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## An Entomological survey of Sabaki River Mouth, Kenya

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### **Introduction:**

Invertebrates in general and insects in particular play a big role towards the health of any given ecosystem. This is not only due to their role in the food webs and nutrients recycling but also as indicators of ecosystem changes. Their abundance, diversity and distribution often reveal a lot of information about a given ecosystem that is normally very critical in management of such ecosystems.

### **Objectives:**

1. To gather entomological data to facilitate in the making of a biodiversity management plan for the Sabaki River Mouth.
2. To gather baseline entomological data as a basis of future bio-monitoring

### **Study site:**

The study was carried out at the Sabaki River Mouth about 5km. north of Malindi town along the Kenyan coast. The study area starts from the seashores extending to c.2km kilometres inland and covered both sides of the estuary. It is characterized by huge sand dunes and was divided into 14 sites depending on the vegetation type.

### **Materials and methods:**

The insect collection methods employed were:

1. Pit-fall trapping
2. Sweep netting
3. Light trapping
4. Hand picking and
5. Direct observation and recording

### **Pit-fall trapping:**

This involved burying plastic containers to the same level as the ground. They were then filled with water containing a few drops of detergent and left for a day and night. 15 pit-fall traps were used in each site and were placed 2 meters apart in a straight line. Insects that fell and drowned were collected in a sieve and preserved in plastic containers with 70% alcohol.

### **Sweep netting:**

This was done using a sweep net and involved walking through the chosen site and making 100 random sweeps. Insects that were collected in the nets were then killed in a killing jar using Ethyl acetate and preserved with 70%alcohol.

### **Light trapping:**

This involved the use of a battery operated light trap. The light trap was place at or about the middle of a given site (vegetation type) and left over night. All collected insects were sorted out the following morning and preserve in 70% alcohol.

### **Hand-picking:**

Harmless and slow moving insects were hand picked, killed with Ethyl acetate and preserved in alcohol.

### **Direct observation and recording:**

This involved observing and recording easy to identify insects in flight, crawling or resting.

**Labelling:**

For each specific sampling point certain general details were recorded. They include

1. Locality (including the GPS readings)
2. Site number
3. Date of collection
4. Collector's name
5. Method of collection

**RESULTS:**

A total of 12 orders of insects were recorded in this survey – c.f. Table 1 and

**Table 1:** Order of insects and their common names.

<b>Insect order</b>	<b>Common name</b>
Orthoptera	Grasshoppers and Crickets
Hymenoptera	Bees, Ants and Wasps
Coleoptera	Beetles
Diptera	Flies
Lepidoptera	Butterflies and Moths
Hemiptera	True Bugs
Odonata	Dragonflies and Damselflies
Blattodea	Cockroaches
Neuroptera	Ant lions and Lacewings
Phasmida	Stick insects
Mantodea	Praying mantids
Dermaptera	Earwigs

**DISCUSSION:**

The five methods applied proved to be adequate for gauging the diversity of insects at the Sabaki estuary and its dune system. The difference in species number and diversity collected between the collection methods was obvious. It is therefore best to use a combination of all these methods at a particular site. Pit-fall traps in addition to insects also collected other invertebrates which included crabs, woodlice and spiders. Sampling was done during dry and wet season conditions. The dry season sampling was carried out between 19<sup>th</sup> and 27<sup>th</sup> Dec. 2004 while the wet season collection was done between 3<sup>rd</sup> and 5<sup>th</sup> April and 27<sup>th</sup> and 31<sup>st</sup> May 2005. The results obtained from the sampling indicated a high diversity of insects. This is however below the expectation as the rains failed during the wet season sampling. The division of the whole area into 14 distinct sites was largely influenced by the vegetation type. These vegetation types created different micro-environments where species typical of them are found.

The presence of this great diversity of insects is very vital for the well being of the river Sabaki estuary. This is mainly due to the big role played by these insects in the food web. They are a good source of food to a variety of birds and other small animals.

One of the interesting results from this sampling is the fact that Sabaki River estuary harbours a large diversity of pollinators, mainly bees and wasps. The yellow striped carpenter bee (*Xylocopa* sp.) was very common visiting flowers of legumes. The presence of these pollinators is very important as the area is surrounded by a farming community whose main crops include water melons, Cashew nuts, tomatoes and mangoes. It goes without saying that these pollinators offer free but valuable pollination services to this farming community. This area therefore provides a safe haven for these pollinators more so when conditions are not favourable in the farms. Frequent tilling of land in the farms also make them unsuitable nesting grounds for ground dwelling solitary bees and wasps. The survival of these pollinators largely depends on the survival of the many flowering plants in the estuary.

This area also harbours some quite rare insects. One such insect is *Cyclosomus buqueti*, a ground beetle in the family Carabidae. Only one specimen was at the National insect collection. Three more were donated from Sabaki to the museum collection. One member of the Family Evaniidae was collected. This is a family of parasitic wasps whose representation at the national collection was very poor with no single identified specimen. Members of this family parasitize the egg cases of cockroaches therefore helping keep down the numbers of these obnoxious insects.

Going by the information from the national collection at The National Museums of Kenya (NMK), this area has a high number of insects whose distribution is restricted to the coastal region. *Phaenomeris besckei brunniennis* (a root chafer) has all other specimens at NMK collected from Lamu Island.

*Bradybaenus opuleatus* (a ground beetle) has all the other specimens at NMK from Mombasa and Arabuko-Sokoke near Watamu. *Tetragonoderus insignicollis* (a ground beetle) *Plagiotriptus hippiscus* (a grasshopper in the family Eumastacidae) as well as *Leichenium variegatum* (A tenebrionid beetle) are all very coastal in their distribution. This area has a high number of ground beetles (Family Carabidae). This family, just in the same way the dragonflies are use to bio-monitor aquatic ecosystems, is used to bio-monitor terrestrial ecosystems. With proper baseline information about their diversity and abundance, the ground beetles can effectively be used to monitor the health of a terrestrial ecosystem such as this.

The presence of many dead wood burrowing beetles in the families Cerambycidae (Long-horned beetles), Buprestidae (Jewel beetles) and Bostrychidae (shot hole borers) calls for retention of dead wood in the area. Collection of such dead wood either for firewood or other uses will be a big blow to the survival of these beetle species.

Of much interest was the presence of tiger beetles *Habrodera nilotica* in the family Cicindellidae in an area where few thought any insect life would be found in an almost bare sandy flooding area between the seashores and the sand dunes.

#### **Conclusion:**

Insects offer an excellent way to examine biological aspects of an ecosystem. Their use in this manner is an idea whose time has come. Scientists from many places are increasingly using them to obtain information about various subjects such as ecosystem health.

#### **Acknowledgements:**

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#### **Reference:**

R.W. Merritt and K.W. Cummins (1996) *An introduction to the aquatic insects of North America*. Pg. 87 – 97  
S.H. Skaife, J. Ledger and A. Bannister (1979) *African insect life*.

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**Appendix I:** Insect identification results from fourteen sites in Sabaki Estuary.

Date	Site	GPS	Method	Order	Family	Sub-family	Genus	Species	Comments
19/12/2004		4 S 03.09.021 E 040.08.135	Light trapping	Diptera	Asilidae	Dasypogoninae	<i>Microstylum</i>	sp.	
				Diptera	Calliphoridae				
				Hymenoptera	Formicidae	Dorylinae	<i>Anomma</i>	sp.	
				Hymenoptera	Mutillidae				
				Lepidoptera	Sphingidae		<i>Hippotion</i>	sp.	
				Hemiptera (hetero)	Pentatomidae	Pentatominae	<i>Acrosternum</i>	sp.	
				Hemiptera (homo)	Cyprinidae		<i>Lastistes</i>	sp.	
				Hemiptera (homo)	Cicadellidae				
				Orthoptera	Gryllidae	Gryllinae	<i>Gryllulus</i>	sp.	
				Mantodea	Thespidae	Thespinae	<i>Hoplocorypha</i>	<i>montana</i>	
				Mantodea	Hymenopodidae	Acromantinae	<i>Oxypilus</i>	<i>capensis</i>	
				Neuroptera	Myrmeleonidae		<i>Cueta</i>	sp.	
				Coleoptera	Tenebrionidae	Opatrinae	<i>Leichenum</i>	<i>variegatum</i>	
				Coleoptera	Tenebrionidae	Tentyriinae	<i>Himatismus</i>	sp.	
				Coleoptera	Scarabaeidae	Rutelinae	<i>Anomala</i>	sp.	
				Coleoptera	Scarabaeidae	Melolonthinae	<i>Schizonycha</i>	sp.	
				Coleoptera	Scarabaeidae	Coprinae	<i>Onthophagus</i>	<i>laceratus</i>	
				Coleoptera	Scarabaeidae	Coprinae	<i>Caccobius</i>	<i>longipennis</i>	
				Coleoptera	Chrysomelidae	Galerucinae	<i>Apophyllia</i>	sp.	
				Coleoptera	Staphylinidae		<i>Zyras</i>	sp.	
Coleoptera	Carabidae	Harpalinae	<i>Lebia</i>	sp.					
Coleoptera	Carabidae	Harpalinae	<i>Harpalus</i>	sp.					
21/12/2004	2 S 06.26.178 E 96.51.764 mark 565	Light trapping	Hymenoptera	Formicidae	Myrmicinae	<i>Camponotus</i>	sp.		
			Orthoptera	Tettigonidae	Phaneropterinae	<i>Eurycorypha</i>	sp.		
			Orthoptera	Acrididae	Oedipodinae	<i>Trilophidia</i>	<i>conturbata</i>		
			Orthoptera	Gryllidae	Gryllinae	<i>Gryllulus</i>	sp.		
			Mantodea	Hymenopodidae	Agromantinae	<i>Oxypilus</i>	<i>capensis</i>		
			Blattodea	Blattellidae	Perisphaeriinae	<i>Gyna</i>	sp.		
			Coleoptera	Tenebrionidae	Opatrinae	<i>Gonocephalum</i>	sp.		
			Coleoptera	Tenebrionidae	Opatrinae	<i>Leichenum</i>	<i>variegatum</i>		
			Coleoptera	Staphylinidae		<i>Zyras</i>	sp.		

