

# Entomopathogenic FUNGI of Tambopata National Reserve, Madre de Dios, Peru

Susanne Sourell, João P.M. Araújo, Tatiana Sanjuan, Priscila Chaverri and Rich C. Hoyer

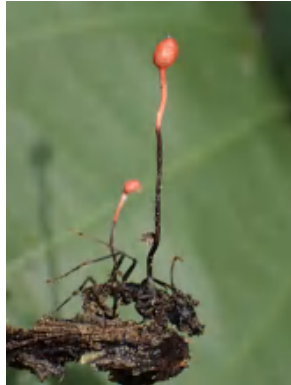
The Tambopata Nature Reserve is located in the Department of Madre de Dios in southeastern Peru at the foothills of the Andes at an elevation of ~250 m. This lowland Amazon rainforest has a mean annual temperature of 25°C with an average annual precipitation of ~2200-2400 mm. The region is renowned for high levels of biodiversity. The global demand for gold is a serious threat for the regions' fungi, fauna and flora especially through mining operations. Photos by Susanne Sourell. Produced by: Susanne Sourell with support of Uriel Gonzalo Collantes, Jhordy Novoa Infantas and Field Museum, Chicago, USA. [susanne.sourell@yahoo.com] [fieldguides.fieldmuseum.org] [1242] version 1 11/2020

**Hymenoptera  
(Formicidae)  
- Ants -**

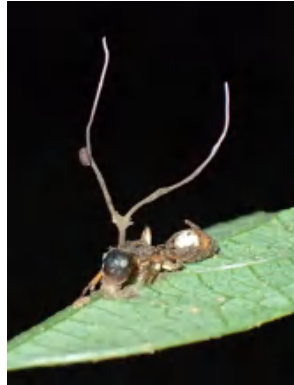
Fungi are grouped by the insect hosts' common English name



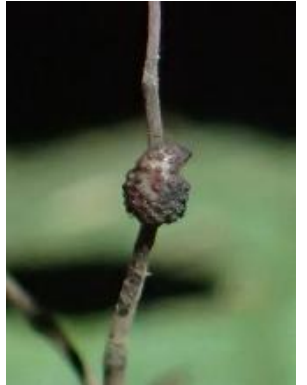
1 *Beauveria* sp.



2 *Ophiocordyceps australis* complex



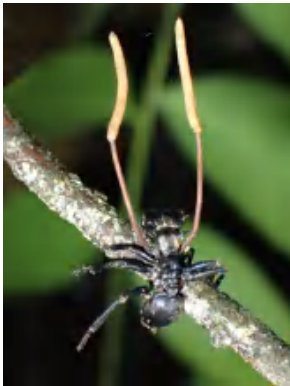
3 *Ophiocordyceps* cf. *camponoti-atricipis*



4 *Ophiocordyceps* cf. *camponoti-atricipis*



5 *Ophiocordyceps* cf. *camponoti-nidulantis*



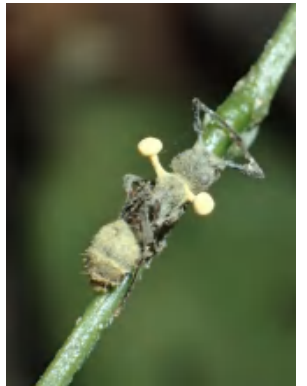
6 *Ophiocordyceps kniphofioides* s.s.



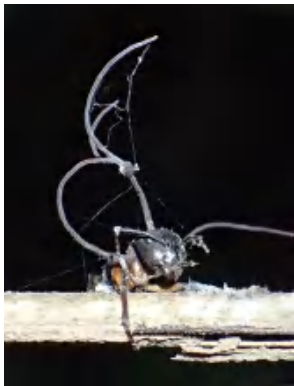
7 *Ophiocordyceps kniphofioides* s.s.



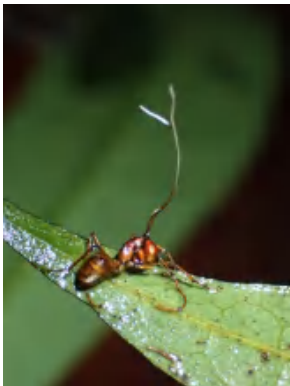
8 *Ophiocordyceps kniphofioides*



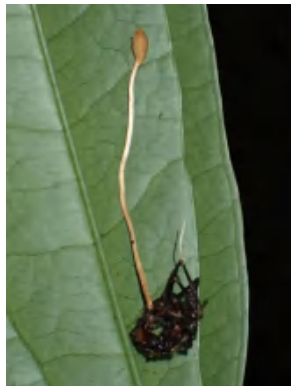
9 *Ophiocordyceps lloydii* var. *binata*



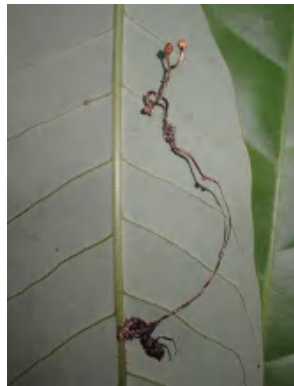
10 *Ophiocordyceps unilateralis* group 1



11 *Ophiocordyceps unilateralis* group 2



12 *Ophiocordyceps* sp.



