

ACP Hierba Buena – Allpayacu y Copal, Corosha, Amazonas, PERU PLANTS in the DIET of the Spectacled Bear (*Tremarctos ornatus*) in Corosha

1

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Photos: Alexandra Chávez. Produced by: A. Chávez.

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1 *Greigia* sp.
BROMELIACEAE



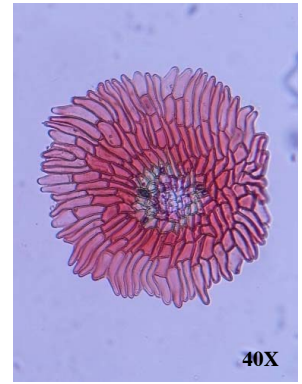
2 *Greigia* sp.
BROMELIACEAE



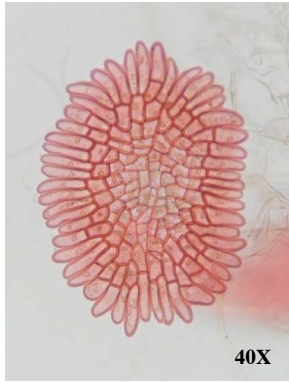
3 *Greigia* sp.
BROMELIACEAE



4 Trichome of *Greigia* sp.
BROMELIACEAE



5 Trichome of *Greigia* sp.
BROMELIACEAE



6 Trichome of *Greigia* sp.
BROMELIACEAE



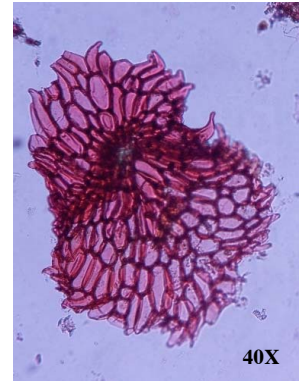
7 Trichome of *Greigia* sp.
BROMELIACEAE



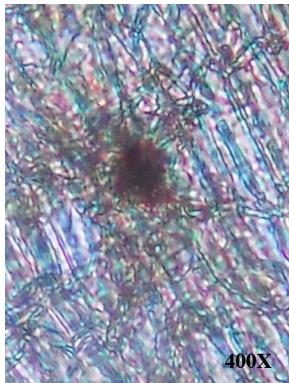
8 Trichomes of *Greigia* sp.
BROMELIACEAE



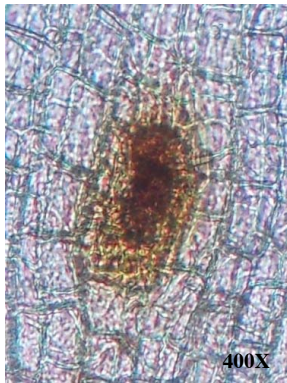
9 Trichome of *Greigia* sp.
BROMELIACEAE



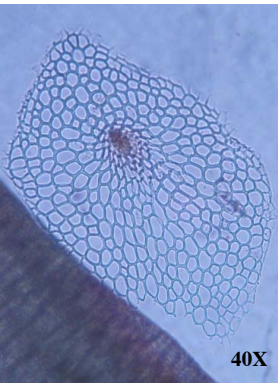
10 Trichome of *Greigia* sp.
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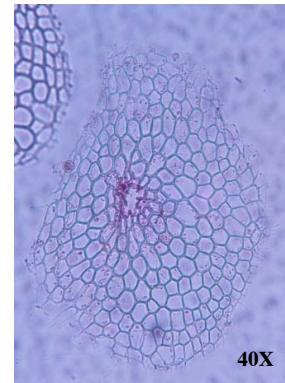
11 Trichome of *Greigia* sp.
BROMELIACEAE



12 Trichome of *Greigia* sp.
BROMELIACEAE



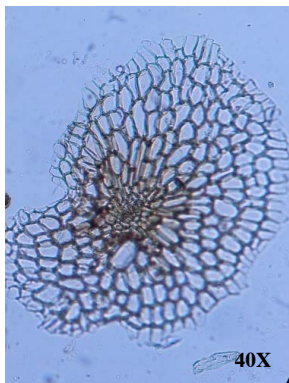
13 Trichome of *Greigia* sp.
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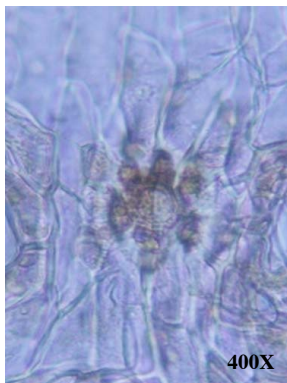
14 Trichome of *Greigia* sp.
BROMELIACEAE