			Coleoptera	Alleculidae		<i>Ectenostoma</i>	sp.
			Coleoptera	Scarabaeidae	Coprinae	<i>Onthophagus</i>	<i>laceratus</i>
			Coleoptera	Scarabaeidae	Coprinae	<i>Onitis</i>	sp.
			Coleoptera	Chrysomelidae	Galerucinae	<i>Asbecesta</i>	sp.
			Coleoptera	Bostrychidae		<i>Xylionulus</i>	sp.
			Coleoptera	Elateridae		<i>Heteroderes</i>	<i>flavonotatus</i>
			Coleoptera	Dytiscidae		<i>Hyphydrus</i>	sp.
			Coleoptera	Dytiscidae		<i>Hydroglyphus</i>	sp.
			Coleoptera	Hydrophilidae		<i>Berosus</i>	sp.
			Hemiptera (hetero)	Corixidae			
22/12/2004	4 S 03.26.442	light trapping	Neuroptera	Myrmeleontidae		<i>Cueta</i>	sp.
	E 040.51.108		Neuroptera	Myrmeleontidae	Stenares	<i>inclemens</i>	
			Orthoptera	Tettigonidae	Phaneropterinae	<i>Phaneroptera</i>	<i>nana</i>
			Orthoptera	Tettigonidae	Conocephalinae	<i>Conocephalus</i>	sp.
			Blattodea	Euthyrrhaphidae	Euthyrrhaphinae	<i>Tiria</i>	sp.
			Hemiptera (hetero)	Cydnidae	Cydninae	<i>Cydnus</i>	sp.
			Hemiptera (homo)	Flatidae			
			Hymenoptera	Sphecidae	Sphecinae	<i>Liris</i>	sp.
			Hymenoptera	Ichneumonidae			
			Diptera	Tachinidae			
			Coleoptera	Bostrichidae		<i>Apate</i>	sp.
			Coleoptera	Scarabaeidae	Coprinae	<i>Onthophagus</i>	<i>laceratus</i>
			Coleoptera	Scarabaeidae	Coprinae	<i>Caccobius</i>	<i>longipennis</i>
			Coleoptera	Scarabaeidae	Coprinae	<i>Onthophagus</i>	sp.
			Coleoptera	Scarabaeidae	Rutelinae	<i>Anomala</i>	sp.
			Coleoptera	Scarabaeidae	Melolonthinae	<i>Schizonycha</i>	sp.
			Coleoptera	Scarabaeidae	Aphodinae	<i>Aphodius</i>	<i>impurus</i>
			Coleoptera	Alleculidae		<i>Ectenostoma</i>	<i>dilatipes</i>
			Coleoptera	Tenebrionidae	Strongyliinae	<i>Ergenna</i>	sp.
			Coleoptera	Chrysomelidae	Eumolpinae	<i>Syagrus</i>	<i>cribricollis</i>
			Coleoptera	Chrysomelidae	Galerucinae	<i>Monolepta</i>	sp.
			Coleoptera	Elateridae		<i>Cardiophorus</i>	<i>raffrayi</i>
			Coleoptera	Elateridae		<i>Heteroderes</i>	<i>flavonotatus</i>
			Coleoptera	Carabidae	Harpalinae	<i>Hyparpalus</i>	<i>holosericeus</i>

			Coleoptera	Cerambycidae	Lamiinae	<i>Calothyrsa</i>	<i>jardinei</i>
			Coleoptera	Cicindelidae		<i>Habrodera</i>	<i>nilotica</i>
04/04/2005	9 S 03.09.265 E 040.07.473 mark 115	light trapping	Neuroptera	Myrmeleontidae		<i>Cueta</i>	sp.
			Neuroptera	Myrmeleontidae		<i>Stenares</i>	<i>inclemens</i>
			Orthoptera	Gryllidae	Gryllinae	<i>Gryllulus</i>	<i>bimaculatus</i>
			Blattodea	Blattellidae		<i>Blattella</i>	sp.
			Blattodea	Blattellidae		<i>Supella</i>	<i>longipalpa</i>
			Diptera	Tabanidae	Tabaninae	<i>Tabanus</i>	sp.
			Diptera	Platystomatidae		<i>Bromophila</i>	<i>caffra</i>
			Hemiptera (homo)	Cicadidae		<i>Platypleura</i>	<i>polydorus</i>
			Hymenoptera	Formicidae	Dorylinae	<i>Anomma</i>	<i>nigricans</i>
			Hymenoptera	Formicidae	Formicinae	<i>Polyhachis</i>	sp.
			Hymenoptera	Formicidae	Ponerinae	<i>Platythyrea</i>	sp.
			Hymenoptera	Eumenidae	Eumeninae	<i>Odynerus</i>	<i>multicolor</i>
			Coleoptera	Staphylinidae		<i>Zyras</i>	sp.
			Coleoptera	Chrysomelidae	Galerucinae	<i>Monolepta</i>	sp.
			Coleoptera	Tenebrionidae	Strongyliinae	<i>Strongylium</i>	sp.
			Coleoptera	Scarabaeidae	Melolonthinae	<i>Oocamenta</i>	sp.
			Coleoptera	Scarabaeidae	Rutelinae	<i>Adoretus</i>	sp.
			Coleoptera	Cleridae			
			Coleoptera	Alleculidae		<i>Allecula</i>	sp.
			Coleoptera	Carabidae	Harpalinae	<i>Coptodera</i>	sp.
			Coleoptera	Cerambycidae	Cerambycinae	<i>Derolus</i>	sp.
			Coleoptera	Cerambycidae	Lamiinae		
05/04/2005	10 S 03.09.278 E 040.07.473 mark 156	light trapping	Neuroptera	Myrmeleontidae		<i>Cueta</i>	sp.
			Hymenoptera	Formicidae	Dorylinae	<i>Anomma</i>	<i>nigricans</i>
			Hymenoptera	Formicidae	Ponerinae	<i>Platythyrea</i>	sp.
			Hymenoptera	Ichneumonidae			
			Embioptera				
			Hemiptera (Hetero)	Reduviidae	Reduviinae	<i>Acanthaspis</i>	<i>obscura</i>
			Diptera	Tabanidae	Tabaninae	<i>Tabanus</i>	sp.
			Coleoptera	Staphylinidae		<i>Zyras</i>	sp.
			Coleoptera	Scarabaeidae	Melolonthinae	<i>Oocamenta</i>	sp.

