



REPORT ON ELECTRICAL INSECT (MOSQUITO) KILLERS DONATED TO THE KARIKARI BROBBEY HOSPITAL.



2010

Office location: Glory Hills Community, (Behind Glory Hills School) Madina –Aburi Rd, Oyarifa, Accra.

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Background

A survey was conducted to identify mosquito hotbeds in and around Chorkor –Chemu prior to the world mosquito day. The Karikari Brobbey hospital happened to be one of the places visited during the survey.

On August 20, 2010, Free Africa From Mosquitoes (FAFM), marked the world mosquito day in Attor-Kwashie, Chorkor-Chemu a suburb of Accra, Ghana. The platform was used to create awareness about mosquito control, preventive and protective measures against mosquitoes. It also marked the beginning of larval control and indoor residual spraying activities in the community by FAFM while three electrical insect (mosquito) killers were donated to the Karikari Brobbey Hospital in Dansoman a suburb of Accra close to Chorkor. The insect killers were donated through FAFM by MOEL® an Italian company.

This was meant to control mosquitoes and also reduce the possible transmission of mosquito borne-diseases especially malaria from person to person in the hospital. However the insect killers trap other non target insects like beetles, wasp, houseflies etc which may be important in other disease transmissions.

The insect killers were received by the Assembly man of the area Hon. Derrick Adotey Myers on behalf of the hospital. This is captured in picture 1 below. These insect killers have an operational range of about 10-16m and are displayed in table 1.0 below. They were later installed in the hospital to control mosquitoes.



Picture 1 Presentation of electric insect killers.

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 Electric insect killers	
Mod. 361	
Mod. 309	
Mod. 308 A	

Table 1 Electric insect killers

Survey

Three potential hotbeds were identified but they contained no mosquito larvae. These included a gutter, manhole and a water tank. However the hospital staff was advised on how to prevent such hotbeds from breed mosquitoes in future. Below is the data sheet used for the hotbed survey.

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Free Africa From Mosquitoes

Survey Data sheet



IDENTIFICATION	
PLACE	Karikari Brobbey Hospital-Accra
DATE	21/08/2010
OPERATOR	TURCHI M.
	General medicine - Surgery Gynaecology - Midwifery

COMMENT AND REMARK	
A) Summer hut	G) Nurses quarters
B) Garage	
C) Doctor's house	△ Attractive trap
D) Clinic	← Gate
E) Plant	⊗ Hotbed (open sewer with permanent stagnant water, manhole, water tank)
F) Canteen	

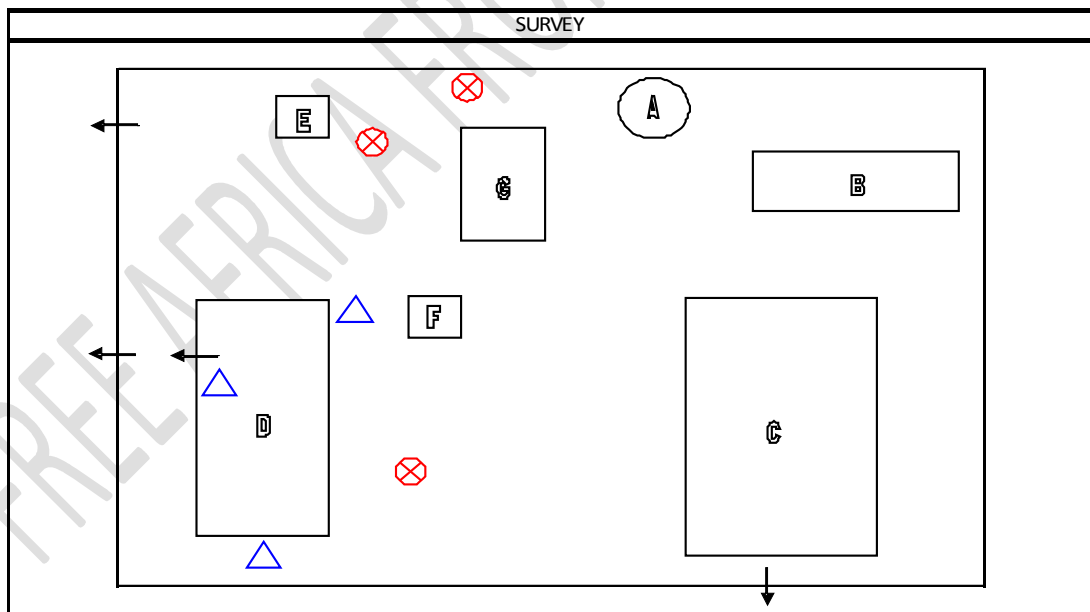


Figure 1 Survey data sheet

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Installation of insect killers

