

Chapter 14

OTHER COUNTRIES IN SOUTHERN AFRICA

The countries included in this chapter are Botswana, Madagascar, Mauritius, Mozambique and Namibia. Chapter 11 provides a **Regional Taxonomic Inventory**.

BOTSWANA

Silberbauer (1972), provides a useful discussion of the history and relationships of the Bushmen (pp. 271-273), and discusses their use of edible insects (pp. 284-287, 302). Animal products supplement the vegetable-based diet of the G/wi Bushmen. Silberbauer states:

The meat of antelope and springhares (*Pedestes caffer*) is by far the most important of the animal products eaten, but the meat of other mammals and of birds and reptiles, the eggs of birds, and a number of edible insects are also regularly included in the diet, and in their seasons of availability, assume considerable temporary importance. . . . In the second half of summer an unidentified species of hairless caterpillar, three inches long in its full form, is enthusiastically sought, and large numbers are eaten in the occasional and brief periods when it is superabundant. Its distribution is sporadic and localized, but a report of a good swarm brings a band hastening across country to camp in the vicinity for five or six days, during which the caterpillars form a major part of the diet. . . . When termites swarm in the wet season they are caught in large numbers, but this is not a precisely predictable event and it is a stroke of luck for a band to be camped near enough to a swarming nest to be able to take advantage of the occasion. Termites provide one or two big meals a year, on average, and their catching provides a great deal of fun and excitement.

The author estimates that one band of G/wi Bushmen captured an average of 1 pint of ants per month from November through March (brought into camp), and in December, January and February, respectively, captured 4, 8, and 4 pints of termites. Honey is a rare delicacy which the G/wi do not actively seek out, but hives are robbed if found in trees felled for other reasons. The author reports that camp sites are usually occupied for three weeks or longer, but "a band will occasionally make a shorter excursion to a locality to exploit a particular resource, for example, eland caterpillars."

Lee (1972) also provides some very useful history of the Bushmen, focusing on the !Kung Bushmen of the Dobe area in northwestern Botswana (pp. 327-333). These people know at least 70 species of insects (pp. 341-342, 345), the "most important" of which are "the mantises (about whom there is a body of myths), bees (highly prized for their honey), flying ants and click beetles (dietary delicacies), and poison beetles (the sources of Bushman arrow poison)." Lee emphasizes that the Dobe area Bushmen exploit an abundant supply of food resources, mainly vegetable, and very little of their food gathering is left to chance. By and large, according to Lee, the snakes, insects and lizards described by Service (1962) as staples of the Bushman diet, are despised by the Bushmen of the Dobe area. Of 220 species of animals known and named by the Dobe area Bushmen, 54 are considered edible, but only 17 (which make up more than 90% of the animal diet by weight) are systematically hunted. Flying ants rank 17th on this list in order of importance.

Service (1966: 100-101) states that:

. . . the Kung are a hungry people, their habits oriented around a constant struggle for food and water. Vegetable foods are rare most of the year, as is grass and water that would attract game; hence the Bushmen band is almost constantly migrating. The most usual game hunted is a small antelope, birds, rodents, snakes, insects, lizards and the difficult ostrich. Foods gathered include mostly roots and seeds, and in the northern areas fruits and nuts.

Thomas (1959: 63, 95) mentions that the Bushmen eat certain beetles, certain ants, and certain caterpillars, "which, they say, are sweet as honey." The abdomens of soldier ants are eaten, and the remainder is thrown away. Thomas tried one and states that, "it was not too unpleasant but sour and very watery, very like a blackberry before it is ripe. The workers, I am told, are tasteless, but the fighters are considered a near-delicacy."

Lloyd O. Schaad (pers. comm. 1987) observed the use of mopanie worms and flying termites during his years as a missionary in Botswana from 1971 to 1980. Schaad's observations were primarily on the Tswana

people in the Francistown and Maun area, but the use of these insects is practiced throughout the country.

Among earlier references, **Sparrrman (1786, I: 201)** mentioned termites, locusts and caterpillars among the foods of the bushmen.