13 *Ophiocordyceps* sp.



14 *Ophiocordyceps* sp.

**Coleoptera  
- Beetles -**



15 *Nigelia martiale*



16 *Nigelia martiale*



17 *Cordyceps* sp.



18 *Cordyceps* sp.

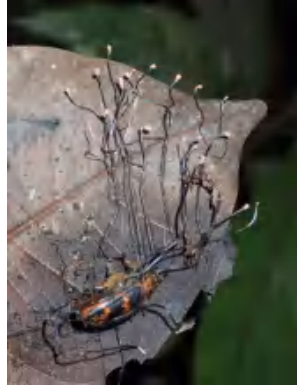
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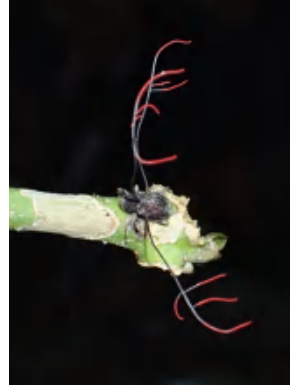
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19 *Cordyceps* sp.



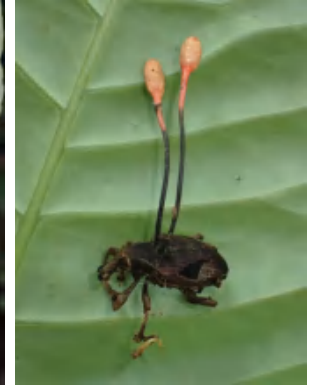
20 *Ophiocordyceps curculionum* complex 1



21 *Ophiocordyceps curculionum* complex 2



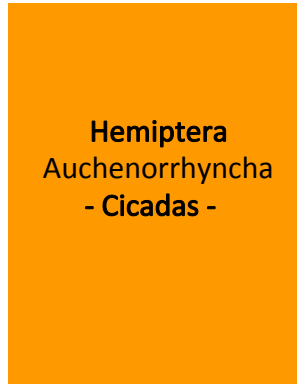
22 *Ophiocordyceps curculionum* complex 3



23 *Ophiocordyceps curculionum* complex 4



24 *Ophiocordyceps curculionum* complex 5



25 *Ophiocordyceps* sp.



26 *Ophiocordyceps* sp.

