

# THE MIMETIDAE OF SOUTH AFRICA



Compiled by: A.S. Dippenaar-Schoeman, C.R. Haddad, S.H. Foord, L.N. Lotz

*South African National Survey of Arachnida Photo Identification Guide Mimetidae 2021 version 1: 1-16*

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# THE MIMETIDAE OF SOUTH AFRICA

Dippenaar-Schoeman, A.S.<sup>1,2,5</sup>, Haddad, C.R.<sup>3</sup>, Foord, S.H.<sup>2</sup>, & Lotz, L.N.<sup>4</sup>  
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<sup>1</sup>ARC-Plant Health and Protection, Private Bag X134, Queenswood, Pretoria, 0121, South Africa

<sup>2</sup>Department of Zoology, University of Venda, Private Bag X5050, Thohoyandou, 0950, South Africa;

<sup>3</sup>Department of Zoology and Entomology, University of the Free State, P.O. Box 339, Bloemfontein, 9300, South Africa

<sup>4</sup>National Museum, Bloemfontein, P.O. Box 266, Bloemfontein 9300, South Africa

<sup>5</sup>Department of Zoology and Entomology, University of Pretoria, Pretoria 2000, South Africa

## ABSTRACT

The family Mimetidae is a small family represented by 8 genera and 154 species that occur worldwide. The Mimetidae of South Africa has not yet being revised and presently only three genera represented by four species have been described. Three of the species are known from southern Africa and only *Anansi natalensis* (Lawrence, 1938) is a South African endemic with a wide distribution. Through the South African National Survey of Arachnida more species have been collected that still need to be determined.

## ACKNOWLEDGEMENTS

We thank the Agricultural Research Council (ARC) and the South African National Biodiversity Institute (SANBI) Threatened Species Programme; the Universities of the Free State, Venda and Pretoria; the National Research Foundation (NRF) for generously funding and support. The staff of the Arachnology section at the National Collection of Arachnida (Connie Anderson, Petro Marais, Sma Mathebula, Robin Lyle and Annette van den Berg), as well as several volunteers from the public, are thanked for their assistance with the sorting and databasing of specimens collected during the SANSA surveys. Various students, members of the public and the Spider Club of Southern Africa collected material for SANSA. We also thank the South African National Parks and E. Oppenheimer & Son for support and providing opportunity to collect in the parks and reserves as well as the provincial conservation agencies for collecting permits. We are especially thankful to all the photographers who provided photographs for the SANSA Virtual Museum without their contribution this guide would have not been possible.



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*Mimetus* sp. from Wakefield Farm KwaZulu-Natal Photo Peter Webb

## FAMILY MIMETIDAE Simon, 1881

The family Mimetidae is a small family represented by 8 genera and 154 species that occur worldwide (World Spider Catalog 2021). The Mimetidae of South Africa has not yet been revised and presently only three genera represented by four species have been described.

