Hi-BEE NEWS

The Newsletter of the Hawai`i Beekeepers' Association

Volume XIV Number 1 **JANUARY 2000**

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Calendar Of Events

JANUARY 23:
Field SunDay at Diamond Head Park
FEBRUARY 28: HBA Meeting, 19:30

George "Smokey" Holeso Passes On.

In Requiem Pacit

It is with great sadness that we inform our readers that long-time President of the HBA, Smokey Holeso passed away on July 26, 1999, at the age of 78 after a long and valiant fight against cancer. We are preparing a memorial biography and would welcome any written or oral remembrances of George's long and remarkable life that could be included in it. Please send any contributions to Fred Salassa or Michael Kliks.

Honey Bee Pests Not Yet In Hawai`i: Part I

Africanized Honey Bees (AHB): An Update

(Updated from a 1990 USDA fact sheet by James E. Tew, National Program Leader, Apiculture Extension Service)

In 1956, researchers in Brazil attempted to develop a more productive honey bee than the European bee honey bee. Honey bee queens from Africa, whose offspring were presumably better suited for Brazilian conditions, were imported and established in test colonies in Sao Paulo, Brazil. African bee swarms escaped into the Brazilian countryside where their queens interbred with the more docile resident European honey bees.

The offspring of these "mismatings" defended their nests more vigorously than European bees and swarmed more often. Therefore, they were better suited for survival in the Tropics. Researchers named them AHBs. However, as a result of widely publicized stinging incidents, the name "**Killer Bee**" was picked up by the movie industry and the media to describe the AHB.

Defensive Behavior of Africanized Honey Bees

Unlike the docile European honey bees common in the United States, the AHB quickly defends its hive and will pursue intruders longer distances. The venom from one AHB sting is no more potent than the venom of a single European bee sting. Most stinging incidences have involved animals, but on rare occasions humans have been attacked. Stinging attacks occur only when the AHB nest or territory is threatened by an intruder.

In some cases, the noise or vibration of tractors or motorboats has provided the bees to sting. However, chance encounters with individual AHBs on blossoms pose no greater threat than encounters with European honey bees. Even though mass stinging attacks are terrifying and could be life-threatening, they are not common. The best defense for avoiding stings from all stinging insects – not just honey bees – is common sense. If you find yourself near large numbers of honey bees calmly and quickly move away from the area.

Other Africanized Honey Bee Traits

Honey bees swarm when a queen bee and several thousand workers bees fly to a new nest site. Because AHBs produce more swarms each year than European honey bees, and also grow from egg to adult quicker, they can eventually replace European honey bee populations in a given area.

AHBs crossed into the US from Mexico in 1990 and have now become well established in 20 states, including Texas, New Mexico, Arizona, Southern California and Nevada. Occasional swarms onboard ships coming from South and Central America are a concern in port cities, but they are not major threats to the American public or to the U.S. beekeeping industry. Since these bees are well suited for life in warm climates, there is reason to believe that all or most of he warmer states will have to contend with the establishment of AHB colonies in the near future.

AHBs are not as selective as European honey bees when choosing a nest site. In fact, AHBs frequently construct nests in exposed areas that would rarely be selected by European bees. Consequently, states having regular cold months may not have to contend with AHBs

initially; however, in the future even honey bees in northern states may show some of the AHB traits.

*In our next issue we will review the current status of the **Varoa** and tracheal mites on beekeeping on the mainland.*

Dr. Hachiro Shimanuki, of the USDA Bee Research Lab and an Honorary Member of the HBA has received the American Association of Professional Apiculturists' Award of Excellence in recognition of his exceptionally productive career researching the diseases of honey bees. He was also re-elected president of the International Bee Research Association (IBRA).

Extent Of The Africanized Bee Threat To Hawai`i

By Tom Culliney, PhD, State Department of Agriculture, Plant Protection Division.

Hawai`i's unique position as the most isolated archipelago on Earth, lying 4000 km (almost 2500 mi.) from the nearest major land mass and 1600 km from the nearest island groups, precludes introduction of Africanized bees through the natural migration of swarms, as is now occurring in the continental U.S. Introduction of the bees into the state can only come about through the agency of man. As populations of the Africanized honey bee become widely distributed in the U.S. (AHB is now established in California, which is home to ports handling trade between U.S. and other Pacific Basin markets), the danger increases that Africanized bees will be introduced into Hawai`i via ship or aircraft.

