



# The Armed Forces Pest Management Board



## AFPMB: Who We Are and What We Do

William J. Sames, PhD, BCE  
Lieutenant Colonel, Medical Service Corps,  
United States Army, October 2010





***The National Center for Medical Intelligence (NCMI) identified 60 infectious diseases that are of military importance. Thirty-eight (63%) are transmitted by insects and other arthropods***

## **Military Entomologists:**

- Perform vector-borne disease risk assessments, communicate the risks to affected personnel, and mitigate those risks using appropriate prevention and control techniques
- Conduct innovative research, testing, and evaluation, in the U.S. and at DOD laboratories located around the globe
- Provide technical expertise and training to fleet and shore commands
- Train and certify active duty, reserve, and DOD civilian personnel in vector surveillance, disease prevention, and pesticide application and safety
- Support the DOD effort in global humanitarian assistance and disaster relief efforts



# Operation Iraqi Freedom (OIF) & Operation Enduring Freedom (OEF)





# Cutaneous Leishmaniasis



# Humanitarian Assistance & Disaster Relief







# AFPMB Mission

Ensure U.S. Forces have the most effective  
vector control and pest management  
capabilities to prevent adverse effects on  
troops, weapons systems, supplies &  
equipment, and installations and to ensure  
maximal risk reduction through the use of best  
pest management and environmental practices



SECDEF  
USD (AT&L)  
DUSD (I&E)  
ODUSD (I&E)/EM

# The Armed Forces Pest Management Board Directorate



**Director**

**Deputy Director**

Support  
(IT, Budget, Admin)

**Operations Division**  
Contingency Liaison Officer

**Research Division**  
Research Liaison Officer

**Information Services Division**  
Information Liaison Officer

Deputy OPs Division  
Asst CLO

Environmental  
Biologist

Technical Consultant  
(DWFP)

Navy  
Rep

AF  
Rep

Army  
Rep

Technical  
Information  
Specialist

Senior  
Scientific  
Associate





# Committees and Council AFPMB

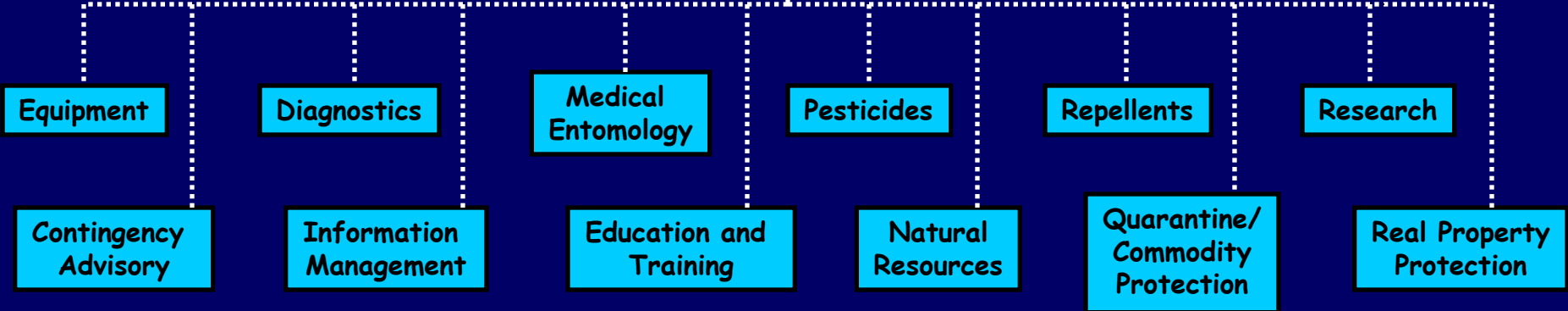
## The Armed Forces Pest Management Board Directorate

AFPMB Staff  
Ex officios

**Executive Committee**

Director AFPMB  
Ex officio

**Voting Council**  
Chair, Vice Chair





# Operations

**Address vector and pest issues impacting US Forces during contingency operations as well as at DOD installations in the US and abroad**

- *Insecticide/herbicide usage in Iraq and Afghanistan*
- *Vector control operations following a natural disaster*
- *Permethrin in uniforms*
- *Natural resources/invasive species*





# Information Services

**Collect, store, and disseminate information on animals and plants that impact the DOD mission concentrating on disease carriers such as mosquitoes, sand flies, ticks, and fleas**

- *Manage Online Literature Database: 123,500+ searches/yr*
- *Develop & Maintain Online Regional Disease Vector Ecology Profiles (DVEPs): 101,800+ downloads/yr*
- *Manage Online Living Hazards Database (LHD): 235,200+ “hits”/yr*



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**Upcoming Meetings:**

DoD Pest Management Workshop, Feb 8-12, 2010 NEW

**What's New:**

Characterization of an enantioselective odorant receptor in the Yellow Fever Mosquito *Aedes aegypti*, by Bohbot JD & Dickens JC.

