

All You Will Ever Remember
about Spittlebug Ecology and Evolution,
in 15 Minutes or Less



Vinton Thompson



Kean University, Union, New Jersey
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Poophilus sp.
spittle mass
Zambia

Spittle on pine



Herbert A. "Joe" Pase III, Texas Forest Service, www.forestryimages.org

Pine spittlebug nymphs –
Aphrophora cribrata



Actually – the spittle comes
out of the other end



And again



Machaerotid nymphal tubes



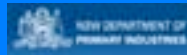
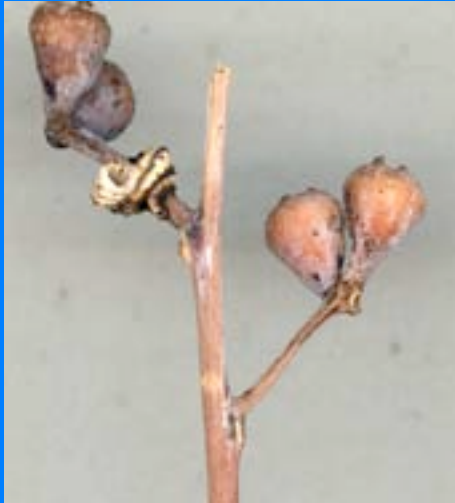
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Machaerota takeuchii nymphal tubes



Keiji Morishima

Nymphal tube of *Hindoloides appendiculata*
on twig of *Eucalyptus grandis*

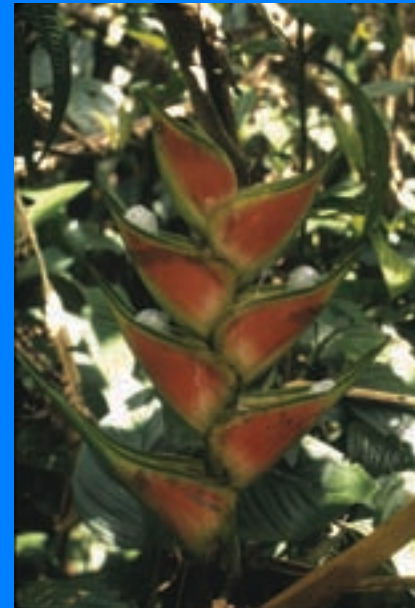


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Mahanarva costaricensis nymph
suspended at air-water interface



Mahanarva costaricensis
nymph
taking a dive –
note ventral air
bubble

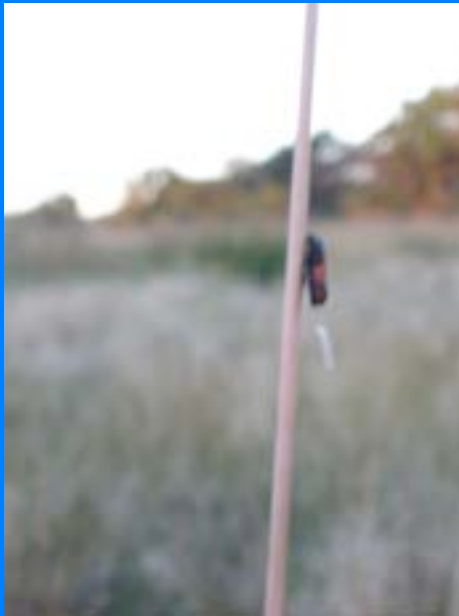


Mahanarva costaricensis
spittles
in water filled
flower bracts
of *Heliconia wagneriana*

Sand Savannah in Zambia



*Spittlebug
host grass
growing in
almost pure
sand*

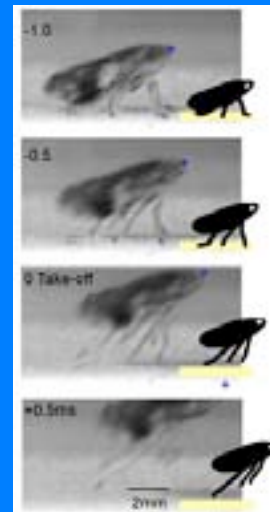


Locris sp. feeding
on grass stem
- note liquid
discharge -
no spittle

Zambia

Ruth Moscovitch

Philaenus spumarius takes off



NewScientist.com
news service

Malcolm Burrows
Nature (vol 424, p 509)



If Shaquille O'Neal had the spittlebug's abilities, he could jump 500 feet above the basket!

