

**INTRASEXUAL EGG LAYING IN *BELOSTOMA OXYURUM*.
A NOTE ON ITS ECOLOGICAL DETERMINANTS
(HEMIPTERA, BELOSTOMATIDAE)¹**

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RESUMEN: Oviposición intrasexual en *Belostoma oxyurum*. Una nota sobre sus determinantes ecológicos.

Un caso de oviposición intrasexual fue detectado en una población de *Belostoma oxyurum* (Dufour) localizada en un limnótomo léntico de Pinamar, Provincia de Buenos Aires. El fenómeno observado es atribuido a la limitación del recurso sexual constituido por el área de postura, es decir, la superficie dorsal de los machos reproductivos. Tal circunstancia ambiental fue registrada en el campo cuando la "hembra incubante" era extraída de su hábitat. La población de adultos incluía entonces, el máximo porcentaje de hembras grávidas y machos incubantes, ostentando elevados valores de fecundidad potencial y real, y un predominio, aunque no significativo, de hembras sobre machos.

SUMMARY:

Intrasexual egg laying was detected in a female giant water bug, *Belostoma oxyurum* (Dufour) which was captured carrying six fertilized eggs on its back. The location of the eggs does not belong to the pattern known for incubant males of this species. This finding is attributed to the absolute shortage of a sexual resource constituted by the male back space. Such environmental circumstance was recorded in the field when this female was captured. The adult population from which it was taken included a hundred percent of both, gravid females and incubant males, and sex ratio was female biased though without statistical significance. The observed phenomenon has also been recorded in the Nearctic species *Belostoma flumineum* Say. Comparative considerations referred to both species are included.

By the end of the last century there was a general belief among entomologists in the sense that egg incubation and care was performed by females in Belostomatinae species. However, Slatter (1899) stated that in the genus *Zaitha* (= *Belostoma*) this sexual role was exclusively carried out by males. Torre Bueno (1906) observed that in following courtship and copulation, females of *Belostoma flumineum* Say lay eggs on the back of conspecific males. The current knowledge of sexual behavior of Belostomatinae indicates that males carry the eggs they fertilize.

Recently, Kruse and Leffler (1984) documented for the first time females of *B. flumineum* carrying fertilized eggs. In fact, they found two

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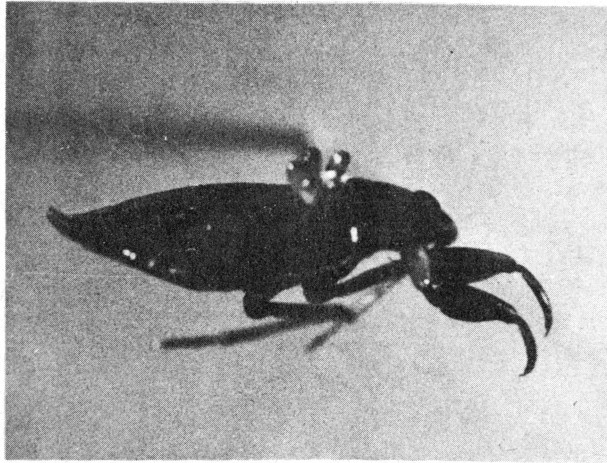


Fig. 1

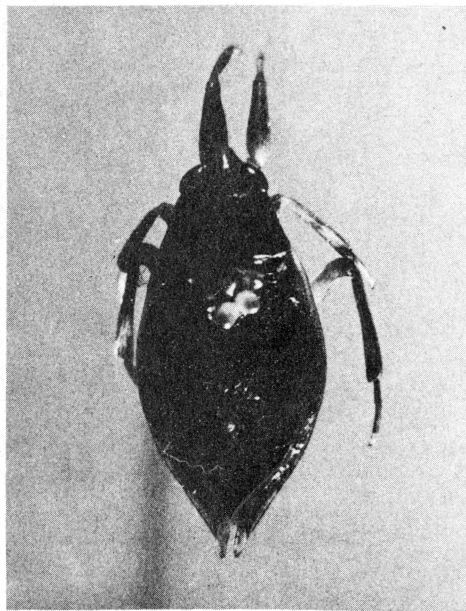


Fig.2

“incubant” females in mid spring at Coles County, Illinois, U.S.A.; one of them carrying one egg while the other carried six eggs. Both females were reared in laboratory and eggs were dropped off unhatched. No sophistic-

ated behavior was then observed, as Smith (1976) did while rearing incubant males of *B. flumineum*.

On November 16, 1986 we sampled a *Belostoma oxyurum* (Dufour) population at Pinamar, Buenos Aires, Argentina. Once in the laboratory while sorting specimens of different age and sex, preserved in alcohol 70°, we verified the presence of a female bearing six fertilized eggs, covering its scutellum and part of the clavus (figs. 1 and 2). It is remarkable the atypical location of the eggs. Domizi and Schnack (unpublished data) observed that adult females of *B. oxyurum* deposit the first fertilized eggs in an accurate location of the male corium, contiguous to the membrane.

Even though we were not able to rare the studied specimen, we suggest that female egg bearing is a rarity as Kruse and Leffler (1984) postulated for *B. flumineum*.

The observed phenomenon would be attributed to the absolute shortage (*sensu* Andrewartha and Browning, 1961) of a sexual resource, i.e. the male back space. Schnack *et al.* (1980) suggested that such a shortage could be occasionally observed in *B. oxyurum* when the sex ratio is female biased and gravid females and incubant males proportions are extremely high. Data obtained from the sampled population agree anyhow with the above mentioned situation. Actually, we recorded high fecundity values (46.3 ± 12.7 S.D. eggs per female; 64.27 ± 12.9 S.D. eggs per incubant male). Furthermore, a hundred percent of gravid females and incubant males were reported and females prevailed over males, though without statistical significance; the adult population included 11 males and 20 females ($X^2 = 2.61$). This situation resembles the one described by Kruse and Leffler (1984) for *B. flumineum*. Both findings took place in mid spring, time of the year when reproductive activity is particularly intense. Thus, intrasexual egg laying in *B. oxyurum* and *B. flumineum* could be catalogued as parallel behaviors which respond to similar selective pressures imposed by the sexual environment.

Further studies are needed in order to prove if this behavior can be extended to other congeneric species.

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