15 Trichome of *Greigia* sp.
BROMELIACEAE



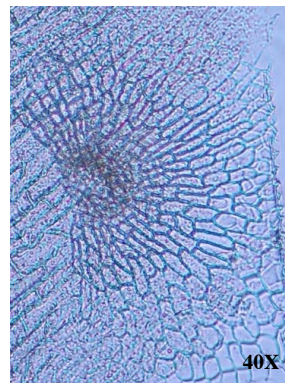
16 Trichome of *Greigia* sp.
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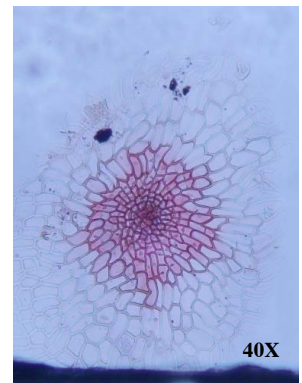
17 Trichome of *Greigia* sp.
BROMELIACEAE



18 Trichome of *Greigia* sp.
BROMELIACEAE



19 Trichome of *Greigia* sp.
BROMELIACEAE



20 Trichome of *Greigia* sp.
BROMELIACEAE

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21 *Guzmania* sp. 1
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22 *Guzmania* sp. 1
BROMELIACEAE



23 *Guzmania* sp. 1
BROMELIACEAE



24 *Guzmania* sp. 2
BROMELIACEAE



25 *Guzmania* sp. 2
BROMELIACEAE



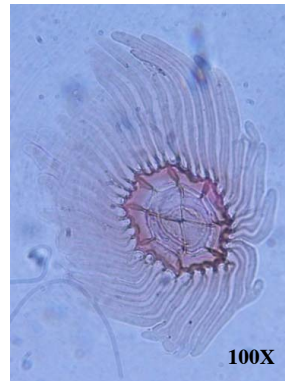
26 Trichome *Guzmania* sp. 1 / sp. 2
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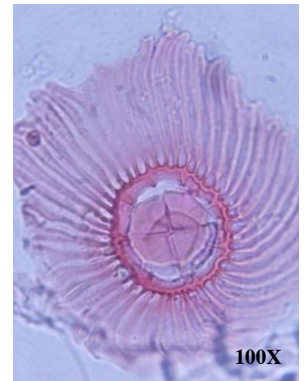
27 Trichome *Guzmania* sp. 1 / sp. 2
BROMELIACEAE



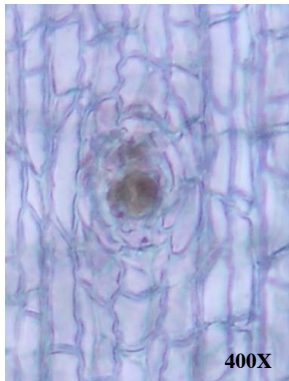
28 Trichome *Guzmania* sp. 1 / sp. 2
BROMELIACEAE



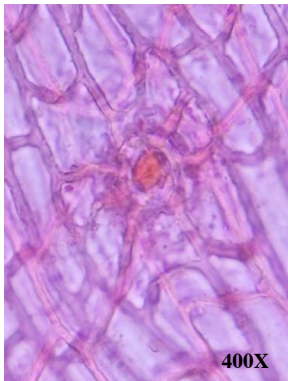
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BROMELIACEAE



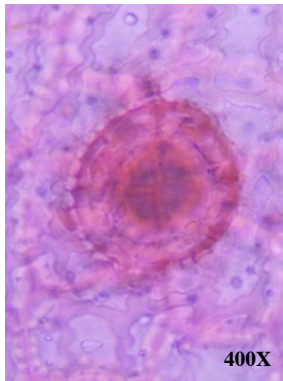
30 Trichome *Guzmania* sp. 1 / sp. 2
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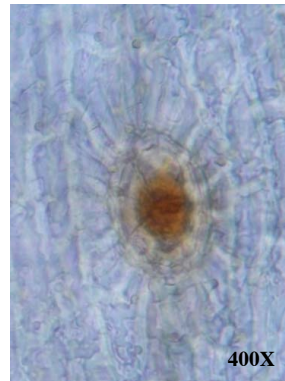
31 Trichome *Guzmania* sp. 1 / sp. 2
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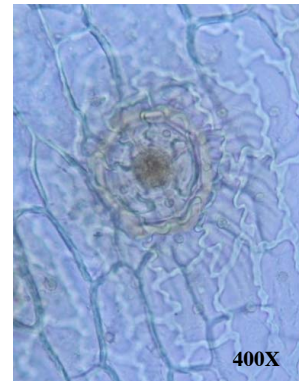
32 Trichome *Guzmania* sp. 1 / sp. 2
BROMELIACEAE



