites and we treat any disease they could carry. We also need to make sure that they have a proper enclosure according to their needs as species and also as an individual. We provide enough space for them to exercise and we try to encourage natural behaviours through different types of enrichment. A specific diet is designed for them to fully recover in the less time possible.

They learnt the Centre protocols for the arrival of new animals, health status assessment, quarantine procedures and care of neonates and juveniles.

Fidelia had the chance to participate on the management of a three juvenile blue and yellow macaws. Silvia had the chance to participate taking care of a young puma.

## **CLINICAL RECORDS**

Keeping clinical records up to date is needed in order to keep track of the health of all the animals. Apart from clinical records, we also need to write reports about the health and management of our animals monthly. The interns participated in those tasks.

## **NUTRITION**

Nutrition is one of the pillars for a healthy life, especially for animals in captivity that have previously suffered horrible conditions and unbalanced diets for a long time. Evaluating the diets regularly is important to adjust them to their current health status and physiologic needs.

Furthermore, every time a new animal arrives to the Centre we need to prepare an individualised diet. They're usually suffering from nutritional imbalances and nutritional related diseases.

The interns helped with all these procedures, from researching nutritional requirements for that species and physiological status, to evaluating the acceptance of the ingredients.

A flour worm farm was started in order to feed some of our animals.



*The flour worms in their growing containers*

## **ALTERNATIVE MEDICINE: PHYTOTHERAPY AND HOMEOPATHY**

Some of our animals have chronic diseases due to age and their lives in captivity. For chronic pathologies we try to use the most harmless treatment possible. That is why we tend to use natural medicine to treat those diseases whenever possible. Principles and treatment options were taught and then used on a day to day basis.

## **NECROPSY**

Several necropsies of different species of animals were performed. Necropsy protocols were taught to the interns and the importance of sample taking. A report was made after each necropsy.

# **JACJ CUISI RESCUE CENTRE**

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Carol, one of our interns spent one month at CCFS Jacj Cuisi. This Centre is CIWYs youngest and with more future plans as a researching and rescuing centre. Because of these future plans, Jacj Cuisi is in constant change and many construction projects are ongoing.

## **DAILY HEALTH CHECKS**

In this centre we have 3 pumas, Sonko, Capitán and Luna, all three cats rescued from illegal wildlife trafficking. During this time, Carol was in charge of the pumas' daily health checks alongside our vet Jara. Luna is a mid-aged puma with a

good health status but Sonko and Capitan are elderly cats with arthrosis issues (very common in older cats). Carol checked them every day to ensure their welfare and health status.

## **ENCLOSURES RECONDITIONING**

As Jacj Cuisi is a Centre that is in constant development. Carol took charge of improving the chickens' welfare through the reconditioning of their enclosure. New structures and shelters were built for the chickens to perch and nest. She also helped evaluate and reformulat the chickens diet.

Thanks to all these changes, the animal welfare of those animals was improved and they started to lay more eggs every day.



*Carol finishing the construction of one of the new shelters for the chickens*

## **PARASITOLOGY**

Carol completed the coprological analysis for all the animals in the Centre, including domestic animals, alongside the vet. To perform those analyses, three techniques were used: direct smear, floatation and sedimentation to increase the sensitivity of the tests. After the results, deworming of each animal was done, choosing the most appropriate antiparasitic drugs.



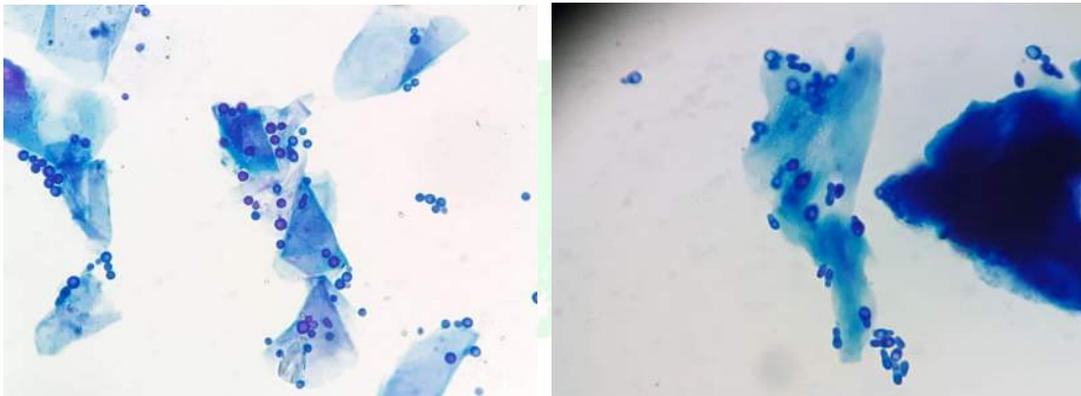
*Carol revising the faecal samples under the microscope*

## CLINICAL PATHOLOGY

In addition, the domestic animals were checked to evaluate their health status. They had been scratching their ears, so Carol and Jara took samples from the ear ducts to evaluate them. An overgrowth of *Malassezia spp.* yeast was discovered in the ear duct of one of the dogs, Dave. Carol was in charge of his treatment with ear cleaning products.



*Dave, one of the domestic animals of CCFS Jacj Cuisi*



*An overgrowth of Malassezia spp. in Dave's ears as seen under the microscope*

## Summary

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Our veterinarians have had a great time sharing their knowledge and seeing how the interns were improving their clinical and wildlife management. There has been an impressive evolution of the five interns since they started, personally and professionally. By the end of the program the interns felt more confident with their job, they could perfectly complete some tasks independently, they had very good new and fresh ideas and they proved themselves to be very proactive.

Also, we are happy to announce that one of the interns has stayed longer in CIWY after finishing the program, to continue working with wildlife and gaining more clinical experience as a veterinarian.

The success of this training program has been and will be possible thanks to more and more motivated interns in each internship period. It will help training veterinarians with a higher level of education in clinical veterinary care of wildlife.

Comunidad Inti Wara Yassi is keen to continue this project to be able to continue creating awareness within the population through specialised veterinarians in this area that will spread the word with their actions towards nature conservation.



# Diploma presentation



*Team Machía with their diplomas*



*Vet team Ambue Ari with their diplomas*



*Team Machía with their diplomas*



*Team Machía with their diplomas*

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**THANK YOU LUSH  
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