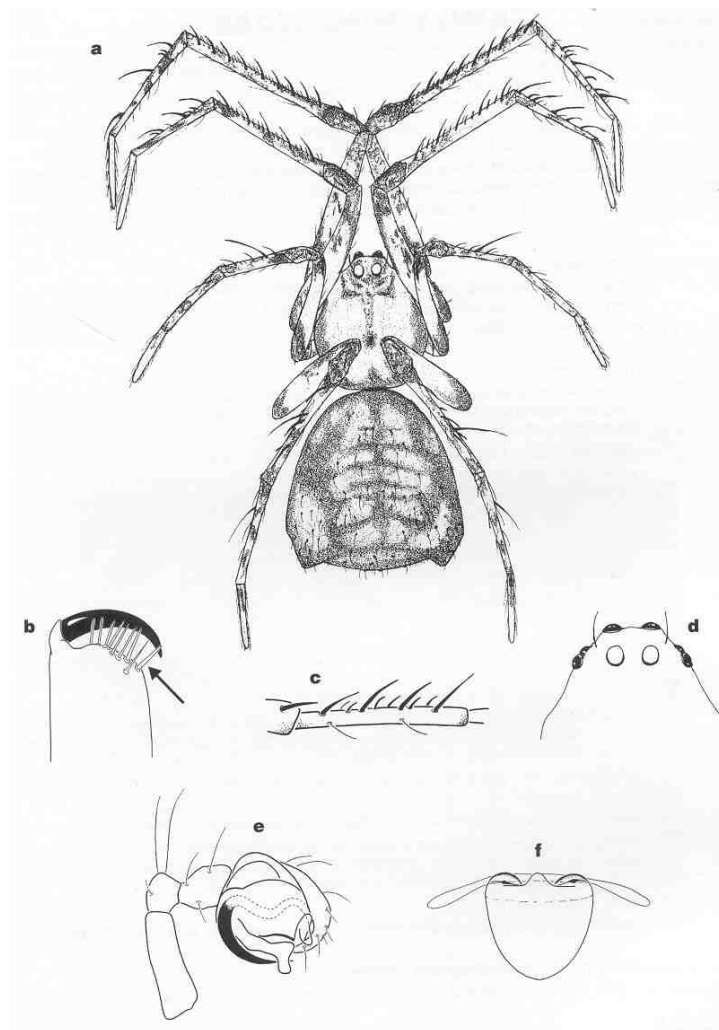
**COMMON NAME:** Pirate Spiders.

**TYPE GENUS:** *Mimetus* Hentz, 1832

**MORPHOLOGY:** Mimetids are small to medium-sized (2.5–12mm) cribellate orb-weavers. The most conspicuous morphological characteristic of Mimetidae is the set of macrosetae on the anterior prolateral surfaces of the tibiae and metatarsi of legs I and II. Colour pale yellowish background with dark spots or markings over body, legs frequently banded. Carapace with thoracic region sloping; with a small, deep fovea while the cephalic region varies from long and attenuated (*Anansi*) to short, sharply convex near the middle and sloping to the front and back (*Ero*); carapace sometimes with rows of long spines; eyes 8 in 2 rows, anterior median eyes usually largest, lateral eyes equal, connate and raised on a small common protuberance; cheliceral paturon with promarginal peg teeth; chelicerae fused at the base. Abdomen variable in shape, often broad and angular in front or provided with humps; four dorsal abdominal humps with apical macrosetae (*Anansi*); integument usually with very strong isolated setae. Legs long and slender; with characteristic raptorial macrosetae (spines) on the anterior prolateral surfaces of the legs I and II tibia and metatarsi consisting of a series of short spines, interspersed with a series of longer, slightly curved spines; legs with three tarsal claws.

**LIFESTYLE:** Most mimetids are specialized predators of web-living spiders. They enter the webs of other spiders and, using vibratory patterns that simulate the movement of captured prey or courting males, trick and kill the host (Nentwig & Heimer 1987). This complex behaviour is known as aggressive mimicry (Benavides et al. 2017). Using the rake-like spines on their legs, they first immobilized the legs of host. A quick bite is then delivered, injecting a fast-acting venom that kills the host immediately. Mimetids are also kleptoparasitic on the webs of other spiders, and also feed upon other arthropods (Jackson & Whitehouse 1986) and also feed on eggs of other spiders (Lawrence 1981).

**TAXONOMY:** Except for the genus *Anansi* the African species of the other two genera not yet revised.



Mimetidae. a: *Mimetus* sp., female, dorsal view; b: chelicera showing peg teeth; c: leg I, with modified setae on tibia; d: eye pattern, dorsal view; e: male palp, ventrolateral view; f: epigyne (after Dippenaar-Schoeman & Jocqué 1997)



Leg I, with modified Rake-like setae on tibia



Chelicera showing peg teeth



## GENUS *ANANSI* Benavides & Hormiga, 2017

The genus *Anansi* was recently described by Benavides and Hormiga (Benavides et al. 2017). It is known from three species in Cameroon, Gabon, Congo, and South Africa. (World Spider Catalog 2021).