Dornan (1925: 114) stated that the Kalahari Bushmen, often compelled by hunger, eat almost anything that can be eaten including insects, common insects including (p. 28) bees, hornets, mason wasps, beetles, ants, mosquitoes, "swarms" of flies, grasshoppers, locusts and crickets. Relative to honey-gathering by the Bushmen, whom Dornan says live on honey, the sting of the bees is severe. They are smoked out of hollow trees, rocks or holes in the ground. Relative to termites, Dornan states (p. 29) that: "White ants are a great plague. Their hills are found all over the country wherever the soil is suitable, and are sometimes of great size. . . . The well-known bushman's rice is a species of ant with long bodies and black heads."

Schapera (1930: 3) states that the Bushmen were at one time spread over almost all of southern Africa, but are now confined mainly to the Central and Northern Kalahari Desert and adjacent areas (thus, insect foods reported for the Bushmen or in the Kalahari have been in this Summary more or less arbitrarily assigned to Botswana, which can result in some error). Schapera (p. 93) states, as did Dornan, that the Bushmen will eat almost anything that can be eaten. Game is favored when it can be obtained, but various insects including locusts, beetles, "young bees" [probably larvae and/or pupae], termites, "flying ants and ants' eggs" [probably pupae], as well as honey are used. Schapera does not make clear whether it is the adults or grubs of beetles that are used. Locusts are either baked or boiled (p. 94).

Coleoptera

Elateridae (click beetles)

See Lee (1972) in the Introduction.

Miscellaneous Coleoptera

See Dornan (1925), Schapera (1930) and Thomas (1959) in the Introduction.

Diptera

Culicidae (mosquitoes)

See Dornan (1925) in the Introduction.

Miscellaneous Diptera

See Dornan (1925) in the Introduction.

Hymenoptera

Apidae (honey bees)

See Dornan (1925) and Schapera (1930) in the Introduction.

Eumenidae (mason and potter wasps)

See Dornan (1925) in the Introduction.

Formicidae (ants)

See Dornan (1925), Schapera (1930) and Thomas (1959, ants or termites?) in the Introduction.

Vespidae (wasps, hornets)

See Dornan (1925) in the Introduction.

Isoptera

Miscellaneous Isoptera

According to **Schaad** (pers. comm. **1987**), termites appeared with the first rains in November or when induced to emerge by pouring water into their subterranean nests and were roasted or used in sauces. See also Sparrman (1786), Dornan (1925), Schapera (1930), Silberbauer (1972) and Lee (1972) in the Introduction.

Lepidoptera

Saturniidae (giant silkmoths)

Gonimbrasia belina Westwood, larva

"Mopanie worms," the caterpillars of *Gonimbrasia belina*, occur widely in southern Africa, including in Botswana (see under South Africa for discussion of its processing and nutritional value). A Botswana-based company, Albert's Mopanie Worms, with retailing centers in Johannesburg, sells the dried, prepackaged caterpillars and turned a profit in its first year of operation, in 1983 (**Brandon 1987**). Brandon mentions that one company is experimenting with grinding the dried mopanie caterpillars into a protein-rich powder. Botswana ranchers have for years used crushed caterpillars for feed, and one rancher described its benefits by saying, "Hell, one dose of those worms and my stud bull covered 80 cows and never raised a sweat."

According to **Schaad** (pers. comm. **1987**) mopanie worms, which reach three inches in length, appeared on the native mopane trees in mid-summer and are used as a meat substitute. They can be purchased in the stores in large bags as dried caterpillars and are often roasted. They are exported by the tons to Zambia. Schaad mentioned that trees with larvae could be located because of the large flocks of hawks that gather to feed on them.

Miscellaneous Lepidoptera

Bryden (1936: 215, 218; vide Bodenheimer 1951: 142) mentions caterpillars among the foods of the Masarwa Bushmen of the northern Kalahari. See also Sparrman (1786), Dornan (1925), Thomas (1959) and Silberbauer (1972) in the Introduction.

Orthoptera

Acrididae (short-horned grasshoppers)

Locusta tartarica (author?)

