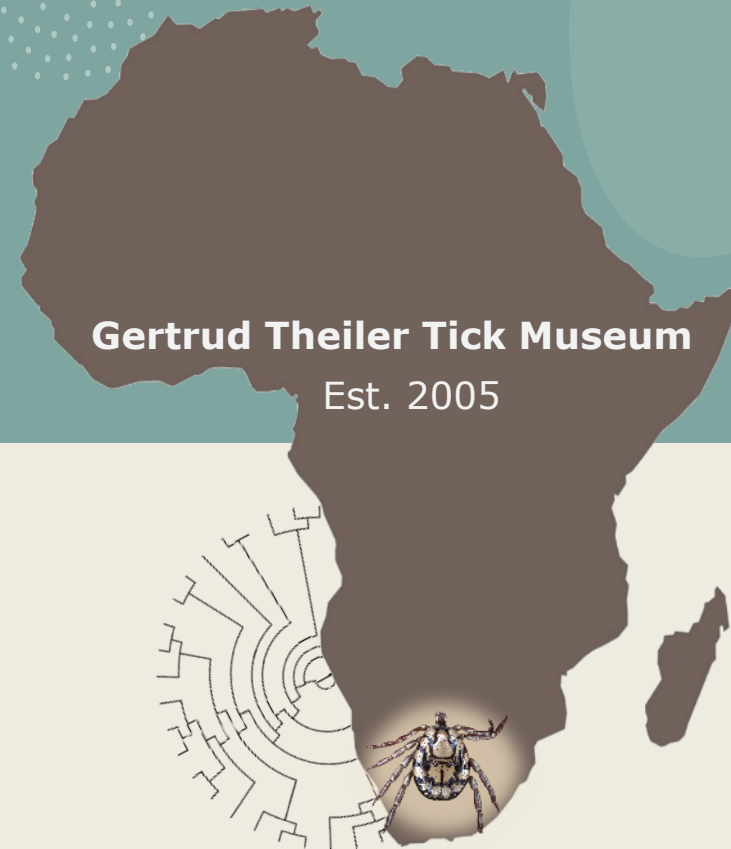


The National Tick Collection Gertrud Theiler Tick Museum



A National Resource for Tick Biology, Biodiversity, Systematics and Vector Research

Agricultural Research Council – Onderstepoort Veterinary Research, [Epidemiology, Parasites & Vectors](#)

Overview

The Epidemiology, Parasites & Vectors Programme (EPV) of the Agricultural Research Council – Onderstepoort Veterinary Research (ARC-OVR) is the custodian of the Gertrud Theiler Tick Museum, incorporating the National Tick Collection. The collection is recognised as a national research asset of strategic importance.

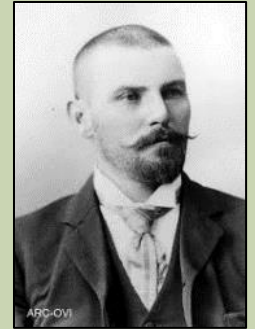


Legacy	Named in honour of Dr. Gertrud Theiler (1897–1986), groundbreaking tick researcher
Location	Onderstepoort Veterinary Institute, Pretoria, South Africa
Established	Museum established on 23 August 2005 Collection in existence since 1912
Scope	55 type specimens >3 000 collections, 313 species, 30 genera, 3 families, complemented by a growing molecular reference resource, linking morphological and genetic data to support integrative taxonomy.
Functions	Reference center, Tick & related locality data repository, Literature database, Taxonomic research, Identification services, Research and Training Resource, Ecology and Biodiversity monitoring, Phylogeography and Systematics

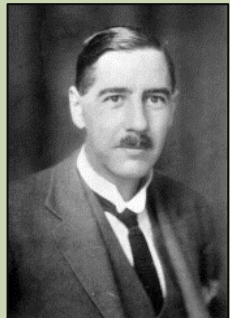
Historical Legacy

The National Tick Collection was initiated by G. A. H. Bedford in 1912, with early contributions from Charles Lounsbury. It was substantially expanded by Michel du Toit, Gertrud Theiler, whose work laid the foundation for tick taxonomy in South Africa and expanded on by Jane Walker.