**COMMON NAME:** Anansi Pirate Spiders

**TYPE SPECIES:** *Anansi luki* Benavides & Hormiga, 2017.

**MORPHOLOGY:** Total length 5.34–6.68 in males and 4.74–5.26 in females. Carapace longer than wide; cephalothorax piriform; cephalic region as long as thoracic region (*A. natalensis*); fovea two longitudinal slits whose ends meet posteriorly; carapace light yellow with dark medial longitudinal band, wide and forming a triangular shape from top of fovea to ocular area; anterior row (seen from in front) straight to slightly recurved; medians black, distinctly larger than the white laterals; two-thirds their own diameter apart, and it is diameters from the laterals; posterior row (seen from above) subequal, straight; anterior median eyes larger, on a tubercle; chelicerae longer than clypeus with peg teeth, yellowish to dark brown, longer than clypeus width, ca. 1.4 times longer in *A. natalensis*, Sternum longer than wide, prolonged between coxae IV; light yellow to brownish. Abdomen dark brown and approximately as long as wide (*A. natalensis*); dorsal abdomen with four humps, two anterior located about one third of the anterior abdominal margin and two larger humps about one half of the anterior abdominal margin. Legs slender; yellowish with dark spots; with macrosetae; retrolateral side of femur I and prolateral side of femur II with a longitudinal row of short setae. Genitalia: female epigyne posteriorly projected; male palp a conductor with a flagellum-like process. paracymbium spoon shaped

**LIFESTYLE:** A free-living spider found on vegetation that feeds on other spiders

**TAXONOMY:** The genus was recently described by Benavides and Hormiga (Benavides et al. 2017) and the species *Mimetes natalensis* Lawrence, 1938 was transferred to the new genus.



*Anansi natalensis* immature male from Ndumo Photos Rudi Steenkamp

## *Anansi natalensis* (Lawrence, 1938)

**COMMON NAME:** Anansi Pirate Spider

**NATIONAL STATUS:** LC

**NATIONAL RATIONALE:** A South African endemic described by Lawrence (1938) as *Mimetes natalensis* from Pietermaritzburg. It is known from seven provinces (EOO=687 348 km<sup>2</sup>; AOO=116 km<sup>2</sup>; 5-1732 m a.s.l.). Due to wide geographical range and the fact that it can utilise agricultural areas it is listed as being of Least Concern.

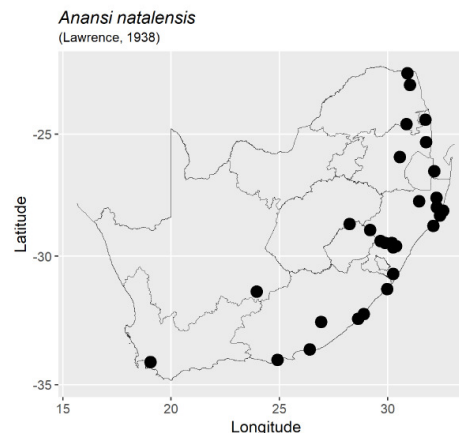
**LIFESTYLE:** A free-living spider found on vegetation that feeds on other spiders. This is an arboreal species commonly found in crops such as avocado, citrus, cotton and in pine plantations, with adequate supply of spiders to prey on (Dippenaar-Shoeman et al. 2013). The species occurs in all biomes excluding the Desert and Succulent Karoo Biome (Foord et al. 2011, Haddad et al. 2013).