Illustration by Dean Macadam – National Geographic Kids Magazine, March 2004

Cercopis vulnerata



Mahanarva fimbriolata, a major Brazilian sugar cane pest



Mahanarva costaricensis aggregated adults



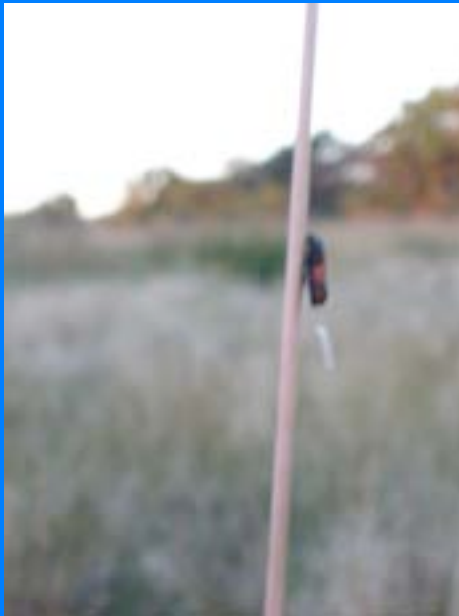


Cercopidae plate in the *Biologia Centrali Americana* Rhynchota volume

– if this isn't warning coloration, what is?



Color polymorphism in *Philaenus spumarius*



Xylem feeding requires processing large volumes of very dilute nutrients

- consequence: preference for N-fixing and ectomycorrhizal plants with more xylem borne organic compounds

Philaenus spumarius consequential pest of alfalfa





*Faidherbia
albida* -

Zambia

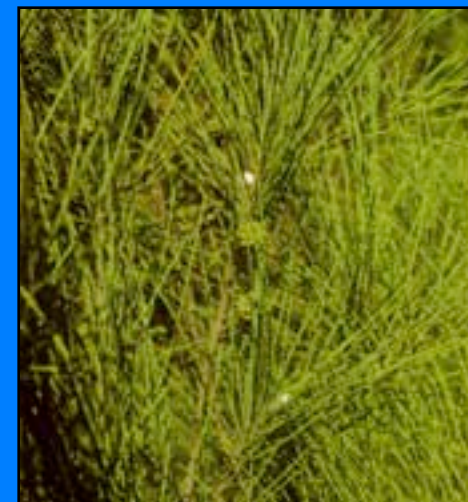
Ptyelus grossus (Aphrophoridae)
Zambia – on *Faidherbia albida*



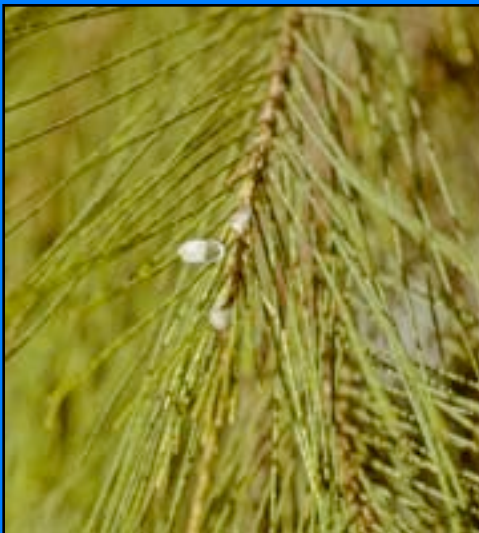
Ptyelus grossus nymphs run out of the
spittle when disturbed



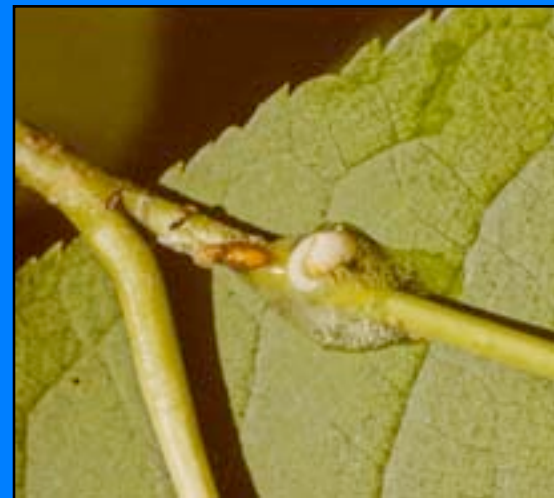
Clastoptera laenata on *Casuarina*
- an actinorhizal N-fixing plant



Clastoptera laenata on *Casuarina* – close up



Clastoptera obtusa nymph with *Clasochaeta inversa* larva and pupa on *Alnus rugosa*



Sugar cane leaves with minor spittlebug damage



Spittle mass on sugar cane internode
Costa Rica



Aeneolamia varia on sugar cane roots, Trinidad



Table 2.
Adult specimens of *Clastoptera* collected, by sex.



Salpinogaster nigra larva and spittlebug nymph



Salpinogaster nigra adult



Aeneolamia varia
3rd instar nymphs on
Brachiaria roots



Aeneolamia varia
4th instar nymphs on
Brachiaria roots



Brachiaria grass infected with 3rd instar
Aeneolamia varia nymphs



Brachiaria grass infected with
5th instar *Aeneolamia varia* nymphs
and emerged adults



Prosapia ignipectus nymph
in Little Bluestem tuft



Dwarf mistletoe on Ponderosa pine with
Clastoptera distincta spittles



Dwarf mistletoe on Ponderosa pine with
Clastoptera distincta spittles – close up

