

New Species of Assassin Fly from Namib Desert

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Introduction

Assassin flies (Asilidae) are a family of insects with about 7,500 species, all of which are predators as larvae and adults. The Namib Desert in southern Africa supports many insect species despite being hyperarid. Many insect species still await discovery in this harsh environment and this research contributes to understanding insect biodiversity.

Acnephalomyia (subfamily Willistoniniinae) is a genus with 7 species found only in Southern Africa. Unfortunately, several species can only be identified using the males.

This project aims to:

- 1) Review *Acnephalomyia* specimens and other genera within the Namib Desert
- 2) Describe new and redescribe known species of *Acnephalomyia* in the Namib
- 3) Study seasonality and distribution
- 4) Produce a dichotomous key

Materials and Methods

- We used specimens from the Smithsonian, KwaZulu-Natal Museum (NMSA) and Swedish Museum of Natural History (NHRS)
- Updated data in Emu (a shared museum database) to be shared publicly by GBIF
- Photographed specimens using Helicon Focus and GIGAmacro Magnify²
- Species descriptions made in Lucid 4 using 252 characters
- Create maps of specimen occurrence using Google Earth



Tayler Blee

New Species and Previously Described Species



A. sp. n.

- Stump wing vein absent
- Wings hyaline (clear, not tinted)
- Cuticle is black, often bluish metallic
- Sparse, short setae (hairs)
- Seven specimens from two locations
- Adults active in late September

A. platygaster

- Stump wing vein present
- Wings tinted brown at base
- Cuticle is dark or light brown
- White and brown setae (hairs)
- Two specimens from two locations
- Adults active in February