			Coleoptera	Scarabaeidae	Melolonthinae	<i>Trochalus</i>	sp.
			Coleoptera	Scarabaeidae	Melolonthinae	<i>Schizonycha</i>	sp.
			Coleoptera	Scarabaeidae	Rutelinae	<i>Adoretus</i>	sp.
			Coleoptera	Scarabaeidae	Rutelinae	<i>Anomala</i>	sp.
			Coleoptera	Rhipiphoridae			
			Coleoptera	Chrysomelidae	Galerucinae	<i>Galerudolphia</i>	sp.
			Coleoptera	Bruchidae	Bruchinae	<i>Bruchidius</i>	<i>atrolineatus</i>
			Coleoptera	Elateridae		<i>Alaus</i>	sp.
			Coleoptera	Cerambycidae	Cerambycinae	<i>Derolus</i>	<i>brunneipennis</i>
			Coleoptera	Carabidae	Harpalinae	<i>Dromius</i>	sp.
			Coleoptera	Alleculidae		<i>Allecula</i>	sp.
			Coleoptera	Chrysomelidae	Eumolpinae	<i>Syagrus</i>	<i>cribricollis</i>
			Coleoptera	Chrysomelidae	Eumolpinae	<i>Liniscus</i>	<i>sansibaricus</i>
			Coleoptera	Chrysomelidae	Eumolpinae	<i>Colasposoma</i>	<i>cyaneocupreum</i>
29/05/2005	2 S 06.26.212 96.51.770 mark 569	light trapping	Lepidoptera	Sphingidae		<i>Acherontia</i>	<i>atropos</i>
			Odonata (Anisopte)	Aeshnidae		<i>Anax</i>	<i>ephippiger</i>
			Hymenoptera	Formicidae	Dorylinae	<i>Anomma</i>	<i>nigricans</i>
			Hymenoptera	Ichneumonidae			
			Diptera	Tabanidae	Tabaninae	<i>Tabanus</i>	sp.
			Coleoptera	Staphylinidae		<i>Paederus</i>	<i>sabaeus</i>
			Coleoptera	Staphylinidae		<i>Philonthus</i>	sp.
			Coleoptera	Scarabaeidae	Coprinae	<i>Scarabaeus</i>	sp.
			Coleoptera	Scarabaeidae	Melolonthinae	<i>Selomonthus</i>	sp.
			Coleoptera	Scarabaeidae	Rutelinae	<i>Adoretus</i>	sp.
			Coleoptera	Scarabaeidae	Rutelinae	<i>Anomala</i>	sp.
			Coleoptera	Scarabaeidae	Coprinae	<i>Onthophagus</i>	<i>laceratus</i>
			Coleoptera	Scarabaeidae	Dynastinae	<i>Heteronychus</i>	sp.
			Coleoptera	Bostrychidae		<i>Apate</i>	<i>femoralis</i>
			Coleoptera	Tenebrionidae	Strongyliinae	<i>Praeugena</i>	sp.
			Coleoptera	Chrysomelidae	Galerucinae	<i>Spilonotula</i>	<i>sagax</i>
			Coleoptera	Carabidae	Harpalinae	<i>Bradybaenus</i>	<i>opulentus</i>
			Coleoptera	Carabidae	Harpalinae	<i>Chlaenius</i>	<i>cribricollis</i>
			Coleoptera	Carabidae	Harpalinae	<i>Hyparpalus</i>	<i>holosericeus</i>
			Coleoptera	Carabidae	Harpalinae	<i>Xenodus</i>	sp.

		Coleoptera	Geotropidae		<i>Bolboceras</i>	sp.
		Coleoptera	Cerambycidae	Lamiinae	<i>Eunidia</i>	sp.
		Hemiptera (Hetero)	Cydnidae	Cydninae	<i>Cydnus</i>	sp.
		Hemiptera (Hetero)	Pentatomidae	Asopinae	<i>Macrorhaphis</i>	<i>spurcata</i>
		Hemiptera (Hetero)	Pentatomidae	pentatominae	<i>Acrosternum</i>	sp.
		Blattodea	Blattellidae	Perisphaeriinae	<i>Gyna</i>	sp.
		Blattodea	Blattidae	Oxyhaloinae	<i>Nauphoeta</i>	sp.
		Orthoptera	Gryllidae	Gryllinae	<i>Gryllulus</i>	sp.
		Orthoptera	Tettigonidae	Copiphorinae	<i>Ruspolia</i>	<i>vicinus</i>
		Orthoptera	Tettigonidae	Conocephalinae	<i>Conocephalus</i>	sp.
		Orthoptera	Acrididae	Oedipodinae	<i>Aiolopus</i>	<i>longipennis</i>
		Neuroptera	Myrmeleontidae		<i>Cueta</i>	sp.
30/05/2005	Campsite S 06.25.834	Hymenoptera	Formicidae	Dorylinae	<i>Anomma</i>	<i>nigricans</i>
	14 E 96.51.610	Hymenoptera	Formicidae	Ponerinae	<i>Plectroctena</i>	sp.
	mark559	Hemiptera (Hetero)	Pyrhocoridae		<i>Dysdercus</i>	sp.
		Hemiptera (Hetero)	Cydnidae	Cydninae	<i>Cydnus</i>	sp.
		Hemiptera (Hetero)	Pentatomidae	pentatominae	<i>Acrosternum</i>	sp.
		Hemiptera (Hetero)	Reduviidae	Reduviinae	<i>Edocla</i>	sp.
		Diptera	Tabanidae	Tabaninae	<i>Tabanus</i>	sp.
		Orthoptera	Tettigonidae	Copiphorinae	<i>Ruspolia</i>	<i>vicinus</i>
		Orthoptera	Tettigonidae	Conocephalinae	<i>Conocephalus</i>	sp.
		Orthoptera	Acrididae	Oedipodinae	<i>Morphacris</i>	<i>fasciata</i>
		Orthoptera	Acrididae	Oedipodinae	<i>Aiolopus</i>	<i>longicornis</i>
		Orthoptera	Gryllotalpidae	Gryllotalpinae	<i>Gryllotalpa</i>	sp.
		Orthoptera	Tetrigidae	Batrachidiinae	<i>Paratettix</i>	sp.
		Blattodea	Blattellidae		<i>Supella</i>	sp.
		Neuroptera	Myrmeleontidae		<i>Centroclisis</i>	sp.
		Coleoptera	Geotropidae		<i>Bolboceras</i>	sp.
		Coleoptera	Scarabaeidae	Coprinae	<i>Onthophagus</i>	<i>laceratus</i>
		Coleoptera	Scarabaeidae	Coprinae	<i>Anomala</i>	sp.
		Coleoptera	Scarabaeidae	Rutelinae	<i>Adoretus</i>	sp.
		Coleoptera	Scarabaeidae	Melolonthinae	<i>Selomonthus</i>	sp.
		Coleoptera	Bostrychidae		<i>Apate</i>	<i>femoralis</i>
		Coleoptera	Staphylinidae		<i>Philonthus</i>	sp.

			Coleoptera	Chrysomelidae	Galerucinae	<i>Spilonotula</i>	<i>sagax</i>	
			Coleoptera	Coccinellidae	Epilachninae	<i>Epilachna</i>	<i>fulvosignata</i>	
			Coleoptera	Carabidae	Harpalinae	<i>Pheropsophus</i>	<i>congoensis</i>	
			Coleoptera	Hydrophilidae		<i>Helochares</i>	<i>sp.</i>	
			Coleoptera	Elateridae		<i>Prosephus</i>	<i>sp.</i>	
			Mantodea					
19/12/2004	None	S 03.09.094 E 040.08.260	pitfall	Hymenoptera	Braconidae			
				Hymenoptera	Mutillidae		<i>Dasylabris</i>	<i>sp.</i>
				Hymenoptera	Apidae	Apinae	<i>Apis</i>	<i>melifera</i>
				Orthoptera	Pyrgomorphidae		<i>Chrotogonus</i>	<i>hemipterus</i>
				Coleoptera	Tenebrionidae	Tentyriinae	<i>Rhytinota</i>	<i>angulicollis</i>
				Coleoptera	Carabidae	Harpalinae	<i>Cyclosomus</i>	<i>buqueti</i>
				Coleoptera	Elateridae		<i>Cardiophorus</i>	<i>sp.</i>
				Diptera	Calliphoridae	Chrysomyinae	<i>Chrysomya</i>	<i>sp.</i>
19/12/2004	none	S03.09.023 E040.08.136	pitfall	Coleoptera	Scarabaeidae	Coprinae	<i>Scarabaeus</i>	<i>isidis</i>
				Coleoptera	Carabidae	Harpalinae	<i>Triaenogenius</i>	<i>sculpturatus</i>
				Coleoptera	Carabidae	Harpalinae	<i>Orthogonus</i>	<i>sp.</i>
				Coleoptera	Tenebrionidae	Opatrinae	<i>Leichenum</i>	<i>sp.</i>
				Coleoptera	Chrysomelidae	Eumolpinae	<i>Lefevrea</i>	<i>sp.</i>
				Coleoptera	Bruchidae	Pachymerinae	<i>Afroredon</i>	<i>africanus</i>
				Hemiptera (homo)	Cicadellidae			
				Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	<i>sp.</i>
				Hymenoptera	Formicidae	Ponerinae	<i>Ocymyrmex</i>	<i>sp.</i>
				Hymenoptera	Formicidae	Ponerinae	<i>Leptogenys</i>	<i>sp.</i>
				Hymenoptera	Mutillidae		<i>Dasylabris</i>	<i>sp.</i>
				Hymenoptera	Sphecidae	Larrinae	<i>Palarus</i>	<i>latifrons</i>
				Diptera	Calliphoridae	Rhiniinae	<i>Rhinia</i>	<i>sp.</i>
				Diptera	Asilidae	Dasypogoninae	<i>Stichopogon</i>	<i>sp.</i>
				Orthoptera	Oedipodinae	Acrotylus	<i>blondeli</i>	
				Blattoidea				
20/12/2004		1 S 06.26.095 E 96.51.762	pitfall	Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	<i>Sp.</i>
				Coleoptera	Tenebrionidae	Tentyriinae	<i>Rhytinota</i>	<i>angulicollis</i>

