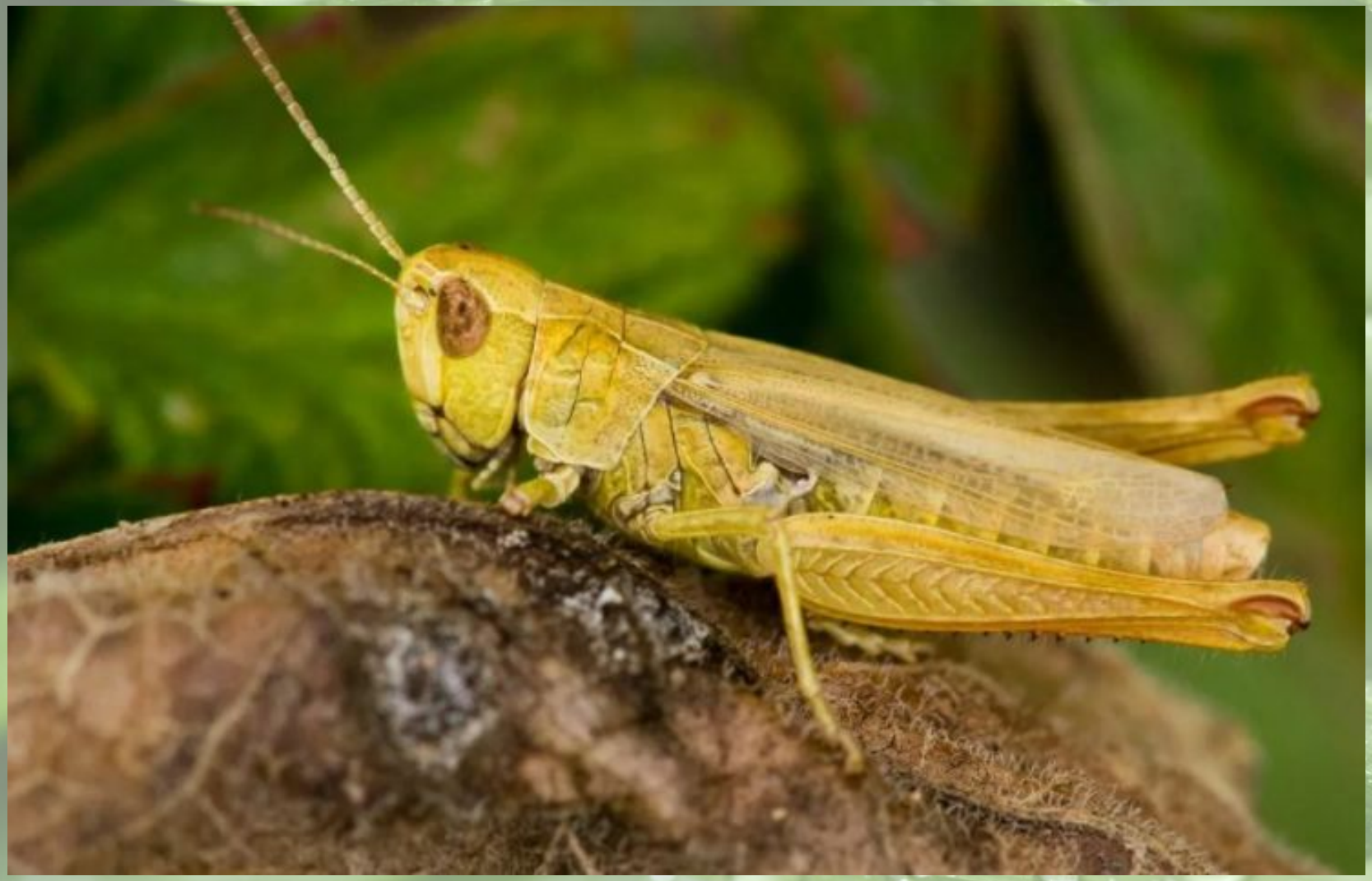
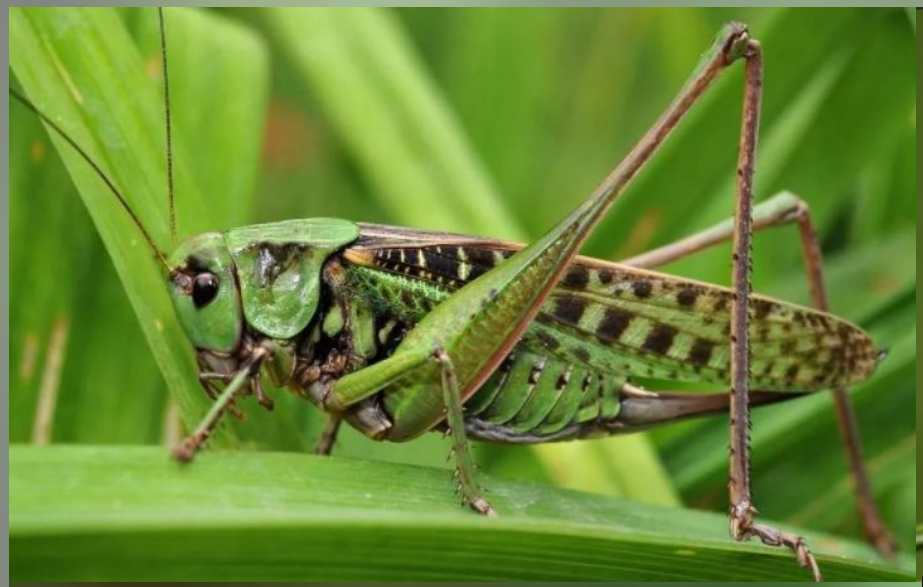
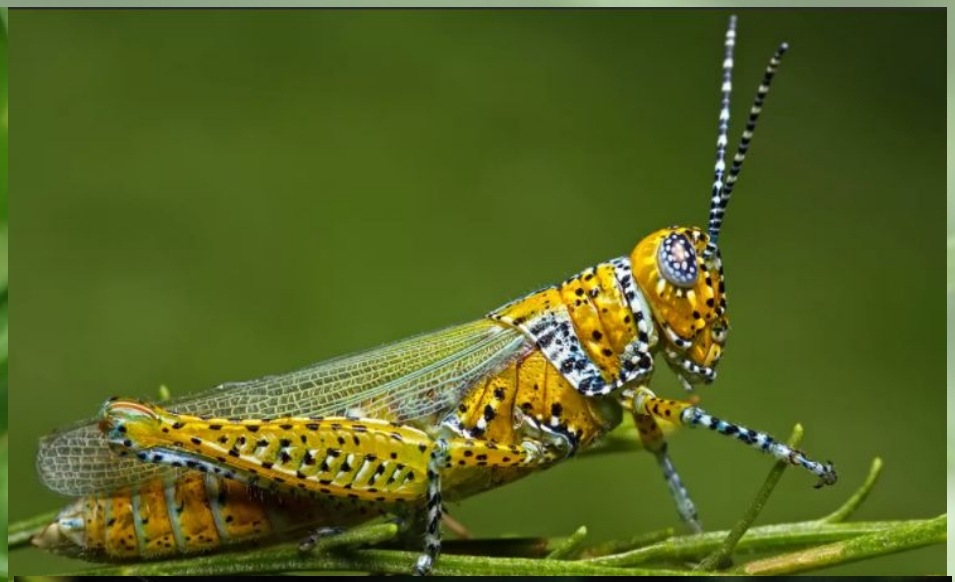
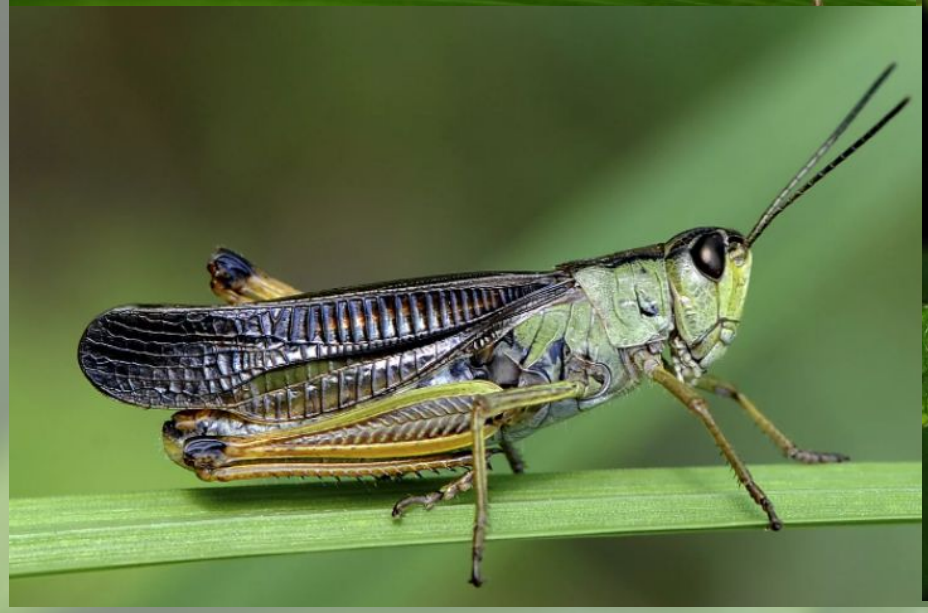
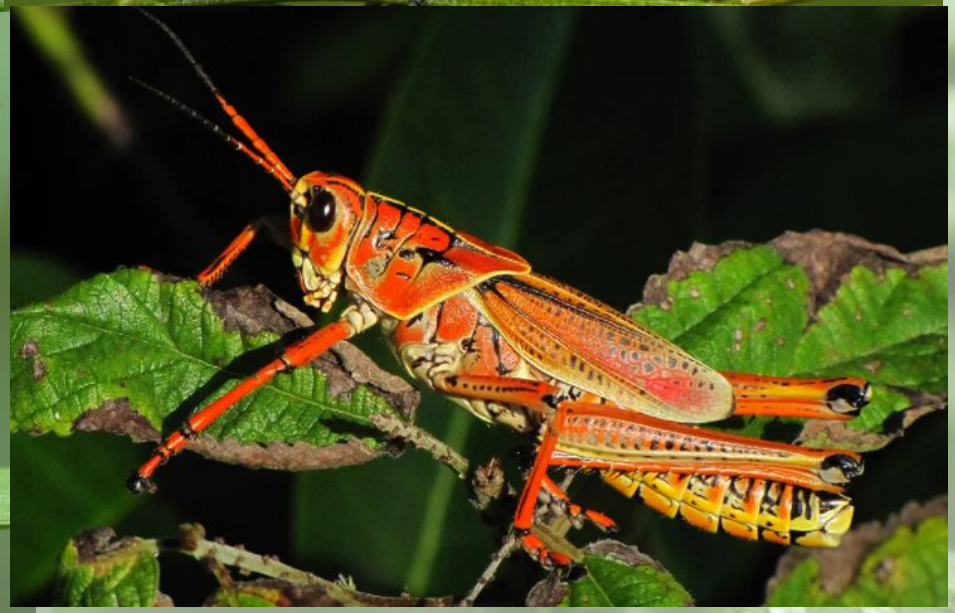
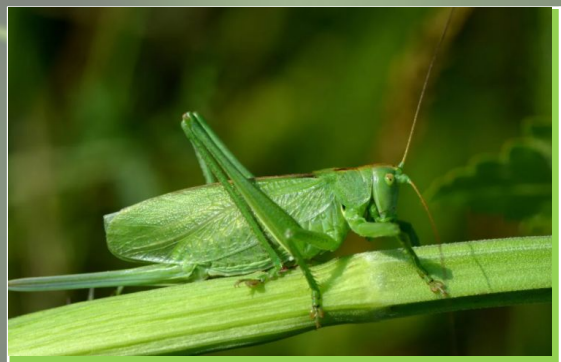
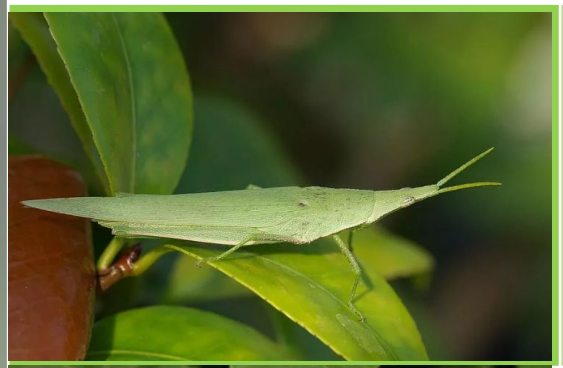
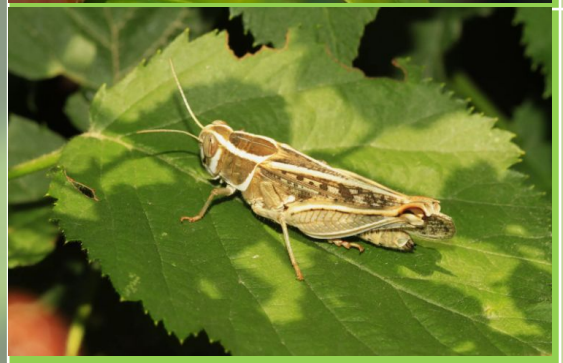
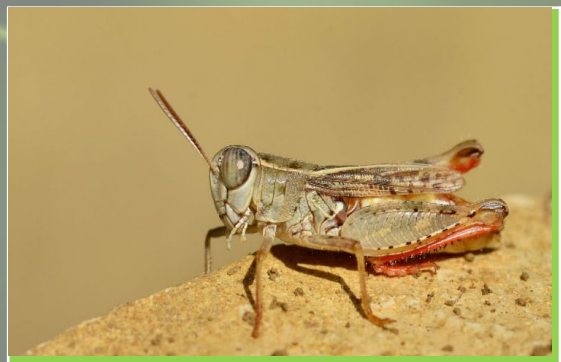
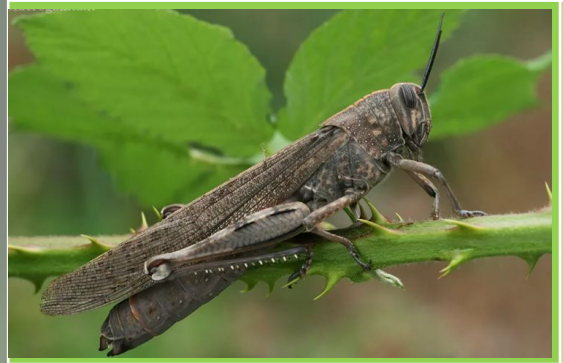
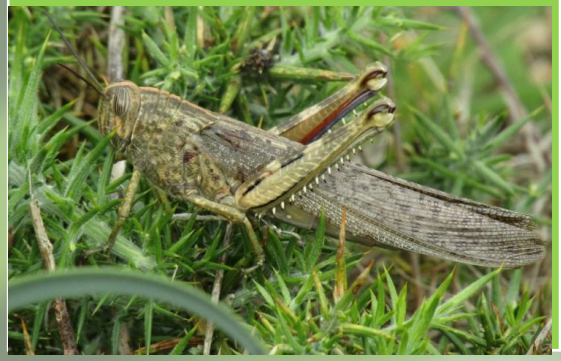
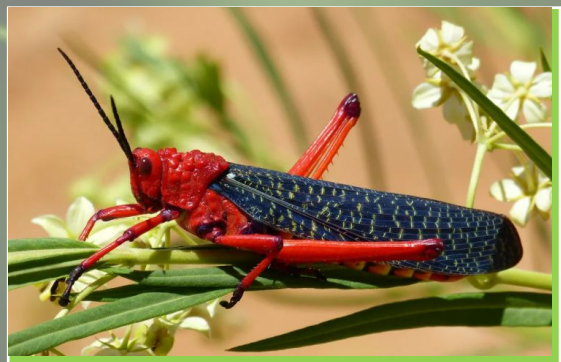
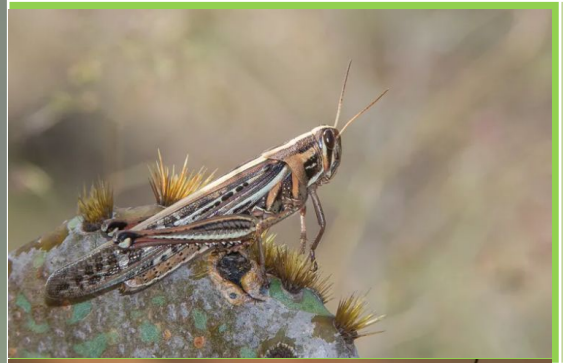
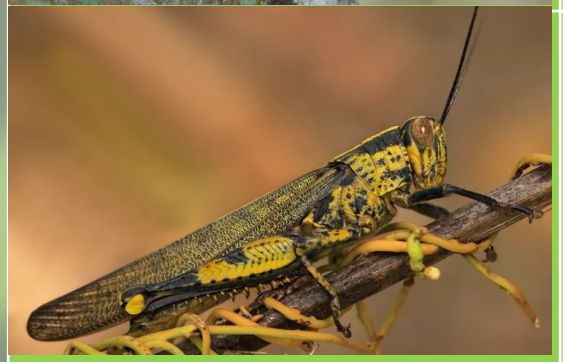
Grasshoppers