33 Trichome *Guzmania* sp. 1 / sp. 2
BROMELIACEAE



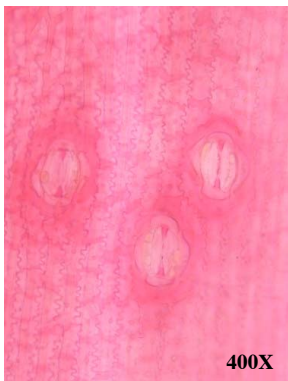
34 Trichome *Guzmania* sp. 1 / sp. 2
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35 Trichome *Guzmania* sp. 1 / sp. 2
BROMELIACEAE



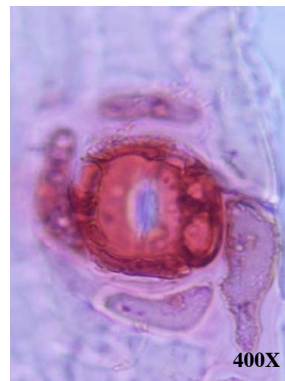
36 Tetracyclic stomata of
BROMELIACEAE



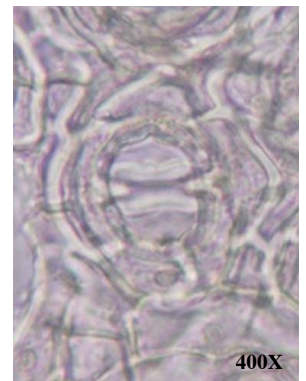
37 Tetracyclic stomata of
BROMELIACEAE



38 Tetracyclic stomata of
BROMELIACEAE



39 Tetracyclic stomata of
BROMELIACEAE



40 Tetracyclic stomata of
BROMELIACEAE

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41 *Puya ferruginea*
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42 *Puya ferruginea*
BROMELIACEAE



43 *Puya ferruginea*
BROMELIACEAE



44 *Puya ferruginea*
BROMELIACEAE



45 *Puya pyramidata*
BROMELIACEAE



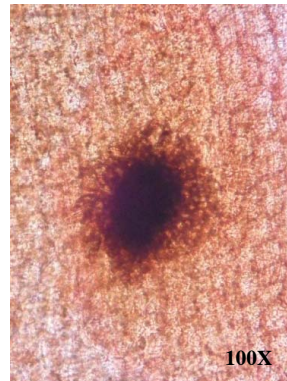
46 *Puya pyramidata*
BROMELIACEAE



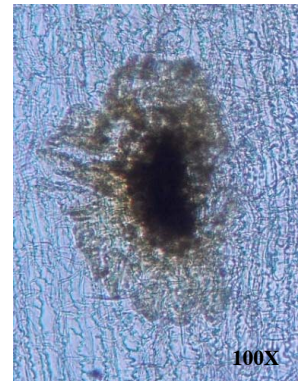
47 *Puya pyramidata*
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48 *Puya pyramidata*
BROMELIACEAE



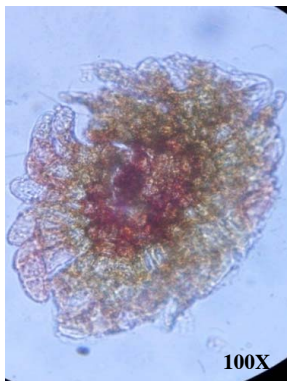
49 Trichome *P. ferruginea/pyramidata*
BROMELIACEAE