			Coleoptera	Tenebrionidae	Opatrinae	<i>Gonocephalum</i>	<i>simplex</i>
			Coleoptera	Anthicidae			
			Diptera	Calliphoridae			
20/12/2004	2 S 06.26.172 E 96.51.735 mark 567	pitfall	Orthoptera	Gryllidae	Gryllinae	<i>Gryllulus</i>	<i>sp.</i>
			Orthoptera	Gryllidae	Gryllinae	<i>Ectatoderus</i>	<i>sp.</i>
			Orthoptera	Acrididae	Oedipodinae	<i>Acrotylus</i>	<i>blondeli</i>
			Coleoptera	Carabidae	Scaratinae	<i>Scarites</i>	<i>tenebricosus</i>
			Coleoptera	Carabidae	Pterostichinae	<i>Abacetus</i>	<i>sp.</i>
			Coleoptera	Chrysomelidae	Eumolpinae	<i>Pseudocolaspis</i>	<i>sp.</i>
			Coleoptera	Tenebrionidae	Opatrinae	<i>Leichenum</i>	<i>variegatum</i>
			Coleoptera	Scarabaeidae	Coprinae	<i>Onthophagus</i>	<i>sp.</i>
			Hemiptera (homo)	cicadellidae			
			Diptera	Asilidae			
			Diptera	Muscidae	Muscinae	<i>Musca</i>	<i>sp.</i>
			Diptera	Calliphoridae	Rhiniinae	<i>Stomorphina</i>	<i>sp.</i>
			Diptera	Sarcophagidae			
			Hymenoptera	Ichneumonidae			
			Hymenoptera	Sphecidae	Nyssoninae	<i>Bembix</i>	<i>sp.</i>
			Hymenoptera	Formicidae	Dorylinae	<i>Dorylus</i>	<i>nigricans</i>
			Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	<i>maculatus</i>
21/12/2004	5 none	pitfall	Coleoptera	Tenebrionidae	Tentyriinae	<i>Rhytinota</i>	<i>angulicollis</i>
			Coleoptera	Tenebrionidae	Opatrinae	<i>Gonocephalum</i>	<i>simplex</i>
			Coleoptera	Tenebrionidae	Opatrinae	<i>Leichenum</i>	<i>Sp.</i>
			Coleoptera	Cicindellidae		<i>Lophyra</i>	<i>neglecta</i>
			Orthoptera	Pyrgomorphidae		<i>Chrotogonus</i>	<i>hemipterus</i>
			Orthoptera	Acrididae	Catantopinae	<i>Diabolocatantops</i>	<i>axillaris</i>
			Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	<i>Sp.</i>
			Hymenoptera	Formicidae	Dorylinae	<i>Anomma</i>	<i>nigricans</i>
			Hymenoptera	Formicidae	Myrmicinae	<i>Crematogaster</i>	<i>Sp.</i>
			Hymenoptera	Sphecidae	Larrinae	<i>Tachysphex</i>	<i>Sp.</i>
			Hymenoptera	Sphecidae	Nyssoninae	<i>Bembecinus</i>	<i>Sp.</i>
			Hymenoptera	Apidae	Apinae	<i>Apis</i>	<i>mellifera</i>
			Hymenoptera	Pompilidae	Psammacharinae	<i>Episyron</i>	<i>Sp.</i>

			Hymenoptera	Formicidae	Ponerinae	<i>Odontomachus</i>	<i>haematodes</i>
			Diptera	Calliphoridae	Rhiniinae	<i>Stomorphina</i>	Sp.
			Hemiptera (homo)	Cicadellidae	Coelidiinae	<i>Platyretus</i>	sp.
21/12/2004	4 S 03.26.442 E040.51.168	pitfall	Coleoptera	Scarabaeidae	Dynastinae	<i>Heteronychus</i>	Sp.
			Coleoptera	Tenebrionidae	Tentyriinae	<i>Rhytinota</i>	<i>angulicollis</i>
			Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	Sp.
			Hymenoptera	Halictidae			
			Hymenoptera	Pompilidae	Macromerinae	<i>Pseudagenia</i>	Sp.
			Hymenoptera	Pompilidae	Pepsinae	<i>Hemipepsis</i>	Sp.
			Diptera	Sarcophagidae	Sarcophaginae	<i>Sarcophaga</i>	Sp.
			Orthoptera	Acrididae	Psammacharinae	<i>Platyderes</i>	Sp.
			Orthoptera	Acrididae	Acridinae	<i>Gymnobothrus</i>	Sp.
			Orthoptera	Gryllidae			
			Blattodea	Blattellidae	Blattinae	<i>Periplaneta</i>	Sp.
			Blattodea	Blattellidae	Blattinae	<i>Blattella</i>	sp.
21/12/2004	3 S 06.26.451 E96.51.494	pitfall	Hymenoptera	Anthophoridae	Xylocopinae	<i>Xylocopa</i>	sp.
			Hymenoptera	Megachilidae		<i>Chalicodoma</i>	sp.
			Hymenoptera	Megachilidae		<i>Macrogalea</i>	sp.
			Odonata	Coenagriidae		<i>Pseudagrion</i>	sp.
			Odonata	Libellulidae		<i>Diplacodes</i>	sp.
			Orthoptera	Pyrgomorphidae		<i>Chrotogonus</i>	<i>hemipterus</i>
			Coleoptera	Alleculidae		<i>Ectenostoma</i>	<i>nigritarsis</i>
			Coleoptera	Apionidae	Apioninae	<i>Apion</i>	sp.
			Coleoptera	Coccinellidae	Coccinellinae	<i>Thea</i>	<i>variegata</i>
			Coleoptera	Buprestidae		<i>Paracylindromorphus</i>	<i>ukerewensis</i>
			Coleoptera	Elateridae		<i>Agrypnus</i>	sp.
			Coleoptera	Bruchidae	Bruchinae	<i>Bruchus</i>	sp.
21/12/2004	4 S 03.26.442 E 040.51.168	pitfall	Coleoptera	Scarabaeidae	Coprinae	<i>Scarabaeus</i>	<i>isidis</i>
			Coleoptera	Tenebrionidae	Tentyriinae	<i>Rhytonota</i>	<i>angulicollis</i>
			Hymenoptera	Sphecidae	Astatinae	<i>Liris</i>	sp.
			Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	sp.
			Hymenoptera	Pompilidae	Ctenocerinae	<i>Paraclavelia</i>	sp.

			Orthoptera	Acrididae	Acridinae	<i>Comacris</i>	sp.	
			Blattodea	Blattellidae	Perisphaeriinae	<i>Periplaneta</i>	<i>bimaculata</i>	
22/12/2004	7 none	pitfall	Orthoptera	Gryllidae	Oecanthinae	<i>Phaeophilacris</i>		
			Coleoptera	Chrysomelidae	Cassidinae	<i>Aspidomorpha</i>	sp.	
			Coleoptera	Scarabaeidae	Coprinae	<i>Onthophagus</i>	<i>laceratus</i>	
			Coleoptera	Tenebrionidae	Opatrinae	<i>Leichenum</i>	<i>variegatum</i>	
			Coleoptera	Carabidae	Harpalinae	<i>Cyclosomus</i>	<i>buqueti</i>	
			Coleoptera	Carabidae	Harpalinae	<i>Tetragonoderus</i>	<i>insignicollis</i>	
			Coleoptera	Carabidae	Harpalinae	<i>Chlaenius</i>	<i>raffrayi</i>	
			Coleoptera	Carabidae	Harpalinae	<i>Bradybaenus</i>	<i>opulentus</i>	
			Diptera	Calliphoridae				
			Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	sp.	
22/12/2004	5 none	pitfall	Coleoptera	Cicindellidae		<i>Lophyra</i>	<i>neglecta</i>	
			Coleoptera	Elateridae		<i>Meristhus</i>	sp.	
			Coleoptera	Tenebrionidae	Opatrinae	<i>Leichenum</i>	<i>variegatum</i>	
			Coleoptera	Carabidae	Harpalinae	<i>Tetragonoderus</i>	<i>insignicollis</i>	
			Hymenoptera	Formicidae	Dorylinae	<i>Anomma</i>	<i>nigricans</i>	
			Hymenoptera	Formicidae	Myrmicinae	<i>Catalaucus</i>	sp.	
			Hymenoptera	Mutillidae		<i>Glossotilla</i>	sp.	
			Hymenoptera	Sphecidae	Crabroninae	<i>Oxybelus</i>	sp.	
			Hymenoptera	Pompilidae	Psammacharinae	<i>Episyron</i>	sp.	
			Diptera	Sarcophagidae	Sarcophaginae	<i>Sarcophaga</i>	sp.	
22/12/2004	6 S 03.10.422 E 040.08.118 mark 011	pitfall	Hymenoptera	Apidae	Apinae	<i>Apis</i>	<i>melifera</i>	
			Hymenoptera	Sphecidae	Nyssoninae	<i>Bembix</i>	sp.	
			Coleoptera	Scarabaeidae	Rutelinae	<i>Phaenomeris</i>	<i>besckei</i>	ssp. <i>brunnipennis</i>
			Coleoptera	Scarabaeidae	Rutelinae	<i>Anomala</i>	<i>flaveola</i>	
			Orthoptera	Pyrgomophidae		<i>Chrotogonus</i>	<i>hemipterus</i>	
			Orthoptera	Gryllidae	Oecanthinae	<i>Oecanthus</i>	sp.	
			Hymenoptera	Scoliidae		<i>Cathimeris</i>	sp.	
			Coleoptera	Carabidae	Harpalinae	<i>Tetragonoderus</i>	<i>insignicollis</i>	
			Blattodea	Blattellidae	Oxyhaloinae	<i>oxyhaloa</i>	sp.	