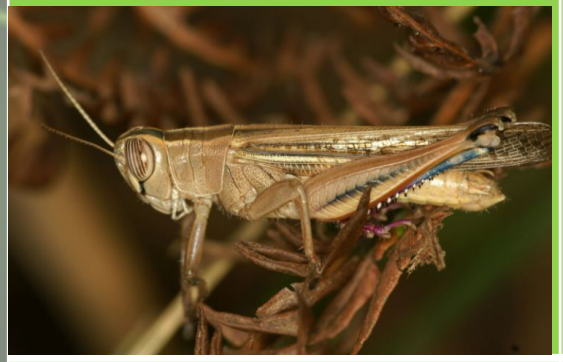
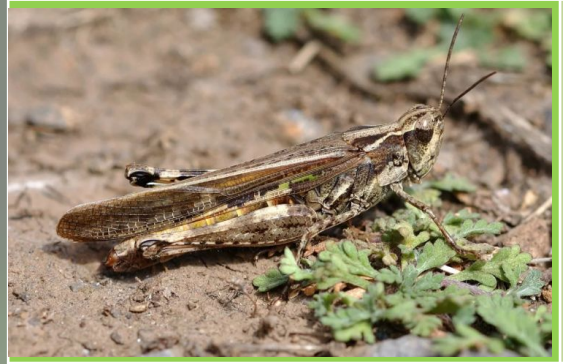
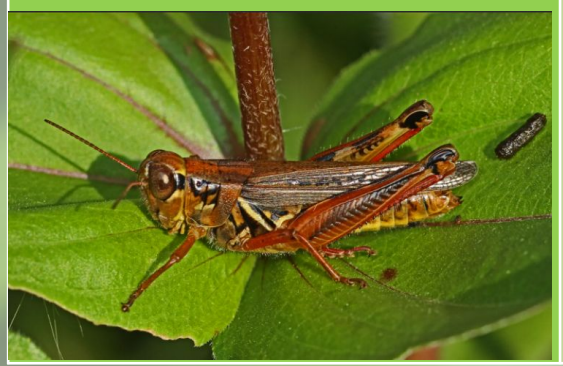