Hemiptera  
Auchenorrhyncha  
- Cicadas -

Diptera  
- Flies -



27 *Ophiocordyceps dipterigena*



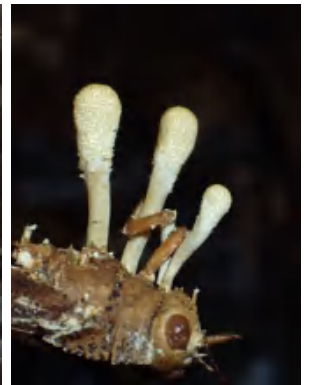
28 *Ophiocordyceps* aff. *dipterigena*



Orthoptera  
- Grasshoppers /  
Locusts -



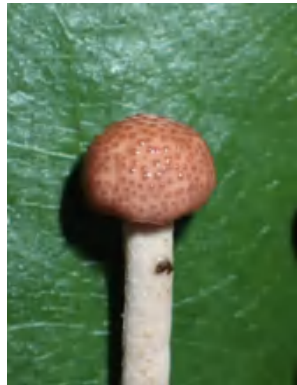
29 *Beauveria acridophila*



30 *Beauveria acridophila*



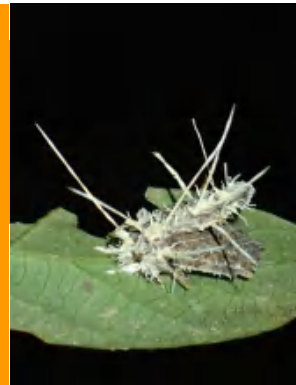
31 *Ophiocordyceps amazonica*



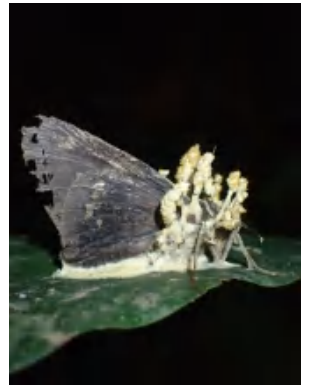
32 *Ophiocordyceps amazonica*



Lepidoptera  
- Moths / Butterflies -



33 *Akanthomyces* cf. *pistillariiformis*

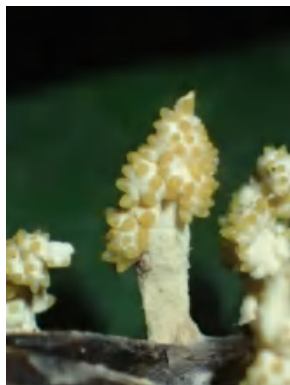


34 *Akanthomyces tuberculatus* complex 1

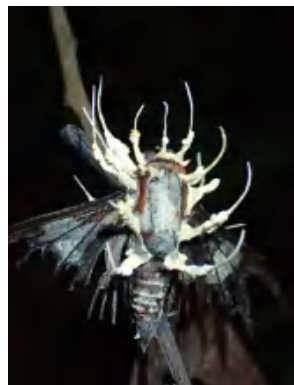
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35 *Akanthomyces tuberculatus* complex 1



36 *Akanthomyces tuberculatus* complex 2



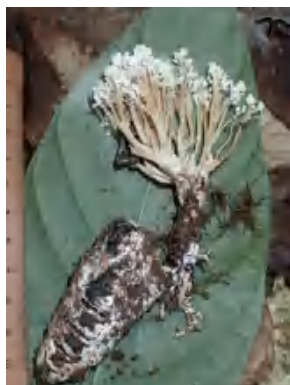
37 *Akanthomyces tuberculatus* complex 3



38 *Akanthomyces tuberculatus* complex 3



39 *Cordyceps polyarthra* (on Spingidae)



40 *Cordyceps polyarthra* (on Spingidae)



41 *Cordyceps polyarthra* (on Spingidae)



42 *Cordyceps tenuipes*



43 *Cordyceps tenuipes*



44 *Cordyceps* sp.



45 *Metarhizium* sp.



46 *Metarhizium* sp.



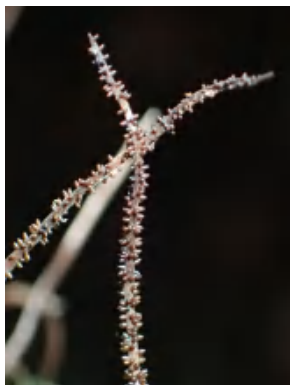
47 *Nigelia* sp.



48 *Nigelia* sp. (46 infected by hyperparasite)



49 *Ophiocordyceps* aff. *acicularis* (on Saturniidae)



50 *Ophiocordyceps* aff. *acicularis*



Hemiptera  
Sternorrhyncha  
- Scale insects -



51 *Ascopolyporus* cf. *polychrous* 1



52 *Ascopolyporus* cf. *polychrous* 1



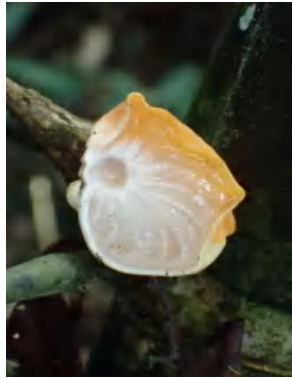
53 *Ascopolyporus* cf. *polychrous* 1

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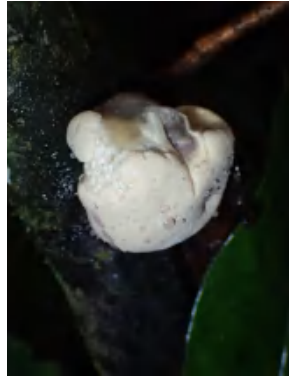
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54 *Ascopolyporus* cf. *polychrous* 2



