

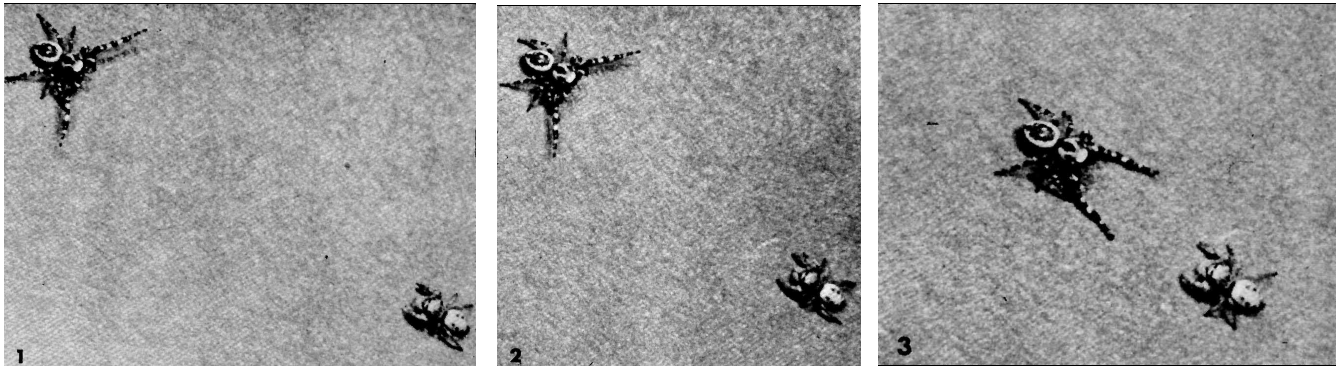
This is a PDF version of PECKHAMIA 2(3): 38-41, December 1982. Pagination of the original document has been retained, except for movement of figure captions from p. 40, and figures from p. 41, to accompany the text. Editor's note [55.1]: Most names used in this paper have changed since 1982: *Habrocestum*>*Naphrys* (in part), *Metaphidippus galathea*>*Pelegrina galathea*, *Metaphidippus vitis*>*Sassacus vitis*, *Pellenes*>*Habronattus* (in part, including all names used here), *P. arizonensis*>*H. conjunctus*.

NOTES ON THE COURTSHIP OF SOUTHWESTERN *METAPHIDIPPUS* AND *PELLENES* (ARANEAE: SALTICIDAE).

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I recently (Richman 1982) published the results of eight years of research on the courtship displays of 48 species of salticid spiders. Much of the earliest work I did on this subject was in the southwestern United States and involved several species of the genus *Pellenes* (*Habronattus*). I also, however, observed and made films of the courtships of two species of *Metaphidippus*- *M. manni* (Peckham & Peckham) and *M. vitis* (Cockerell). I present here some notes on these and on three species of *Pellenes* (*Habronattus*) - *P. arizonensis* Banks, *P. sp. cf. coecatus* (Hentz), and *P. tarsalis* Banks- along with photographs of males and females during courtship (Figs. 1-7).

Courtship in *Metaphidippus manni* (Fig. 1-3) involved short zigzag movements of the male, with the first legs lowered. This is quite similar to the courtship of *M. galathea* (Walckenaer) from Florida in the early stages, except that in the observed courtship of the latter species the zigzags tended to be more arc-like and extended over a somewhat wider surface. This type of courtship, with the angle of separation of the front legs of the male getting smaller as the male approached the female, may be common to several species within *Metaphidippus*. Unfortunately, I have not been able to observe the courtships of some of the other species related to *M. manni* and *M. galathea*.



Figures 1-3. *Metaphidippus manni* (Peckham & Peckham) courtship pose. Male on left.

Metaphidippus vitis exhibits quite a different courtship (Fig. 4). Here the male crossed the first legs and raised them. The crossed front legs were then jerked at short intervals during the zigzag movement toward the female. A similar courtship was observed for *Sassacus papenhoei* Peckham & Peckham (Richman 1982), but the reproductive morphology of these two species is different enough to separate them into distinct genera. I thus do not believe, as I once did, that these two species are congeneric. However, I have serious doubts that *M. vitis* should be in *Metaphidippus*.

Pellenes (*Habronattus*) *arizonensis* (Fig. 5) has a courtship which is difficult to distinguish from several other members of the *agilis* group (see Griswold 1976 for species group descriptions). These include *P. agilis* (Banks) and *P. n. sp. cf. arizonensis* from Florida. Male specimens, which appeared to be *P. arizonensis*, from 20 mi. south of Mulege, Baja California Sur, Mexico, had bright red cephalic areas, whereas males from Yuma, Yuma Co., Arizona, had brownish colored cephalic areas. The courtship of both forms appeared to be identical. The courtship of *P. arizonensis* from Yuma

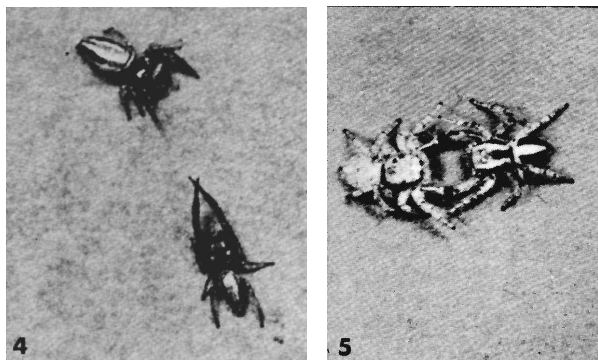


Figure 4. (left) *Metaphidippus vitis* (Cockerell) courtship pose. Male at bottom. Figure 5. (right) *Pellenes arizonensis* Banks courtship pose. Male on right.