			Lepidoptera	Pieridae					
04/04/2005	9	S 03.09.250	pitfall	Coleoptera	Meloidae	Meloinae	<i>Coryna</i>	<i>ambigua</i>	Blister beetle; feed on flowers - easy to catch in pan traps as attracted to flowers; pollinator
		E 040.07.465		Coleoptera	Tenebrionidae	Tentyriinae	<i>Zophosis</i>	sp.	
		mark118		Hymenoptera	Formicidae	Ponerinae	<i>Platythyrea</i>	sp.	
				Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	sp.	
				Hymenoptera	Formicidae	Formicinae	<i>Polyhachis</i>	<i>schistacea</i>	
				Orthoptera	Gryllidae	Eneopterinae	<i>Ectatoderus</i>	sp.	
04/04/2005	10	S 03.09.295	pitfall	Hymenoptera	Formicidae	Ponerinae	<i>Platythyrea</i>	sp.	
		E 040.07.464		Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	sp.	
		mark 119		Hymenoptera	Mutillidae		<i>Glossotilla</i>	spp.	
				Coleoptera	Tenebrionidae	Tentyriinae	<i>Rhytinota</i>	sp.	
				Coleoptera	Meloidae	Meloinae	<i>Coryna</i>	<i>ambigua</i>	
				Coleoptera	Meloidae	Meloinae	<i>Ceroctis</i>	<i>calicera</i>	
				Orthoptera	Gryllidae	Eneopterinae	<i>Ectatoderus</i>	sp.	
				Blattodea	Blattidae	Blattinae	<i>Deropeltis</i>	sp.	
05/04/2005	9	S 03.09.250	pitfall	Hymenoptera	Formicidae	Ponerinae	<i>Platythyrea</i>	sp.	
		E 040.07.465		Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	sp.	
		mark 153		Hymenoptera	Formicidae	Myrmicinae	<i>Catalaucus</i>	sp.	
				Coleoptera	Tenebrionidae	Tentyriinae	<i>Zophosis</i>	sp.	
				Coleoptera	Meloidae	Meloinae	<i>Coryna</i>	<i>ambigua</i>	
				Coleoptera	Meloidae	Meloinae	<i>Ceroctis</i>	<i>calicera</i>	
				Coleoptera	Scarabaeidae	Rutelinae	<i>Anomala</i>	<i>flaveola</i>	
05/04/2005	10	S 03.09.295	pitfall	Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	<i>maculatus</i>	
		E 040.07.463		Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	sp.	
		mark158		Hymenoptera	Formicidae	Ponerinae	<i>Platythyrea</i>	sp.	
				Hymenoptera	Formicidae	Myrmicinae	<i>Crematogaster</i>	sp.	
				Orthoptera	Acrididae	Catantopinae	<i>Cryptocatantops</i>	<i>allesandricus</i>	

27/05/2005	1 S 06.26.095 E 96.51.762 mark 560	pitfall	Isoptera	Termitidae	Macrotermitinae	<i>Odontotermes</i>	sp.	
28/05/2005	2 S 06.26.178 E 96.51.764 mark 565	pitfall	Hymenoptera	Formicidae	Ponerinae	<i>Platythyrea</i>	sp.	
			Diptera	Calliphoridae	Calliphorinae	<i>Bengalia</i>	sp.	
			Blattodea	Blaberidae	Perisphaeriinae	<i>Gynopeltis</i>	<i>neavei</i>	
			Isoptera	Termitidae	Macrotermitinae	<i>Odontotermes</i>	sp.	
			Coleoptera	Scarabaeidae	Coprinae	<i>Onthophagus</i>	<i>laceratus</i>	
			Coleoptera	Lampyridae				
			Coleoptera	Tenebrionidae	Opatrinae	<i>Leichenum</i>	<i>variegatum</i>	
			coleoptera	Tenebrionidae	Tentyriinae	<i>Psammodes</i>	sp.	
			Coleoptera	Carabidae	Scaratinae	<i>Scarites</i>	<i>molossus</i>	
			Coleoptera	Carabidae	Harpalinae	<i>Chlaenius</i>	<i>bipustulatus</i>	
			Coleoptera	Carabidae	Harpalinae	<i>Chlaenius</i>	<i>xanthomerus</i>	
			Coleoptera	Carabidae	Harpalinae	<i>Bradybaenus</i>	<i>opulentus</i>	
			Coleoptera	Carabidae	Harpalinae	<i>Anisodactylus</i>	sp.	
28/5/2004	3 S 06.26.451 E 96.51.494	Pitfall	Hemiptera (hetero)	Pentatomidae	Scutellerinae	<i>Elvisura</i>	<i>irrorata</i>	
			Hymenoptera	Anthophoridae	Xylocopinae	<i>Xylocopa</i>	sp.	
			Hymenoptera	Megachilidae	Megachilinae	<i>Megachile</i>	<i>venusta</i>	
			Hymenoptera	Scoliidae		<i>Micromeriella</i>	<i>aureola</i>	ssp. <i>bobi</i>
			Hymenoptera	Scoliidae		<i>Scolia</i>	sp.	
			Hymenoptera	Formicidae	Dorylinae	<i>Anomma</i>	<i>nigricans</i>	
			Hymenoptera	Sphecidae	Nyssoninae	<i>Bembecinus</i>	sp.	
			Diptera	Sarcophagidae	Sarcophaginae	<i>Sarcophaga</i>	sp.	
			Coleoptera	Carabidae	Harpalinae	<i>Cyclosomus</i>	<i>buqueti</i>	
			Coleoptera	Carabidae	Harpalinae	<i>Tetragonoderus</i>	<i>insignicollis</i>	
			Coleoptera	Tenebrionidae	Opatrinae	<i>Leichenum</i>	<i>variegatum</i>	
			Coleoptera	Elateridae		<i>Meristhus</i>	<i>lepidotus</i>	
			Coleoptera	Curculionidae				
28/5/2005	4 S 03.26.442 E 040.51.108	Pitfall	Orthoptera	Acrididae		<i>Taramussus</i>	<i>cunctator</i>	
			Orthoptera	Gryllidae	Gryllinae	<i>Gryllulus</i>	sp.	
			Coleoptera	Carabidae	Scaritinae	<i>Scarites</i>	<i>tenebricosus</i>	