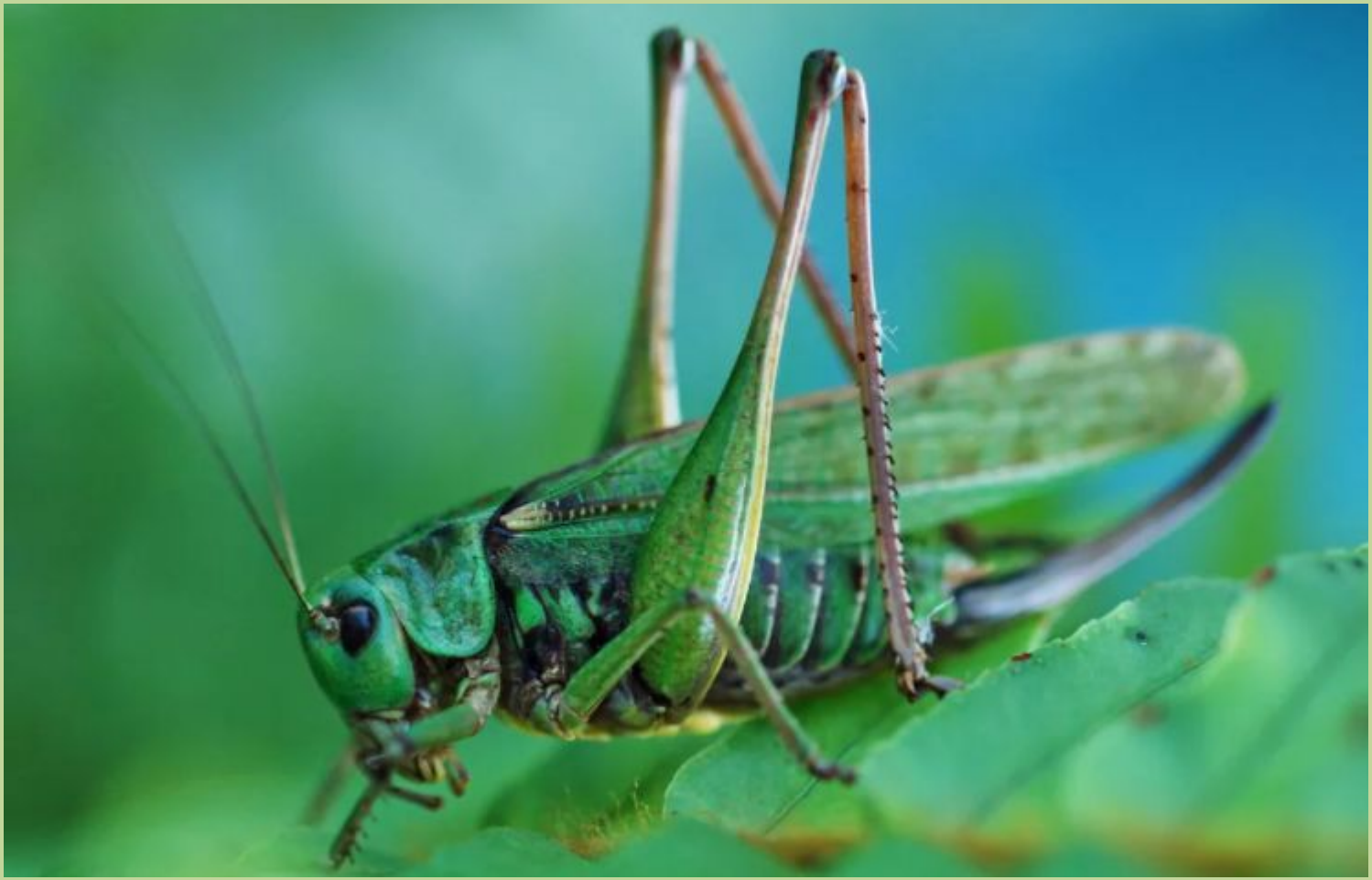
	grasshopper - кузнечик	[ˈgrɑːshɒpə]
	longheaded grasshopper - длинноголовый кузнечик	[longheaded ˈgrɑːshɒpə]
	short-horned grasshopper - короткорогий кузнечик	[ʃɔːt-hɔːnd ˈgrɑːshɒpə]

	**pygmy pincer grasshopper – карликовый короткорогий кузнечик**	[ˈpɪgmɪ ˈpɪnsə ˈgrɑːshɒpə]
	**Egyptian grasshopper - Египетский кузнечик**	[ɪˈdʒɪpʃn ˈgrɑːshɒpə]
	**camouflaged tree locust – древесная саранча**	[ˈkæməflɑːʒd triː ˈləʊkəst]

	**red locust - красная саранча**	**[red ˈləʊkəst]**
	**American bird grasshopper – Американский кузнечик**	**[əˈmerɪkən bɜːd ˈgrɑːshɒpə]**
	**giant grasshopper - гигантский кузнечик**	**[ˈʤaɪənt ˈgrɑːshɒpə]**

	lamenting grasshopper – длинноусый кузнечик	[ləˈmentɪŋ ˈgrɑːshɒpə]
	Moroccan locust - Марокканская саранча	[məˈrɒkən ˈləʊkəst]
	red-legged grasshopper - красноногий кузнечик	[red-ˈleg(ɪ)d ˈgrɑːshɒpə]

Grasshopper



Grasshoppers are a group of insects belonging to the suborder Caelifera. They are among what is probably the most ancient living group of chewing herbivorous insects, dating back to the early Triassic around 250 million years ago.

Grasshoppers are typically ground-dwelling insects with powerful hind legs which allow them to escape from threats by leaping vigorously. As hemimetabolous insects, they do not undergo complete metamorphosis; they hatch from an egg into a nymph or "hopper" which undergoes five moults, becoming more similar to the adult insect at each developmental stage. At high population densities and under certain environmental conditions, some grasshopper species can change color and behavior and form swarms. Under these circumstances, they are known as locusts.

Grasshoppers are plant-eaters, with a few species at times becoming serious pests of cereals, vegetables and pasture, especially when they swarm in their millions as locusts and destroy crops over wide areas. They protect themselves from predators by camouflage; when detected, many species attempt to startle the predator with a brilliantly-coloured wing-flash while jumping and (if adult) launching themselves into the air, usually flying for only a short distance. Other species such as the rainbow grasshopper have warning coloration which deters predators. Grasshoppers are affected by parasites and various diseases, and many predatory creatures feed on both nymphs and adults. The eggs are subject to attack by parasitoids and predators.

Grasshoppers have had a long relationship with humans. Swarms of locusts can have devastating effects and cause famine, having done so since Biblical times. Even in smaller numbers, the insects can be serious pests. They are used as food in countries such as Mexico and Indonesia. They feature in art, symbolism and literature. The study of grasshopper species is called acridology.

Grasshoppers have the typical insect body plan of head, thorax and abdomen. The head is held vertically at an angle to the body, with the mouth at the bottom. The head bears a large pair of compound eyes which give all-round vision, three simple eyes which can detect light and dark, and a pair of thread-like antennae that are sensitive to touch and smell. The downward-directed mouthparts are modified for chewing and there are two sensory palps in front of the jaws.

The thorax and abdomen are segmented and have a rigid cuticle made up of overlapping plates composed of chitin. The three fused thoracic segments bear three pairs of legs and two pairs of wings. The forewings, known as tegmina, are narrow and leathery while the hindwings are large and membranous, the veins providing strength. The legs are terminated by claws for gripping. The hind leg is particularly powerful; the femur is robust and has several ridges where different surfaces join and the inner ridges bear stridulatory pegs in some species. The posterior edge of the tibia bears a double row of spines and there are a pair of articulated spurs near its lower end. The interior of the thorax houses the muscles that control the wings and legs.

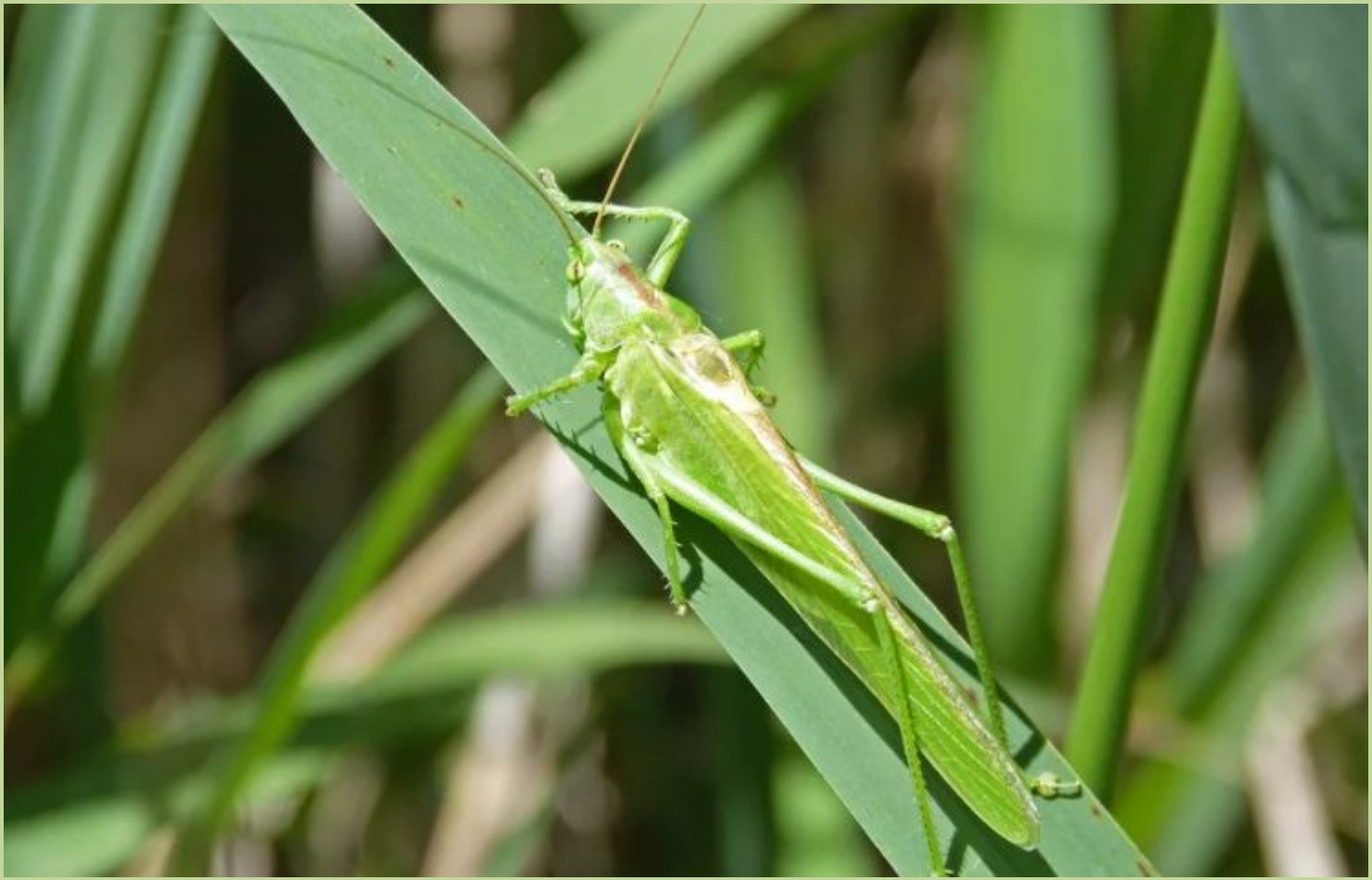
The abdomen has eleven segments, the first of which is fused to the thorax and contains the tympanal organ and hearing system. Segments two to eight are ring-shaped and joined by flexible membranes. Segments nine to eleven are reduced in size; segment nine bears a pair of cerci and segments ten and eleven have the reproductive organs. Female grasshoppers are normally larger than males, with short ovipositors. The name of the suborder "Caelifera" comes from the Latin and means chisel-bearing, referring to the shape of the ovipositor.