often began with the male positioning his front legs in a wide-spread stance, than moving in a zigzag, crab-like fashion toward the female. The palpi were spread apart and the opisthosoma was often bent downward. The front legs were extended and waved a few times. The male eventually reached a position in front of the female, facing her, with his front tarsi touching the bases of her front femora and with his palpi bent downward (Figure 5). The male often moved his palpi back and forth periodically a few times in unison with his second pair of legs. If the female was not receptive she would move slightly forwards pushing the male and causing him to jump backward. The male would often return, repeating the display several times before stopping. In the one successful mating observed the display was very short, lasting only a few seconds. The male moved forward, mounting over the the female's carapace and inserted his palpi alternately. He first inserted his right palpus and

remained in this position for 60 seconds. During this time he bobbed his abdomen and jerked his legs during three separate episodes. He then transferred to the left and repeated the activity.

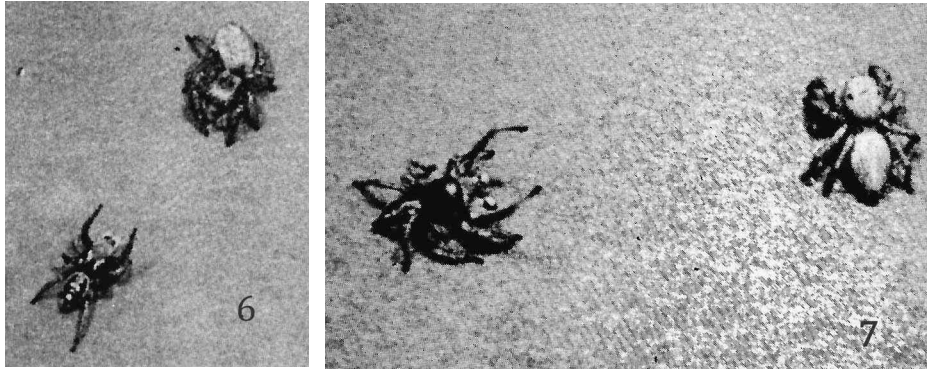


Figure 6. (left) *Pellenes pyrrihrix* Chamberlin (= *P. cf. coecatus* (Hentz)) courtship pose. Male on lower left. Figure 7. (right) *Pellenes tarsalis* Banks courtship pose. Male on left.

Mating was terminated after two minutes when the female moved and the male jumped backward.

The courtship of *P. (H.) cf. coecatus*¹ (Fig. 6) was much longer in duration than those observed for *P. arizonensis*. Members of the *coecatus* group generally seem to exhibit very long, drawn out courtships during which the male is nearly motionless for as much as a half hour. The early courtship often began with the male moving in a zigzag fashion. The male then usually approached the female in a straight line. When the distance

had closed to less than 25 mm the male ceased moving rapidly, almost came to a stop, and crept slowly forward with his front legs held nearly perpendicular to the substrate. As the male slowly approached, he jerked his first pair of legs about four or five times in succession at intervals of 20 to 30 seconds, decreasing the length of the interval as he got closer. The jerks were always preceded by the movement of the third pair of legs, both legs being raised and lowered in unison, displaying the modifications of the patellae and tibiae. The palpi were lowered, revealing the bright red clypeus. This display often lasted several minutes. The male at times was completely still, with his first pair of legs raised and facing the female (Fig. 6). The female occasionally responded early in the display by waving her front legs in unison, but by this later stage she usually looked straight at the male. Mating was observed on one occasion. It lasted 25 minutes, during which the male transferred from right to left several times and only bobbed his abdomen once. In addition to morphological differences, males of *P. coecatus* from Georgia differed in that they extended their palpi laterally and moved them up and down during early courtship. The courtships of *P. coecatus* from Georgia and *P. brunneus* Peckham & Peckham from Florida were indistinguishable.

P. tarsalis males began their displays by raising the first pair of legs at an angle of 45° to the substrate. As he approached the female in zigzag fashion the male bowed his legs into the shape of a horseshoe (Fig. 7); the black tarsi being prominently displayed. The black and white cymbium of each palpus was moved rapidly back and forth, producing a bouncing effect. At intervals the male jerked his first legs three to five times, while extending the palpi straight in front of the carapace. If the female was receptive, mating began as quickly as 30 seconds after the start of the display. Otherwise the male would repeat the same pattern over again for several minutes. In mating, the male rocked forward by extending his last three pairs of legs, while jerking his front legs over the female's carapace. The male then mounted, choosing either the right or left side with no preference. After inserting the palpus on one side the male transferred to the other. During the mating the male jerked his hind legs, but did not bob his abdomen. The five matings observed lasted from less than 30 seconds to a few minutes. The courtship of *P. tarsalis* differed from all other species of *Pellenes* I have observed. *P. tarsalis* belongs to the *americanus* species group.

Whether the species of *Habronattus* should be separated from *Pellenes*, as done by F. O. Pickard-Cambridge (1901), or relegated to subgeneric status as done by Gertsch (in Lowrie and Gertsch 1955) is a serious question. I am inclined to disagree with Gertsch on placing *Evarcha* in *Pellenes*, but the relationship of *Pellenes* s.s. and *Habronattus* seems to be very close. The question may be resolved when a planned revision of the genus by Griswold is finished. My recent separation of *Tylogonus* and *Habrocestum* (1981) has made me start to rethink my reasons for placing *Habronattus* in *Pellenes*, but for now I will reserve judgment on the matter.

¹Charles Griswold informs me that this is *Pellenes pyrrihrix* Chamberlin, based on examination of the type and collections made at the type locality in Sonora.

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