

**Abstract.** We studied the influence of altitude on the reproductive biology of two populations of *Rana esculenta*, one living at sea level in a lagoon and the other in the mountains. In the lagoon, where only slight fluctuations of air and water temperature occurred during the year, the reproductive period was longer than in the mountain population in which only one clutch was observed and where a sharp decline of temperature in autumn was consistent with a faster recovery period. High sex steroid plasma levels were found in amplexing males and females of both populations sampled in the field, compared with individuals. A pronounced effect of short-term captivity was found; androgens, estradiol-17 $\beta$  and progesterone plasma levels decreased dramatically in amplexing frogs sampled in the laboratory 12 h after capture.