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In temperate zone pitvipers of North America, the mating season may be temporally dissociated from fertilization. For example, the mating season in *Crotalus viridis* occurs in summer preceding, by as much as seven months, spring ovulation (Duvall et al., 1985). Mating may also be temporally dissociated from spermatogenesis. Several species of pitvipers (*Agkistrodon contortrix*, Mount, 1973; *Crotalus atrox*, Wright and Wright, 1956) mate in spring, before spermatogenesis begins. Thus, within the pitvipers of North America, the mating season appears independent of gametogenesis. Because males can store sperm in the vas deferens for at least one year (Aldridge, 1995) and females can store sperm in the oviduct for at least eight months (Schuett, 1992), the timing of the mating season may be acted on by natural selection to occur at times most favorable to females.

In almost all North American pitvipers in which the reproductive cycle has been described, vitellogenesis begins in the summer, and the follicles overwinter at an intermediate size (Aldridge, 1979). After emergence from hibernation, vitellogenesis resumes, followed by ovulation and fertilization in the spring. The mating season in pitvipers appears to be restricted to the period of vitellogenesis (Rahn, 1942; Schuett, 1992). Thus, mating may occur in the summer, during the early stages of vitellogenesis, or in the spring, during the late stage of vitellogenesis, or during both periods (Schuett, 1992).

Within the widespread western rattlesnake (*Crotalus viridis*), the seasonal pattern of vitellogenesis described above (summer–spring) has been reported for *C. v. oreganus* (Rahn, 1942; Aldridge, 1979), and *Crotalus viridis viridis* (Diller and Wallace 1984; Macartney and Gregory, 1988). The only apparent exception to this pattern was presented by Fitch (1949) for a population of *C. v. oreganus* in Madera County, California. Fitch (1949) implied that vitellogenesis is restricted to the spring in this population. However, a comparison of the data presented by Fitch (1949) with data presented by Rahn (1942) and Aldridge (1979), for *C. v. viridis* in Wyoming and New Mexico, respectively, indicates that Fitch (1949) may have had both reproductive and nonreproductive snakes in his sample. Thus, the presence of vitellogenic and nonvitellogenic females in his early samples indicates that vitellogenesis started in the previous summer in reproductive snakes.

Schuett (1992) identified two major patterns of mating and sperm storage in pitvipers. The first, long-term sperm storage (LTS), is sperm storage in the oviduct from matings that occur in the summer and fall, prior to hibernation. The second, short-term