Blood-Sucking Mosquitoes May Soon Face Tougher New Repellants

New State Records for *Lutzomyia shannoni* and *Lutzomyia vexator*, by Logan Minter, Brian Kovacic, David Claborn, Phillip Lawyer, David Florin, and G. C. Brown

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**Snapshot from our Image Library**



**Multimedia:**

- [Browse our image library](#)
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**Description:**

*Hyalomma marginatum* Koch. Photographer: James L. Occi

Video: *Hyalomma marginatum* on a Permethrin-impregnated Battle Dress Uniform in Afghanistan, provided by Dr. Michael K. Faulde. Please note that the tick jumps off the uniform shortly after the video ends.

**Resources:**

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- CDs - (Internal AFPMB Use Only)** ([Browse](#))
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- TIB's - Archived Technical Information Bulletins (1980-2000)** ([Browse](#))
- WRBU - Mosquito Systematics Literature** ([Browse](#))

## Welcome to the Armed Forces Pest Management Board, Defense Pest Management Information Analysis Center Literature Retrieval System -- the LRS

Our Literature Retrieval System is an online collection of scientific papers comprising over 100,000 documents in searchable PDF format, drawn from our extensive library of books, journals, reprints, reports, and other sources. Established in 1962, our collection has grown steadily through dedicated searching of published and unpublished materials for information of significance to the Department of Defense pest management program, and accessioning of these materials into our library and online database.

We have recently added two important collections to our site: The Walter Reed Biosystematics Unit (WRBU) collection focusing on mosquitoes of medical importance, and the Dr. Norman G. Gratz memorial collection of global pest management interest. The extensive Gratz collection, assembled over a period of 30+ years, is in the early stages of accessioning, with new books and articles posted daily.

We hope that you will find this collection useful in your research, and that you will contribute to it to help us keep the LRS collections growing.

**This system is for research purposes only.**



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1) [THE TICKS \(ACARI: IXODIDA: ARGASIDAE, IXODIDAE\) OF TAIWAN: A SYNONYMIC CHECKLIST](#)

Author(s): ROBBINS R G

Date of Publication, Journal, Volume, Pagination: 2005. PROC ENTOMOL SOC WASH 107(2): 245-253

File size: 2Mbytes - Please note that this file will take some time to download.

Accession Number: 178334

2) [DOES APONOMMA VARANENSIS \(ACARI: IXODIDA: IXODIDAE\) OCCUR ON THE TAIWANESE MAINLAND?](#)

Author(s): ROBBINS R G

Date of Publication, Journal, Volume, Pagination: 1996 J. PARASITOL. 82(4), PP. 672-673 (JOURNAL)

File size: 438Kbytes

Accession Number: 175204

3) [LYME DISEASE IN TAIWAN: FIRST HUMAN PATIENT WITH CHARACTERISTIC ERYTHEMA CHRONICUM MIGRANS SKIN LESION](#)

Author(s): SHIH C-M WANG J-C CHAO L-L WANG C-H  
[Open Original Document](#)

Date of Publication, Journal, Volume, Pagination: 1996 J. CLIN. MICROBIOL. 36(3): 807-08 (15 REF., 1 FIG.)

(DPMIAC LOC: JOURNAL)





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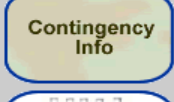
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# Family Ixodidae

Morphology and Identification

[How to Use this Program](#)

[About the Authors](#)

[Tutorial in Tick Morphology](#)  
[Demonstration in Identifying Ticks by an Expert](#)

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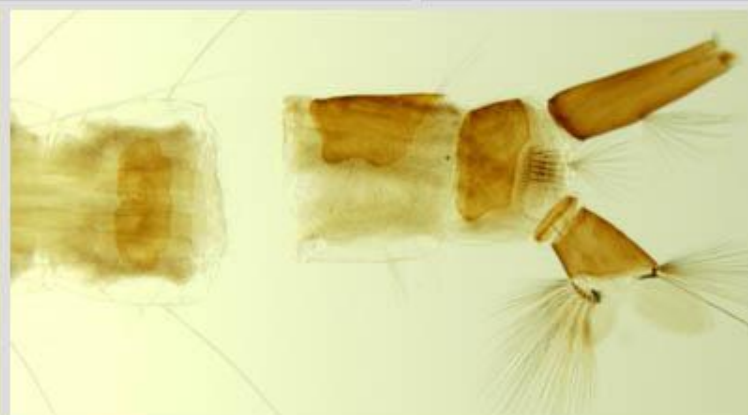


# Family Culicidae

4th Instar Larvae  
Morphology and Identification

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### Disease Vector Ecology Profiles

Disease Vector Ecology Profiles (DVEPs) come in two formats that can be viewed, downloaded, or printed. Selecting the DVEP name or picture loads the .HTML version to your Web browser. The .PDF file is a Portable Document Format file requiring [Adobe\(TM\) Acrobat\(TM\) Reader](#) in order to view it and print it.