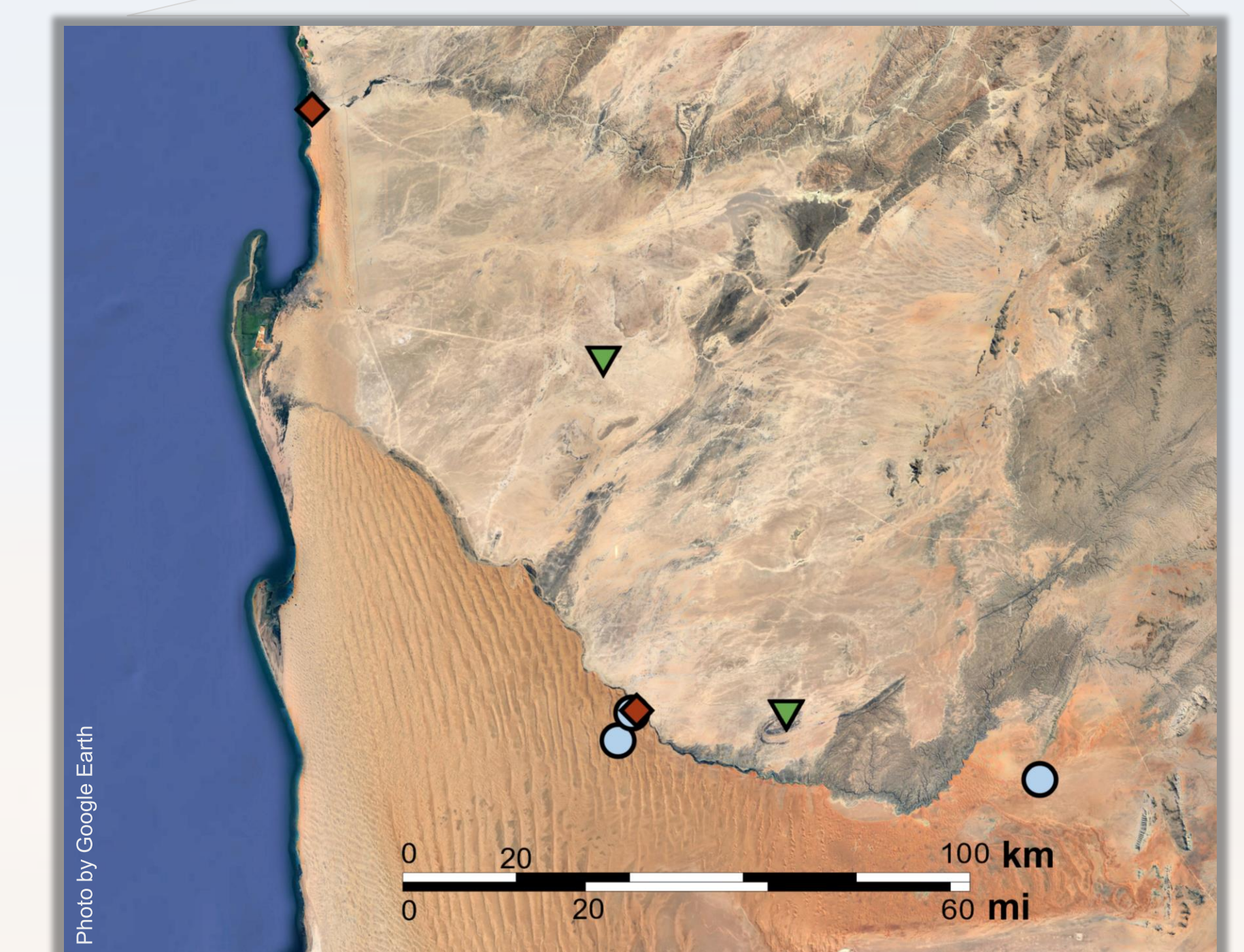
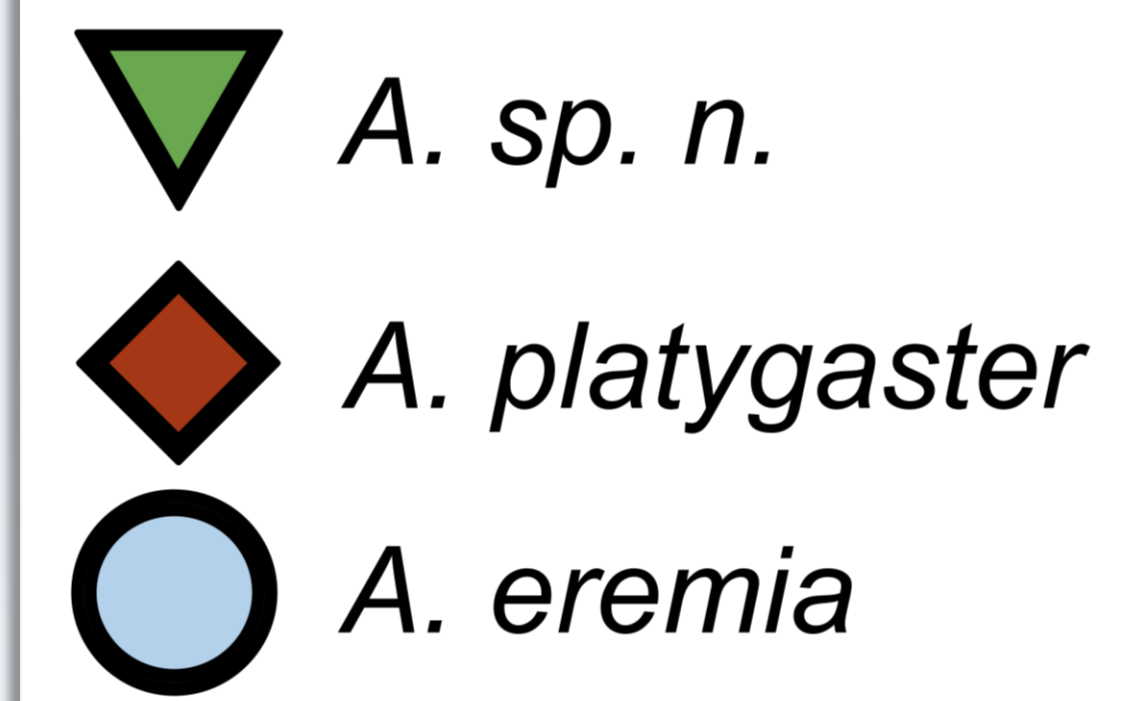