The most common species of locust, according to **Dornan** (1925: 28), is *Locusta tartarica*:

These locusts lay their eggs at the beginning of winter in the sand-belts of the Kalahari, and in the hopping stage cover considerable portions of the country. In the winged stage they are carried by the prevailing wind from the west and north-west over the neighbouring districts, and do an incredible amount of damage. The natives turn out when a swarm alights and do their best to destroy and capture as many as possible. They dry them in the sun, and use them as food. The legs and wings are pulled off and they are fried in fat, and kept in bags, and are not at all bad eating.

Stow (1905) mentioned locusts as food of the Bushmen. See also Sparrman (1786) and Schapera (1930) in the Introduction.

Gryllidae (crickets)

See Dornan (1925) in the Introduction.

MADAGASCAR

DeCary (1937) wrote the definitive paper on entomophagy in Madagascar, citing references as early as

1617 to the consumption of insects, particularly grasshoppers. Palm worms were mentioned as being eaten raw. Of grasshoppers, DeCary said [translation], "Still today, Madagascans are fond of this food, and if these harmful insects, at the time of their invasions, destroy rice fields and cultivations, at least the owners find a small compensation for the damage committed in the form of food reserves for man and pigs alike." He further states that insects are used in a "more or less regular fashion, notably during the periods between harvests, when rice may momentarily become rare." Species discussed by DeCary are considered below under their respective orders. **DeCary (1950: 172-173)** mostly repeats information provided in his earlier paper, except as noted under the appropriate groups below.

According to **Simmonds (1885: 368)**: "The inhabitants of Madagascar are ill fed for half the year; they prefer fried grasshoppers and silkworms, esteeming the latter a great delicacy."

Gade (1985) states that: "Anthropogenic fire above 900 m elevation on Madagascar has created several discrete zones of savanna woodland dominated by tapia (*Uapaca bojeri*). This tree, preadapted to surviving periodic burning, provides edible fruit, firewood and medicinal bark, but it is most important as a host plant to several useful lepidopteran insects." One of the lepidopteran species is a traditional silk producer and it and four other lepidopterans have an edible stage. These and several other insects used as food are discussed under the appropriate taxonomic categories below. Gade discusses several factors that make continuation of the tapia-protein-silk ethnobiological system very tenuous.

Coleoptera

Beetle grubs are eaten fried, according to **DeCary (1937)**, who states that, "The taste of these different larvae is rather subtle and not at all disagreeable." They were "very well liked in the olden days, were very costly and reserved for the rich." Since custom forbade looking for the grubs in the embankments of rice fields in order not to deface them or impede irrigation, one had to sometimes go very far to gather them.

Carabidae (ground beetles)

Scarites sp., larva

Tricholepsis sp., larva

DeCary (1937) reports the use of larvae of unidentified species of two genera, *Scarites* sp., known as *sahobaka*, and *Tricholepsis* sp., known as *tsikondry* or *voangoribe*.

Cicindelidae (tiger beetles)

Proagsternus sp., larva

Larvae of *Proagsternus* sp., also known as *tsikondry* or *voangoribe*, are eaten (**DeCary 1937**).

Curculionidae (snout beetles, weevils)

Eugnoristus monachus Ol., larva

Rhina sp., larva

Rhynchophorus sp., larva

Bodenheimer (1951: 200) states, without referencing, that the palmworm (*Rhynchophorus*) and two other weevils, *Eugnoristus monachus* Ol. and *Rhina* sp., are consumed raw or fried. **DeCary (1937)** also mentions palm tree worms among the edible coleopterans. **DeWailly and Theodorides (1953)** mention without elaboration, "the fat of weevils (Coleoptera Curculionidae), whose production in the northwestern part of Madagascar supplies certain Tsimibuty markets, giving rise, in the forest, to a real 'curculioculture.'"

Dytiscidae (predaceous diving beetles)

Cybister hova Fairm., adult

Adults of *Cybister hova* are eaten (**DeCary 1937**).

Lucanidae (stag beetles)

Cladognathus serricornis (author?)

Larvae of *Cladognathus serricornis*, known as *sahobaka* (?), are eaten (**DeCary 1937**).

Passalidae (bess beetles)

According to **Paulian (1943: 351-352; vide Theodorides 1949: 128)**, fried larvae of palmicolous Passalidae are consumed in Madagascar.