Three traps were installed;

1. Mod 361: at the entrance of clinic;
2. Mod 309: at the South-west side of the clinic;
3. Mod 308 A: at the north-west side of the clinic.

This is shown in the map and picture (Figure 2) below;



Figure 2 Installed traps



3. North-west side



2. South-west side



1. Entrance

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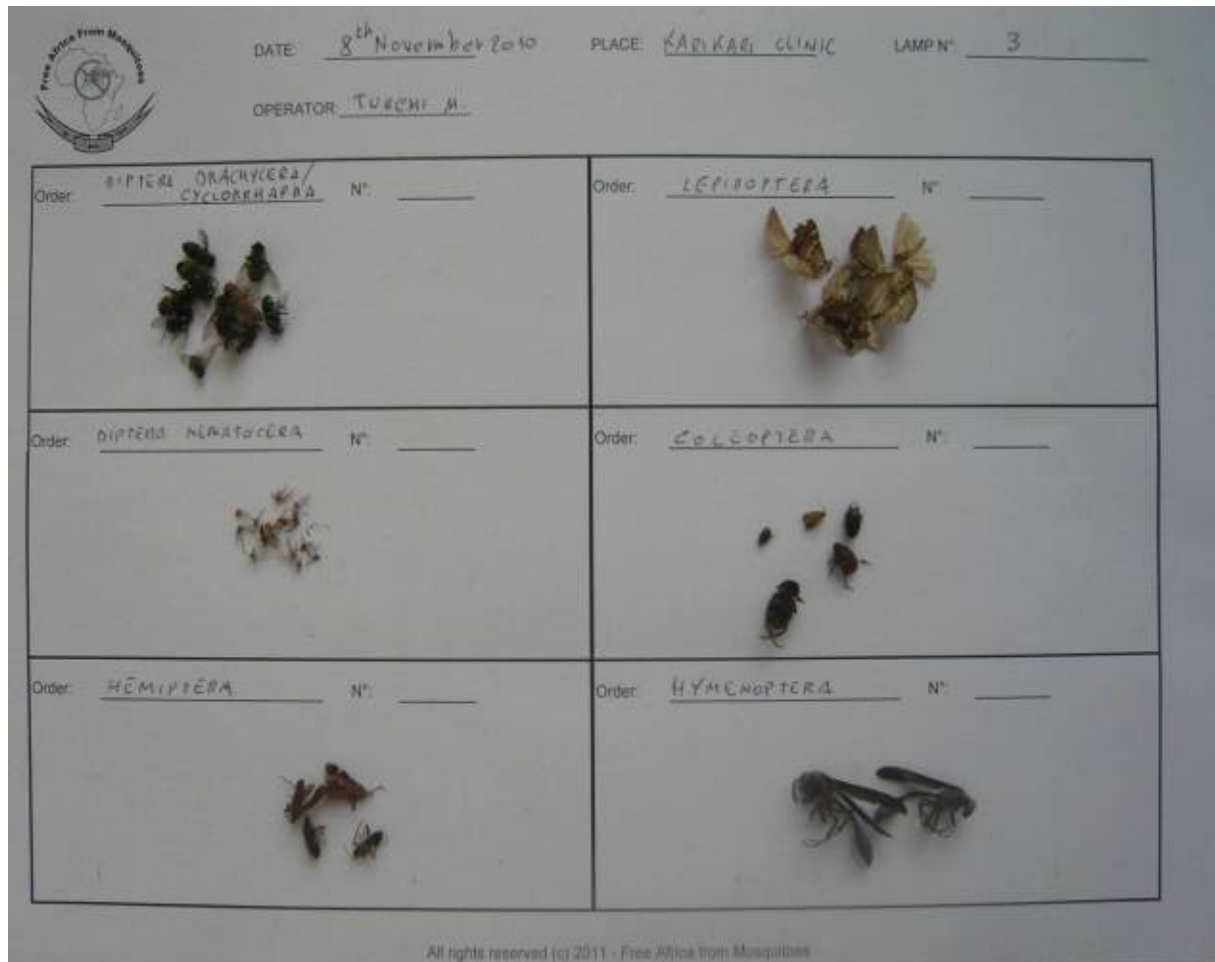
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Monitoring and evaluation

