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CONTENTS

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ABSTRACT

A recent preliminary survey of katipo (*Latrodectus* spp.) along the Bay of Plenty coastline found spiders that were clearly morphologically different, although they shared many of the known katipo features. The combination of these aspects made the identification of katipo in the field somewhat difficult, especially when encountering many juvenile animals. We reviewed the literature concerning the identification of katipo and *Steatoda* spp. in the field, received advice from people working with katipo, and observed the key morphological differences using a dissecting microscope. A combination of the spiders' colour, surface appearance, markings, general body shape, and especially the difference between the lateral eye spacings are helpful in identifying and distinguishing between the katipo species, and similar spider species.

Keywords: katipo, spiders, *Latrodectus katipo*, *Latrodectus atritus, Steatoda capensis*, New Zealand

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1. Introduction

Katipo are an iconic coastal species, and one of the most well known endemic invertebrates within New Zealand. While most New Zealanders know of the katipo (spider), for the public, coastal care groups, and even conservation managers to easily identify katipo can be another matter. Griffiths (2001) indicated that there is a shared distribution of the two katipo species—red katipo (*Latrodectus katipo*) and black katipo (*Latrodectus atritus*). Within this shared distribution, similar-looking spiders especially of the *Steatoda* genus (of which many of the common ones are exotic) are also present. One of the *Steatoda* species (*Steatoda capensis*) shares so many of the katipo features, including size, shape, general colouration, as well as the general location (although not necessarily habitat preference) it has been termed the 'false katipo'. This short article has been compiled to help interested individuals in identifying the katipo species and its similar *Steatoda* neighbours.

2. Diagnostic characteristics of the katipo spider

The most clearly identifiable morphological distinction between the red katipo *Latrodectus katipo* and black katipo *Latrodectus atritus* is the spider's colour. The location where a katipo is found can help in distinguishing between the two species. The black katipo is found along the west coast of the North Island down to Oakura, and on the east coast down to Te Kaha. The red katipo is found along the west coast south from Kawhia to Karamea, and from Maketu on the east coast down to Dunedin (source: Griffiths 2001). There exists an overlap of distribution of the two species in the Waikato, Taranaki, and Bay of Plenty regions (Griffiths 2001).

2.1 RED KATIPO—*Latrodectus katipo*

Mature female *L. katipo* have a white-bordered red stripe that runs from the uppermost surface of the dark velvet-black abdomen back to the spinnerets (Forster & Forster 1999). The black abdomen has also been described as satin or silky in appearance, as opposed to being of a patent leather type shine (Phil Sirvid, Museum of New Zealand Te Papa Tongarewa, pers. comm.). Mature female *L. katipo* can also have faint white lines on the uppermost surface of the abdomen (James Griffiths, pers. comm.). The underside of the abdomen is black with a distinctive red hourglass marking (Forster & Forster 1999).

2.2 BLACK KATIPO — *Latrodectus atritus*

Except for the (often apparent) absence of the red stripe, *L. atritus* is similar to the red katipo *L. katipo*. Mature female *L. atritus* are dark velvet (or satin; silky) black in colour and appearance. The abdominal colouration of *L. atritus* is generally lighter however than in *L. katipo* (Griffiths 2001). There is usually an hourglass marking beneath the abdomen of *L. atritus*, although not always (Phil Sirvid, pers. comm.). Additionally, the hourglass may be quite indistinct and not have the central part (Phil Sirvid, pers. comm.). However, if there is no red hourglass marking beneath the abdomen, then the animal is not *Latrodectus* (Olwyn Green, MAF, pers. comm.). McCutcheon (1976) outlined the colour variation of *L. atritus*, where in rare cases colonies of *L. atritus* may be brown, and can have a dull red or yellow dorsal stripe on the abdomen. *L. atritus* additionally can have a brown abdomen with a black cephalothorax; the brown abdomen can have cream coloured spots on the dorsal surface, and conversely *L. atritus* can have a black abdomen with a brown cephalothorax. Mature male *L. katipo* and *L. atritus* are predominantly white with a series of red-orange diamonds running from the thorax to the spinnerets that are bordered by irregular black lines (Griffiths 2001). There is considerable intra-specific variation amongst *L. katipo* and *L. atritus*, so inter-specific differences between mature males are much less obvious (Griffiths 2001).

The body of the mature female *L. katipo* and *L. atritus* is approximately 8–10 mm long, most of which is accounted for by the abdomen which is about the size of a garden pea (Griffiths 2001). Their overall length (including legs) is approximately 35–41 mm (McCutcheon 1976). Mature *L. katipo* and *L. atritus* males are approximately one sixth the size of the mature female. The abdomen of the mature male is more elongated than the female.