Those species that make easily heard noises usually do so by rubbing a row of pegs on the hind legs against the edges of the forewings (stridulation). These sounds are produced mainly by males to attract females, though in some species the females also stridulate.

Grasshoppers may be confused with crickets, but they differ in many aspects; these include the number of segments in their antennae and the structure of the ovipositor, as well as the location of the tympanal organ and the methods by which sound is produced. Ensiferans have antennae that can be much longer than the body and have at least 20–24 segments, while caeliferans have fewer segments in their shorter, stouter antennae.

Most grasshoppers are polyphagous, eating vegetation from multiple plant sources, but some are omnivorous and also eat animal tissue and animal faeces. In general their preference is for grasses, including many cereals grown as crops. The digestive system is typical of insects, with Malpighian tubules discharging into the midgut. Carbohydrates are digested mainly in the crop, while proteins are digested in the ceca of the midgut. Saliva is abundant but largely free of enzymes, helping to move food and Malpighian secretions along the gut. Some grasshoppers possess cellulase, which by softening plant cell walls makes plant cell contents accessible to other digestive enzymes.

Longheaded grasshopper

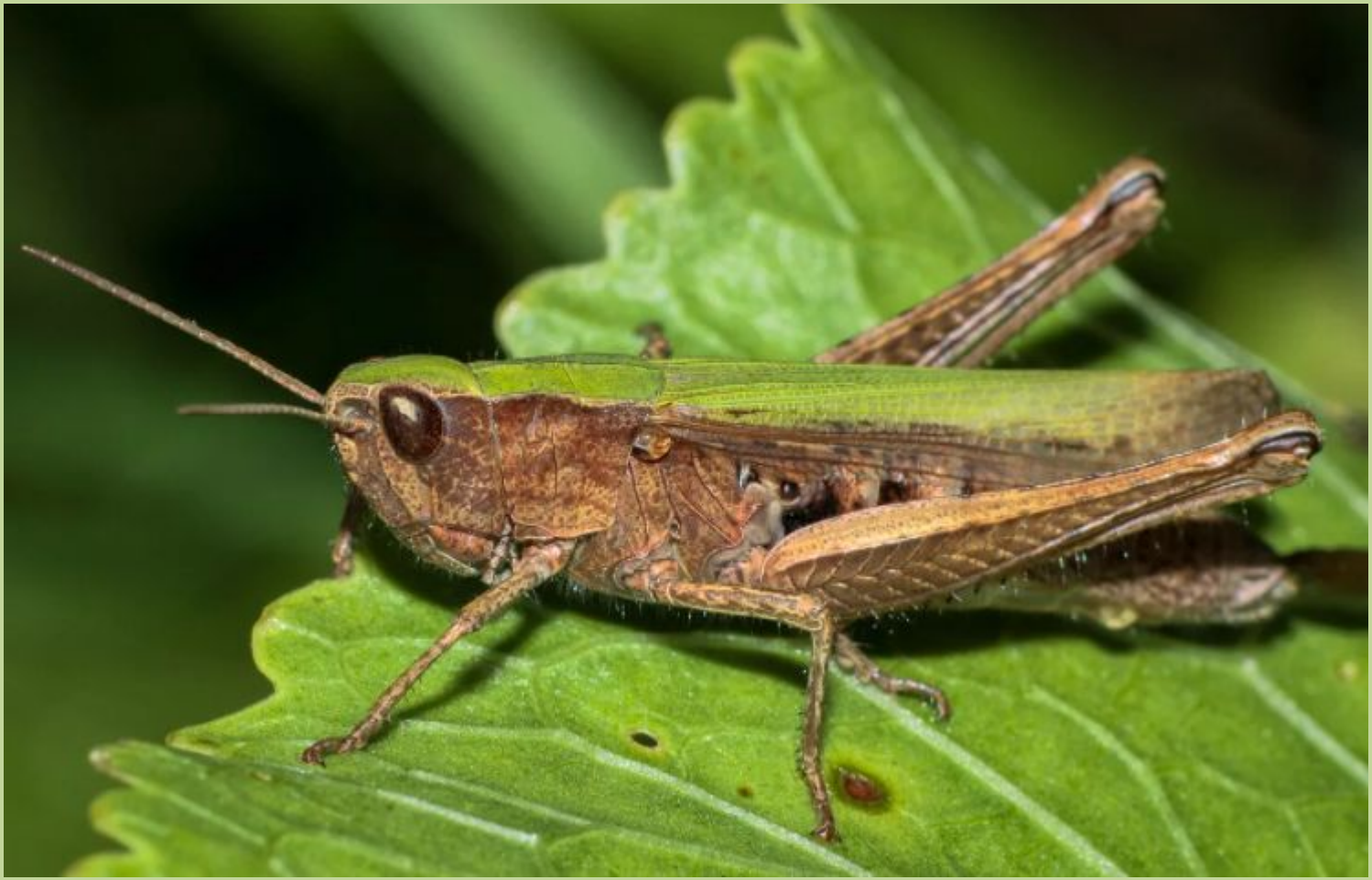


Acrida cinerea, sometimes called the Oriental longheaded grasshopper/locust or the Chinese grasshopper (though this name is also applied to Oxya chinensis), is a member of the Acrididae family. Like other members of the genus Acrida, Acrida cinerea lacks stridulatory organs on its legs and so they do not make noise whilst moving.

Historically it has been used as a human food source, and it has been investigated for its nutritional value for the poultry industry.

Acrida cinerea males are typically 40–50 mm in length while females are 70–80 mm. They are either green or brown in color with colorless wings. A. cinerea has long legs which allow it to jump long distances.

Short-horned grasshopper



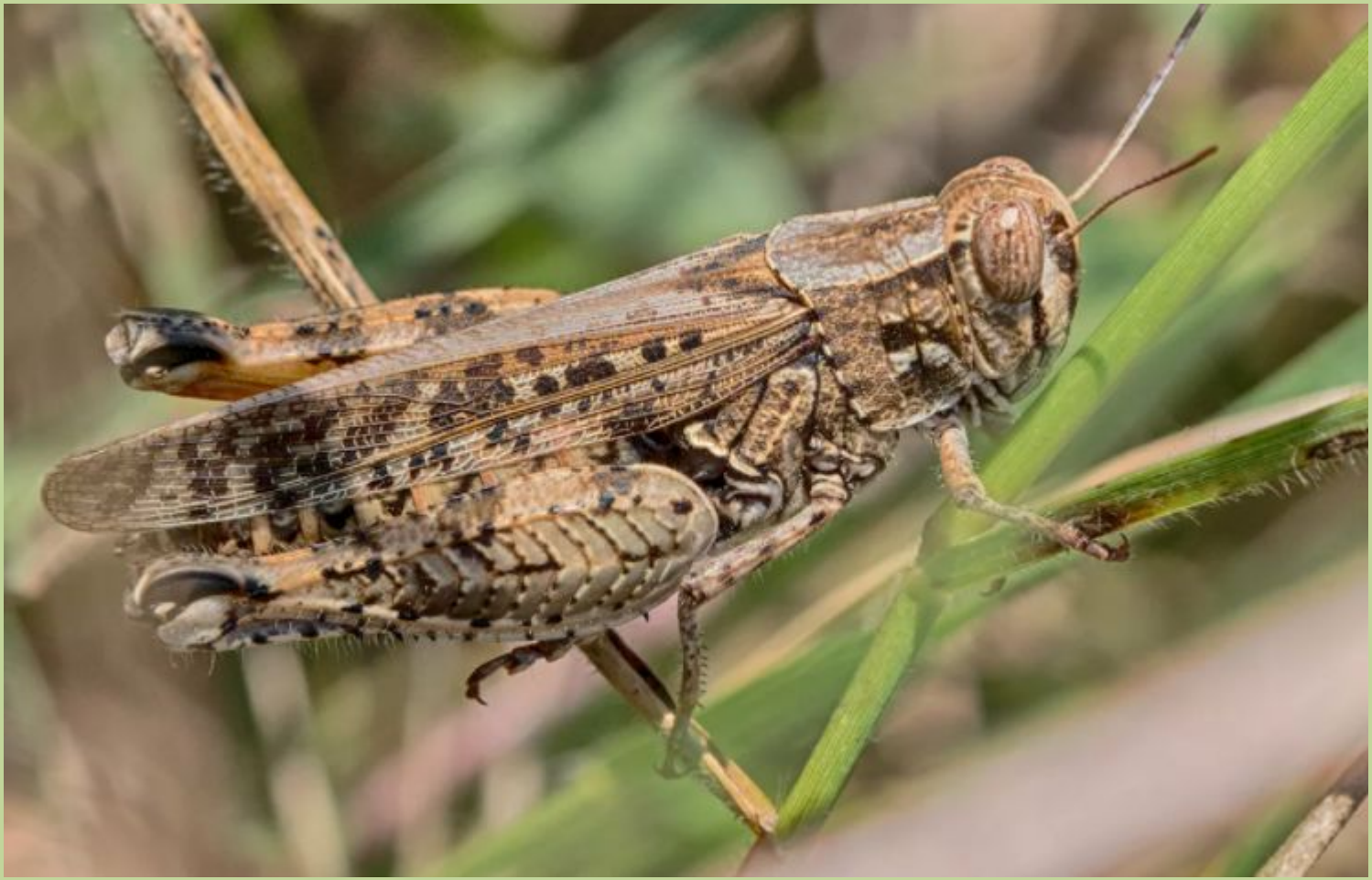
Calliptamus italicus, the Italian locust, is a species of 'short-horned grasshopper' belonging to the family Acrididae, subfamily Calliptaminae.

This species is native of the steppes of Central Asia, but it is also present in most of Europe, in the eastern Palearctic realm, in North Africa, and in the Near East.

Calliptamus italicus is found in Western Europe and Central Asia. Its range extends from North Africa and the countries bordering the Mediterranean Sea to Central Europe, Central Asia, Mongolia and western Siberia. These grasshoppers can be encountered from July through October. It thrives in warm dry habitats with sparse vegetation cover such as grasslands and rocky steppes, old quarries, gravel pits, rock-strewn areas beside rivers, sand dunes and fallow land.