				Coleoptera	Carabidae	Harpalinae	<i>Chlaenius</i>	<i>oecus</i>
				Coleoptera	Carabidae	Harpalinae	<i>Harpalus</i>	<i>asemus</i>
				Diptera	Calliphoridae	Rhiniinae	<i>Rhycomya</i>	sp.
				Hymenoptera	Sphecidae	Philanthinae	<i>Cerceris</i>	<i>kilimanjaroensis</i>
				Hymenoptera	Pompilidae	Psammacharinae	<i>Pompilus</i>	<i>plumbeus</i>
				Hymenoptera	Formicidae	Ponerinae	<i>Odontomachus</i>	sp.
29/5/2005	none	S 06.26.245 E 96.51.804	pitfall	Coleoptera	Meloidae	Meloinae	<i>Ceroctis</i>	<i>calicera</i>
				Coleoptera	Cicindellidae		<i>Cicindela</i>	<i>neglecta</i>
				Coleoptera	Lampyridae		<i>Luciola</i>	sp.
				Coleoptera	Scarabaeidae	Coprinae	<i>Onthophagus</i>	<i>sinuosicollis</i>
				Coleoptera	Tenebrionidae	Opatrinae	<i>Leichenum</i>	<i>variegatum</i>
				Coleoptera	Elateridae		<i>Meristhus</i>	<i>lepidotus</i>
				Coleoptera	Carabidae	Anthiinae	<i>Thermophilum</i>	<i>hexastictum</i>
				Coleoptera	Carabidae	Scaratinae	<i>Scarites</i>	<i>molossus</i>
				Coleoptera	Carabidae	Harpalinae	<i>Chlaenius</i>	<i>raffrayi</i>
				Coleoptera	Carabidae	Harpalinae	<i>Chlaenius</i>	<i>kira</i>
				Coleoptera	Carabidae	Harpalinae	<i>Brandybaenus</i>	<i>opulantis</i>
				Hymenoptera	Scoliidae		<i>Micromeriella</i>	sp.
				Hymenoptera	Mutillidae			
				Hymenoptera	Sphecidae	Astatinae	<i>Liris</i>	sp.
				Orthoptera	Acrididae	Oedipodinae	<i>Acrotylus</i>	<i>blondeli</i>
None		13 S 03.10.110 E 040.08.008 mark 001	pitfall	Orthoptera	Pyrgomorphidae		<i>Chrotogonus</i>	<i>hemipterus</i>
				Coleoptera	Carabidae	Harpalinae	<i>Bradybaenus</i>	<i>opulentus</i>
				Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	<i>maculatus</i>
				Hymenoptera	Scoliidae		<i>Aureimeris</i>	sp.
20/12/2004	none	S 03.09.035 E 040.08.056	Sweeping	Orthoptera	Acrididae	Gomphocerinae	<i>Mesopsis</i>	Sp.
				Orthoptera	Acrididae	Acridinae	<i>Gymnobothrus</i>	Sp.
				Orthoptera	Tettiginidae			
				Orthoptera	Gryllidae			
				Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	Sp.
				Hymenoptera	Pompilidae		<i>Batazonellus</i>	Sp.
				Hymenoptera	Chalcididae			

			Coleoptera	Buprestidae		<i>Tropeopeltis</i>	<i>sp.</i>	
			Coleoptera	Chrysomelidae	Hispiinae	<i>Cirrispa</i>	<i>conradsi</i>	
			Coleoptera	Chrysomelidae	Alticinae	<i>Torodera</i>	<i>octomaculata</i>	
			Coleoptera	Meloidae		<i>Coryna</i>	<i>ambigua</i>	
			Coleoptera	Coccinellidae	Coccinellinae	<i>Brumoides</i>	<i>nigrifrons</i>	
			Coleoptera	Coccinellidae	Coccinellinae	<i>Epilachna</i>	<i>multinota</i>	
			Hemiptera (hetero)	Coreidae				
			Hemiptera (hetero)	Pentatomidae	pentatominae	<i>Gynenica</i>	<i>sp.</i>	
			Hemiptera (hetero)	Lygaeidae	Oxycareninae	<i>Oxycarenum</i>	<i>sp.</i>	
			Diptera	Muscidae	Muscinae	<i>Musca</i>	<i>sp.</i>	
			Mantodeae	Mantidae				
			Phasmatodea	Phasmidae		<i>Gratidia</i>	<i>sp.</i>	
			Neuroptera			<i>Hagenomyia</i>	<i>variegatus</i>	
20/12/2004	2 S 06.26.172	sweeping	Coleoptera	Elateridae		<i>Candiophorus</i>	<i>raffrayi</i>	
	E 96.51.735		Coleoptera	Elateridae		<i>Heteroderes</i>	<i>rothschildi</i>	
	mark 567		Coleoptera	Elateridae		<i>Candiophorus</i>	<i>breviusculus</i>	
			Coleoptera	Carabidae	Harpalinae	<i>Callida</i>	<i>sp.</i>	
			Coleoptera	Scarabaeidae	Aphodinae	<i>Aphodius</i>	<i>sp.</i>	
			Coleoptera	Staphylinidae		<i>Zyras</i>	<i>sp.</i>	
			Coleoptera	Staphylinidae		<i>Cordalia</i>	<i>sp.</i>	
			Coleoptera	Alleculidae		<i>Ectenostoma</i>	<i>nigritarsis</i>	
			Coleoptera	Lycidae		<i>Lycus</i>	<i>sp.</i>	
			Coleoptera	Cicindelidae		<i>Lophyra</i>	<i>neglecta</i>	
			Coleoptera	Coccinellidae	Coccinellinae	<i>Boschalis</i>	<i>sp.</i>	
			Coleoptera	Coccinellidae	Coccinellinae	<i>Brumoides</i>	<i>sp.</i>	
			Coleoptera	Chrysomelidae	Eumolpinae	<i>Pachnephorus</i>	<i>sp.</i>	
			Coleoptera	Curculionidae	Apioninae	<i>Apion</i>	<i>sp.</i>	
			Coleoptera	Bruchidae	Bruchinae	<i>Bruchus</i>	<i>sp.</i>	
			Diptera	Calliphoridae	Rhiniinae	<i>Rhyncomya</i>	<i>sp.</i>	
			Diptera	Sciaridae		<i>Sciara</i>	<i>sp.</i>	
			Hemiptera (hetero)	Reduviidae	Ectrichodiinae	<i>Physorhynchus</i>	<i>ectrichodia</i>	
			Hemiptera (hetero)	Miridae		<i>Deraeocoris</i>	<i>ostentans</i>	
			Hemiptera (hetero)	Tingidae		<i>Teleonemia</i>	<i>Scrupulosa</i>	
			Hemiptera (hetero)	Pentatomidae	Scutellerinae	<i>Callidea</i>	<i>12-punctata</i>	<i>ssp. dregei</i>

				Hymenoptera	Formicidae	Myrmicinae	<i>Crematogaster</i>	<i>castanea</i>
				Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	<i>sp.</i>
				Hymenoptera	Formicidae	Formicinae	<i>Catalaucus</i>	<i>sp.</i>
				Hymenoptera	Sphecidae	Nyssoninae	<i>Bembix</i>	<i>sp.</i>
				Hymenoptera	Anthophoridae	Xylocopinae	<i>Xylocopa</i>	<i>caffra</i>
20/12/2004	none	S 03.09.380 E 040.08.260	Sweeping	Coleoptera	Buprestidae		<i>Steraspis</i>	<i>fastuosa</i>
				Hymenoptera	Sphecidae	Nyssoninae	<i>Bembix</i>	<i>olivacea</i>
				Hymenoptera	Anthophoridae	Xylocopinae	<i>Xylocopa</i>	<i>sp.</i>
				Hymenoptera	Anthophoridae	Xylocopinae	<i>Braunsapis</i>	<i>sp.</i>
				Hymenoptera	Formicidae	Formicinae	<i>Oecophylla</i>	<i>sp.</i>
20/12/2004	none	S 03.09.300 E 040.08.260	sweeping	Orthoptera	Acrididae	Oedipodinae	<i>Morphacris</i>	<i>fasciata</i>
				Orthoptera	Acrididae	Oedipodinae	<i>Trilophidia</i>	<i>conturbata</i>
				Orthoptera	Acrididae	Oedipodinae	<i>Aiolopus</i>	<i>sp.</i>
20/12/2004	none	S 03.09.093 E 040.08.261	sweeping	Orthoptera	Pyrgomorphidae		<i>Chrotogonus</i>	<i>hemipterus</i>
				Orthoptera	Acrididae	Oedipodinae	<i>Acrotylus</i>	<i>sp.</i>
				Orthoptera	Acrididae	Catantopinae	<i>Axillaris</i>	<i>sp.</i>
				Hymenoptera	Vespidae	Polistinae	<i>Polistes</i>	<i>marginalis</i>
				Hemiptera (hetero)	Pentatomidae	pentatominae	<i>Piezodorus</i>	<i>pallescens</i>
				Odonata (Anisopte)	Libellulidae		<i>Acisoma</i>	<i>sp.</i>
21/12/2004		1 S 06.26.095 E 96.51.762	Sweeping	Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	<i>sp.</i>
				Hymenoptera	Anthophoridae	Xylocopinae	<i>Xylocopa</i>	<i>modesta</i>
				Hymenoptera	Braconidae	Doryctinae	<i>Aphiaulax</i>	<i>sp.</i>
				Hemiptera (hetero)	Pyrrhocoridae		<i>Dysdercus</i>	<i>sp.</i>
				Hemiptera (hetero)	Coereidae		<i>Tenosius</i>	<i>proletarius</i>
				Hemiptera (hetero)	Lygaeidae	Oxycareninae	<i>Oxycarenum</i>	<i>annulipes</i>
				Hemiptera (homo)	Dictyopharidae		<i>Dictyophara</i>	<i>sp.</i>
				Orthoptera	Acrididae	Oedipodinae	<i>Trilophidia</i>	<i>conturbata</i>
				Orthoptera	Acrididae	Oedipodinae	<i>Acrotylus</i>	<i>blondeli</i>
				Orthoptera	Acrididae	Oedipodinae	<i>Aiolopus</i>	<i>thalsinus</i>
				Orthoptera	Acrididae	Oedipodinae	<i>Jasomenia</i>	<i>sansibara</i>
				Orthoptera	Acrididae	Acridinae	<i>Acrida</i>	<i>sp.</i>

