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## Neotype designations for the type species of *Phidippus* (Araneae: Salticidae)<sup>1</sup>

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### Abstract

Neotypes are designated for *Attus audax* Hentz and *Salticus variegatus* Lucas in order to establish the identity of these species to facilitate a ruling on the proper name of the type species of the genus *Phidippus* by the International Commission of Zoological Nomenclature.

### Introduction

The genus *Phidippus* was created by C. L. Koch (1846), who designated *Salticus variegatus* Lucas (1833) as the type species. Subsequent workers were uncertain to which species this name should apply. *Phidippus variegatus* (Lucas) has been variously considered as a separate species or used in the literature for both *P. audax* (Hentz) and *P. regius* C. L. Koch (Levi and Pinter 1970). Taylor and Peck (1974) have demonstrated that the populations considered by some authors (e.g., Peckham and Peckham 1901) to be *P. variegatus* are *P. audax*. Hentz's collection in Boston, including the type of *Attus audax* Hentz (1845), has long since been destroyed (Hentz 1875). The type of *S. variegatus*, which is supposed to be in the Museum National d'Histoire Naturelle (MNHN), Paris, cannot be located and is presumed lost (C. Rollard, personal communication). I have examined the type of *Phidippus regius* C. L. Koch (1846), which is located in the Zoologisches Museum, Humboldt University, Berlin.

First must be answered the question, "what species is *Salticus variegatus*?" The type of this species is supposed to be from New Orleans, Louisiana. Bryant (1942) borrowed a pair labelled as this species (not types) from the MNHN which had been collected in Mobile County, Alabama. She made a rather crude illustration of the palp, which, however, was sufficient to suggest that *S. variegatus* might be a senior synonym of *Phidippus regius* C. L. Koch. I have examined the pair from Alabama in the MNHN, presumably the same pair that Bryant examined. The male is *P. audax*, the female is *P. regius*.

One other piece of evidence supporting the synonymy of *P. regius* and *S. variegatus* comes from the

description of *S. variegatus* by Lucas (1833), in which he stated, "dessous de l'abdomen entierement noir" (underside of the abdomen entirely black). This matches the condition which always occurs in *P. regius*, but which only occasionally occurs in *P. audax*. *Phidippus audax* commonly has a pair of longitudinal white lines on the venter of the abdomen.

Levi and Pinter (1970) requested the International Commission of Zoological Nomenclature to suppress *Salticus variegatus* Lucas, 1833, in favor of *Attus audax* Hentz, 1845, as type species of the genus *Phidippus*, based on the massive preponderance of usage of the name *audax* in various combinations, especially *Phidippus audax* (Hentz), as well as the confusion as to its identity mentioned above. Levi and Pinter (1970) stated that, "All evidence we have indicates that it (*S. variegatus*) is a senior synonym of *P. audax*." They presented no actual morphological evidence to support this statement.

Evidence that *S. variegatus* is *P. audax* does exist. Lucas described *S. variegatus* as having white carapace bands, a condition that is quite common in *P. audax* but extremely rare in *P. regius*, which normally has an all black carapace. Furthermore, it is possible that those rare *P. regius* males which have white carapace bands are the results of introgression, as this species is known to hybridize occasionally with *Phidippus otiosus* (Hentz), resulting in offspring which look similar to the rare morph of *P. regius* (Edwards 1980). It is worth noting that if the missing type of *S. variegatus* did prove to have genitalia similar to that of *P. regius*, there is a strong possibility that the specimen could have been a *P. regius* x *P. otiosus* hybrid! According to Article 23(h) of the 1985 edition of the International Code of Zoological Nomenclature, the name of a type based on a hybrid specimen cannot be used as the name of either parent species, even if it has priority.

Another factor favoring the likelihood that *P. audax* is the true *S. variegatus* is that the type locality of *S.*

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*variegatus* (New Orleans, Louisiana) is approximately 50 miles west of the westernmost record (Hattiesburg, Mississippi) of *P. regius*. More important than the distance is the presence of the Mississippi River between the two localities. Although *P. regius* balloons (Edwards 1975), and the river itself may not prevent *P. regius* spiderlings from crossing, the hydric habitats surrounding the river are probably not conducive to colonization by *P. regius*, which are generally found in mesic to primarily semi-xeric habitats in Florida (Edwards 1980).

A third factor of importance is the ventral abdominal pattern of *P. audax*. The two white lines are made up of scale-like setae which are not difficult to rub off. It is possible that the type of *S. variegatus* was a normal specimen of *P. audax* in which the venter of the abdomen had been rubbed, giving the appearance of an all black venter. Alternatively, it could have been a specimen of the less common variety of *P. audax* in which the ventral white stripes are reduced or lacking altogether. This condition is more prevalent in males (the types of both *S. variegatus* and *A. audax* were males).

Taking all the above evidence into consideration, my first inclination, given the recent lack of use of the name, the confusion over the characters given in Lucas' description, and the fact that the type is lost, would have been to pronounce *S. variegatus* to be a *nomen dubium*. However, since the name is a senior synonym and concerns the type species of the genus, further action is called for. The weight of the evidence leads me to believe that *Salcticus variegatus* Lucas is more likely to be *Attus audax* Hentz than *Phidippus regius* C. L. Koch. Neotypes for both *S. variegatus* and *Attus audax* are designated below. Due to reasons given previously (Cutler 1979, Edwards 1979, Richman 1979), along with additional evidence given above, I continue to support the petition of Levi and Pinter (1970) to suppress the name *S. variegatus* Lucas in favor of *Attus audax* Hentz as type species of the genus *Phidippus*.

Both neotypes designated below are deposited in the Museum of Comparative Zoology, Cambridge, Massachusetts, USA. Illustrations of genitalia and other drawings of *P. audax* sufficient to identify this species were published by Kaston (1948). Hill (1978) illustrated numerous color variations of this species.

***Salcticus variegatus* Lucas, 1833**, Neotype male:USA: LOUISIANA: East Baton Rouge Parish, May, 1955, L. R. Roddy, in building. The carapace is 5.66 mm long and 4.90 mm wide, and total body length is 11.33 mm. The color pattern is similar to that illustrated by Hill (1978) in figure 1J, except the abdominal spots are white instead of red.

***Attus audax* Hentz, 1845**, Neotype male:USA: MASSACHUSETTS: Middlesex County, Cambridge, May 1961, A. Russel, in biology laboratory building. The carapace is 4.37 mm long and 3.54 mm wide, and total body length is 8.75 mm. The color pattern is similar to that illustrated by Hill (1978) in figure 1E, with the addition that the first and fourth spot pairs are also present and represented by small white spots.

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