Malaria Vectors

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Highly evolvable malaria vectors: The genomes of 16 *Anopheles* mosquitoes

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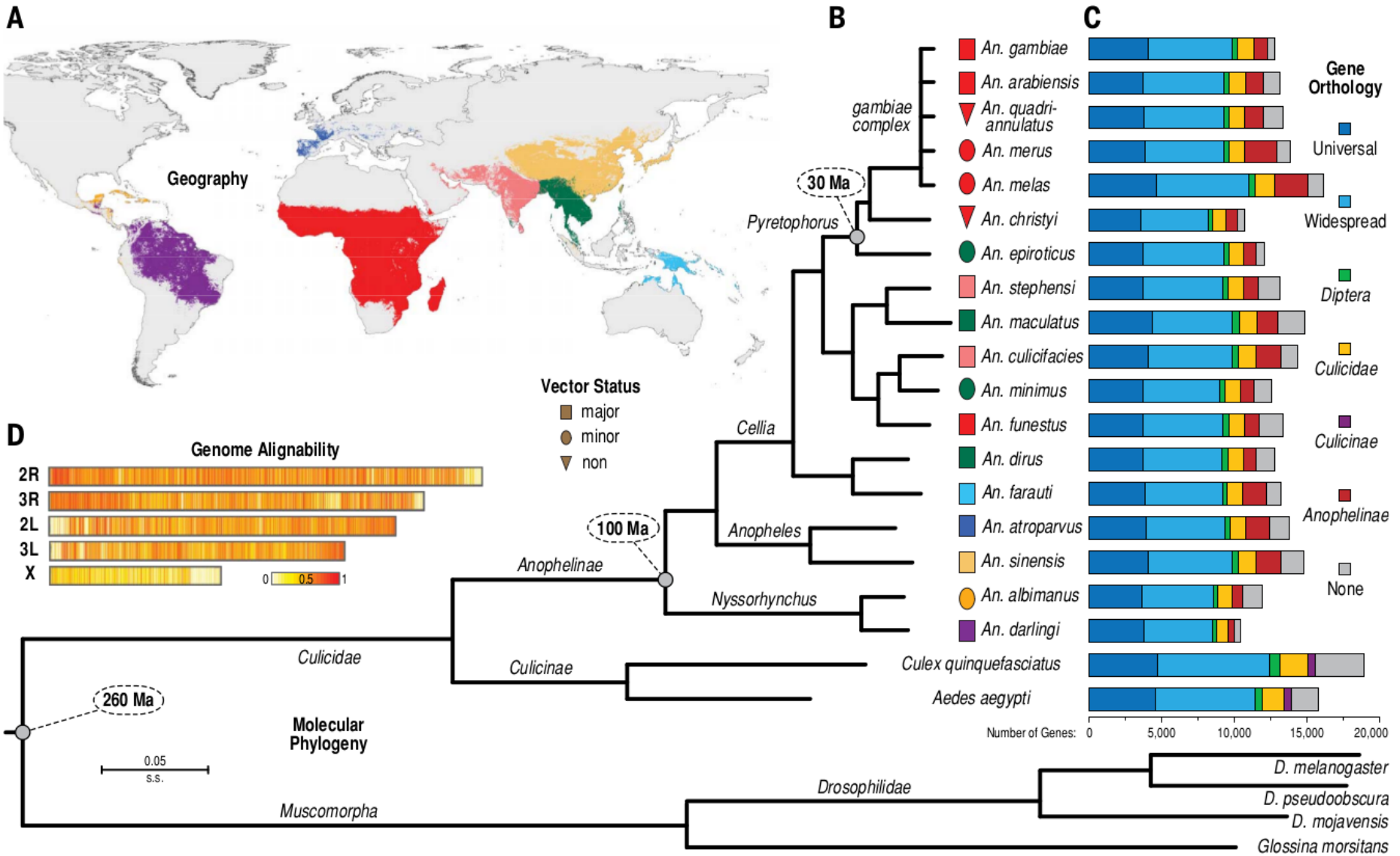

Background

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- Vector capacity is governed by mosquito behavior, mosquito parasite immunity and mosquito life history.
- Compared to *Drosophila* (fruit fly), *Anopheles* has a five-fold faster rate of gene gain/loss.

Conclusion

The genomes of the Anopheles mosquito harbor strong evidence of functional variations in traits that determine vectorial capacity.

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- *Anopheles merus*, *melas*, *farauti*, *albiumanus* females can lay eggs in salty/brackish water.

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- Orthologs of genes associated with insecticide resistance found in all *Anopheles* species suggesting that all species capable of developing insecticide resistance through similar mechanisms.

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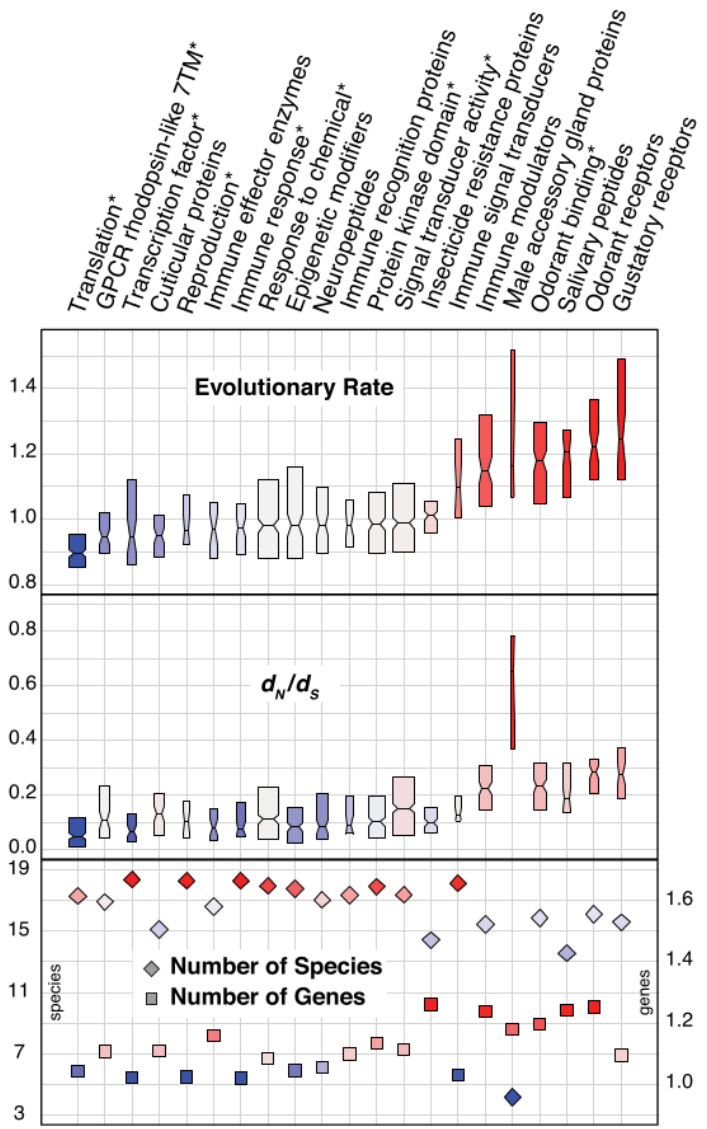

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- IGF1 is present in other dipterans, including *Drosophila melanogaster* and *Ae. aegypti*.

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- Cascade modulators are divergent and generally have more gene duplication, but are also more lineage-specific.

Creation of New Genes