[Bolivia, 1998 \(PDF Format, 657K\)](#)

[Caribbean, 2002 \(PDF Format, 9698K\)](#)  
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- Includes Anguilla, Antigua and Barbuda, Aruba, The Bahamas, Barbados, British Virgin Islands, Cayman Islands, Cuba, Dominica, Dominican Republic, Grenada, Guadeloupe, Haiti, Jamaica, Martinique, Montserrat, Navassa Island, Netherlands Antilles, Puerto Rico, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Trinidad and Tobago, Turks and Caicos Islands, and U. S. Virgin Islands.

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- Includes Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Greece, Hungary, The Former Yugoslav Republic of Macedonia, Poland, Romania, Serbia and Montenegro, Slovak Republic, and Slovenia.

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- [TG Number 1 - AFPMB Publications](#) April 2003 ([HTML](#) [PDF](#))
- [TG Number 6 - Delousing Procedures for the Control of Louse-borne Disease During Contingency Operations](#) March 6, 2002 - reviewed October 2005 ([HTML](#) [PDF](#) [WORD](#))
- [TG 7 - Installation Pesticide Security](#) August 2003 ([HTML](#) [PDF](#))
- [TG 11 - Hydrogen Phosphide Fumigation with Aluminum Phosphide](#) ([PDF](#), 5,618K)
- [TG 13 - Ultra Low Volume Dispersal of Insecticides by Ground Equipment](#) (41K), ([PDF](#), )
- [TG 14 - Personal Protective Equipment for Pest Management Personnel](#), ([PDE](#), 219K)
- [TG 15 - Pesticide Spill Prevention and Management](#) (256K), ([PDF](#), )
- [TG 16 - Pesticide Fires: Prevention, Control, and Cleanup](#) (47K), ([PDF](#), 52K)
- [TG 17 - Military Handbook - Design of Pest Management Facilities](#) (84K), ([PDF](#), )
- [TG 18 - Installation Pest Management Program Guide](#), March 11, 2003 ([HTML](#), [PDF](#))
- [TG 20 - Pest Management Operations in Medical Treatment Facilities](#), November 2005 ([HTML](#) [PDF](#) [WORD](#))
- [TG 21 - Pesticide Disposal Guide for Pest Control Shops \(Word Format 168KB\)](#), ([PDE](#), 325KB),
- [TG 22 - Guidelines for Testing Experimental Pesticides on DoD Property](#) (128K), ([PDF](#), 195K)
- [TG 24 - Contingency Pest Management Guide](#) May 2, 2006 ([Word Version](#)) ([PDF Version](#))
- TG 25/TIM 25 - 'Devices for Electrocuting Flying Insects,' was cancelled and incorporated into TG 29 in April 2001
- [TG 26 - Tick-Borne Diseases: Vector Surveillance and Control](#) February 2006
- [TG 27 - Stored-Product Pest Monitoring Methods](#) June 2005 ([PDF](#), [HTML](#), [DOC](#))
- [TG 29 - Integrated Pest Management in and around Buildings](#) July 2003 ([HTML](#) [PDF](#) [WORD](#))
- [TG 30 - Filth Flies: Significance, Surveillance and Control in Contingency Operations](#), March 2006 ([HTML](#) [PDF](#) [WORD](#))

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[Proceedings of the DoD Symposium, ESA 2008](#)

### Snapshot from our Image Library



### Multimedia:

- [Browse our image library](#)
- [Browse our video library](#)

### Description:

*Hyalomma marginatum* Koch. Photographer: James L. Occi

Video: [Hyalomma marginatum on a Permethrin-impregnated Battle Dress Uniform in Afghanistan](#), provided by Dr. Michael K. Faulde. Please note that the tick jumps off the uniform shortly after the video ends.

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- [Brown Tree Snake Documents](#)
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- [Links](#)
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## AFPMB LIVING HAZARDS DATABASE



- [Overview of the Living Hazards Database](#)

The Living Hazards Database (LHD) is a comprehensive compilation of more than 500 species worldwide, which are reported to cause serious injury or death of humans. The LHD is intended to provide a concise, practical information source for use by medical, paramedical, first-responder personnel and medical planners supporting U.S. military personnel.

Information on each species listed includes: description, habitat, behavior, known harmful effects, geographic distribution, taxonomy, and a representative image for most species.