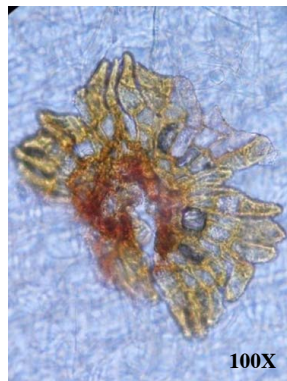
50 Trichome *P. ferruginea/pyramidata*
BROMELIACEAE



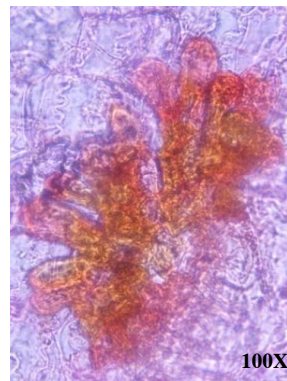
51 Trichome *P. ferruginea/pyramidata*
BROMELIACEAE



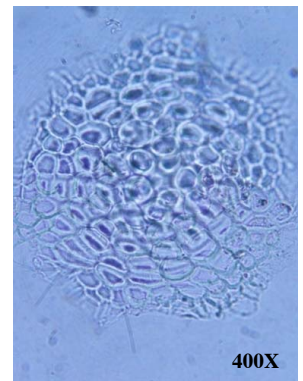
52 Trichome *P. ferruginea/pyramidata*
BROMELIACEAE



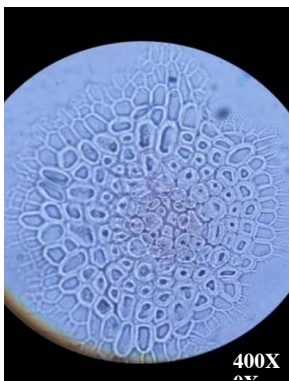
53 Trichome *P. ferruginea/pyramidata*
BROMELIACEAE



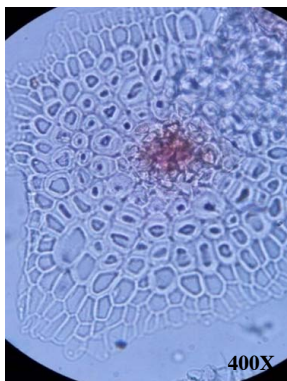
54 Trichome *P. ferruginea/pyramidata*
BROMELIACEAE



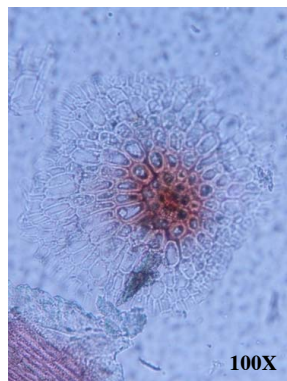
55 Trichome *P. ferruginea/pyramidata*
BROMELIACEAE



56 Trichome *P. ferruginea/pyramidata*
BROMELIACEAE



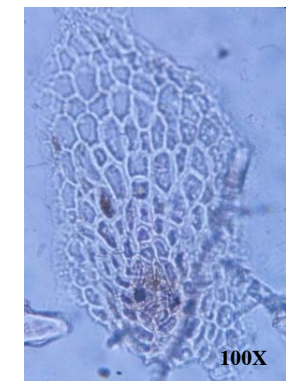
57 Trichome *P. ferruginea/pyramidata*
BROMELIACEAE



58 Trichome *P. ferruginea/pyramidata*
BROMELIACEAE



59 Trichome *P. ferruginea/pyramidata*
BROMELIACEAE



60 Trichome *P. ferruginea/pyramidata*
BROMELIACEAE

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61 *Puya robin-fosteri*
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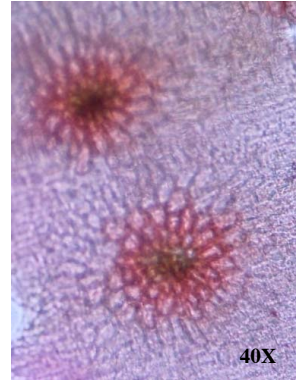
62 *Puya robin-fosteri*
BROMELIACEAE



63 *Puya robin-fosteri*
BROMELIACEAE



64 *Puya robin-fosteri*
BROMELIACEAE



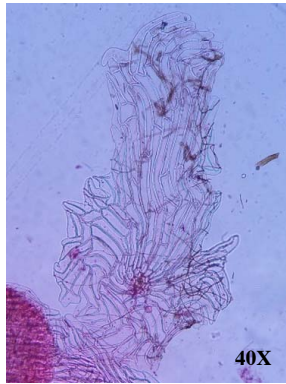
65 Trichomes *Puya robin-fosteri*
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66 Trichome *Puya robin-fosteri*
BROMELIACEAE