**GLOBAL DISTRIBUTION:** South Africa.

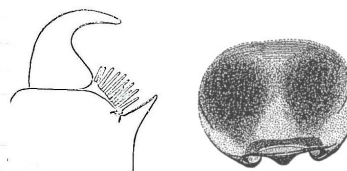
**DISTRIBUTION IN SOUTH AFRICA:** **Eastern Cape:** Alexandria (-33.65, 26.4); Cwebbe Nature Reserve (-32.28, 28.9); Hogsback (-32.59, 26.92); Mazeppa Bay (-32.47, 28.64); Mkambati Nature Reserve (-31.31, 29.97). **Free State:** Wyndford Guest Farm, Fouriesburg (-28.7, 28.24). **KwaZulu-Natal:** Cathedral Peak (-28.94, 29.19); iSimangaliso Wetland Park: Hell's Gate (-28, 32.48); uMkuze Game Reserve (-27.63, 32.25); Cape Vidal (-28.16, 32.56); Kamberg Nature Reserve (-29.39, 29.67); Ngome State Forest (-27.78, 31.45); Pietermaritzburg (-29.6, 30.38); Richards Bay (15 km N) (-28.78, 32.1); Richmond -29.86, 30.26; Umgeni Valley Nature Reserve (-29.47, 30.2); Wakefield Farm (-29.473, 29.893); Vernon Crookes Nature Reserve (-30.16, 30.37); Edendale (-29.65, 30.26); Oribi Gorge Nature Reserve (-30.71, 30.26). **Limpopo:** Kruger National Park (-22.93, 31.02); Kruger National Park (Satara) (-24.399, 31.736); Wallers Camp/Pafuri River Camp (-22.424, 30.911). **Mpumalanga:** Badplaas (-25.95, 30.56); Nelspruit (-25.47, 30.96); Mariepskop (-24.58, 30.87). **Northern Cape:** Richmond (-31.4, 23.95). **Western Cape:** Lebanon Forest Station (-34.14, 19.04).

**CONSERVATION MEASURES:** There are no significant threats. It is sampled from 10 protected areas.

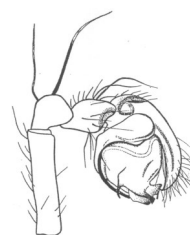
**TAXONOMIC NOTES:** Moved by Benavides & Hormiga (2017) from *Mimetes* to *Anansi*. Known from both sexes.



*Anansi natalensis* Photo ASD



After Lawrence (1938)



After Unzicker (1938)



Epigyne Photo ASD



After Benavides & Hormiga (2017)

## GENUS *ERO* C. L. Koch, 1836

The genus *Ero* C.L. Koch, 1836 is a cosmopolitan genus with 41 currently recognised species (World Spider Catalog 2021). Five from Africa

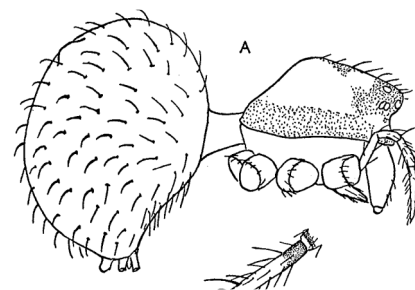
**COMMON NAME:** Ero Pirate Spiders

**TYPE SPECIES:** *Ero tuberculata* (De Geer, 1778).

**MORPHOLOGY:** Size: Total length 3-4 mm. Carapace elevated in the middle; with a circular depression in the middle of the thoracic region; clypeus very concave, about as wide as ocular area; eyes: posterior row very slightly recurved; eyes equal; medians nearer to each other than to laterals; anterior row very slightly recurved (as seen from in front), nearly straight; medians darker, and a little larger, than laterals, slightly nearer to each other than to laterals; laterals on eminences; median trapezium a very little longer than broad; labium triangular, not rebordered, reaching a little beyond mid point of maxillae; chelicerae with stridulating ridges on outer surface; having 4-5 peg teeth in outer row. Abdomen humped; covered with short spines and mottled with dark brown, or black and creamy white, with, sometimes, a reddish tinge; there are two rather flat tubercles on the anterior half. Legs rather slender; light yellow-brown, with deep brown annulations; promarginal row of long, slightly curved spines on the tibiae and metatarsi of legs I and II. The sexes are alike in general appearance.

