

**Informationen zur Umwelt und für Naturreisende auf Kreta:**
Information about the Environment and for travellers in Crete:**Egyptian Grasshopper, *Anacridium aegyptium* (Linnaeus 1764)**
(Suborder Caelifera, Short Horned Grasshopper: Family Acrididae, Locust)

The **Egyptian Grasshopper** (*Anacridium aegyptium*) is a short horned grasshopper from the family Locust (*Acrididae*) and occurs on Crete (as well as the brown migratory locust (*Locusta migratoria*); therefore see also our leaflet No. 035-04/E (Page 2) at: [http://www.kreta-umweltforum.de/Merkblaetter_en/035-04E.pdf]. *Anacridium aegyptium* is represented throughout the Mediterranean and lives in loose covered areas with only single tree vegetation. Sometimes animals are introduced to Central Europe with vegetable imports. Ten species from the family of locust are referred as migratory locust.

Migratory locusts are present in two forms, as largely philopatric, individually living animals (solitary phase) and as itinerant swarm animals (gregarious phase). The transition from the solitary to the gregarious phase is thrown by the hormone Serotonin, which is produced when enough solitary animals meet, in particular touch. Decisive for the transformation to swarm animals is the amount of conspecifics seen by the animals, smell or feel when their hind legs touch. The swarm behaviour coincides with an increase in serotonin concentration in parts of the nervous system. The two phases differ both the behaviour and colour as well as morphological (e.g. proportion wing length to the length of the ankle bone). The morphological differences between the solitary living and the deviating locusts are so large that they are assigned to different types through the 1920s. Solitary locusts have contrary to gregarious a larger reproductive, live inconspicuously mostly in outlands and are of economic importance; gregarious against this keep up in groups, have a characteristic imitate behaviour and synchronous development and finally wander off together from their retreat area.



The Egyptian locusts are 3.5 to 5.5 cm (male) or 4.5 to 6.5 cm (female) long. They have a yellow-brown to drab basic colour with a fine dark grain. On the upper side of their neck scutum they carry a clear yellow to orange coloured edge with three cross furrows lengthwise. The tibiae on the hind legs are bluish; the thighs are orange on the upper side. On the rear wings they wear a dark, curved bandage. Their wings are fully developed and some body long. They have dark and yellow striped lengthwise compound eyes. Migratory locust do not need water, they receive the necessary liquid from the feed. They feed on grass, leaves and fruits.

During the breeding season (all-year) the male court the female with a chirping concert. Sexual maturity is after 4-5 weeks. For mating (see fig.1 left) the male clamps with its front legs on the back of the female and hooks his mating organ. The couple can stay for hours in this position. The sperm remain until fertilization of the eggs in their seeds pocket. Until laying eggs, it takes a few days, then the female digs up the eggs in moist soil (see picture 2 left on next page)



The abdomen of a female is extended (see fig. 3 above right) and drill into the moist earth. In the resulting earth tube (see fig. 4 left) it lays 30 to 70 eggs, which in addition are wrapped with white, damp foam to protect from dehydration. The larvae hatch after 10 days and are grown after 20 days. The 8 to 10 mm big lads (nymphs) have a chitin shield. The green young locusts (see fig. 5 below left) look similar the adult animals, but still have not wings. Because the chitin shield may not extend during the growth period, the young are skinning several times (up to 6 times). Only after the last skinning (see middle fig. 6 below: Exuvia), the so-called Imaginal skinning the locusts get wings. Already 4 days after the last skinning they are ready for maturity. A female of Egyptian migratory locust can produce up to 500 children in her live.



Plagues of insects (by gregarious swarms) are mentioned over 30 times in the Bible. So far the largest expansion of migratory locusts was registered 1784 in South Africa, where an estimate of 300 billion insects covered an area of 5,200 km². Therefore see the book illustration (above right) from “Brehms Tierleben”, 1884.



The oldest fossil locusts come from the Jurassic age about 150 million years ago (Eichstädt / Bavaria). This is the genus *Pycnophlebia* with up to 15 cm long wings. He fig. left shows the fossil grasshopper *P. robusta* (Zeuner); Image source: Fossnet shop, FN 1725

Remark: Pictures 2 to 4 are taken by *U. Kluge* on the 6th of May 2009 at Ierapetra / South Crete.