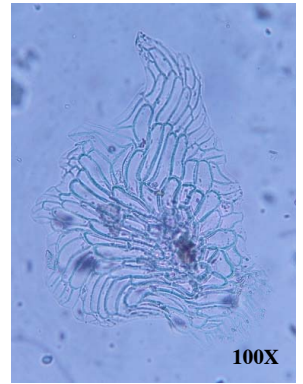
67 Trichome *Puya robin-fosteri*
BROMELIACEAE



68 Trichome *Puya robin-fosteri*
BROMELIACEAE



69 Trichome *Puya robin-fosteri*
BROMELIACEAE



70 Trichome *Puya robin-fosteri*
BROMELIACEAE



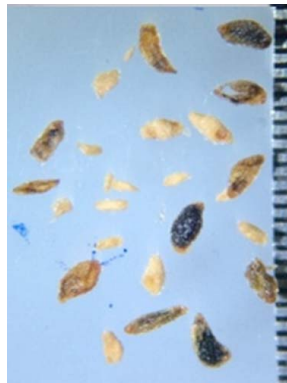
71 *Demosthenesia* sp.
ERICACEAE



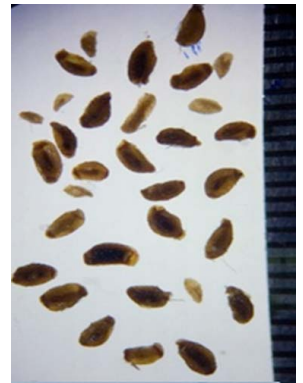
72 *Demosthenesia* sp.
ERICACEAE



73 *Demosthenesia* sp.
ERICACEAE



74 *Demosthenesia* sp.
(Seeds) ERICACEAE



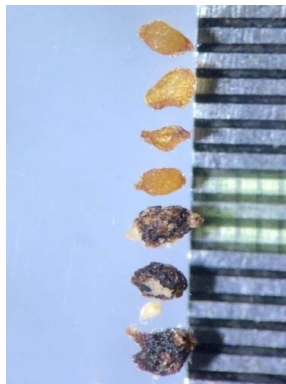
75 *Demosthenesia* sp.
(Seeds) ERICACEAE



76 *Satyria* sp.
ERICACEAE



77 *Satyria* sp.
ERICACEAE



78 *Satyria* sp.
(Seeds) ERICACEAE



79 *Vaccinium floribundum*
ERICACEAE



80 *Vaccinium floribundum*
ERICACEAE

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81 *Vaccinium floribundum*
ERICACEAE



82 *Vaccinium floribundum*
(Seeds) ERICACEAE



83 *V. pseudocaracasatum*
ERICACEAE



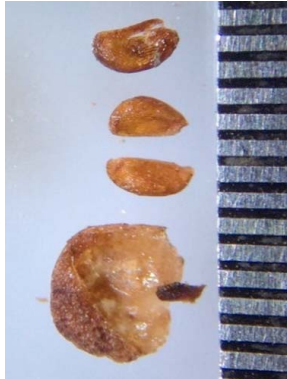
84 *V. pseudocaracasatum*
ERICACEAE



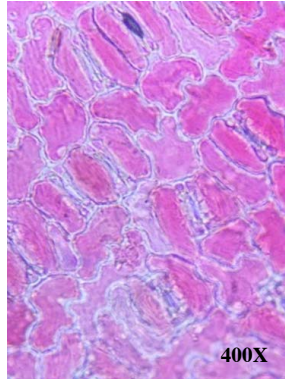
85 *V. pseudocaracasatum*
ERICACEAE



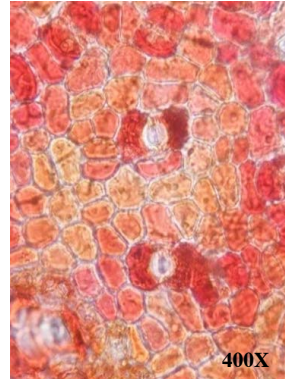
86 *V. pseudocaracasatum*
ERICACEAE



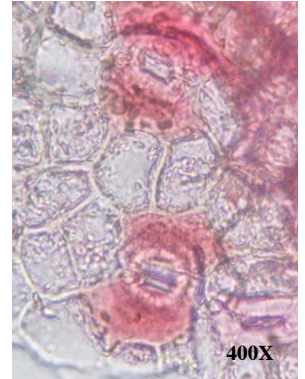
87 *V. pseudocaracasatum*
(Seeds) ERICACEAE