However, whereas natural Africanized bee spread to, and establishment in, many mainland areas is a certainty, necessitating detailed and thorough planning to enable the local agriculture and populace to adapt to the new threat, the bees' arrival and establishment in Hawai`i is by no means inevitable. The utmost importance of preventing any entry of Africanized bees into Hawai`i must therefore be emphasized. Should populations of the bee be introduced into the state in significant numbers, the following outcome is highly likely: eradication will prove to be impossible, establishment will be certain; population increase will occur rapidly, accompanied by displacement or elimination of the resident European bee population; spread throughout the island of introduction and perhaps to at least some neighbor island will be rapid; and mitigation of the resulting highly negative impacts on agriculture, apiculture, other important sectors of the state's economy (e.g., tourism, the recreation industry), and public health will be difficult and costly.

Hawai`i is perhaps the best place on Earth to raise bees, truly a beekeeper's paradise. Here, isolated in the tropical north Pacific, with an ever-benign climate, much of the effort and expense involved in keeping bees in temperate regions is absent. For example, preparing hives for winter, by insulating them and providing them with food supplements, is unnecessary. Honey production proceeds with few interruptions year-round. Many of the diseases and parasites that plague apiculture elsewhere in the world are absent from Hawai`i. The bees of Hawai`i are a mixture of European races, mainly German, Italian, and Carniolan. For the most part, they are gentle, are hardy and productive, and are easy for the beekeeper to work with, characteristics that have made beekeeping so popular as a hobby throughout the state.

Hawai`i's beekeeping industry is largely self-regulating. This arrangement has worked well up to the present because beekeepers as well as state agencies, such as the Hawai`i Department of Agriculture, realize that maintaining a healthy apiculture in Hawai`i is in the best interest of all. Beekeepers have given their support to the state's prohibition of all honey bee imports since 1985. Such support by the Hawai`i beekeeping industry and beekeeping organizations, like the Hawai`i Beekeepers Association, has been vitally important in ensuring that misguided beekeepers, who may have wished to bring bees, including AHBs, into the state for selfish reasons (to improve their stock or gain competitive advantage), will not do so in the interest of all beekeepers in the state. Here, as with all quarantine laws, effectiveness depends on the full compliance of all beekeepers.

Of course, the considerable threat to public health, to agriculture, and the larger economy, posed by the arrival and establishment of the AHB in Hawai`i, would necessitate passage of new and onerous legislation to regulate beekeeping the state. Africanization of the local bee population would increase considerably the burden of costs of keeping bees. Additional equipment, labor, and perhaps liability insurance may be needed. Routine management tasks such as those involved in relocating and maintaining colonies in more remote sites, would probably eliminate most of the state's hobbyists.

Many factors contribute to Hawai`i's special status and favorableness for apiculture. It would be a tragedy to see this enviable situation change with the introduction of the AHB into Hawai`i.

(Dr. Culliney is the state's de facto Apiculture Extension Officer. Upon request [tel: 973-9528] will visit and inspect apiaries and advise Beekeepers on the appropriate management of their hives. Ed.)

Bee Stings: Avoiding, Allergic Reactions and Treatments

By Fred Salassa, Member HBA

Wear Protective Attire. Wearing appropriate apparel is perhaps the most effective way to avoid bee stings. Regardless of the (mis)behavior of the beekeeper, a beekeeper's protective attire can ensure to a reasonably high degree that the wearer will not feel the stings of defensive bees. Nonetheless, even the most expensive body armor currently available can not be assumed to be an absolute defense against bee stings. Even though complete protective attire may be worn, there is a chance that a bee's stinger might penetrate the material if it is stretched tightly against part of the body, or if a bee finds an opening.

Such apparel also should be smooth textured and light colored because alerted bees have a propensity for attacking dark fuzzy objects (Free 1961).

Beekeepers should suit up before approaching hives, and this sometimes can mean a distance of several tens of yards or more, depending upon the temperament of the colonies housed in the apiary. Removing protective apparel likewise should be done at some distance from the hives. Beekeepers need to make certain that no defensive bees are waiting to alight before un-suiting.

Among the defensive measures are smoking oneself and the immediate vicinity, and walking through a dense grove trees or tall bushes. If objects such as branches and leaves interpose themselves between the beekeeper and attacking bees, the bees will be confused quickly and will let off their attack (Sammatraro & Avitable, 1998). Another defensive measure would be to move into a darkened outbuilding where bees generally will not continue their pursuit.