Calliptamus italicus is a medium-sized grasshopper characterized by a significant sexual dimorphism. The adult males grow up to 14–26 millimetres long, while females reach 21–40 millimetres of length. This species is quite variable in size and colour. The basic coloration of the body varies from gray to brownish-reddish. The wings have a characteristic reddish or pinkish coloration, better visible when the insect is in flight. Quite evident is the dilating membrane ('pallium') of the subgenital plate of males.

Pygmy pincer grasshopper



Calliptamus siciliae, commonly known as the pygmy pincer grasshopper, is a species of short-horned grasshoppers belonging to the family Acrididae subfamily Calliptaminae.

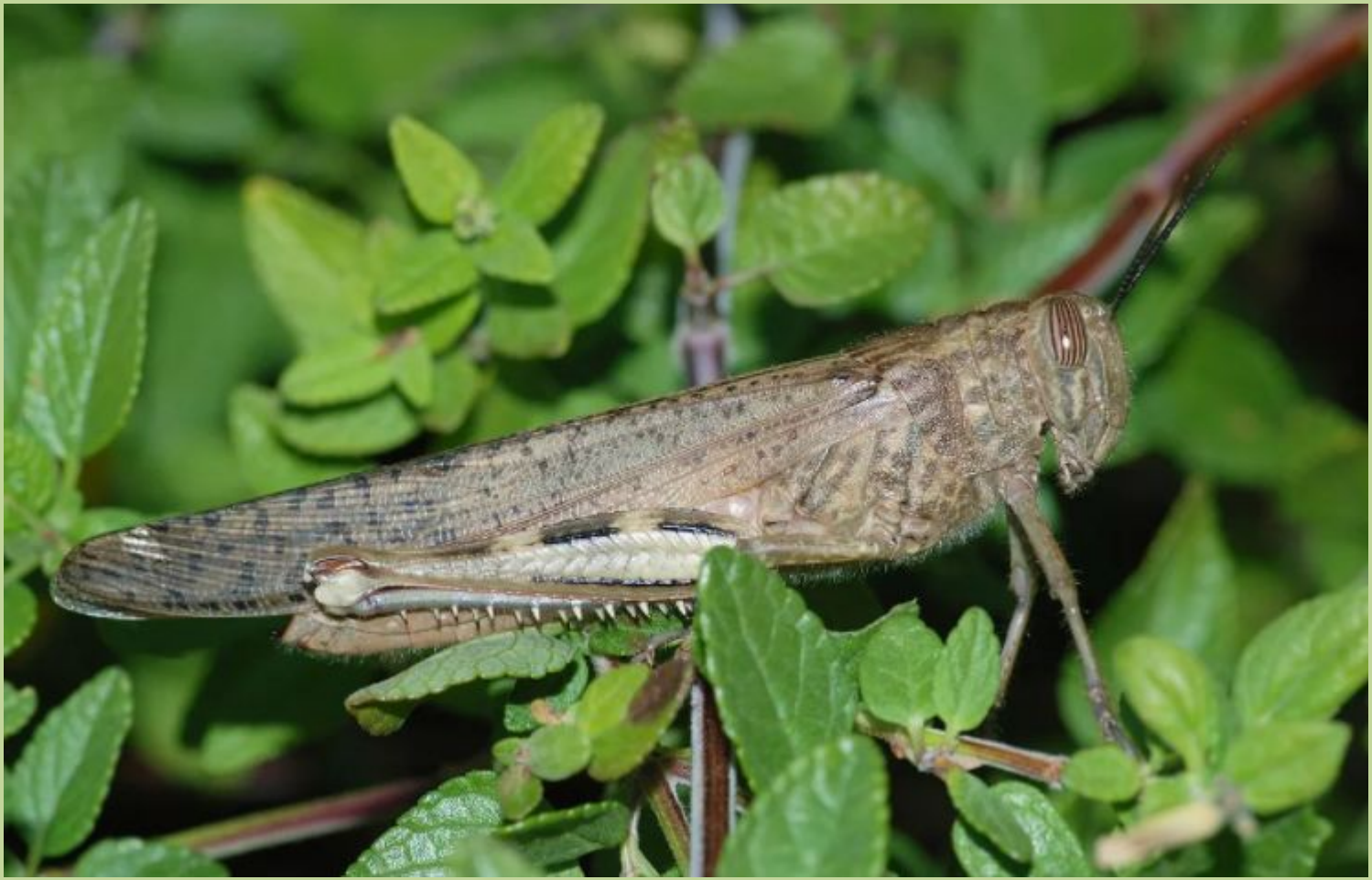
This endemism is only present in the south-east of France, in Switzerland, in mainland Italy and in Sicily.

This species inhabits dry meadows, shrubland and arid environments, but also mountainous areas along stony paths, at an elevation of 220–1,420 above sea level. It prefers dense vegetation.

Calliptamus siciliae can reach a body length of 12–17 millimetres in males, of 19–27 millimetres in females. The basic coloration of the body is rather variable. It ranges from dark gray, greyish brown to reddish brown. The wings are narrow and dark spotted. The hind wings are transparent milky. The tibiae of the hindlegs and the underside of the femurs are reddish. It can be distinguished from similar species by the front wings (tegmina) shorter than the abdomen.

Adults can mainly be encountered from July through October.

Egyptian grasshopper

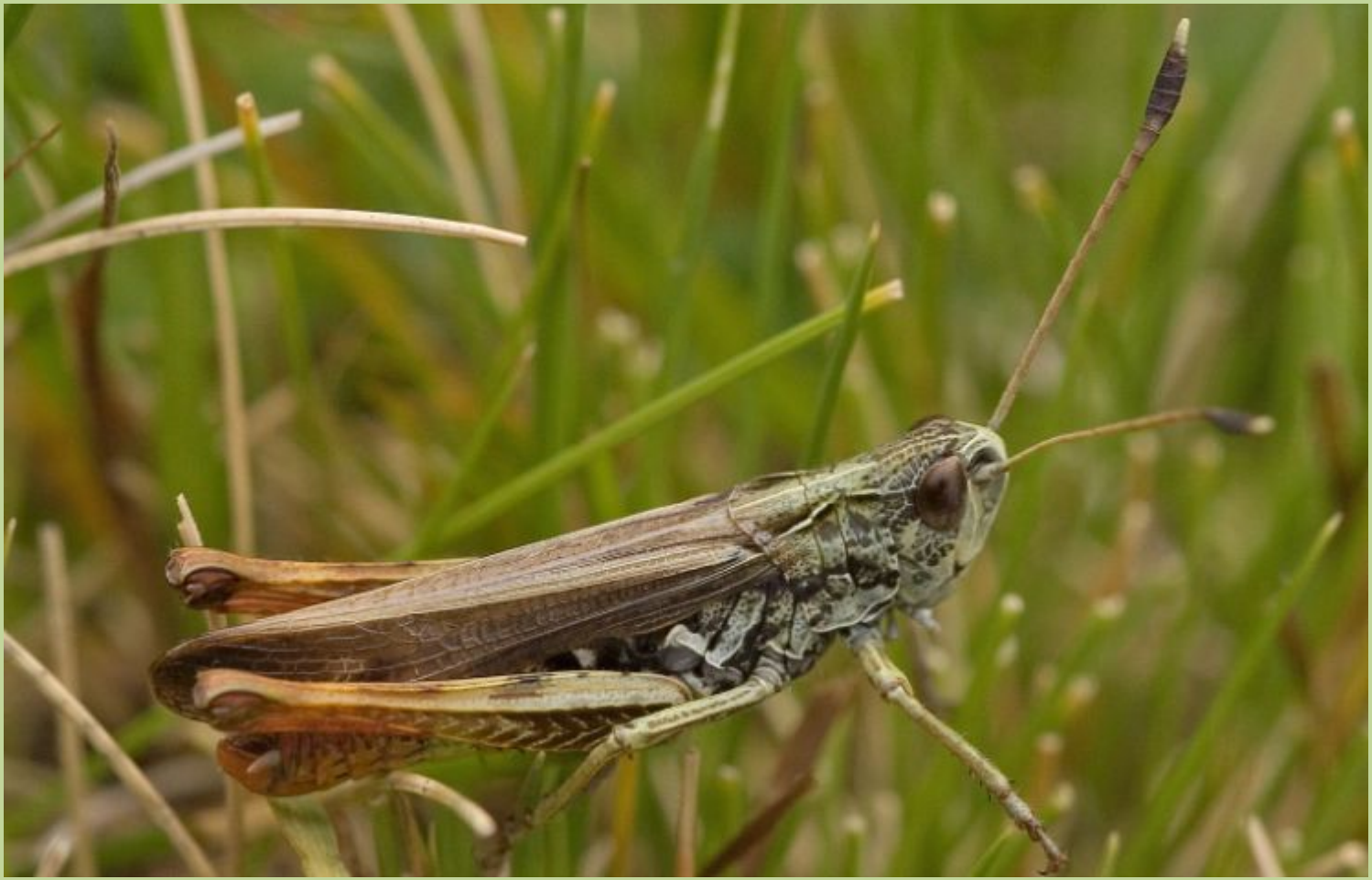


Anacridium aegyptium, the Egyptian grasshopper or Egyptian locust, is a species of insect belonging to the subfamily Cyrtacanthacridinae.

This quite common species is present in most of Europe, the Afrotropical realm, eastern Palearctic realm, the Near East, and North Africa, and recently seen in Cape Town, South Africa. These grasshoppers inhabit trees and shrubs, scrub land, maquis, and orchards in warm and bright environments, at an elevation from sea level to 1,500 m.

Anacridium aegyptium is one of the largest European grasshoppers. The adult males grow up to 30–56 mm long, while females reach 46–70 mm in length. Their bodies are usually gray, brown, or olive-coloured, and their antennae are relatively short and robust. The tibiae of the hind legs are blue, while the femora are orange. The hind femora have characteristic dark marks. They are easily identifiable also by the characteristic eyes with vertical black and white stripes. Their pronota show a dorsal orange stripe and several white small spots. The wings are clear with dark marks. This species is a folivore, essentially feeding on leaves of various plants. It is a solitary species, not harmful to crops. Adults can mainly be encountered in August and September, but they are active throughout the year. After mating, these grasshoppers overwinter as adults. Spawning occurs in spring just under the soil surface and the nymphs appear in April. These grasshoppers undergo several molts. The nymphs have the appearance of the adults, their color varies from yellow to bright green and ocher and the wings are absent or small, as they are gradually developed after each molting.

