Male anurans can exhibit different reproductive strategies, which may vary according to the density of individuals, different geographical areas, and different times (Pombal and Haddad, 2005). Herein, we report for the first time multiple amplexus and multiple spawning in *Phyllomedusa iheringii* Boulenger, 1885, an endemic Uruguayan and Brazilian Pampa leaf frog (Duellman, 1999; Frost, 2013). On 23/24 November 2012 between 23:40 and 03:15 in a permanent pond located in the municipality of São Sepé, Rio Grande do Sul, Brazil (30°15'27.5"S; 53°34'52.4"W), we observed two cases of multiple amplexus and one multiple spawning in *P. iheringii* while 17 males were observed vocalising, perched on edge vegetation. In the two multiple amplexus observed, the unattached male chased and intercepted the pair in amplexus, clasping the attached male. The first amplected male performed leg stretching behaviour, and both males fought on the female’s back (mutual dislodge kicking with hindlegs) until the intruder male gave up, while the female kept moving, with both males on her back (Figures 1A, B). The multimale spawning started when an unattached male joined an amplected pair that had already started spawning at 02:21 in a nest from a leaf of *Miconia hiemalis* (shrub species of the family Melastomataceae). The unattached male revolved until it introduced its cloaca between the leaf border and the female’s body (Figures 1C, D). The unattached male had several contractions in its abdominal laterals while his cloaca was inside of the leaf nest. Both males left together at 02:55 after spawning was complete, whereas the female closed the nest clutch alone at 03:15.

Reports of this behaviour are increasing in tree frogs of the Phyllomedusinae subfamily, with a total at least nine species: *Agalychnis callidryas*, *A. dacnicolor*, *A. saltator*, *Phyllomedusa azurea*, *P. bahiana*, *P. distincta*, *P. iheringii*, *P. megacephala*, and *P. rohdei* (Pyburn, 1970; Roberts, 1994; Wogel, Abrunhosa and Pombal, 2005; Prado et al., 2006; Dias et al., 2012; Oliveira, Nogueira and Eterovick, 2012; Santos-Silva, Santos and Ferrari, 2012; and this study). Polyandrous mating may be simply the result of competition among the individuals for access to females in a population with a high density of males (Wells, 2007). However, this behaviour appears to be advantageous because the males can release sperm simultaneously, fertilising at least some of the eggs deposited by the female (Halliday, 1998; Wells, 2007); and for females, it can increase the chances of successful development and genetic variability of the offspring (Prado et al., 2006).

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References


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*Figure 1.* Sequence of multiple amplexus and spawning in *Phyllomedusa iheringii*: (A) a male chasing a pair in amplexus (note the amplexed male performing leg stretching behaviour); (B) males fighting (mutual dislodge) on the female’s back; (C) the intruder male trying to introduce his cloaca inside the nest; and (D) intruder male with his cloaca inside the nest.

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