Avoid actions that elicit defensive behavior. Experienced beekeepers who really know bees rarely get stung, even if they wear little to no bee sting protection. This is because they have learned to avoid actions that encourage defensive behavior of bees, and to deal effectively with harassing behavior once it begins. Until the novice beekeeper comes to know the way of the bee – in some sense to think like a bee – he would be well advised to continue wearing protective attire. Only after a beekeeper has learned to see things from an apian perspective and knows that he is not allergic to bee stings, should he attempt to work bees without complete protective attire. Regardless of the amount of protective attire worn, the following guidelines should be followed when working bees, in order to avoid placing undue stress on the bees and thereby eliciting defensive behavior.

Experience shows that guard bees may be driven temporarily from their posts at the entrance by an application of smoke. These and other bees may move to the comb to fill themselves with honey in preparation for fleeing. According to Jaycox (1982), approximately 60% of the bees located on comb will engorge themselves with honey when confronted with smoke. It has been hypothesized that engorged bees find it difficult to bend their abdomens sufficiently enough to inflict a sting. Regardless of why it works, experience shows that the application of smoke, if done correctly, minimized defensive behavior that leads to bee stings.

Advancing on the hives, select which hive will be worked first, and approach this hive from the side or back.

The amount of smoke required to manage bees depends upon both the temperament of the bees and the weather conditions under which the bees are being worked. Use the smallest amount of smoke necessary to keep the bees calm.

During hive work it is helpful for the beekeeper to move slowly and deliberately, while at the same time avoiding the mistake of keeping any one hive in an apiary open for too long a time. A hive that is open for too long a may invite robbing behavior that ultimately will put the colony residing there on the defensive.

Resist the urge to swat at bees with body parts as quickly moving targets attract the attention of defensive bees and invite stinging.

As the hive is worked, avoid crushing bees as this too will release the alarm pheromone that could invite defensive behavior.

Smoke new leather gloves before using them for the first time. Smoke any sting sites that are noticed on gloves and protective apparel. Such smoking may serve to mask the sting pheromone that smells like banana oil to humans and is an open invitation for defensive behavior to bees.

Avoid opening hives very early in the morning, late in the evening, or after nightfall. Working hives just after sunrise and just before sunset can stir up bees. Moving a "closed" hive after sundown, especially, will place a significant stress upon bees. Hive disturbances at any of these times – dawn, dusk, or night – are closely associated with the actions of predatory animals. Bees do not distinguish between humans and predatory animals that have a history of attacking colonies.

Avoid conditions that encourage stinging. Experience has shown that even within a given strain of bees there are more and less aggressive colonies. Defensive behavior appears to be closely linked to honey bee genetics (Breed et al., 1990). If aggressive colonies are re-queened, within about eight weeks a new generation of generically different honey bees will be in place that will exhibit a milder temperament.

It is rare to find a beekeeper who enjoys the pain of a sting although some practice apivenom therapy. A small portion of the population that is allergic to bee venom will

have life threatening anaphylactic reactions if stung and left untreated. There are many who feel that bee venom has medicinal value, and have offered anecdotal evidence of its worth (American Apitherapy Society, 1999): recently the HIH has awarded several grants funding formal studies on apivenom therapy for multiple sclerosis and arthritis.

Defensive behavior, which is essentially a reaction of bees to stress, appears on the whole to be generically and environmentally controlled. Biologists tend to believe that the stinging behavior of honey bees arose as a colony-wide evolutionary response to the stress of predation. Though individual bees may die as a result of stinging, the colony as a whole benefits. Queens of colonies whose workers exhibited a greater propensity for stinging were probably more likely to pass on their genes to future generations. The African honey bee, ***Apis mellifera scutellata***, shows all the traits of having evolved under very challenging environmental circumstances.

Stinging Insect Allergy

(Excerpted from Carl J. Wenning and Victoria A. Wang, MD, American Academy of Allergy and Immunology)

When a person is stung by an insect of the Hymenoptera family, which includes bees, wasps, hornets, yellow jackets and some ants, it injects venom into its victim.

Common Stinging Insects. Five flying insects – the honey bee, paper wasp, yellow jacket, yellow hornet, and white-faced hornet share the blame for most cases of insect stings in the United States. Overall, the yellow jacket is the number one offender, followed by the honeybee, wasp, and hornet. However, this varies in different parts of the country. Mild Reactions to Stings. When an insect stings, it injects venom under the victim's skin. In the vast majority of people, the injected venom produces pain, some minor swelling, and itching right around the site of the sting. These symptoms develop after the sting and disappear in a day or so.

