**Reptiles**

Reptiles (Reptilia) are a vertebrate group numbering approximately 11,570 species and inhabiting a range of climate zones and terrestrial and aquatic habitats (Uetz 2021). Israel is home to 97 reptile species (Meiri et al. 2019) belonging to four orders: the two largest orders are Squamata (scaled reptiles), which includes lizards and snakes, and Testudines, which includes turtles and tortoises. Reptiles are characterized by scales made of keratin, which cover their bodies, and poikilothermism (commonly known as cold-bloodedness), meaning that they regulate their body temperature through changes in behavior throughout the day and between seasons.

Reptiles living on migrating sand dunes have developed diverse adaptations to the typical limiting factors of sand dunes (lack of available water, high temperature in the upper sand layer, and an unstable substrate of migrating sand). Lacking sweat glands, exploiting the fluids in their food, reducing the volume of water in their urine, and avoiding panting are traits that help reptiles cope with the lack of available water, while the keratin present in the scales that cover their body comprises insoluble proteins that are resistant to high temperatures. Avoiding activity during the hot hours of the day, hiding in burrows or partially burying themselves in the sand, raising their body above the sand, and being active in the shade are behavioral traits that help them cope with the high temperatures of the air and soil surface. Furthermore, digging into the sand and adapting to breathing within it, sidewinding movement across the sand (in some snake species; Figure 30), and increasing the surface area of their limbs and belly to prevent wasting energy during movement are traits that help them move across the unstable, migrating sand.

 

**Figure 30:** Foot of a Nidua fringe-fingered lizard (*Acanthodactylus scutellatus*) and a crowned leafnose snake (*Lytorhynchus diadema*) digging into the sand

(Photo: Boaz Shacham)