Over the decades, numerous prominent acarologists have contributed to the collection, building a legacy of scientific excellence that continues to underpin current research under expert curation and guidance by the Research Team Manager: [Ben J. Mans](#)



[Sir Arnold Theiler](#)
(1908-1927)
Director: VRI



Gerald Bedford
(1912-1938)
VRI Tick
Collection



**Renè Michel
du Toit**
(1939)



Gertrud Theiler
(1939-1983)



Jane Walker
(1966-2000)



Heloise Heyne
(1972-2018)
Curator



Deon Bakkes
(2016-2022)
Curator



[Ronel Pienaar](#)
(2024-Present)
Curator

A scanning electron micrograph (SEM) of a tick, showing its body, legs, and mouthparts in detail. The image is in grayscale and serves as the background for the slide.

Role and Scientific Relevance

The Gertrud Theiler Tick Museum functions as:

- A biosystematics hub for tick biology, taxonomy and phylogenetics
- A reference center for diagnostic identification and surveillance
- A research platform supporting biodiversity, ecology and epidemiology
- A training resource for acarology and vector biology

Recent advances have strengthened its position as a globally relevant collection, particularly through:

- The development of integrative taxonomic frameworks
- Contributions to the tick list of South Africa
- Description and documentation of new tick species and records
- Expansion of curated datasets for host associations and distribution patterns

2025

20 Year anniversary of the opening of the GTTM





Ticks and Tick-borne Diseases

Volume 16, Issue 4, July 2025, 102510



An official South African species checklist from the National Tick Collection of South Africa (Gertrud Theiler Tick Museum)

Ronel Pienaar^{a b c}  , Dikeledi Matloa^{a b} , Ben J. Mans^{a b c d}  



<https://doi.org/10.1016/j.ttbdis.2025.102510>

2025

Ixodes (Afrixodes) hyracis n. sp.

Syst Parasitol (2025) 102:53
<https://doi.org/10.1007/s11230-025-10248-6>



Description of a new species of *Ixodes* Latreille, 1795 (Acari: Ixodidae) and notes on *I. spinae* Arthur, 1958, parasites of the rock hyrax, *Procavia capensis* (Pallas) (Hyracoidea: Procaviidae) in South Africa

Dmitry A. Apanaskevich · Carley E. Drew ·
Ronel Pienaar



<https://doi.org/10.1007/s11230-025-10248-6>

Collections and Research Infrastructure

The collection includes:

- Extensive holdings of *Rhipicephalus* and *Hyalomma*, among the most important genera for veterinary and medical significance.
- Rare and historically significant taxa such as *Cosmiomma hippopotamensis*, *Nosomma monstrosum*, and *Nuttalliella namaqua*.
- A dedicated type specimen collection.
- Digitisation and database development are ongoing, enabling integration with biodiversity informatics platforms, spatial analyses and predictive modelling.



Research Focus

The museum supports multidisciplinary research aligned with national and continental priorities:

Systematics & Taxonomy

- Species delimitation and revisionary taxonomy.
- Integrative approaches combining morphology, genetics and morphometrics.

Biodiversity & Biogeography

- Distribution mapping and climate niche modelling.
- Host–parasite associations and specificity through transcriptomic sequencing analyses.