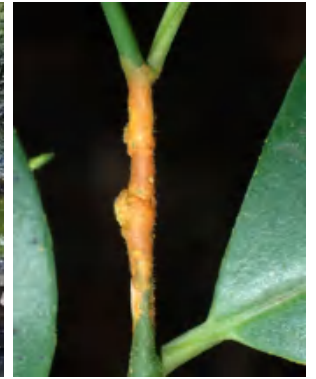
55 *Ascopolyporus* cf. *polychrous* 2



56 *Ascopolyporus* cf. *polychrous* 3



57 *Ascopolyporus* cf. *polychrous* 3



58 *Hyperdermium* *bertonii*



59 *Hypocrella* *hirsuta*



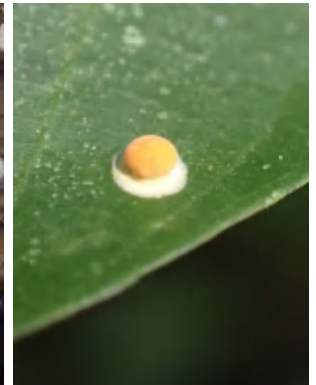
60 *Moelleriella* *epiphylla*



61 *Moelleriella* *libera*



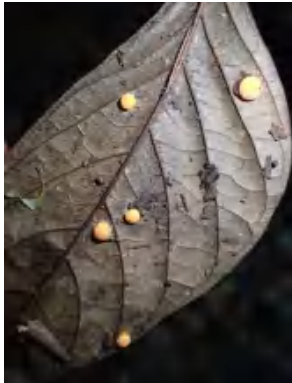
62 *Moelleriella* cf. *ochracea*



63 *Moelleriella* *phyllogena*



64 *Moelleriella* *phyllogena*



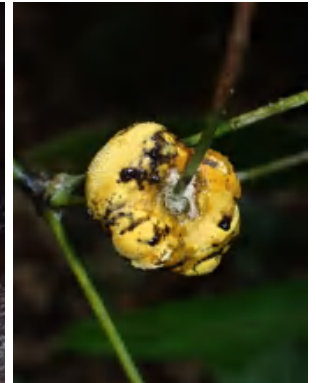
65 *Moelleriella* *phyllogena*



66 *Moelleriella* *sloaneae*



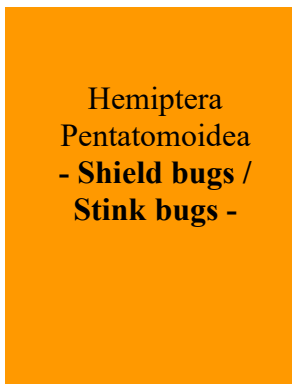
67 *Moelleriella* *turbinata*



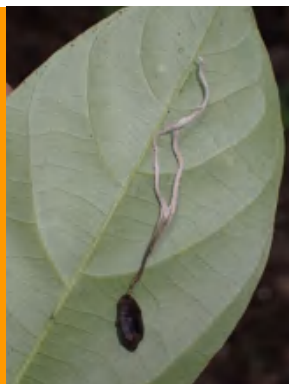
68 *Mycomalus* cf. *citrinus*



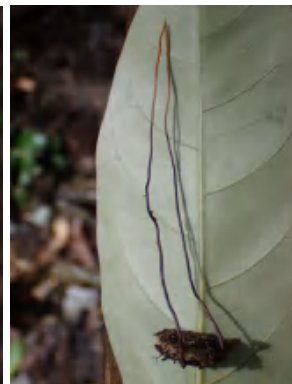
69 *Mycomalus* cf. *citrinus*



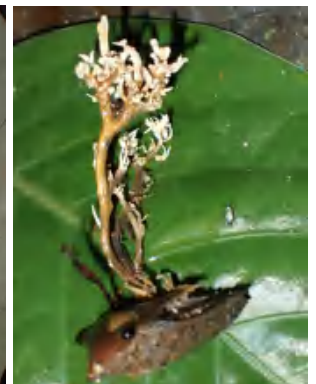
Hemiptera  
Pentatomoidea  
- Shield bugs /  
Stink bugs -



70 *Purpureocillium* cf. *lilacinum* (on Cydnidae)



71 *Ophiocordyceps* cf. *fulgoromorpha*



72 *Ophiocordyceps* cf. *pentatomae*

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**Arachnida  
- Spiders /  
Harvesters -**



