(1) Two cohorts of Streptocephalus vitreus (Brauer 1877) lived for 19 (short-rains cohort) and 32 days (long-rains cohort) in a temporary rainpool during two wet seasons in Kenya. On both occasions the pool dried up when many animals were still alive and producing eggs. The instantaneous growth rate was constant between the age of 3 and 17 days (27.0% dry weight day-') in the short-rains cohort, but declined with age in the long-rains cohort, being constant between day 3 and 5 (53.8% day-'), 9 and 19 (19-9% day-') and 19 and 32 (1.2% day-'). (2) Egg production began at the age of 17 days and at a mean dry weight of 300 ,ug in the short-rains cohort and at the age of 14 days and weight 440 ,ug in the long-rains cohort. A higher proportion of females produced eggs in the long than in the short-rains cohort and average clutch size differed (42.1 + 5.1 and 11.0 + 1.4 respectively). (3) There was a constant mortality rate in the long-rains cohort. Sex ratios were equal at first but favoured females after maturity. Males were preponderant in sample units containing one or two individuals, females in those with more than two individuals. In the long-rains cohort, average daily production was 5.70 mg dry weight m-2 day-' and the P/B ratio between age 3 and 32 days was 3.36. (4) More eggs hatched from soil cores taken near the edge of the pool than from those near the middle. Eggs either hatched within 3 days of immersion or not until they had been dried again. Egg hatching was very erratic and metanauplii emerged during each of nine periods of flooding the same soil cores. Hatching times were very variable even between eggs in the same clutch. (5) General aspects of the life-history strategy are discussed. Fairy shrimps are large in comparison with most other freshwater crustacea, do not co-exist with fish and, through their eggs, resist unfavourable circumstances rather than disperse. In S. vitreus there is extreme spreading of risk among the progeny and very rapid growth to maturity. Apparently in response to the unusually unreliable and hazardous nature of its habitat, reproduction begins relatively early and at a modest size. When circumstances allow, repeated copulations (probably with different males) produce further clutches of eggs.