A. eremia

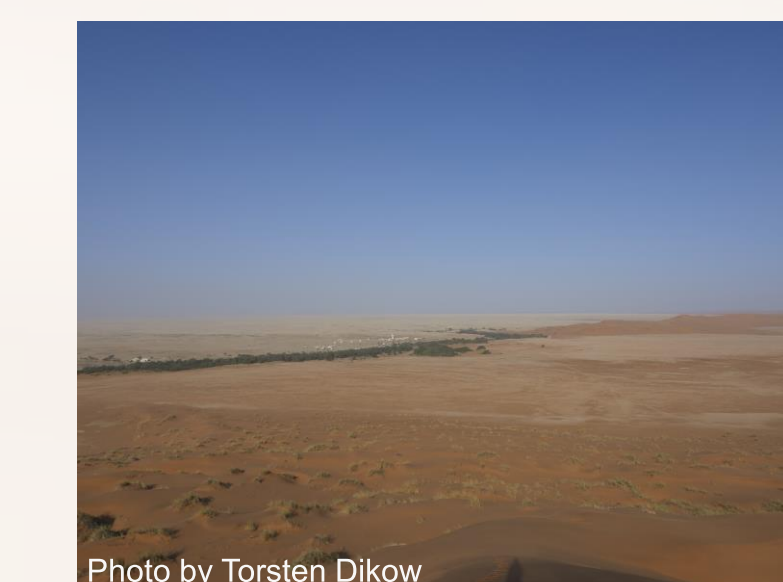
- Stump wing vein present
- Wings hyaline (clear, not tinted)
- Cuticle is dark brown to black
- Almost entire white setose (hairy)
- Twenty-one specimens from three locations
- Adults active in late September



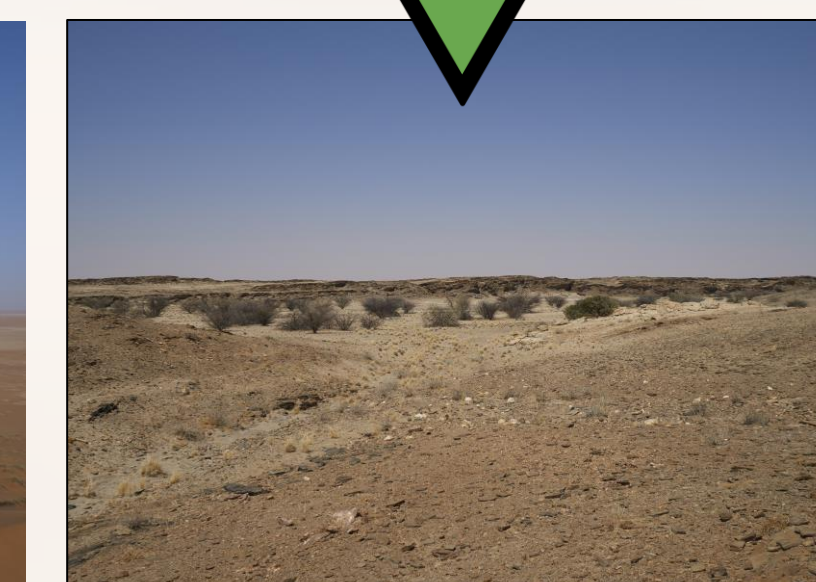
Acnephalomyia Distribution in the Central Namib



Habitats in the Central Namib



Linear Oasis / dry riverbed
(Gobabeb Research Station)



Gravel Plains
(Hope Mine wash)



Sand Dunes
(Kahani)

Acknowledgements and References

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Conclusion

We discovered and described a new *Acnephalomyia* species (*A. sp. n.*) based on 7 specimens. This taxonomic research contributes to global species accounts and serves as a foundation for future studies into biodiversity, ecology, and climate change. Our research assists in species identification and provides insight into evolutionary relationships. Existing natural history collections hold undiscovered species across many taxa, and deserts hold many more.