**Hunting and Feeding**

**Bats** eat the equivalent of half of their body weight every night. For insect eaters this can mean more than a thousand small insects, which in terms of energy is roughly the same as a person eating 30–40 hamburgers. Suckling females need an especially high-energy intake and can eat even more. So as not to put on excess weight, bats are careful to only eat what gives them most energy. Fruit eaters spit out fibrous matter, stones, and pips, and insect eaters usually bite off the indigestible legs and wings of their larger prey. The abdomens of swarming insects like ants and termites are rich in fat, and in order to maximise their nutrient intake, bats sometimes feast only on that particular part and spit out the rest. Many bats eat on the wing, while others, particularly those that hunt larger animals, prefer to land before savouring their meal in peace and quiet. Bats chew their food carefully to ease digestion and, owing to the large size of their stomachs in relation to their intestines, can eat a great deal when the occasion arises. At the same time, bats can digest their food and expel the waste in less than an hour.

**Insects**

Most bats live on insects and have probably always done so. Their prey comprises everything from tiny midges and aphids to the largest beetles. Many are very flexible in their choice of diet and eat whatever is available.

The dipterans or flies are very important as bat food. They often occur in large numbers almost everywhere, and many species replace each other throughout the season. Most species breed in water, which is why lakes and rivers are important as feeding sites for bats.

Each species of insect swarms for a short time, usually for a few days or a week, but with the thousands of insect species available, there is always food to be had throughout the summer. Insects also swarm at specific places and in specific environments. Bats have learnt where and when the insects are available and are quick to make the best of the occasion. Insects that emerge from water, such as chironomids—nonbiting midges—and caddisflies, are particularly important sources of nutrition in the Nordic region, since there is a great abundance and a continual turnover of species throughout the summer. Some bats are, of course, better at exploiting certain sources of food than others. Large bats, on average, catch larger insects than smaller bats, but the variation is wide and the exceptions many. Even more than this, the nature of the prey depends on the hunting technique applied by the hunter. Brown long-eared bats and barbastelles are moth specialists, serotine bats and northern bats prefer dung beetles, and the soprano and Nathusius’ pipistrelles mostly enjoy a diet of flies such as mosquitoes, midges, crane flies, and gnats.

**Aeroplankton**

As we have already mentioned, swift narrow-winged bats often hunt at high altitudes, elegantly mastering the dark with acrobatic prowess as they hunt for swarms of tiny insects. Low-frequency, high-amplitude echolocation, as used by these bats, has a comparatively long range, and every
echoing response reveals the whereabouts of the prey. The bats systematically scan their surroundings, picking out landmarks on the horizon with their eyes. The species of bent-wing bats stick together in large colonies that flock to wherever insects are hatching. These bats are relatively small and light but quick on the wing. They feed partly on aeroplankton carried by air currents and winds high above the ground. Aeroplankton includes animal life forms, such as midges and aphids as well as spiders and caterpillars that sail through the air suspended from their gossamer threads. Colonies of bent-winged bats are often enormous, containing tens of thousands on individuals, and, like bats in general, are important for agriculture and other activities as a natural form of vermin control.

**Above Water**

Watercourses and wetlands are the most important hunting grounds for bats in the north, as mangrove swamps and estuaries are for many tropical and subtropical species. Water is the environment for a wide variety of insects in the larval stage, such as mayflies, caddisflies, and most true flies including mosquitoes, gnats, and nonbiting midges. After hatching, some of these insects congregate in swarms above the surface of the water or above trees along its edge. Flies are easier for bats to catch than many other insects since they are earless and therefore deaf to echolocation. Most true flies are active for a brief period at dusk after the birds have returned to their night roosts but before the bats have started to venture out, but they also find protection by forming dense swarms based on the same safety-in-number principle as a shoal of fish or a flock of starlings.

Even though many bats hunt over the water, few of them catch fish. This is because it is not easy to locate prey under water in the dark. There might have been the odd report on Daubenton’s bats being able to catch fish, but it is in Latin America where the real specialist, the fishing bat, lives. The fishing bat sweeps across the dark surfaces of rivers, trawling with its long hind legs, large feet, and hook-like claws. The fishing bat has a characteristic echolocation technique and can sense the slightest ripple on the surface caused by a fish.

Fishing bats, Daubenton’s bats, and many other over-water hunters have large feet for trawling, a technique so named because it was once thought, erroneously as it turns out, that they drag their feet along the water in a more or less random fashion. But as we can clearly see in the photograph overleaf, a bat is perfectly able to locate its prey with pinpoint precision using echolocation alone and pluck it from the surface without any recourse to chance.

**Drinking**

In hot, dry climates, bats need to keep themselves hydrated, especially suckling females, which therefore need to drink every day. There are some desert species that can live off the water content of the insects they eat, but many of the inhabitants of hot, arid regions are geographically constrained by the need to drink. In some areas, such as the Mongolian steppes, bats are totally dependent on human wells, and as rural communities decline, the wells collapse, and the bats disappear. Bats also visit dug wells and livestock troughs in many other countries, and in California, southern Europe, and other hot places, it is not unusual to find bats quenching their thirst from outdoor pools.

Bats prefer to drink on the wing from still water surfaces. To avoid getting wet, they need to perform a precision manoeuvre, but given that still waters return no echo to an individual approaching from the side, this is difficult to do. Therefore, bats approaching a watering hole to drink always circle a few times to pinpoint the surface exactly before descending.

**Hanging and Waiting**

Instead of hunting on the wing, certain bats listen for their prey while hanging silently from a branch. Yellow-winged bats hang in the open tropical air, fully exposed to predators, from the branches of the acacia tree. But its colour serves as camouflage, its large eyes and ears indicate good vision and excellent hearing, and it is constantly on the alert. Yellow-winged bats live in pairs and engage in territorial defence,