Camouflaged tree locust



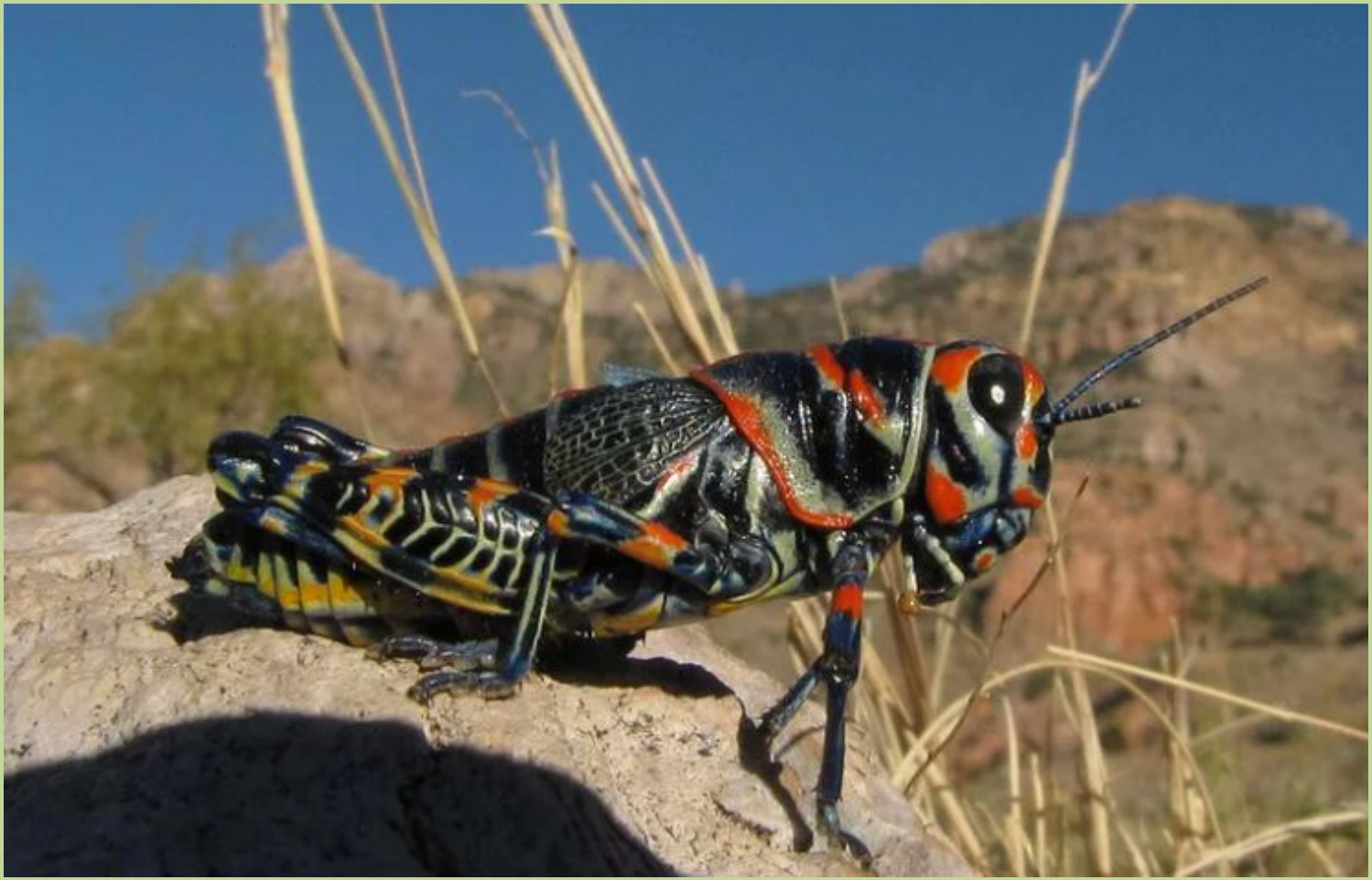
Anacridium moestum, the camouflaged tree locust, is a species of grasshopper belonging to the family Acrididae, that is native to Africa south of the equator. It is similar in appearance to the Southern African desert locust, Schistocerca gregaria subsp. flavicentris. It is likewise brownish, large and slender, but mostly arboreal in its habits.

Anacridium moestum can reach a length of 50–90 millimetres. These large and slender locusts show a mottled reddish brown or grey body, with a finely speckled green tegmina. Hind wings are pale blue with a black band near the base. Hind tibiae are purplish. Nymphs (hoppers) are yellowish green. The eyes and face are vertically striped.

This species is native and widespread in southern and south tropical Africa. These grasshoppers live on trees or shrubs in grassland with acacias.

Anacridium moestum feeds on Acacia, Zizyphus, Capparis aphelia, and gum trees. These tree locusts may damage crops and fruit trees, but only occasionally swarm.

Red locust



The red locust (Nomadacris septemfasciata) is a large grasshopper species found in sub-Saharan Africa. Its name refers to the colour of its hind wings. It is sometimes called the criquet nomade in French, due to its nomadic movements in the dry season. When it forms swarms, it is described as a locust.

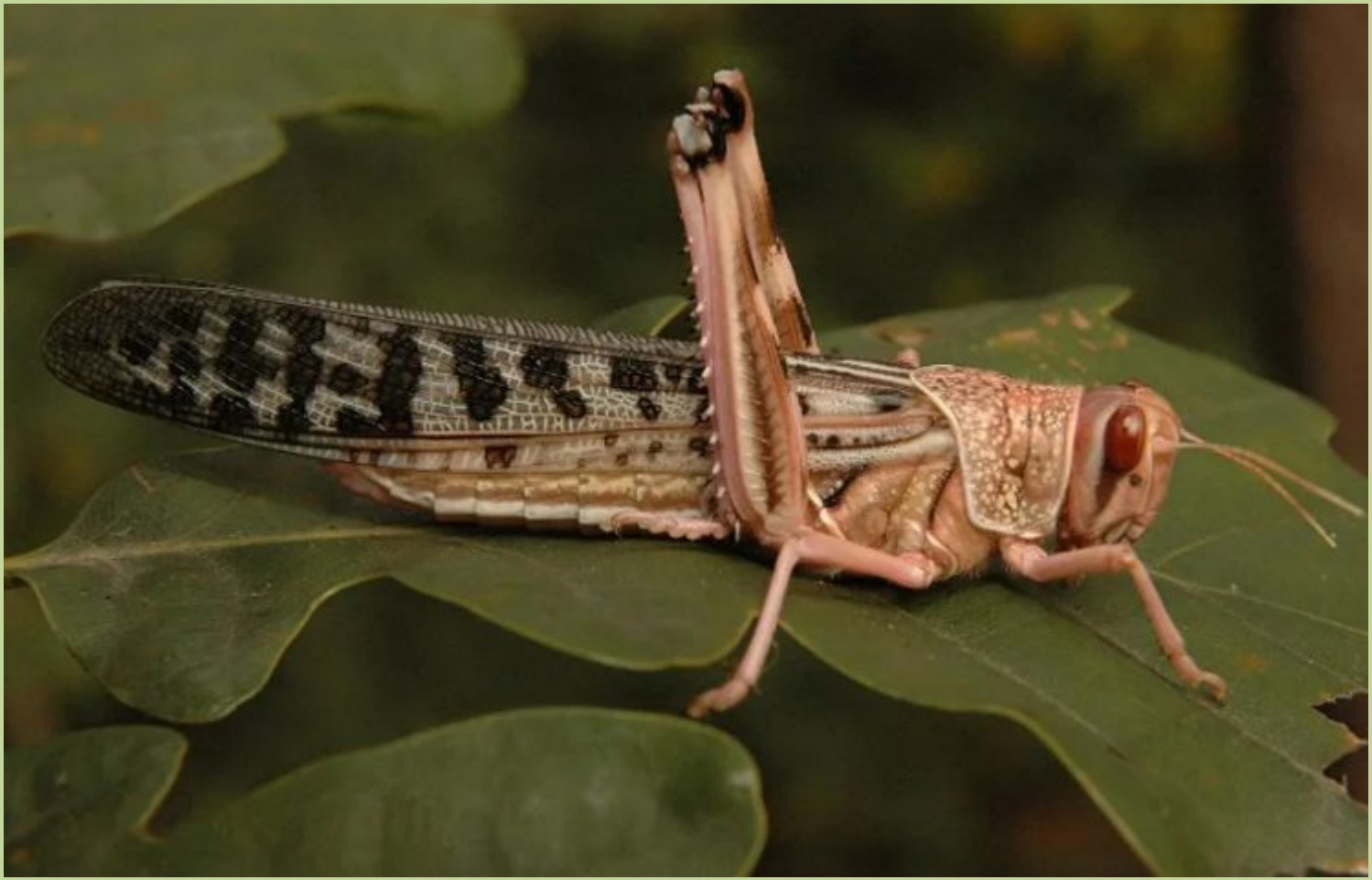
Nomadacris septemfasciata is in the family Acrididae and is the only member of the genus Nomadacris. The genus Nomadacris was erected in 1923 by Boris Uvarov and the species was named originally as Acridium septemfasciatum by Jean Guillaume Audinet-Serville in 1838. It is placed in the subfamily Cyrtacanthacridinae, the bird locusts. Other species previously placed in Nomadacris are now considered part of the genus Patanga

The overall colour of adult insects is a mixture of light beige and brown. They have seven brown transverse bands on the elytra, justifying the species name septemfasciata. The pronotum has two brown lateral bands.

Males are 60–70 mm long; females are 60–85 mm long.

Unlike adults, the colour of immature insects varies depending on their phase. When solitary, they can be green or brown; when in large numbers (gregarious), they are bright yellow and red-brown with black markings.

