



FAIR Reuse of Biodiversity Data Using Plazi platform



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INTRODUCTION

- Plazi is an open-access digital platform for biodiversity literature.
- It extracts structured data from taxonomic publications, including:
- Species descriptions
- Morphological traits
- Distribution records
- Ecological notes
- Data is available in machine-readable formats (XML, RDF), enabling integration with other datasets.

OBJECTIVE

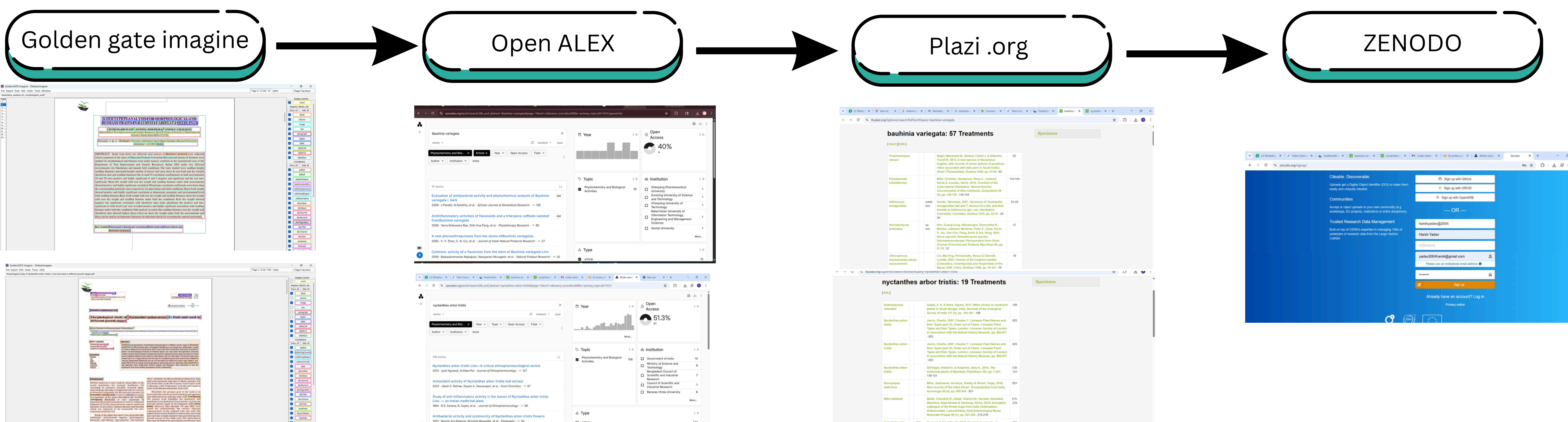
- Extract and reuse species-level data (morphological descriptions, distribution, ecological notes) from published literature.
- Enable machine-readable datasets for biodiversity research, phylogenetics, and chemotaxonomy.
- Facilitate data integration across studies, supporting systematic reviews and comparative analyses.
- Promote open science and reproducibility in taxonomy and biodiversity studies.

WHY PLAZI ONLY?



- Focused on taxonomic literature
- Provides machine readable structure data
- Fully open access and reusable
- Easily integrated with biodiversity data
- Efficient for large scale data extraction

METHODOLOGY



OUR TOPIC

- Bauhinia variegata*** and ***Nyctanthes arbor - tristis***
- Temporal Niche Separation
- Studies on floral ecology show that diurnal vs nocturnal flowering is a common adaptive strategy in tropical and subtropical forest to maximize pollination efficiency.
- Difference in Phytochemistry
- Difference in Biological Activities
- Difference in Ecological Functions
- Both plants are found in tropical and subtropical Asia

FINDINGS

Bauhinia variegata and ***Nyctanthes arbor - tristis*** are the arboreal and low canopy tree respectively, which shows temporal niche segregation. Where the former one is Day blooming flower and the latter one is night blooming flower. Which lead to clear demarcation between the division of pollinators amongst the two plant species. The latter one has white color and fragrance to attract pollinators at night and the former one has nectary and brightly redish pinkish color to attract day pollinators.



DISCUSSION

Our study on ***Bauhinia variegata*** and ***Nyctanthes arbor-tristis*** highlights how these two coexisting species exhibit temporal niche differentiation, with ***Bauhinia*** flowering during the day and ***Nyctanthes*** at night. This separation reduces competition for pollinators and allows efficient utilization of diurnal and nocturnal insect visitors. Morphologically, ***Bauhinia*** shows bright petals, exposed stamens, and accessible nectaries optimized for bees and butterflies, while ***Nyctanthes*** has white, fragrant flowers with nectar suited to moths. The use of Plazi and OpenAlex allowed us to efficiently integrate morphological, temporal, and biological data, demonstrating the potential of open-access platforms for reproducible research. Overall, these findings show that temporal, morphological, and chemical differentiation enables coexistence and functional complementarity between these tropical and subtropical species.

CONCLUSION

Using the Plazi platform, morphological and phytochemical data of ***Bauhinia variegata*** and ***Nyctanthes arbor-tristis*** were efficiently extracted from existing literature without manual effort. The structured and reusable data enables easy comparison between species and supports evolutionary analysis, while aligning with the FAIR data principles.

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REFERENCES

- Modak, K., & Chowdhury, M. (2021). Morphological study of *Nyctanthes arbor-tristis* L. fruit and seed in different growth stages. *Plant Science Today*, 8(4), 778-785.
- Xu, Y. (2024). Surface morphology and microstructure of *Bauhinia variegata* L. flowers and leaves. *Micron*, 177, 103575.