**LIFESTYLE:** A free-living spider found on vegetation that feeds on other spiders.

**TAXONOMY** Although about two-thirds of the *Ero* species have been described since the 1900s the genus lacks a modern taxonomic treatment, with most species described outside a revisionary context. The characters that have traditionally been used to distinguish *Ero* from *Mimetus* are the height of the clypeus (higher in *Ero* than in *Mimetus*), and the length of the fore legs (in *Ero* legs I and II subequal, while in *Mimetus* legs I are the longest).



*Ero* sp. showing the shape of the carapace



## *Ero capensis* Simon, 1895

**COMMON NAME:** Cape Ero Pirate Spider

**NATIONAL STATUS:** LC

**NATIONAL RATIONALE:** A southern African endemic described by Simon(1895), with type locality given only as Cape Peninsula. The species is recorded from Swaziland and three provinces in South Africa (EOO= 751 010 km<sup>2</sup>; AOO=44km<sup>2</sup>; 7-957m a.s.l.). Although the species is presently known only from one sex it has a wide geographical range and can be listed as being of Least Concern.

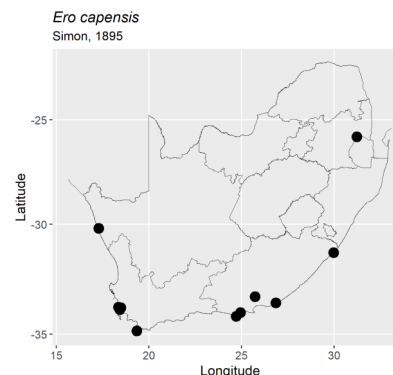
**LIFESTYLE:** A free-living spider found on vegetation that feeds on other spiders. Sampled from the Fynbos, Grassland and Thicket biomes.

**GLOBAL DISTRIBUTION:** Swaziland and South Africa.

**DISTRIBUTION IN SOUTH AFRICA:** **Eastern Cape:** Fish River (-33.6, 26.85); Jeffrey's Bay (-34.06, 24.91); Mkambati Nature Reserve (-31.31, 29.97); Baviaanskloof (-33.76, 24.81); Addo Elephant National Park (-33.32, 25.72); Thyspunt, 12 km WNW, Cape St Francis (-34.2056, 24.7083). **Northern Cape:** Koinaas (-30.57, 17.57). **Western Cape:** Cape Town (-33.91,18.42); Table Mountain National Park (-33.82, 18.48); Fernkloof Nature Reserve (-34.86, 19.34); Robben Island (-33.8, 18.35).

**CONSERVATION MEASURE:** There are no significant threats. It is protected in Addo Elephant National Park, Fernkloof Nature Reserve, Table Mountain National Park and Mkambati Nature Reserve

**TAXONOMIC NOTES:** Not revised. Known only from the female. Carapace yellow-olive-brown with dark triangle marking. Protruding abdomen, numerous setae, black-speckled and variegated. Chelicerae and other parts of the mouth castaneous. Legs yellow with olive-bands. Total length 3.5 mm (Simon 1895).



*Ero capensis* from Addo National Park Photo L. Wiese



*Ero capensis* Photo ASD



## *Ero lawrencei* Unzicker, 1966

**COMMON NAME:** Lawrence's Ero Pirate Spider

**NATIONAL STATUS:** LC

**NATIONAL RATIONALE:** A southern African endemic described by Unzicker (1966) from the Kasouga River near Grahamstown, South Africa. The species is also known from Zimbabwe and occurs in three provinces in South Africa (EOO=313 307 km<sup>2</sup>; AOO=44 km<sup>2</sup>; 29 -1646 m a.s.l.). Due to its wide geographical range it is listed as being of Least concern.

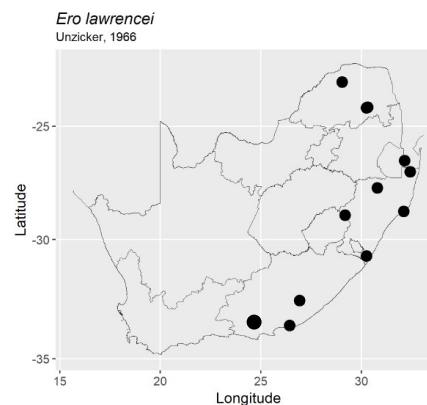
**LIFESTYLE:** A free-living spider found on vegetation that feeds on other spiders. Sampled from the Grassland and Savanna biomes (Foord et al. 2011, Haddad et al. 2013).