			Coleoptera	Coccinellidae	Coccinellinae	<i>Brumoides</i>	sp.
			Coleoptera	Coccinellidae	Coccinellinae	<i>Exochomus</i>	<i>ventralis</i>
			Coleoptera	Coccinellidae	Coccinellinae	<i>Cheilomenes</i>	<i>lunata</i>
			Coleoptera	Chrysomelidae	Hispininae	<i>Dactylispa</i>	<i>lenta</i>
			Coleoptera	Chrysomelidae	Alticinae	<i>Podagrica</i>	<i>puncticollis</i>
			Coleoptera	Bruchidae	Bruchinae	<i>Callosobruchus</i>	sp.
			Coleoptera	Buprestidae		<i>Aphanisticus</i>	sp.
			Coleoptera	Buprestidae		<i>Trachys</i>	sp.
			Coleoptera	Buprestidae		<i>Pseudagrilus</i>	<i>subfasciatus</i>
			Coleoptera	Curculionidae	Zygopinae	<i>Rhaphinocerus</i>	<i>dispar</i>
			Coleoptera	Apionidae	Apioninae	<i>Apion</i>	sp.
21/12/2004	7 none	Sweeping	Coleoptera	Cicindellidae		<i>Habrodera</i>	<i>nilotica</i>
21/12/2004	5 none	sweeping	Orthoptera	Acrididae	Oedipodinae	<i>Trilophidia</i>	<i>conturbata</i>
			Orthoptera	Acrididae	Oedipodinae	<i>Aiolopus</i>	sp.
			Odonata (zygopte)				
			Coleoptera	Carabidae	Scaratinae	<i>Scarites</i>	sp.
			Coleoptera	Histeridae			
21/12/2004	6 S 03.10.422 E 040.08.118 mark 011	sweeping	Coleoptera	Chrysomelidae	Cassidinae	<i>Aspidormopha</i>	<i>puncticosta</i>
			Coleoptera	Chrysomelidae	Alticinae	<i>Altica</i>	sp.
			Coleoptera	coccinellidae	coccinellinae	<i>Brumoides</i>	sp.
			Coleoptera	Elateridae		<i>Cardiophorus</i>	sp.
			Hymenoptera	Megachilidae		<i>Macrogalea</i>	sp.
			Hymenoptera	Anthophoridae	Xylocopinae	<i>Xylocopa</i>	sp.
			Hymenoptera	Sphecidae	Nyssoninae	<i>Bembecinus</i>	sp.
			Hemiptera (homo)	Tettigometridae		<i>Hilda</i>	sp.
			Hemiptera (hetero)	Lygaeidae	Geocorinae	<i>Geocoris</i>	sp.
			Hemipera (hetero)	Lygaeidae	Aphaninae		
			Hemiptere (hetero)	Tingidae		<i>Teleonemia</i>	<i>scrupulosa</i>
			Orthoptera	Pyrgomorphidae		<i>Chrotogonus</i>	<i>hemipterus</i>
22/12/2004	5 none	sweeping	Odonata (zygopte)				
			Coleoptera	Coccinellidae	Coccinellinae	<i>Cheilomenes</i>	<i>Propinqua</i>

			Coleoptera	Chrysomelidae	Galerucinae	<i>Bonesiodes</i>	<i>laevicollis</i>
			Hemiptera (hetero)	Coreidae		<i>Hydera</i>	sp.
			Hymenoptera	Chalcididae	Brachymeriinae		
23/12/2004	5 none	Sweeping	Odonata (zygopte)			<i>Pseudagrion</i>	sp.
			Orthoptera	Pyrgomorphidae		<i>Chrotogonus</i>	<i>hemipterus</i>
23/12/2004	6 S 03.10.422 E 040.08.118 mark 011	sweeping	Orthoptera	Acrididae	Acridinae	<i>Acrida</i>	sp.
			Orthoptera	Acrididae	Catantopinae	<i>Diabolocatantops</i>	<i>axillaris</i>
			Orthoptera	Acrididae	Oedipodinae	<i>Aiolopus</i>	sp.
			Orthoptera	Acrididae	Oedipodinae	<i>Jasomenia</i>	<i>sansibara</i>
			Orthoptera	Pyrgomorphidae		<i>Chrotogonus</i>	<i>hemipterus</i>
			Hemiptera (hetero)	Pentatomidae	pentatominae	<i>Piezodorus</i>	<i>pallescens</i>
			Hymenoptera	Sphecidae	Nyssoninae	<i>Bembix</i>	sp.
			Hymenoptera	Sphecidae	Nyssoninae	<i>Bembecinus</i>	sp.
			Hymenoptera	Evaniidae			
			Hymenoptera	Pompilidae		<i>Episyron</i>	sp.
			Diptera	Sepsidae			
			Coleoptera	Chrysomelidae	Cassidinae	<i>Aspidomorpha</i>	sp.
			Coleoptera	Anthicidae	Anthicinae	<i>Formicomus</i>	<i>schimperii</i>
			Coleoptera	Coccinellidae	Coccinellinae	<i>Exochomus</i>	<i>ventralis</i>
			Coleoptera	Coccinellidae	Coccinellinae	<i>Brumoides</i>	sp.
			Coleoptera	Tenebrionidae	Tenebrioninae	<i>Eutochia</i>	sp.
24/12/2004	8 S 06.26.414 E 96.52.554 Mark 562	Sweeping	Coleoptera	Lycidae		<i>Lycus</i>	<i>trabeatus</i>
			Coleoptera	Chrysomelidae	Cassidinae	<i>Aspidomorpha</i>	sp.
			Coleoptera	Tenebrionidae	Tentyriinae	<i>Rhytinota</i>	<i>angulicollis</i>
			Coleoptera	Meloidae	Meloinae	<i>Coryna</i>	<i>ambigua</i>
			Coleoptera	Coccinellidae	Epilachninae	<i>Epilachna</i>	<i>multinota</i>
			Hymenoptera	Formicidae	Myrmicinae	<i>Camponotus</i>	sp.
			Lepidoptera	Pieridae			
			Orthoptera	Eumastacidae	Thericleinae	<i>Plagiotriptus</i>	<i>hippiscus</i>
			Orthoptera	Gryllidae	Oecanthinae	<i>Phaeophilacris</i>	sp.
			Orthoptera	Acrididae	Oedipodinae	<i>Morphacris</i>	<i>fasciata</i>
			Orthoptera	Acrididae	Catantopinae	<i>Cryptocatantops</i>	<i>haemorrhoidalis</i>

27/12/2004	8 S. 06.26.359 E 96.52.220 Mark 563	Sweeping	Orthoptera	Acrididae	Acridinae	<i>Acrida</i>	<i>sulphuripennis</i>	
			Orthoptera	Acrididae	Oedipodinae	<i>Trilophidia</i>	<i>conturbata</i>	
			Orthoptera	Acrididae	Oedipodinae	<i>Morphacris</i>	<i>fasciata</i>	
			Orthoptera	Acrididae	Oedipodinae	<i>Aiolopus</i>	<i>thalasinus</i>	
			Orthoptera	Acrididae	Oedipodinae	<i>Acrotylus</i>	<i>blondeli</i>	
			Orthoptera	Eumastacidae	Euschmidtinae			
			Orthoptera	Eumastacidae	Thericleinae	<i>Plagiotriptus</i>	<i>hippiscus</i>	
			Orthoptera	Gryllidae	Oecanthinae	<i>Phaeophilacris</i>	sp.	
			Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	sp.	
			Coleoptera	Buprestidae		<i>Hoplistura</i>	sp.	
			Coleoptera	Coccinellidae	Epilachninae	<i>Epilachna</i>	sp.	
			Coleoptera	Coccinellidae	Epilachninae	<i>Epilachna</i>	<i>sahlbergi</i>	
			Coleoptera	Coccinellidae	Epilachninae	<i>Epilachna</i>	<i>sahlbergi</i>	ssp. <i>graphica</i>
			Hemiptera (homo)	Dictyopharidae		<i>Dictyopharina</i>	sp.	
			Hemiptera (hetero)	Lygaeidae		<i>Nysius</i>	sp.	
			Hemiptera (hetero)	Reduviidae				
03/04/2005	10 S03.09.286 E040.07.475 mark111	sweeping	Coleoptera	scarabaeidae	Cetoniinae	<i>Rhabdotis</i>	<i>sobrina</i>	
			Coleoptera	Chrysomelidae	Criocerinae	<i>Hapsidolema</i>	sp.	
			Diptera	Platystomatidae	Platystomatinae	<i>Bromophila</i>	<i>caffra</i>	
			Hemiptera (hetero)	Pyrrhocoridae		<i>Dysdercus</i>	sp.	
			Orthoptera	Acrididae	Oedipodinae	<i>Humbe</i>	<i>tenuicornis</i>	
			Orthoptera	Acrididae	Eyprepocnemidinae	<i>Tylotropidius</i>	sp.	
04/04/2005	10 S 03.09.283 E 040.07.465 mark 119	Sweeping	Neuroptera	Myrmeleontidae		<i>Stenares</i>	<i>inclemens</i>	
			Diptera	Platystomatidae	Platystomatinae	<i>Bromophila</i>	<i>caffra</i>	
			Coleoptera	Scarabaeidae	Cetoniinae	<i>Pachnoda</i>	<i>aemula</i>	
04/04/2005	9 S 03.09.252 E 040.07.465	sweeping	Coleoptera	Meloidae	Meloinae	<i>Coryna</i>	<i>ambigua</i>	
			Coleoptera	Buprestidae		<i>Hoplistura</i>	sp.	
			Hemiptera (hetero)	Pentatomidae	Padopinae	<i>Bolbocoris</i>	sp.	
			Blattodea	Blattidae	Blattinae	<i>Deropeltis</i>	sp.	
			Orthoptera	Gryllidae	Oecanthinae	<i>Oecanthus</i>	sp.	
			Orthoptera	Acrididae	Eyprepocnemidinae	<i>Tylotropidius</i>	sp.	