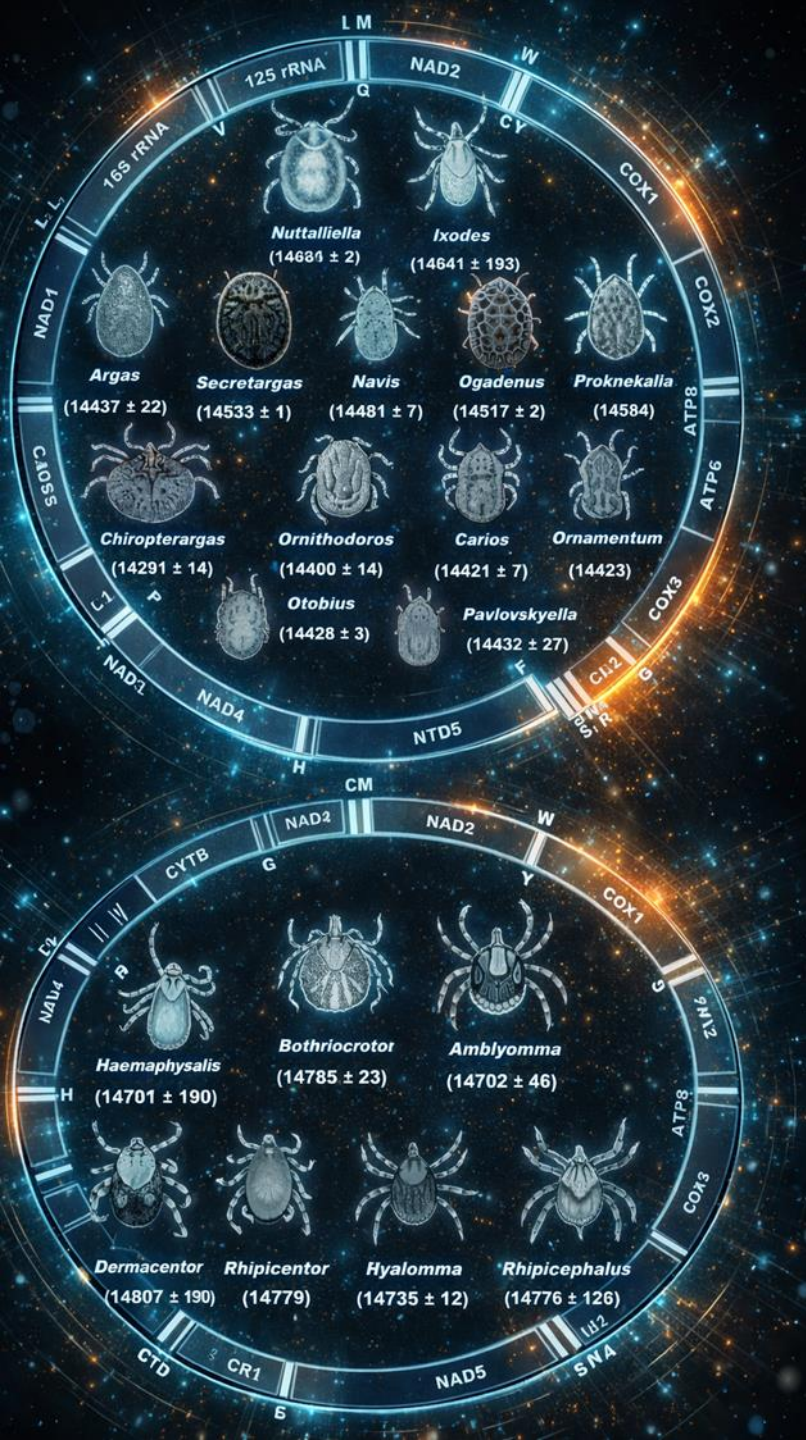
Vector Biology & Epidemiology

- Surveillance of economically important tick species.
- Support for studies on tick-borne diseases.

Evolutionary Biology

- Phylogenetics and evolutionary history of ticks.
- Comparative morphology and lineage diversification through genome sequencing.





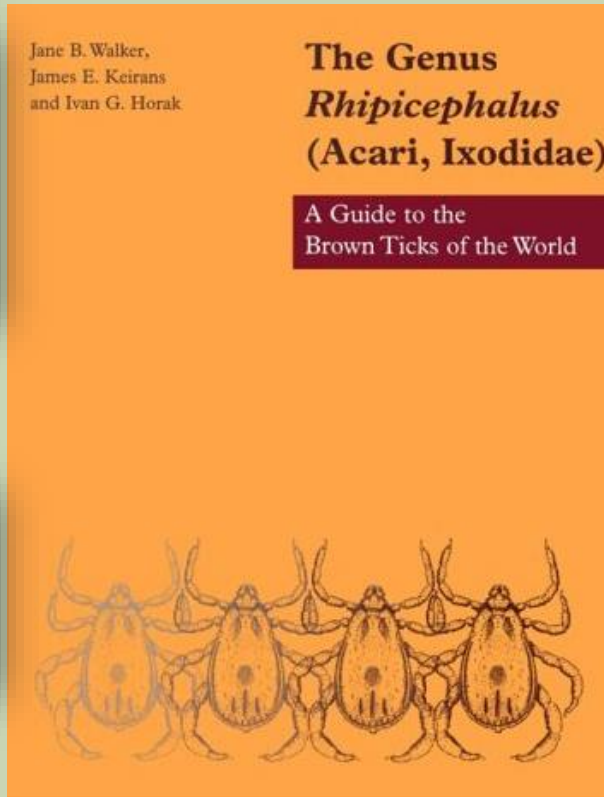
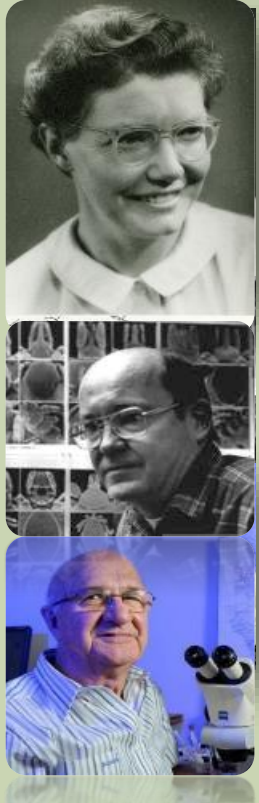
Data and Collections Development Strategy