Hemiptera

Nepidae (waterscorpions)

Nepa sp., adult

According to **DeCary (1937)**, water-bugs of this family, *Nepa* sp., are sometimes eaten on the high plains, but the flavor is rather unpleasant and they are little-liked.

Homoptera

Cicadidae (cicadas)

Phremnia rubra Signoret, "sugar"

The nymph of *Phremnia rubra* Signoret, which lives on Combretaceae and is widespread in the west and south, secretes sugary white droplets that sometimes accumulate to the "thickness of a fist" on the branches or on the ground. The Sakalava, Bara and Mahafaly are fond of this sugar which they call *tantely sakondry* (**DeCary 1937**).

Fulgoridae (planthoppers)

Pyrops madagascariensis (author?) (= *tenebrosa* Fabr.)

Pyrops tenebrosa Fabr., known as *sakondry*, is presently eaten, fried, in the northern part of the island (**DeCary 1937**). **Gade (1985)** reports that the *sakondry* (*P. madagascariensis*) is a "preferred comestible." It feeds on lima bean and related plants, and, dried, is much appreciated, especially in the Majunga region.

Hymenoptera

Vespidae (wasps, hornets)

DeCary (1937) cites Grandidier (in about 1902) in mentioning that wasp larvae were eaten in earlier times although the custom has probably largely fallen into disuse.

Isoptera

According to **DeCary (1950: 147)**, the tops of termite cones are cut off so that hens and guinea fowl can "feast" on the termites.

Lepidoptera

According to **DeCary (1937)**, a number of species of lepidopterous pupae "are still very valued" in Madagascar.

Lasiocampidae (eggar moths, lappets)

Borocera madagascariensis Boisduval, pupa

Borocera spp., larvae

Libethra cajani Vinson, pupa

Rombyx radama Coquillet, pupa

The pupae of several silk-producing lasiocampids are consumed on the high plains and in the west (**DeCary 1937**). These include *Borocera madagascariensis*, the *landibe*, which furnishes silk for spinning, in addition to its pupae; *Rombyx radama*, called *mania* by the Merina and *moundo* by the Sakalava; and *Libethra cajani*, or *mafina*. The pupae are fried after being killed in boiling water or may be cooked on ashes. DeCary mentions that in 1894 a dish of *Borocera* pupae, prepared in a bechamel sauce (white sauce with cream), was served in an official meal in the French Residence in Tananarive.

The *Borocera* pupae have long been sold in peasant markets (**Ellis 1859: 367; vide Gade 1985**).

Simmonds (1885: 355) mentions specifically the pupa of the wild silkworm, *Borocera cajani*, but it is not certain which is meant, *Borocera madagascariensis* Boisd. or *Libethra cajani* Vinson (see DeCary, 1937, above). Whichever, the roasted pupae were a favorite of the son of the ill-fated King Radami II.

Osborn (1924: 322-325) mentions the use of the Madagascar silkworm, the food plant of which is *Tapia edulis*. Osborn states:

The silkworm in the chrysalis stage is as much esteemed for food as the locust and these also are to be found in the markets and in well-provisioned homes. I saw more silkworms in the markets of the Betsilio country than elsewhere and especially in the region about Imamo. There was no dearth of them through Imerina, but in most places not so many as in Imamo, for here the *tapia edulis* is autochthonous and plentiful. This is the food of the Madagascar silkworm and they are to be found in large numbers where it flourishes.

Gade (1985) describes the processing and current economics of *landibe* (*B. madagascariensis*) silk, and notes that pupae are available in markets in the capital city of Antananarivo from October to April, brought in from a 50 km radius. Pupae are often returned to cocoon harvesters in partial payment for their work. Although *Borocera* production requires no human intervention, Gade mentions that the process has been facilitated in various ways:

People have sprinkled *tapia* trees with water during dry spells, transplanted grass to certain locations near the trees on which larvae can spin their cocoons, and dug small trenches to form a barrier to caterpillar rambling. Emerging moths have been caught and tied to tiny sticks on which they deposit their eggs; the sticks are then hung from *tapia* trees. *Tapia* woods without the silkworms have been periodically restocked with eggs or cocoons brought from elsewhere. During the larval stage, children sometimes patrol the grove to scare away caterpillar-eating birds.