The installed insect killers are switched on everyday from 5pm to 8am in the next day and monitored at one week intervals to identify insects especially mosquitoes, that might have been trapped and killed. Various insects which include mosquitoes, flies, beetles, butterflies, wasp, etc were attracted and killed (Picture 2). These insects were later brought to the laboratory for identification (Pictures 3).



Picture2 Some insects attracted and killed by electric insect killer

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Picture 3 Identification of insects in the laboratory

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The graphs below represent the number of insects in their scientific orders trapped and killed by the insect killers from October 25 to November 15, 2010. It is however important to note that the order Diptera was further classified to the sub-order level, thus Diptera-Nematocera which includes mosquitoes and Diptera-Brachycera/ Cyclorrhapha.

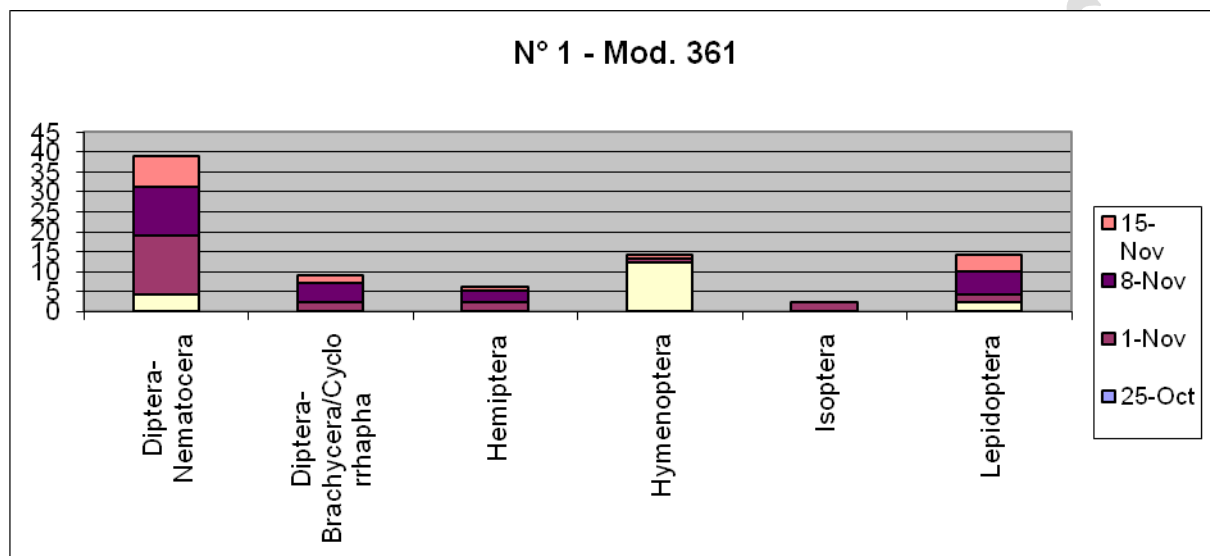


Figure 3 Graph of number of insects trapped and killed by Mod.361 in their scientific orders