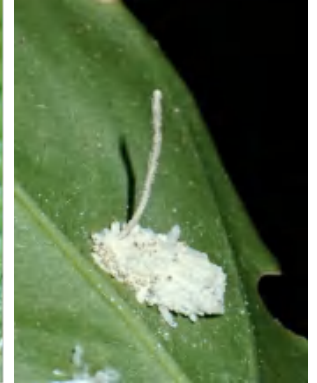
73 *Cordyceps nidus*



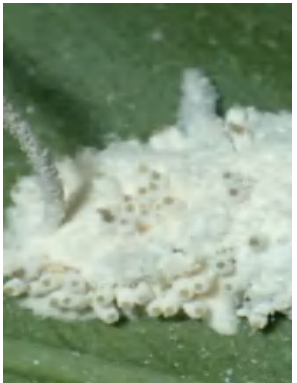
74 *Gibellula* cf. *pulchra*



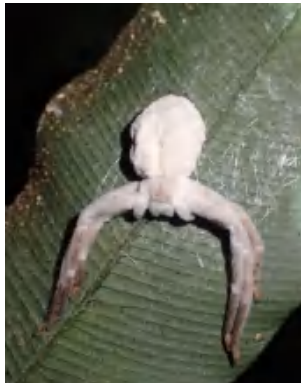
75 *Gibellula* cf. *pulchra*



76 *Gibellula* sp.



77 *Gibellula* sp.

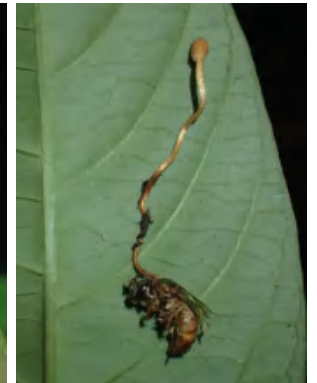


78 Unidentified

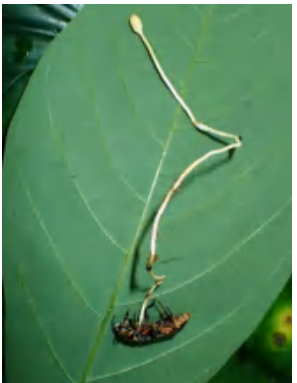
**Hymenoptera  
(Vespidae)  
- Wasps /  
Bees -**



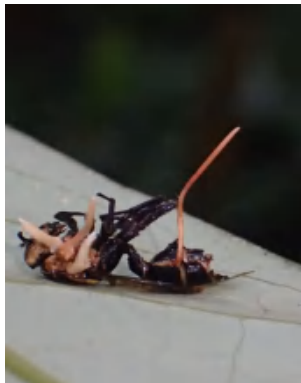
79 *Ophiocordyceps* *humbertii*



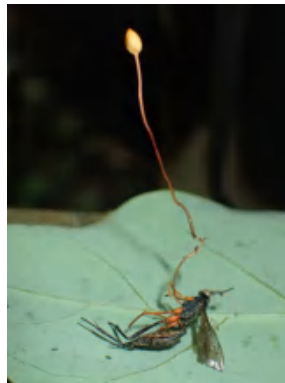
80 *Ophiocordyceps* *sphecocephala* group 1



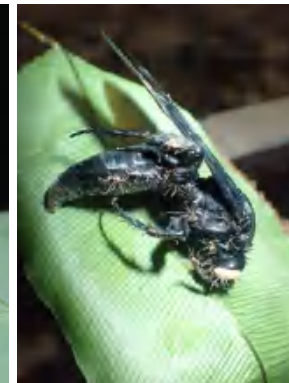
81 *Ophiocordyceps* *sphecocephala* group 2



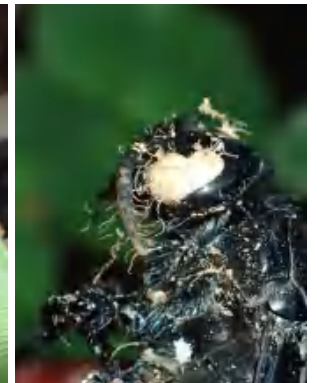
82 *Ophiocordyceps* *sphecocephala* group 3



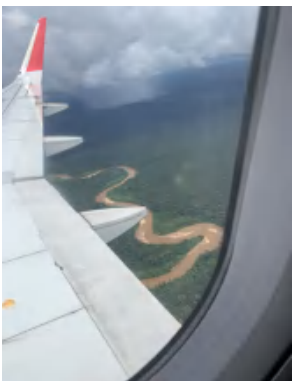
83 *Ophiocordyceps* *sphecocephala* group 4



84 *Ophiocordyceps* sp. *Hirsutella* group



85 *Ophiocordyceps* sp. *Hirsutella* group



Madre de Dios Department



Tambopata National Reserve



Rio Tambopata



View towards Andean foothills

**Acknowledgements**

We would like to express our thanks to Nigel Hywel-Jones for the identifications contributed. Further we are grateful to Uriel Gonzalo Collantes and Jhordy Novoa Infantas for the assistance in the field.

**Notice**

None of the fungi in this guide were analyzed microscopically and identification of genus and species were based on photographs.