Gade continues:

The long process of making *landibe* fabric begins with collection of the raw material in January-February and June-July. Cocoons from *tapia* groves that are remote from human settlement or frequently burned may be collected once a year or less. Size of the harvest varies greatly from one year to the next which, in the aggregate, amounts to between 10,000 and 30,000 kg for the whole island. Peasants whose main occupation is rice farming but who live near the woodland margins scour the groves armed with a long hooked pole or a forked stick to gather the oval gray cocoons which have projecting urticant hairs that can easily penetrate the skin and cause infection. In some *tapia* areas, cooperatives sanctioned by the state have exclusive rights to cocoon harvest, elsewhere families collect them from designated clumps of trees. Even in periods of relative abundance, the return for labor expended is low. Collectors wander over considerable distances to find the cocoons which are scattered on *tapia* branches and nearby herbs. Overlooked cocoons help to assure successive generations but a portion of the collected raw material is also set aside to supply imagos for the next reproductive cycle.

Gade reports that edible larvae feeding on *tapia*, and known as *fangotsoana* or *fangatsika*, apparently include several species of *Borocera* related to *madagascariensis* but not useful as silk. They are reportedly used as a food source primarily during famines.

Turk (date?) suggests that caterpillar production might be greatly increased by cultivation of fast-growing leguminous food plants such as *Cajanus cajan*, which, as described by Gade, was used to raise edible *Borocera madagascariensis* in Madagascar during the 1930s.

Psychidae (bagworm moths)

Debarrea malagassa Heylaerts, pupa

Boiled pupae of the psychid, *Debarrea malagassa* Hylaerts, known as *fangalabola*, which multiplied prodigiously on mimosas and pear trees and was capable of killing the trees, were formerly marketed in quantity in Tananarive (**DeCary 1937**).

Saturniidae (giant silkworm moths)

Antherina suraka (author?), larva

Tagoropsis sp. (1), pupa

Tagoropsis sp. (2), larva

Tapia is the host tree for both *Tagoropsis* species. Caterpillars of *Tagoropsis* sp. 1 descend the tree for pupation in loose soil or under dead leaves. The pupae are collected by scratching the ground, and, according to **Gade (1985)**, collectors can fill a sack with 40 kg of pupae in two or three hours. The pupae are killed in boiling water and may be eaten that way or fried in oil, or cooked in the hot ashes of a fire. The flavor resembles that of fish.

The caterpillar of *Tagoropsis* sp. 2 is known as *bokana*, and according to Gade, "may actually fall into half a dozen different closely-related species." There is some evidence that large populations of *bokana* in a grove coincide with a relative absence of *landibe*. Gade describes the use of *bokana* as follows:

For about half the year, caterpillar collectors, often children, enter the tapia groves with pails and sticks. The creepy-crawlies are brought back to the village where they are decapitated, soaked in salt water, and fried in oil. During its period of abundance, *bokana* supplements the mid-day meal of rice and/or manioc of many peasants in the tapia zones. One family consumes about two kg per week, an amount which increases in September when the household rice supply nears depletion. Caterpillars are also sold in markets to those townspeople who also eat them. Local informants assert that *bokana* consumption was formerly more common than it is at present. European missionaries and administrators on Madagascar undoubtedly prejudiced some people against eating caterpillars. High-caste individuals (*andriana*) refuse them, a possible reflection of their acculturation to Western values and food alternatives rather than a class-dictated taboo. Descendants of the former slave caste (*mainity*), which includes many impoverished people less touched by foreign ideas, appear to be the most avid caterpillar consumers.

The larva known as *saroy* (*Antherina suraka*) has been at times so abundant that it partially defoliates the tapia trees (Gade 1985), but it is eaten in much lesser quantities than the *bokana*.

Sphingidae (sphinx or hawk moths)

DeCary (1950: 172-173) mentions that large sphinx moth pupae, as well as the moths themselves once their wings have been removed, are grilled and eaten by the Sakalava in the west of Madagascar.