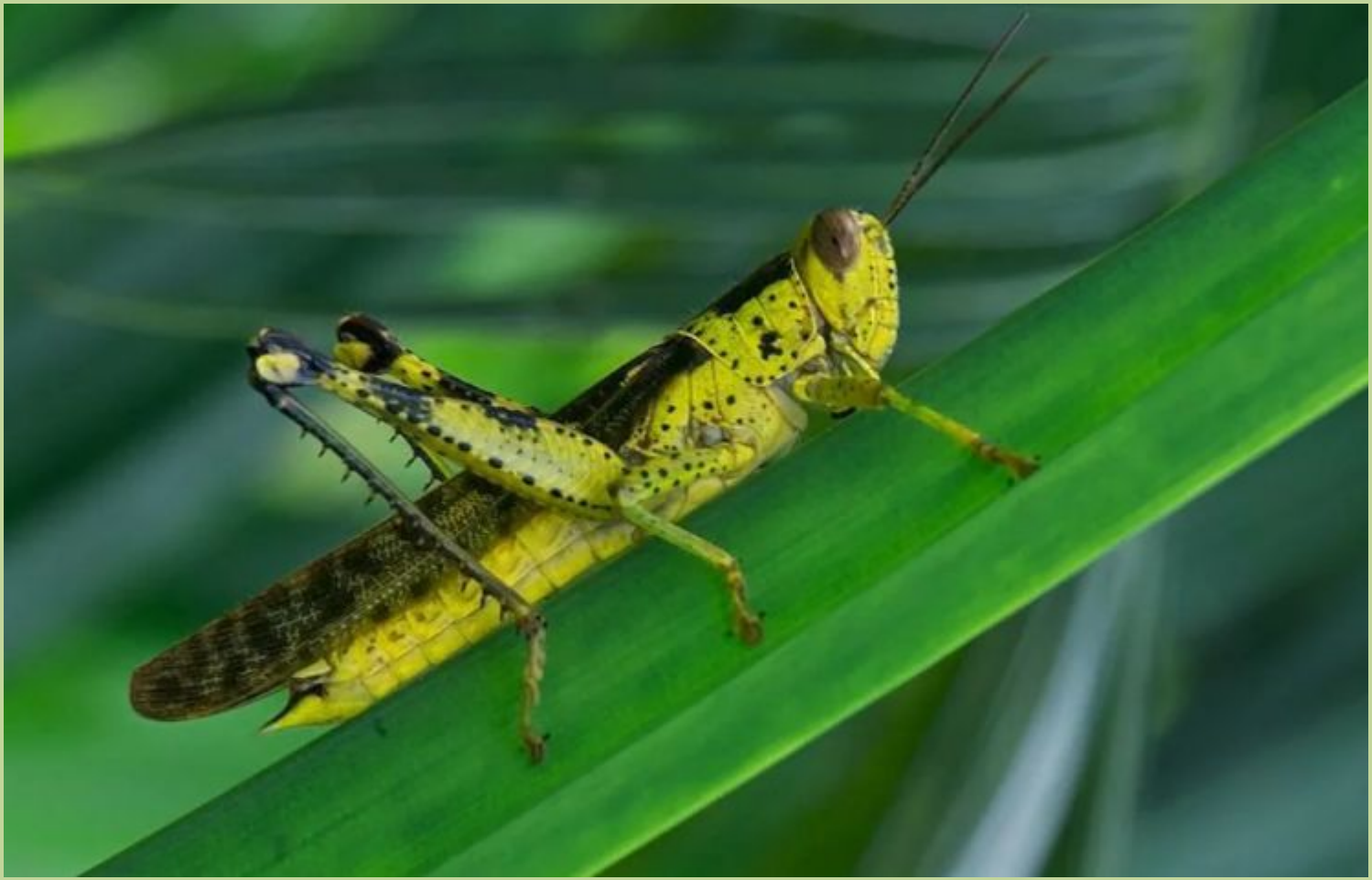
American bird grasshopper



Schistocerca americana is a species of grasshopper in the family Acrididae known commonly as the American grasshopper and American bird grasshopper. It is native to North America, where it occurs in the eastern United States, Mexico, and the Bahamas. Occasional, localized outbreaks of this grasshopper occur, and it is often referred to as a locust, though it lacks the true swarming form of its congener, the desert locust.

The adult male of the species is up to 4.5 cm long, and the adult female may reach 5.5 cm. The body of the adult is generally yellow-brown in color and the wings are pale with large brown spots. The nymphs are different in appearance. They change color as they mature and their coloration is a polyphenic trait - influenced by environmental conditions, producing multiple forms from one genotype. This is not uncommon among grasshoppers. In this species, the coloration of the nymphs is especially influenced by temperature. Nymphs are various shades of green, yellow, or red, usually with a pattern of black markings. They are often red at lower temperatures, but at higher temperatures, only green and yellow shades occur. Black patterning is also influenced by temperature, with lower temperatures inducing darker markings. Density is also a common factor in color polyphenism, but it is less important in this species than in many other grasshoppers. Nymphs reared in crowded conditions develop darker black markings, but density has little effect on their background colors.

Giant grasshopper



Valanga irregularis (common name "giant grasshopper", "giant valanga" or "hedge grasshopper") belongs to the Family of Acrididae. The distribution is restricted in the Australian tropics and subtropics. The species belongs to the largest grasshopper of the continent. Usually the animal lives a solitary mode of life.

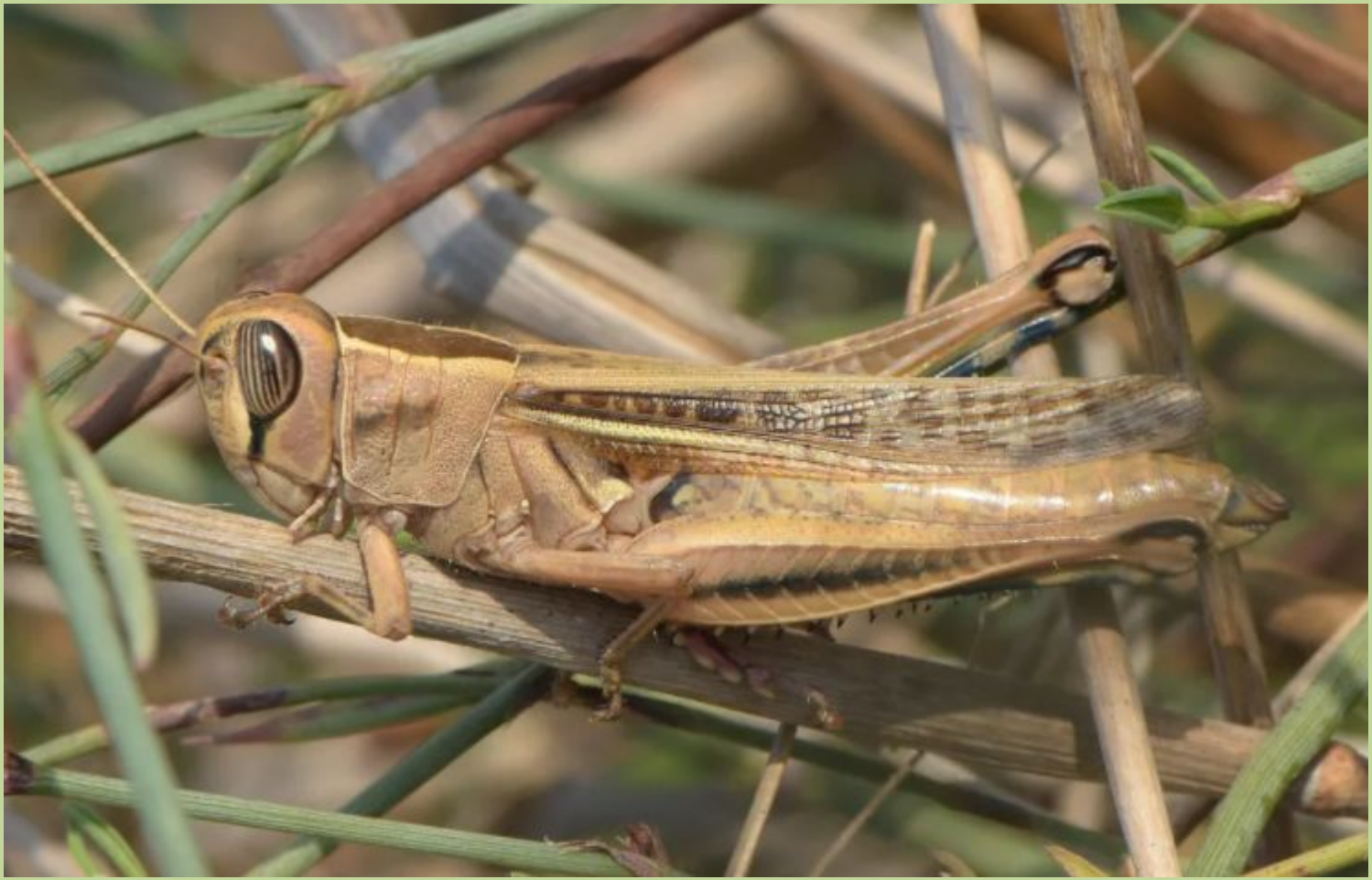
Both sexes look similar but differ in body size. Female individuals can reach up to 60 to 75 millimetres in length, males about 45 to 55 millimetres, hence they count as the largest grasshopper in Australia. Some reports refer a body length up to 90 millimetres.

The body colour and pattern varies highly. Adults have a creamy brown to greyish green colouring. The forewings show a black dot pattern, the hindwings are dark grey, sometimes also colourless or light green. At the tibia orange and red spines with black stings are visible.

Valanga irregularis is native in the tropic and subtropic regions of Australia, northward of Sydney.

The species favours a moist climate. In spring and autumn they are often found in grassland or forest. If the atmospheric conditions are ideal they sometimes leave for suburban gardens.