27/5/2005	1 S 06.26.178 E96.51.764	Sweeping	Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	sp.	
			Hemiptera (hetero)	Pentatomidae	Scutellerinae	<i>Callidea</i>	<i>dregei</i>	
			Hemiptera (hetero)	Lygaeidae		<i>Lygaeus</i>	<i>grandis</i>	
			Hemiptera (hetero)	Reduviidae	Harpactorinae	<i>Sphedanolestes</i>	<i>nanus</i>	
			Coleoptera	Lycidae		<i>Lycus</i>	<i>constrictus</i>	
			Diptera	Asilidae	Dasypogoninae	<i>Rhipidocephala</i>	sp.	
			Orthoptera	Acrididae	Gomphocerinae	<i>Acrotylus</i>	sp.	
			Orthoptera	Acrididae	Acridinae	<i>Gymnobothrus</i>	<i>rimulatus</i>	
			Orthoptera	Acrididae		<i>Taramusus</i>	<i>cunctator</i>	
28/05/2005	1 S 06.26.095 E96.51.762 mark 561	sweeping	Coleoptera	Buprestidae		<i>Hoplistura</i>	sp.	
			Coleoptera	Lycidae		<i>Lycus</i>	<i>trabeatus</i>	
			Coleoptera	Coccinellidae	Coccinellinae	<i>Brumoides</i>	<i>nigrifrons</i>	
			Hymenoptera	Formicidae	Formicinae	<i>Camponotus</i>	sp.	
			Odonata (Anisopte)	Libellulidae		<i>Diplacodes</i>	sp.	
			Orthoptera	Acrididae		<i>Taramusus</i>	<i>cunctator</i>	
			Orthoptera	Acrididae	Catantopinae	<i>Cryptocatantops</i>	<i>allesandricus</i>	
			Orthoptera	Acrididae	Cyrtacanthacridinae	<i>Cyrtacanthacris</i>	<i>tatarica</i>	
			Orthoptera	Acrididae	Oedipodinae	<i>Acrotylus</i>	<i>blondeli</i>	
			Orthoptera	Acrididae	Oedipodinae	<i>Humbe</i>	<i>tenuicornis</i>	
			Orthoptera	Tettigonidae	Conocephalinae	<i>Conocephalus</i>	<i>meruensis</i>	
			Orthoptera	Acrididae	Acridinae	<i>Gymnobothrus</i>	sp.	
			Odonata (Anisopte)	Coenagriidae		<i>Pseudagrion</i>	sp.	
			31/5/2005	4 S 03.09.263 E 040.07.588	sweeping	Hemiptera (homo)	Cicadidae	Platypleurinae
Orthoptera	Acrididae	Oedipodinae				<i>Morphacris</i>	<i>fasciata</i>	
Orthoptera	Acrididae	Truxalinae				<i>Truxalis</i>	sp.	
Orthoptera	Pyrgomorphidae					<i>Chrotogonus</i>	<i>hemipterus</i>	
Hymenoptera	Formicidae	Formicinae				<i>Camponotus</i>	sp.	
Hymenoptera	Anthophoridae	Xylocopinae				<i>Xylocopa</i>	sp.	
Coleoptera	Buprestidae					<i>Sternocera</i>	<i>castanea</i>	ssp. <i>boucardei</i>
Coleoptera	Buprestidae					<i>Hoplistura</i>	<i>neglecta</i>	

May-05	13 S 03.10.308 E 040.07.681	sweeping	Hymenoptera	Anthophoridae	Xylocopinae	<i>Xylocopa</i>	sp.	
			Coleoptera	Chrysomelidae	Eumolpinae	<i>Colasposoma</i>	<i>subcostatus</i>	
			Coleoptera	Meloidae		<i>Coryna</i>	<i>ambigua</i>	
			Coleoptera	Tenebrionidae	Tentyriinae	<i>Himatismus</i>	<i>trivialis</i>	
			Hemiptera (hetero)	Lygaeidae				
			Orthoptera	Acrididae	Cyrtacanthacridinae	<i>Cyrtacanthacris</i>	<i>tatarica</i>	
			Orthoptera	Acrididae	Catantopinae	<i>Cryptocatantops</i>	sp.	
May-05	12 S 03.10.420 E 040.08.115	sweeping	Coleoptera	Scarabaeidae	Rutelinae	<i>Phaenomeris</i>	<i>besckei</i>	ssp. <i>brunnipennis</i>
None	11 S.03.10.108 E 040.08.089 mark 007	Sweeping	Orthoptera	Acrididae	Cyrtacanthacridinae	<i>Cyrtacanthacris</i>	<i>tatarica</i>	
			Orthoptera	Pyrgomophidae		<i>Chrotogonus</i>	<i>hemipterus</i>	
None	11 S 03.10.110 E 040.08.008 mark 001	sweeping	Neuroptera	Myrmeleontidae		<i>Stenares</i>	<i>inclemens</i>	
			Orthoptera	Acrididae	Cyrtacanthacridinae	<i>Cyrtacanthacris</i>	<i>tatarica</i>	
			Orthoptera	Acrididae		<i>Taramusus</i>	<i>cunctator</i>	
			Orthoptera	Pyrgomophidae		<i>Chrotogonus</i>	<i>hemipterus</i>	
			Coleoptera	Scarabaeidae	Rutelinae	<i>Phaenomeris</i>	<i>besckei</i>	ssp. <i>brunnipennis</i>
			Coleoptera	Chrysomelidae	Cassidinae	<i>Aspidomorpha</i>	sp.	
None	13 S 03.10.308 E 040.07.679 mark 214	sweeping	Orthoptera	Acrididae	Cyrtacanthacridinae	<i>Cyrtacanthacris</i>	<i>tatarica</i>	
None	12 S 03.10.420 E 040.08.116 mark 015	sweeping	Orthoptera	Acrididae	Cyrtacanthacridinae	<i>Cyrtacanthacris</i>	<i>tatarica</i>	
			Orthoptera	Acrididae	Catantopinae	<i>Diabolocatantops</i>	<i>axillaris</i>	
			Orthoptera	Pyrgomophidae		<i>Chrotogonus</i>	<i>hemipterus</i>	
			Coleoptera	Scarabaeidae	Rutelinae	<i>Phaenomeris</i>	<i>besckei</i>	ssp. <i>brunnipennis</i>
			Coleoptera	Scarabaeidae	Cetoniinae	<i>Diplognatha</i>	<i>silicea</i>	
21/12/2004	1 S 06.26.095 E96.51.762	Hand-picked	Isoptera	Termitidae	Macrotermitinae	<i>Odontotermes</i>	sp.	

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28/05/2005	2 S 06.26.176 E 96.51.772 mark 570	Hand-picked	Hymenoptera Coleoptera	Formicidae Meloidae	Formicinae Meloinae	<i>Camponotus</i> <i>Mylabris</i>	<i>maculatus</i> sp.
28/05/2005	4 S 06.26.442 E 96.51.108	Handpicked	Coleoptera	Buprestidae		<i>Steraspis</i>	<i>fastuosa</i>

30/5/2005	Camp site S 06.25.834 14 E 040.51.610	Handpicked	Coleoptera Hemiptera (hetero) Orthoptera	Meloidae Pyrrhocoridae Gryllidae	Meloinae Gryllinae	<i>Eletica</i> <i>Dysdercus</i> <i>Gryllulus</i>	<i>albovitta</i> sp. <i>bimaculatus</i>
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blister beetle - black  
with longitudinal  
white stripes; used by  
Giriama women to  
decorate skin with  
scars from acid

Ends...