Family uncertain

Coenostegia diegoi (Mab.), pupa

In the northern part of the island, pupae of the gregarious caterpillars of *Coenostegia* (= *Cnethocampa*) *diegoi* (Mab.) which group themselves in large pockets of silk, are avidly sought after by the Antankara (**DeCary 1937**).

Mager in 1898 is credited by **DeCary (1937)** for the information that in earlier times certain undetermined caterpillars were considered a flavorful dish.

Odonata**Libellulidae (common skimmers)**

Dragonfly nymphs of several species of Libellulidae (called *ondrindrano*) abound in marshes and abandoned rice fields. They are eaten mainly in the high plains, but are not very well-liked. Their flavor, when fried, "is not too pleasant" (**DeCary 1937**).

Orthoptera**Acrididae (short-horned grasshoppers)**

Cyrtacanthacris (= *Nomadacris*) sp.
Locusta migratoria capito Saussure

DeCary (1937), states that the species most consumed throughout the island is *Locusta migratoria capito*, known as *valala*. Other smaller species which are sometimes eaten are known collectively as *tsibody*. To collect the locusts and grasshoppers, "women and children hold out their lambas, pieces of material that are part of their clothing, and skim the ground, engulfing the locusts in them; or yet, holding a basket in their hand, they

sweep, in a manner of speaking, through the moving mass." There are several methods of preparation, the most primitive being to dry them in the sun after having passed boiling water over them. They are stored in large baskets. For consumption they may be pulverized, then cooked in water and eaten as "laoka" (a generic term for a variety of dishes) to flavor the rice. Or, after having their wings and legs removed, they may be soaked for half an hour in saltwater and fried in fat; prepared this latter way, they are very well-liked and in earlier times "appeared on the tables of princes." *Tsibodies* are prepared by throwing them alive onto coals; they are considered sufficiently cooked when the abdomen bursts. DeCary states that, during invasions, locusts become important items of commerce and are found in many markets. To take advantage of this, the government instituted in 1935 a special high-speed transportation tariff for locusts shipped by rail; "they are taxed on the basis of 1 franc 30 per kilometric ton, that is, the same tariff as those for game and fish."

Camboué (1886; vide Bodenheimer 1951: 199) described the locusts or *valala* as "simultaneously a pest and a benefit, as they provide valuable food for animals and men." He described the use of fire and smoke to harvest the flights, and continued as follows, as summarized by Bodenheimer:

The locusts are thrown into big pots, where they are well stewed and then spread on mats to dry in the sun. Wings and legs are removed, and the insects are pounded or stored as they are for the needs of the household or to be taken to market, where they can always be found. Thus dried, the locusts keep for a long time. The natives eat the *valala* either seasoned with pimento and salt, or, better, roasted in fat, or boiled with rice and meat. The last way is preferred. They also make a bouillon of it, which they season with rice. They are to be found even at the royal table at Tananariva. The late queen Ranavalona II kept, in addition to her hunters and fishermen, some women who merely scoured the fields to collect locusts. Other grasshoppers are also consumed.

Osborn (1924: 322-325) states that grasshoppers and locusts are a popular food, and there is no lack of the latter: "In the summer they come in clouds and are a joy to some and a devastation and desolation to others. A man who has no crop to lose and wishes to lay in a supply of good food never thinks of the other fellow, but just gathers his supply and stores them away."

According to Osborn, as the swarms approach:

There is a din of shouting and shrieking and striking with cloths and lambas to drive them on to the next place before they alight. The hope of the natives is to keep them going until they pass the fields and come down in the uncultivated regions. There they dig shallow holes of great area into which the locusts are swept. Then they take as many as they wish to eat and burn the remainder. If they cannot keep them in flight the locust eaters catch them in large deep baskets woven for the purpose. All they have to do is to thrust the basket into the low flying swarm and it is full in a jiffy. This is done mostly by women and children. There is no such thing as famine in Madagascar. If the crops fail or are eaten the people eat locusts and other insects, worms and wild things. There is no land in the world where there is so little worry over the paramount question of food.

