

Multiple broods of the jumping spider *Asemonea tenuipes* (Araneae: Salticidae: Asemoneinae)

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Abstract. The deposition of a series of multiple egg clusters or broods within a single nest by a female *Asemonea tenuipes* is documented with photographs taken at three different nest sites, each occupied by a different female, in Mumbai, Maharashtra, India. There was no sign that any of these broods were attacked by parasitoids, as has been previously reported. The linear arrangement of each egg cluster, aligned with the axis of the nest, appears to facilitate the movement of the female within that nest, between multiple entrances on either side. This permits the female to emerge and to capture prey while brooding.

The female jumping spider *Asemonea tenuipes* (O. Pickard-Cambridge 1869) is widely distributed in tropical south and southeast Asia (Tam, Nhan and Khang 2020; WSC 2021). Females are known to deposit one or more rows of eggs, or broods, in their nest, a thin fabric of silk lines deposited beneath leaves (Jackson & Macnab 1991; Hawes 2017; Abhijith & Hill 2018, 2019). Parasitoid infestation of these broods has already been documented (Abhijith & Hill 2019). Here we document the multiple broods (2–3, in succession) of females at three different nests in Mumbai, Maharashtra, India (Figures 1–3).



Figure 1 (continued on next page). Multiple broods of a female *Asemonea tenuipes*, in a single nest. **1**, Female attending to the 20 eggs of her first brood. **2**, Same female, now gravid, with 20 emergent first instars from her first brood eight days later.



Figure 1 (continued from previous page). Multiple broods of a female *Asemonea tenuipes*, in a single nest. **3**, Same female with the 20 emergent spiderlings from her first brood, and a second brood of 19 eggs deposited in two contiguous rows. **4**, Nine days later, the same female was once again gravid, after the departure of the first brood. At least 14 emergent instars from the second brood are visible. **5**, Three days later, the female has deposited a third brood of 17 eggs near the first one, and about 10 spiderlings from the second brood can still be seen. **6**, Ten days later, and only emergent instars of the third brood can be seen. All photographs in Figures 1-3 were taken by the senior author (PJ) in his backyard next to the Sanjay Gandhi National Park in Mumbai, Maharashtra, India (19°13'59.6"N 72°51'52.5"E).



Figure 2. Multiple broods of a second female *Asemonea tenuipes*, in a different nest. **1**, Female at center between her first, emergent brood and a second group of 22 eggs. Note how her position between these broods allows free access to the two entrances at either end of the nest (top and bottom of each photograph). **2**, Eight days later, and most spiderlings of the first brood (at right) have molted into the free-living second instar stage, as shown by the presence of exuviae. The second brood, at left, has hatched, and this female has deposited a third brood of about 17 eggs between the other broods.



Figure 3. Multiple broods of a third female *Asemonea tenuipes* in a different nest. Members of the first brood (at left) already have well-developed eyes, and the 14 eggs of the second brood are ready to hatch. Note the presence of this well-fed female outside of her nest with captured prey (a brachyceran fly). Also note the multiple entrances at either side of this nest (top and bottom of the photograph), and a clear space for the female to move between these broods.

Discussion. Unlike previously documented nests of *Asemonea tenuipes* (Abhijith & Hill 2019), the nests shown here were not subjected to parasitoid infestation. This is in agreement with the idea that parasitoid populations can be quite unstable, varying greatly in space and time (e.g., Bompard et al. 2013). However, some eggs were lost in the brooding process, and selective oophagy by the brooding female is a possibility.

Hawes (2017) proposed that the deposition of strings of eggs in each brood facilitated the observation or surveillance of these broods by the female. Considering the position of the female in her nest, and her ability to hunt outside of the nest while brooding, we think that it is more likely that these strings allow the female to maintain her own compartment at the center of the nest, with ready access to multiple entrances that allow her to emerge to capture prey when the opportunity arises.

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