**GLOBAL DISTRIBUTION:** Zimbabwe and South Africa.

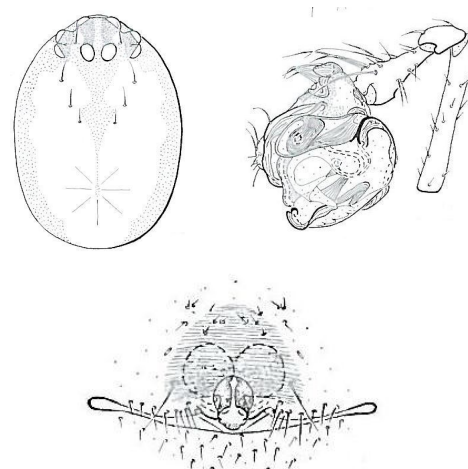
**DISTRIBUTION IN SOUTH AFRICA:** **Eastern Cape:** Port Alfred (-33.58, 26.89); Kasouga Mouth of Kasouga River (-33.63, 26.72); Hogsback (-32.59, 26.92); Jeffrey's Bay (-34.06, 24.91). **KwaZulu-Natal:** Cathedral Peak (-28.94, 29.19); Ndumo Game Reserve (-26.87, 32.24); Richards Bay (15 km N) (-28.78, 32.1); (-27.75, 30.79); Oribi Gorge Nature Reserve (-30.71, 30.26); Tembe Elephant Park (-27.0337, 32.4245). **Limpopo:** Blouberg Nature Reserve (-22.99, 29.04); Lekgalameetse Nature Reserve (-24.17, 30.25); Lekgalameetse Nature Reserve, Farm The Downs (-24.14, 30.31).

**CONSERVATION MEASURE:** There are no significant threats. It is protected in Ndumo Game Reserve (Haddad et al. 2006), Oribi Gorge Nature Reserve, Tembe Elephant Park, Blouberg Nature Reserve (Foord et al. 2019) and Lekgalameetse Nature Reserve (Foord et al. 2016).

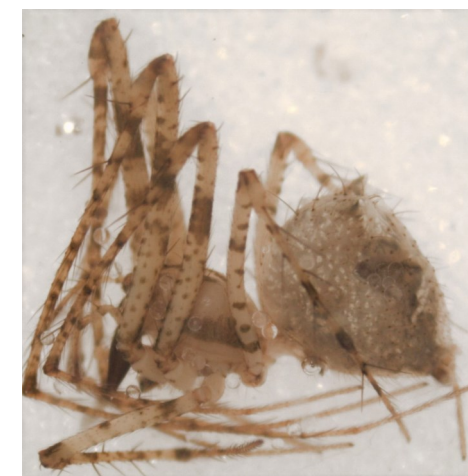
**TAXONOMIC NOTES:** Known from both sexes. Carapace fovea present. Carapace light yellow with brown markings. Abdomen 2.25 mm long; with tubercles and spines in both sexes; with white area on dorsal surface starting between the tubercles and tapering to the base of the spinnerets where it narrows; edges of the white area sinuate and the remainder of the abdomen dark with the exception of another white area just behind the epigynum. Total length 4.30 mm (female), 3.6 mm (male) (Unzicker 1966).