Osborn describes preparation:

Locusts are prepared for food by cooking them a short time and then removing the wings and legs. In order to preserve them they are half boiled and then dried in the sun. As they are drying they are winnowed often and thus they are not only desiccated evenly but the extremities, which are objectionable, are lost. All forward looking housewives in Madagascar have a goodly supply of dried locusts on hand. They are to be had in the great public markets, whither they are carried in hundreds of huge shallow baskets. When these dried locusts are eaten they are first soaked and then fried in oil in earthen dishes.

Bodenheimer (1951: 199) cites A. and G. Grandidier (about 1902), who collected early works on Madagascar, as mentioning that a battle between two tribes was once interrupted by the sudden appearance of locust swarms. The fighting ceased immediately as both sides became intensively occupied in collecting the locusts.

Ruud (1960 pp. 212-213) described a locust fetich designed to drive the disastrous cloud of insects away or to prevent them from descending upon the fields. This represents in some respects a conflict of interest in that Ruud also notes that the locusts are collected in large amounts for food. Presumably, if the fetich is not

successful in protecting crops, or if the swarm descends in non-crop areas, the locusts are collected as food.

The migratory locusts, *Locusta* sp. and *Nomadacris* sp., are widespread over the island as a source of food (Gade 1985).

See also Simmonds (1885) in the Introduction.

Gryllidae (crickets)

Brachytrupes (= *Brachytrypes*) *membranaceus* (Drury)

Crickets, especially the *sahobaka* (*B. membranaceus*) are trapped as they emerge from their nests in alluvial soil (Gade 1985).

MAURITIUS

Coleoptera

Cerambycidae (long-horned beetles)

Cowan (1865, p. 74) cites an earlier reference to a longicorn larva prepared as *moutac* which is devoured "greedily" by both the black and white inhabitants.

MOZAMBIQUE

Coleoptera

Cerambycidae (long-horned beetles)

Stenodontes (= *Mallodon*) *downesi* Hope, larva

Ferreira (1980: 44) observed that the larvae of this species are roasted and eaten.

Curculionidae (weevils, snout beetles)

Ghesquière (1947) states (p.792) that Sparrman and Cossigny, as far back as 1787 and 1798, respectively, reported that palm tree worms [probably genus *Rhynchophorus*] are eaten raw in Mozambique and Madagascar.

Lepidoptera

Miscellaneous Lepidoptera

Malaisse and Parent (1980) cite de Almeida in 1946 that the main period of harvesting edible caterpillars in Mozambique is in October.

NAMIBIA

(SOUTH-WEST AFRICA)

The Hottentots, according to Schapera (1930: 3), formerly occupied most of the western half of southern Africa but are now found chiefly in the southern parts of South-West Africa. He states (p. 238) that, "There is hardly any form of animal life which does not provide food for impoverished Hottentots." Among the insect foods are caterpillars, beetles, locusts, termites and ants. (Note: The reader who is interested in the use of insects as food in Namibia should also consult the summaries for Botswana and South Africa.)

Marais (1995) notes that different tribes and ethnic groups do not necessarily make use of the same resources, and discusses the need for precise environmental clues in determining seasons and the passage of time.

Coleoptera

Miscellaneous Coleoptera

See Schapera (1930) in the Introduction.

Hymenoptera

Formicidae (ants)

See Schapera (1930) in the Introduction.

Isoptera**Miscellaneous Isoptera**

Relative to termites or "white ants," **Berensberg (1907: 759)** mentions that the Hottentots eat them boiled or raw. According to **Steinhardt (1922: 113 ff., 207)**, termites are devoured by the pounds by the Hereros (vide Bodenheimer 1951: 179). See also Schapera (1930) in the Introduction.

Lepidoptera**Miscellaneous Lepidoptera**

See Schapera (1930) in the Introduction.

Orthoptera**Acrididae (short-horned grasshoppers)**

Berensberg (1907: 757) stated that, "the Hottentots and Bushmen welcome the arrival of a [locust] swarm, which gives variety to their menu, which, in the arid districts of South-West Africa, is a rather simple one. They prepare also a fat brown soup of the eggs." See also Schapera (1930) in the Introduction.

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Chapter 14 of The Human Use of Insects as a Food Resource: A Bibliographic Account in Progress, by Gene R. DeFoliart, posted on website July, 2002

Items Needing Attention

A new translation of H. Randrianjafy (1978), Madagascar