88 Parasitic stomata of
ERICACEAE



89 Parasitic stomata of
ERICACEAE



90 Parasitic stomata of
ERICACEAE



91 *Persea* sp.
LAURACEAE



92 *Persea* sp.
LAURACEAE



93 *Persea* sp.
LAURACEAE



94 Seed of *Persea* sp.
LAURACEAE



95 Seed of *Persea* sp.
LAURACEAE



96 *Ceroxylon* sp.
ARECACEAE



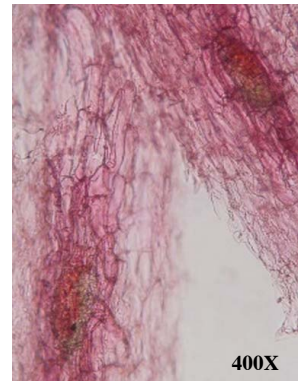
97 *Ceroxylon* sp.
ARECACEAE



98 *Ceroxylon* sp.
ARECACEAE



99 Tetracyclic stomata *Ceroxylon* sp.
ARECACEAE



100 Oil chamber of *Ceroxylon* sp.
ARECACEAE

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THE SPECTACLED BEAR

The Spectacled Bear (*Tremarctos ornatus*), also known as Andean Bear or Ucumari, endemic to South America and the only living species of the subfamily Tremarctinae (Mondolfi, 1989). It is considered Vulnerable (VU) globally and in Peru (IUCN, 2008; DC N°004-2014-MINAGRI) due to habitat fragmentation and illegal hunting (IUCN, 2008). Its distribution range extends through Venezuela, Colombia, Ecuador, Peru and Bolivia, from 250 m to 4,750 m, spanning a variety of ecosystems: seasonally dry template forest of Tumbes-Piura, montane forest and other high Andean ecosystems such as paramo, jalca and puna.

METHODOLOGY

With the aim of identifying species consumed by *Tremarctos ornatus* and present in scat, potential food plants were collected in the field and their tissues characterized histologically (Chung, 2006; Amanzo, et al., 2007). A fresh sub-sample of leaves, fruits and/or flowers of each potential food plant was extracted and stored in a formaldehyde – alcohol – acetic acid solution (F.A.A. solution: 40% formaldehyde, acetic acid, 70% alcohol and distilled water – 10:5:50:35) (Megías, et al., 2016). The rest of each plant was pressed and dried in an oven at 70°C, and deposited in the HEPLAME herbarium of the Universidad Peruana Cayetano Heredia (UPCH) and in the herbarium of the Museo de Historia Natural (MHN) of the Universidad Mayor de San Marcos (UNMSM), both in Peru.

Tissue samples in F.A.A. solution were rehydrated in glycerin at 2% and heated to a boil to recover turgor. Beam, back and cross cuts were made to the tissues to characterize and classify stomata, trichomes (Chung, 2006; Amanzo, et al., 2007), and oil chambers (Ontaneda & Armijos, 2012). Histological cuts were put on slides (25.4 x 76.2 mm, width 1-1.2 mm) and slide covers (Nr1 de 22 x 22 mm) with and without safranin in glycerogelatin as the mounting medium (Ontaneda & Armijos, 2012; Catán, et al., 2003; Reig & García, n.d.). Seeds were taken from ripe and young fruits and photographed to document morphological variation and the difference in lighting and backlighting. Seed length was measured from pole to radical pole.

To identify species consumed by *Tremarctos ornatus*, items from scats were isolated and rehydrated in 2% glycerin. Afterwards, tissues were cut as described before and when they were too small to be cut further were submerged in 60% sodium hypochlorite (Reig & García, n.d.) for 2 hrs in order to lighten the tissues (Catán, et al., 2003). After digestion, tissues were washed in a 180-µm sieve (ASTM specification E-11, U.S.A. branch W.S. Tyler) and their histological structures were compared to those of the potential food plants. Species found in scats were identified and published in the catalogue with the characterized structures.

BIBLIOGRAPHY

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