*Ero lawrencei* female from Jeffrey's Bay Photo Linda Wiese



Carapace and genitalia after Unzicker (1966)



*Ero lawrencei* female from Jeffrey's Bay Photo ASD

## GENUS *MIMETUS* Hentz, 1832

The genus *Mimetus* Hentz, 1832 is a cosmopolitan genus that currently comprises 62 described species (World Spider Catalog 2021). Presently only one species known from South Africa

**COMMON NAME:** Mimetus Pirate Spiders

**TYPE SPECIES:** *Mimetus syllepsicus* Hentz, 1832.

**MORPHOLOGY:** A distinguishing mark of the genus is that the distance between the anterior edge of the carapace and the anterior medial eyes is about one-third to one-half of the distance between the anterior and posterior medial eyes. The length of the anterior legs is about 1.5 to 1.7 times that of the posterior pair. The upper side of the abdomen bears curved bristle like hair. Members of this genus resemble the comb-foot spiders, Theridiidae, due to their globular abdomen.

**LIFESTYLE:** Spiders in this genus are specialised spider killers. They spin no web but are slow moving, stalking or ambushing their prey. They sometimes invade the web of their potential victim, vibrating the silk to mislead the owner. An individual will attack a potential victim by biting one of its legs and injecting toxins. It then retreats and the prey spider quickly becomes paralysed. The attacker then advances and starts to feed, sucking out the body fluids of its victim.

**TAXONOMY:** Although more than 80% of *Mimetus* species have been described in the 1900s or earlier, no modern taxonomic monograph of *Mimetus* exists and the genus remains without an explicit phylogenetic circumscription.



*Mimetus* sp. Photo Les Oates



## *Mimetus cornutus* Lawrence, 1947

**COMMON NAME:** Horned Mimetus Pirate Spider

**NATIONAL STATUS:** LC

**NATIONAL RATIONALE:** A southern African endemic described by Lawrence (1947) from Durban in KwaZulu-Natal. The species is also recorded from Botswana, Mozambique and in South Africa recorded from two provinces (EOO=101 587 km<sup>2</sup>; AOO=47 km<sup>2</sup>; 47-1393 m a.s.l.). Although the species is presently known only from one sex it has a wide geographical range and can be listed as being of Least Concern.

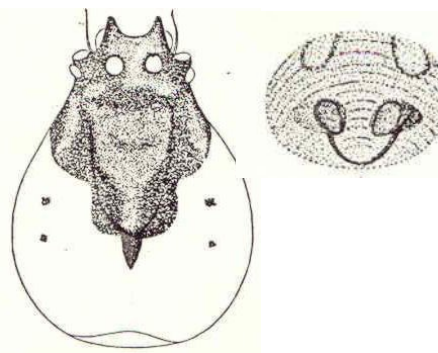
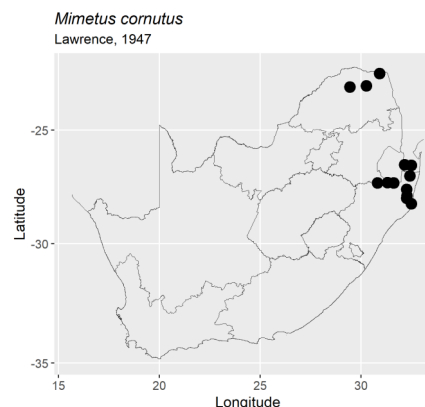
**LIFESTYLE:** A free-living spider found on vegetation that feeds on other spiders. Sampled from the Indian Ocean Coastal Belt and Savanna biomes (Foord et al. 2011).

**GLOBAL DISTRIBUTION:** Botswana, Mozambique and South Africa.

**DISTRIBUTION IN SOUTH AFRICA: KwaZulu-Natal:** Durban (-29.85, 31.01); Pongola Farm Vergeval, district Ngotsche 58 (-27.35, 31.61); Ndumo Game Reserve (-26.87, 32.24); Tembe Elephant Park (-27.034, 32.425); iSimangaliso Wetland Park: Hell's Gate (-28, 32.48); iSimangaliso Wetland Park: False Bay (-27.92, 32.27); iSimangaliso Wetland Park: Mission Rocks Picnic Site (-28.264, 32.483); iSimangaliso Wetland Park: uMkhuze Game Reserve (-27.63, 32.25); Paradise 54 (-27.34, 31.3); Kosi Bay Coastal Forest (-26.95, 32.82). **Limpopo:** Entabeni Nature Reserve (-22.99, 30.26); Pafuri (Waller's Camp); (-22.46, 31.3); Lhuvhondo Nature Reserve (-23.03, 29.45); Tshulu (Venda) (-22.58, 30.81).

