RESUMEN

Pomacea canaliculata es un gasterópodo de agua dulce perteneciente a la familia Ampullariidae (Architaenioglossa, Caenogastropoda), cuyo rango de distribución natural abarca desde el sur de Brasil hasta el sur Bonaerense. Se lo considera uno de los 100 peores invasores a escala global debido a su voracidad, altas tasas reproductivas y alta plasticidad en su ciclo vital. El objetivo principal de este trabajo de tesis fue estudiar la norma de reacción de diversas características del ciclo vital de *P. canaliculata* frente a la disponibilidad trófica. Específicamente se estudió cómo afectan distintos niveles de disponibilidad trófica constantes, el crecimiento, la talla y la edad a la que alcanzan la madurez, la cantidad de recursos que destinan a la reproducción y la forma de su conchilla. Finalmente, se estudió el efecto de una interrupción abrupta en la alimentación sobre la reproducción, el crecimiento y la supervivencia.

Los resultados mostraron una superioridad en los parámetros específicos de ingestión y eficiencia de crecimiento de las hembras respecto de los machos y en los juveniles respecto de los adultos. *P. canaliculata* puede completar normalmente su ciclo vital bajo un amplio rango de disponibilidades tróficas. Frente a distintas disponibilidades tróficas la estrategia de las hembras fue madurar a distintas edades y a una talla semejante, mientras que en los machos fue madurar a edades semejantes pero a tallas muy distintas.

La disponibilidad trófica no afectó el éxito reproductivo de los machos, mientras que en las hembras las restricciones en la disponibilidad trófica provocaron descensos, principalmente en el número de huevos. En caracoles

en reproducción, un corte abrupto de la alimentación redujo la supervivencia más en machos que en hembras, y produjo una caída en el número de cópulas y de puestas. Un efecto maternal en el cual el vigor de la progenie de hembras que crecieron con baja disponibilidad trófica se incrementa respecto de las hembras sin restricciones alimentarias parece indicar una estrategia adaptativa transgeneracional. La forma de la conchilla parece cambiar en algún grado con la disponibilidad trófica pero sin ningún patrón claro y monótono; el dimorfismo sexual no parece verse alterado por la disponibilidad trófica.

Aparecen indicios que sugieren que el contenido de nitratos del agua y la materia orgánica del sustrato en ambientes naturales tienen relación con parámetros poblacionales como la densidad de puestas y la talla máxima de *P. canaliculata*; por el contrario, los iones inorgánicos y los factores fisicoquímicos analizados no mostraron relación con éstos.

La estrategia evolutiva de *Pomacea canaliculata* frente a la disponibilidad trófica parece basarse en una alta plasticidad de su ciclo vital, abarcando el crecimiento, la maduración y el esfuerzo reproductivo, así como en un alto grado de diferenciación sexual en estas características.

SUMMARY

Pomacea canaliculata is a freshwater snail belonging to the family Ampullariidae (Architaenioglossa, Caenogastropoda) whose natural range extends from Southern Brazil to Southern Pampas in Argentina. It has been nominated as one of the 100 worst invaders at a global scale, owing to its voracious feeding habits, high reproductive rates and plastic life history traits. The main aim of this Thesis was to study the reaction norms to trophic availability of several life history traits in *P. canaliculata*. Specifically, the way in which growth, age and size at maturity, reproductive effort and shell shape are affected by different chronic levels of trophic availability was investigated. In addition, the effect of an abrupt shortage of food on reproduction, growth and survivorship was investigated.

The results obtained showed higher values of specific parameters of ingestion and growth efficiency in females than in males and in juvenile snails relative to adults. *P. canaliculata* is able to complete its life cycle under a wide range of trophic availability. Confronted with different trophic availabilities, the strategy of females was to mature at different ages but always at almost the same size, whereas for males it was to mature at the same age but at very different sizes.

Trophic availability did not affect the reproductive success of males while for females restricted trophic availabilities caused a drop mainly in the number of eggs laid. For snails which were already in reproductive state, an abrupt shortage of food reduced the survivorship of males in a higher degree than in females and a drop in the number of copulations and egg masses laid. A

maternal effect, in which the progeny of females grown under low trophic availabilities showed a higher vigor than those from females fed *ad libitum*, suggests a transgeneration adaptive strategy. Shell shape seems to be affected by trophic availability though without producing a clear and monotonous pattern; sexual dimorphism seems not to be affected by trophic availability.

The nitrate content of water and the organic matter of sediments seem to be related to demographic parameters of *P. canaliculata,* like density of egg masses and maximum sizes; on the other hand, inorganic ions and physicochemical variables did not show any relation with them.

The evolutionary strategy of *Pomacea canaliculata* relative to trophic availability seems to be based on a high plasticity in life history, including growth, maturity and reproductive effort, and on a high degree of sexual differentiation in these traits.

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