Current initiatives include:

- Expansion of the national tick database
- Targeted field sampling to fill geographic and taxonomic gaps
- Integration of historical and contemporary datasets
- Strengthening of the DNA reference library
- Advancing tick systematics and vector–host interface research through transcriptomic and mitochondrial genome analyses

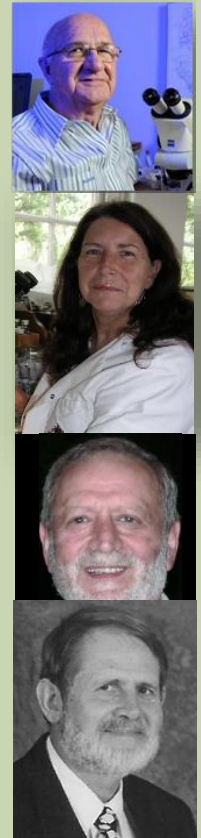
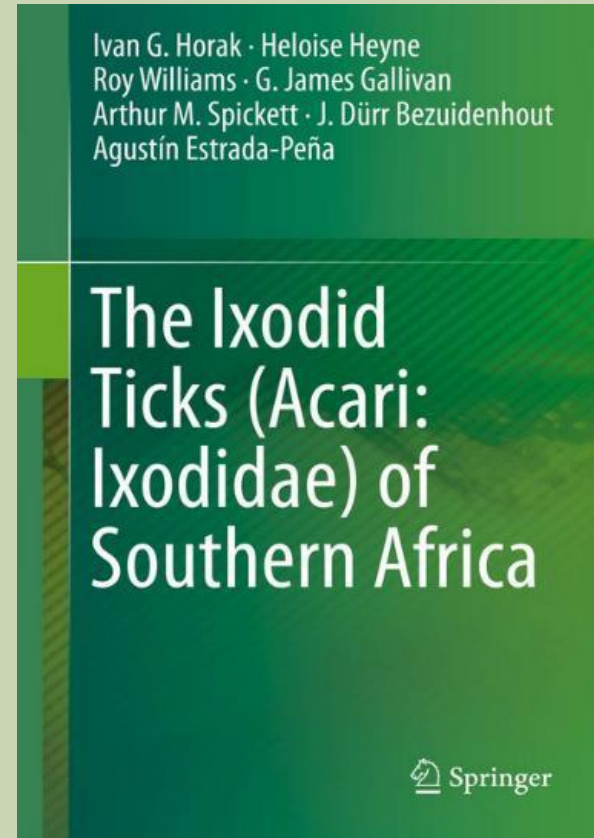
These efforts position the museum as a key node in African biodiversity research infrastructure.

Noteworthy contributions



Walker et al.(2000)

<https://doi.org/10.1017/CBO9780511661754>



Horak et al.(2018)

<https://doi.org/10.1007/978-3-319-70642-9>

Scientific contributions continued

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❖ Scientific contributions since 2005 ([download pdf](#))



Gertrud Theiler Tick Museum
Est. 2005

Collections are the key to understanding vectors. — Harry Hoogstraal

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