Lamenting grasshopper

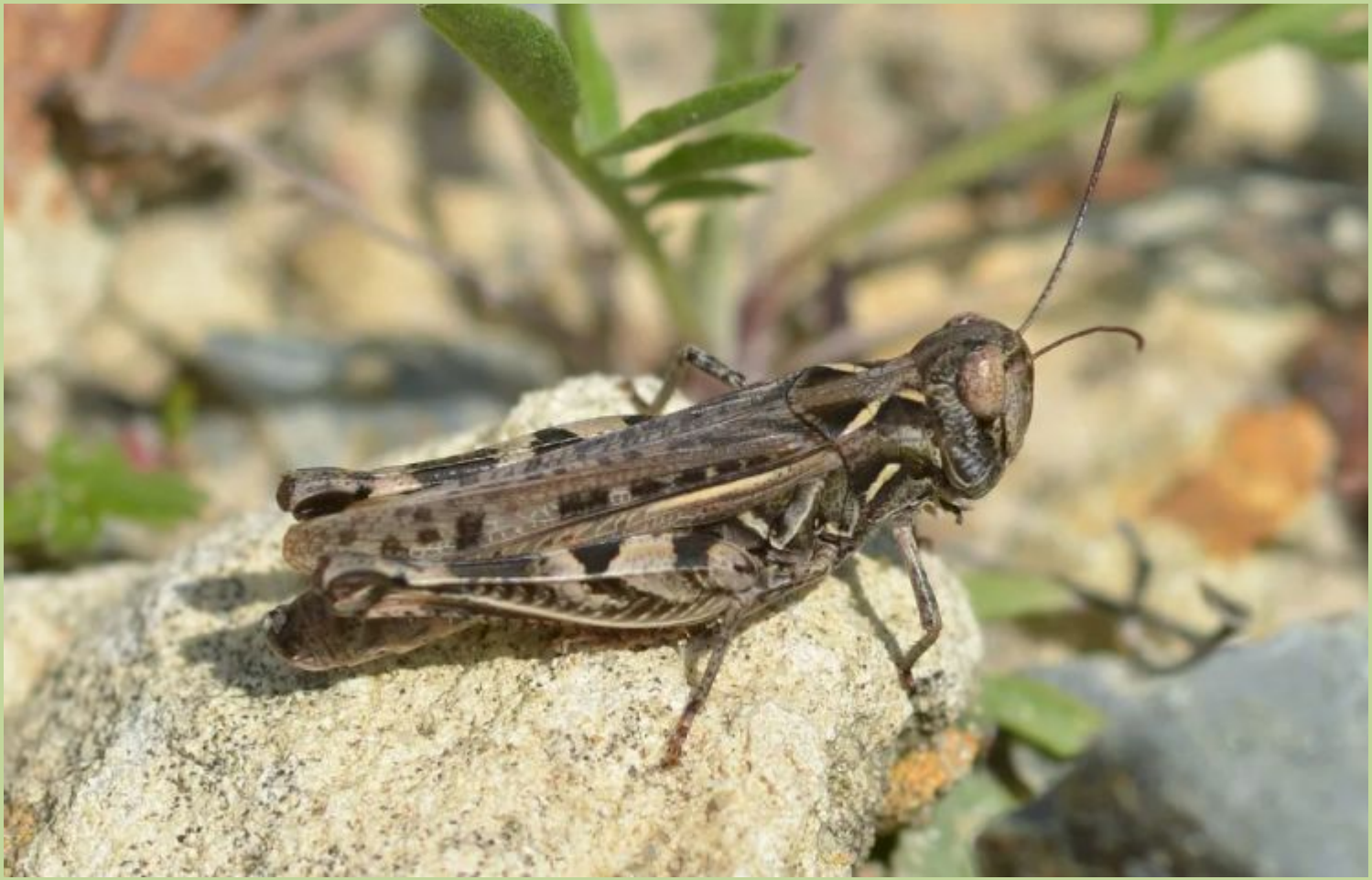


Eyprepocnemis plorans, the lamenting grasshopper, is a species of insect in the family Acrididae. It is the type species of the genus Eyprepocnemis, and is found in Africa, parts of the Middle East, and southern Europe. It typically inhabits wetlands and other moist habitats.

This is a medium-sized grasshopper, with females growing to a length of about 4.5 cm, while males are slightly smaller. The general colour is greyish-brown. The head and prothorax have a central dark band edged with paler stripes. The eye has a longitudinal dark streak, a characteristic shared by Anacridium aegyptium, Heteracris annulosa and Heteracris adspersa. The femurs of the hind legs have greenish, blue and yellow striations, and the hind tibia have reddish or bluish iridescence, and black and white spines.

Eyprepocnemis plorans is native to much of Africa, parts of the Middle East such as Iran, and southern Europe, where it is present in southern Greece, southern Italy, Sicily, Sardinia and southern Spain. It seems to be expanding its range northwards in Italy, possibly as a result of putative climate change. It usually occurs in wetlands, reed beds, freshwater and salt marshes, riverside vegetation, coastal vegetation and man-made habitats. It appreciates vertical-growing stems such as reeds, and habitats with tall forbs mixed with lower-growing plants.

Moroccan locust

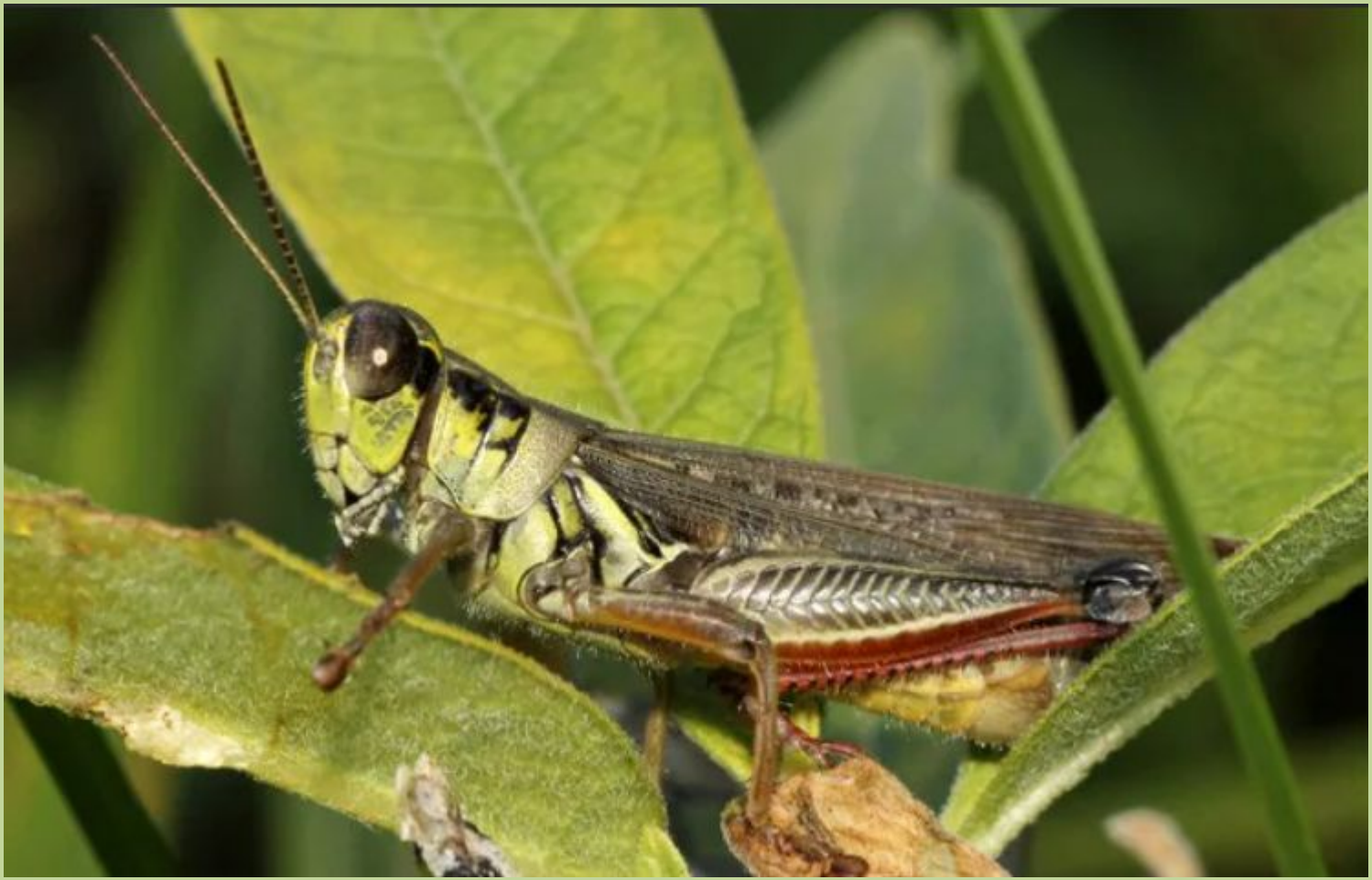


Dociostaurus maroccanus, commonly known as the Moroccan locust, is a grasshopper in the insect family Acrididae. It is found in northern Africa, southern and eastern Europe and western Asia. It lives a solitary existence but in some years its numbers increase sharply, and it becomes gregarious and congregates to form swarms which can cause devastation in agricultural areas. The species was first described by Carl Peter Thunberg in 1815.

The range of the Moroccan locust extends from the Canary Islands and Madeira in the west to Kazakhstan and Afghanistan in the east. In Africa it is found in Algeria, Egypt, Libya, Morocco and Tunisia. In Europe it is found in France, Portugal, Spain, Italy and the Balkan peninsula. It is also found in the Middle East and Central Asia.

The eggs are laid in pods with about thirty eggs each. The nymphs ("hoppers") resemble wingless adults. They moult five times, each instar having larger wing pads. The adult female locust is 20 to 38 millimetres long and the male 16 to 28 millimetres long. The body colour is yellowish gray with dark patches. There is a creamy coloured cross-shape on the prothorax. The elytra are large and transparent, sometimes speckled with brown, and the wings are colourless and strongly veined. The hind legs are powerful, the femur often being banded with black while the tibia is usually red. The time taken from hatching to maturity is about thirty days.

Red-legged grasshopper



The red-legged grasshopper (Melanoplus femurrubrum) is a species of grasshopper belonging to the genus Melanoplus. It is one of the most common grasshoppers found in Mexico, the United States, and Canada. This grasshopper is frequently used as a model organism in scientific studies, due to their abundance throughout North America and behavioral response to changes in climate.

M. femurrubrum is a medium-sized grasshopper, in which males can range in length from 1.7 cm - 2.4 cm, whereas females can range from 1.8 cm - 3.0 cm long. This grasshopper has a reddish-brown back, a greenish-yellow belly, and red hind tibiae, hence its specific name femurrubrum. Wings of M. femurrubrum typically extend beyond the tip of the abdomen. Males have an enlarged abdomen, with a U-shaped sub-genital plate.

M. femurrubrum can be found in a variety of habitats found throughout most of North America, but prefer grasslands and areas of thick vegetation. They are commonly found in disturbed habitats and old fields.