**CONSERVATION MEASURES:** Threats to the species are unknown but more sampling is needed to collect the male. It is presently protected in Ndumo Game Reserve (Haddad et al. 2006), Tembe Elephant Park (Haddad et al. 2009), uMkhuze Game Reserve, Entabeni Nature Reserve and Lhuvhondo Nature Reserve (Foord et al. 2008)

**TAXONOMIC NOTES:** Not revised. Known only from the female. Male sampled but not yet described (National Museum Bloemfontein).



Carapace and epigyne after Lawrence (1947)



*Mimetus cornutus* female Photos Wynand Uys



Eyes anterior view Photo ASD

## Mimetidae undetermined species



Jeffrey's Bay Linda Wiese



Jeffrey's Bay Linda Wiese



Jeffrey's Bay Linda Wiese



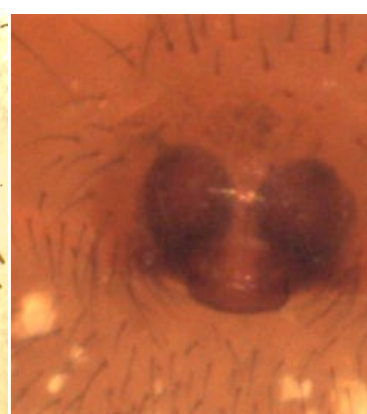
Kalkfontein Nature Reserve Nicolette Josling *Anansi* sp?



Kalkfontein Nature Reserve Nicolette Josling *Ero lawrencei*?



Ezemvelo Nature Reserve Peter Webb & ASD



Britstown J. Riddell *Anansi* sp?



## Mimetidae undetermined species



Hermannsburg Peter Webb



Sp.1 Lekgalameetse Nature Reserve Peter Webb



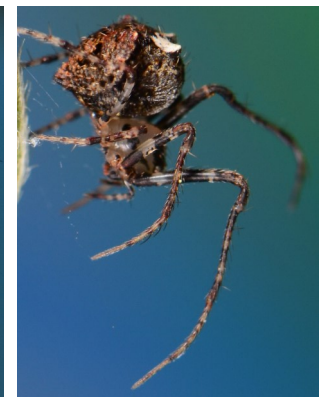
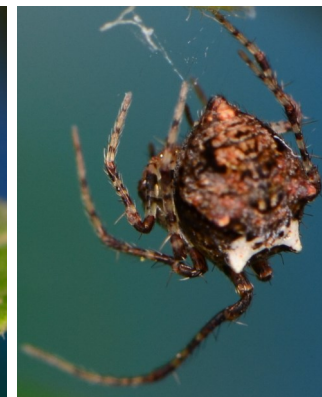
Sp. 2 Lekgalameetse Nature Reserve Peter Webb



Kloof Peter Webb



Sp. 1 Wakefield Farm KZN Peter Webb



Sp. 2 Wakefield Farm KZN Peter Webb



***Mimetidae* undetermined species**



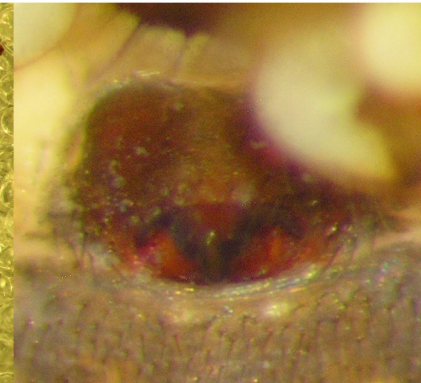
Blouberg Nature Reserve Photo ASD



Soutpansberg Photo ASD



Hluhluwe Photo ASD



Bloemfontein National Botanical Garden PhotoCharles Haddad



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