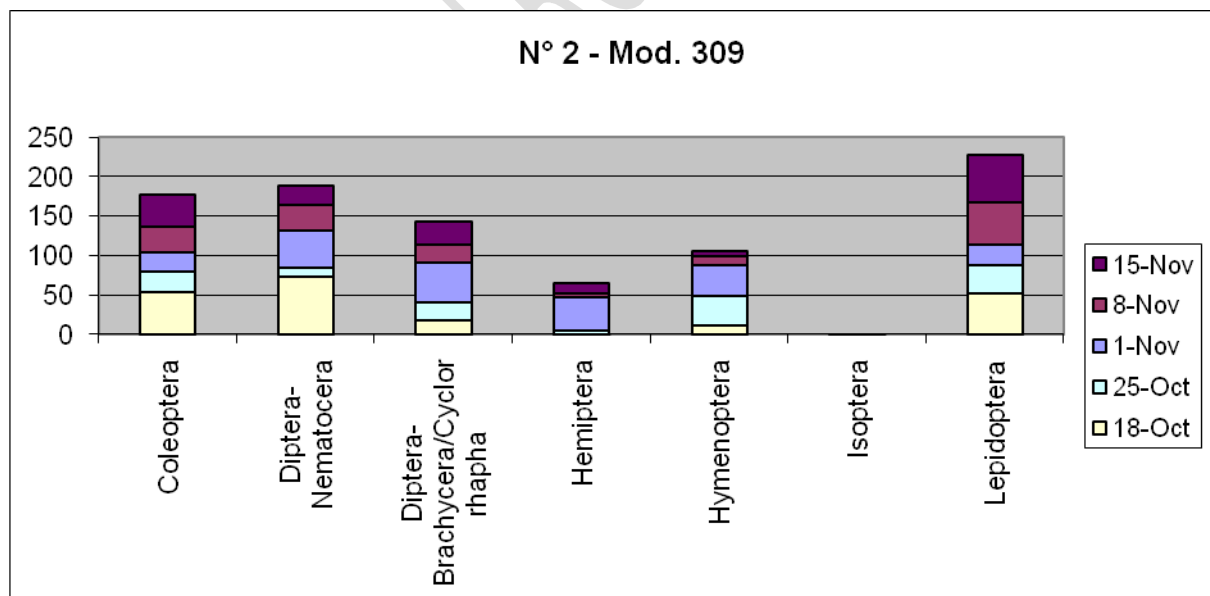


Figure 4 Graph of number of insects trapped and killed by Mod.309 in their scientific orders

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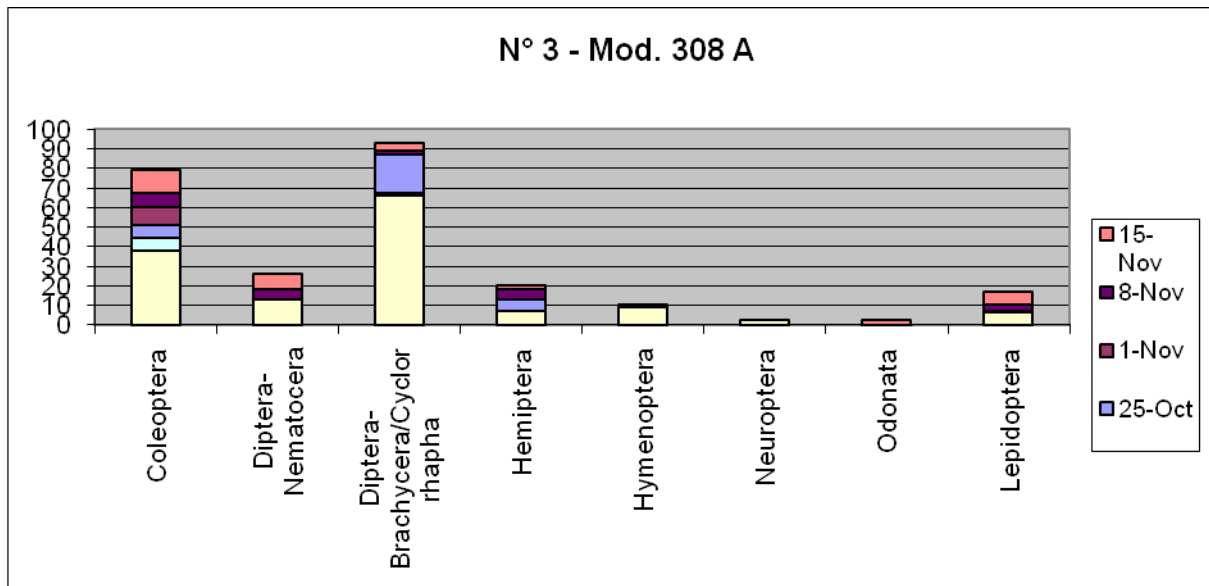