(Last Major Update: Feb 2008)

- [Venomous Animals](#)
- [Venomous Animals by Country](#)

[Antivenom information removed \(7.1.2008\)](#)

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### Upcoming Meetings:

DoD Pest Management Workshop, Feb 8-12, 2010 NEW

### What's New:

- Characterization of an enantioselective odorant receptor in the Yellow Fever Mosquito *Aedes aegypti*, by Bohbot JD & Dickens JC.
- Blood-Sucking Mosquitoes May Soon Face Tougher New Repellants
- New State Records for *Lutzomyia shannoni* and *Lutzomyia vexator*, by Logan Minter, Brian Kovacic, David Claborn, Phillip Lawyer, David Florin, and G. C. Brown
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[Navy](#)



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[Air Force](#)



# The Walter Reed Biosystematics Unit

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- VECTOR ID
- WHO WE ARE
- STAFF
- WHAT WE DO
- FAQS
- FORUM

The Walter Reed Biosystematics Unit (WRBU) is a unique national resource. Its mission is to conduct systematics research on medically important arthropods and to maintain the U.S. mosquito collection. The WRBU is just one part of the U.S. Government's entomological research system, which includes the U.S. Department of Agriculture (USDA) and the Smithsonian Institution (SI). Historically, mosquito identification was managed by USDA and the SI, but in 1972 this responsibility was transferred from USDA to the U.S. Army for research on medically important arthropods. Located at the Museum Support Center of the Smithsonian Institution in Suitland, Maryland, the WRBU's physical space is provided by the Smithsonian Institution in return for curation of the collection and specimen identification... *(more)*

### What's New?

- Discussion Forum
- New mosquito identification keys
- See new WRBU staff publications
- New MosquitoMap site



### Vector Identification Resources

to medically important arthropods and WRBU's Vector Identification Service



Medically Important Sand Flies



Phlebotominae Catalog [Not yet available]

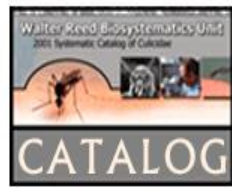
### Other Vectors



Ticks



Medically Important Mosquitoes



Culicidae Catalog



Scorpions



Fleas





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## Contact Us Send an e-mail to AFPMB



◆ **David Hill**

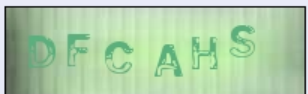


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- General Question
- Board Meeting Video Access Request
- Committee Workspace Access Request
- Directory Password Request
- Literature Retrieval System (LRS) Question
- Web Site Feedback
- Other

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**Message:**

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# Research

**Conduct research and development resulting in new products and practices for protecting DOD personnel and materiel from disease vectors and other pests.**

- *Military Infectious Diseases Research Program (MIDRP)*
- *Deployed Warfighter Protection Program (DWFP)*





***DWFP is an initiative to develop and validate novel methods to protect US military deployed abroad from threats posed by vector-borne diseases***



# Deployed War-Fighter Protection Program (DWFP)



- **Administered by Armed Forces Pest Management Board**
- **Funding: \$5M/year + increments – SBIR tax**
  - *up to \$3M/year to USDA Agricultural Research Service approximately \$1.6M/year for other competitive proposals*
  - *Grants up to \$250,000/yr for up to 3 years*
- **Areas of Emphasis**
  - *Novel Insecticide Chemistries/Formulations*
  - *Personal Protective Systems*
  - *Application Technology*
- **POC: Lt Col Douglas Burkett – [douglas.burkett@osd.mil](mailto:douglas.burkett@osd.mil)**
- **DWFP Consultant – Dr. Graham White [GBWhite@ufl.edu](mailto:GBWhite@ufl.edu)**





# DWFP Accomplishments from USDA ARS and Competitive Grants



- >200 publications; 11+ patents; 2+ Invention disclosures; 3+ GenBank accessions
- New products in National Stock System (e.g. Sprayers, Pesticides, Fly Traps and Lures)
- IR4 agreement to expedite registration of PH pesticides
- New classes of pesticides (Moleculars, Sterol Inhibitors, Chromenes, Piperidines, Carboxamides)
- Three compounds found better than DEET (ligustilide, diol terpenoids, natural product)
- Scientific evaluations of spray equipment in DOD stock system
- State of the art insectary facilities
- Leveraging USDA dollars for intra- and extra-agency and industry collaborations
- New application techniques and products to kill disease transmitting arthropods:
  - Dengue vector control (Auto-dissemination)
  - Combating sand flies and their rodent hosts
  - Deployable spraying systems
  - Improvements of barrier, space, and deposition sprays
  - Comparative risk analyses
  - Sand fly, mosquito, and filth fly control techniques
  - Attractant Toxic Sugar Baits (ATSBs)
  - Behavior and molecular toxicology advances tied to insecticides and repellents



***U.S. Service  
Members have and  
will continue to go  
in harm's way...***



...and it's the AFPMB's mission to help bring them home safe and sound



# Questions?



**AFPMB COUNCIL MEETING**  
**APRIL 23, 2010**