3. Distinguishing *Latrodectus* from *Steatoda*

Latrodectus spp.can be distinguished from *Steatoda* spp. using morphological identification characteristics. The black abdomen of *Steatoda* is a lot shinier, like patent leather (Phil Sirvid, pers. comm.). The abdomen of *L. katipo* and *L. atritus* can look more tapered towards the rear than that of *Steatoda* (Fig. 1). The most distinct morphological-identification feature between *Latrodectus* and *Steatoda* is the lateral eye spacing (Figs 2A and 3A), although the easiest characteristics to be seen with the naked eye are the general body shape, and surface appearance of the abdomen.

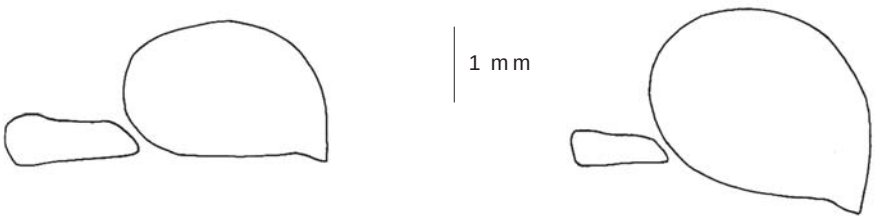

Figure 1. *Steotoda capensis* (left) and katipo (right) general body shapes. Scale bar = 1 mm.

Steatoda eggsacs tend to look a little fluffier than *Latrodectus katipo* or *L. atritus* eggsacs (Phil Sirvid, pers. comm.). Forster & Forster (1999: 176) depicted an *L. katipo* eggsac which appears fairly finely woven. *Steatoda* tends to have a slightly messier, more open look to its eggsacs (Phil Sirvid, pers. comm.).

The lateral eyes are separate on *Latrodectus katipo* and *L. atritus* (Figs 2A and 2B), while the lateral eyes are contiguous (or separated by less than their diameter) on *Steatoda* spp. (Figs 3A and 3B). To determine this does necessitate the use of a microscope with adequate magnification (i.e. at least a dissecting microscope).

Figure 2. Black katipo (*Latrodectus atritus*). **A**. Dorsal and lateral cephalothorax drawings. **B**. Frontal head drawing.

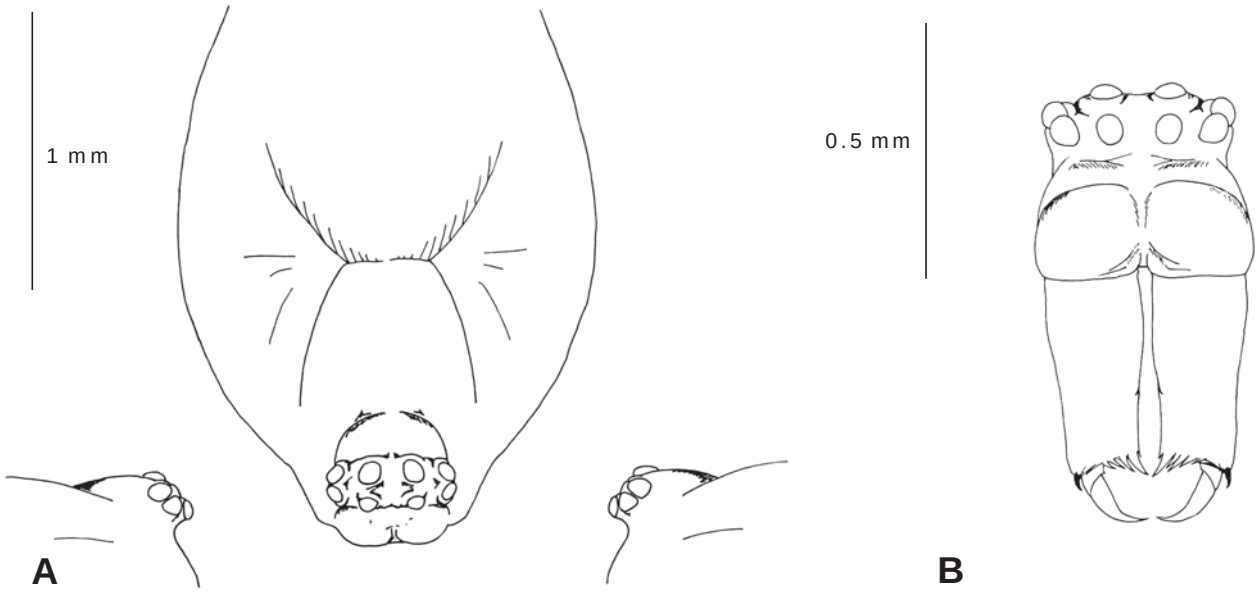

Figure 3. *Steatoda capensis*. **A**. Dorsal and lateral cephalothorax drawings. **B**. Frontal head drawing.

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