Figure 5 Graph of number of insects trapped and killed by Mod.308A in their scientific orders

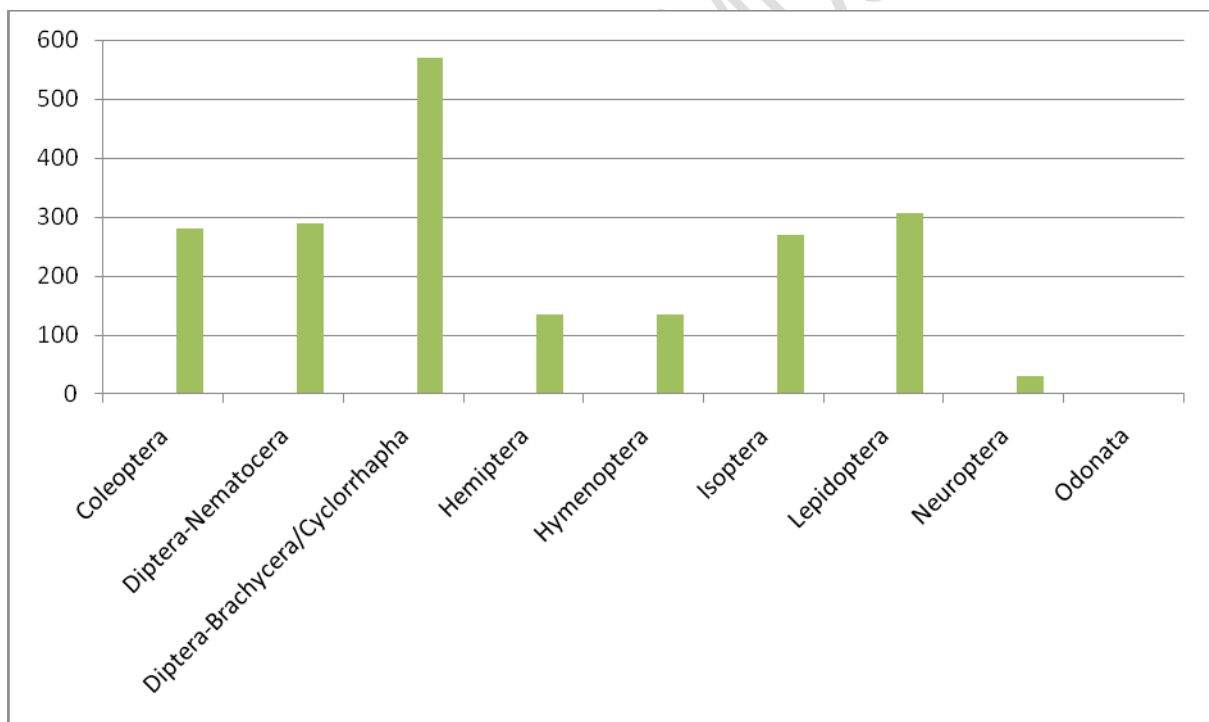


Figure 7 Graph of total number of insects trapped and killed in their scientific orders

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Discussion and Conclusion

All three models have been effective in attracting and killing a variety of insects. Whilst models 1&3 attracted and killed some Isopterans, model 3 did not capture any Isopteran. Models 2&3 also captured Coleopterans which was not found in model 1 whereas model 3 attracted and killed Neuropterans and Odonatans but same could not be said of models 1&2. This variance could be attributed to various factors including the location of the insect killer. However mosquitoes (Diptera-Nematocera) which happen to be of primary interest were also attracted and killed by all three models. As a result of electric shocks that kills the insects in models 2 and 3; a lot of the insects were broken in several parts and thus making classification difficult.

It is also important to note that the order of insects (Diptera) which mosquitoes belong were the insects that were mostly killed. The control of mosquito populations is an effective means of controlling the spread of malaria and other mosquito-borne diseases. The use of electric insect killers therefore can help control these diseases to a large extent especially when used indoors to attract and kill indoor resting mosquitoes most of which transmit malaria in Ghana.

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