Sometimes, more extensive swelling appears around the site of the sting one or two days later and lasts for as long as a week. This represents a mild allergic reaction.

More Serious Reactions. In a small number or people, the body reacts more violently to being stung by an insect. The people develop a widespread allergic reaction about an hour after the sting. Hives appear all over their bodies, beginning at the site of the bee sting, and their eyes and lips may become very swollen.

Finally, in rare cases, an insect sting can provoke a very severe allergic reaction called "anaphylaxis" or an "anaphylactic reaction." Person who know that they are prone to an anaphylactic reaction should always carry with them a injector kit containing epinephrine which are available by prescription from most pharmacies.

Anaphylaxis is a major emergency: it is an acute systemic allergic reaction affecting the whole body. It can occur after exposure to an antigen (allergen) to which the patient was previously sensitized.

Anaphylaxis is an event which can involve an IgE antibody that attaches to a mast cell or basophil and reacts with a certain allergen, i.e., food, drug, insect venom. This reaction causes a release of many chemicals, known as mediators.

Mediators are chemical substances that attract or activate other parts of the immune system' the best known mediator is histamine.

Anaphylactoid reactions have similar symptoms to anaphylaxis, but are triggered instead by a non-IgE mechanism which directly causes the release of these mediators. These include reactions to exercise and non-steroidal, anti-inflammatory drugs, i.e., ibuprofen.

This dangerous reaction heralded by the development of dizziness, faintness, anxiety, weakness, or nausea within an hour after the person is stung. The victim may feel a sense of tightness in the throat or chest, and may also start wheezing and have difficulty breathing or swallowing.

If these severe reactions are not treated immediately, symptoms can worsen dramatically. Blood pressure may plunge quickly, and the person may go into shock. Because anaphylactic reactions can become life-threatening so rapidly, immediate medical attention is absolutely essential.

What To Do If You Are Stung.

1. Among the Hymenoptera insects, only the honey bee leaves her stinger (with its venom sac attached) in the skin of its victim. Since it takes two or three minutes for the venom sac to inject all its venom, instant removal of the stinger and sac may prevent some harmful effects. Removal of the stinger may be accomplished with one quick scrape of the fingernail. The sac should not be compressed between the thumb and forefinger since this maneuver may merely inject more venom into the victim. The hornets, wasps, yellow jackets, and ants do not leave their stinger and should be brushed from the victim's should then quietly and immediately leave the area.
2. Wash the wound thoroughly with soap and water.
3. After the wound has been washed, quickly apply ice to the sting site. Keeping the area cold will help lessen swelling. Ice should be kept on the site of the sting for a few hours.

4. An antihistamine (such as Benadryl) can be taken to help prevent trigging of immune system.
5. Some unproven remedies include the use of a meat tenderizer (i.e., Adolph's meat tenderizer is made into a paste with water and applied to sting area) and honey. The idea being to break down some of the proteins in the bee venom.

For most insect stings, it's enough to remove the stinger, wash the wound, and apply ice. However, if you notice any signs of an allergic reaction, such as widespread swelling or hives and , most important, tightness in the throat or chest, wheezing or other difficulty in breathing, difficulty in swallowing, dizziness, faintness, or nausea, get medical attention immediately. These are signs of an anaphylactic reaction. As mentioned above, this type of allergic reaction to a sting must be treated at once.

Preventing Allergic Reactions

Excerpted from ALK Laboratories, Inc.

Allergic reactions to insect stings can be prevented with venom immuno-therapy, a treatment which is 97% effective in preventing future occurrences. It involves administering gradually increasing doses of venom which stimulates the patient's own immune system to become resistant to a future allergic reaction. In a matter of weeks, people who previously lived under the constant threat of sever reactions to insect stings can go about leading normal lives.

The President's Cell: 1999 A Brief Review!

by Michael M. Kliks, PhD

1999 was a year of great progress for Hawai`i's beekeepers. Our membership grew by 200% to a total of 44 members, including 27 new Regular Members, 3 Honorary and 4 Senior Members ... and our Friends of Apiculture list is now over 60. We held the first HBA Field Day and Picnic at the Damons' Papakea Estate and it was an unqualified success. The Department of Health, Vector Control Division has agreed to cease moonlighting as bee removal service providers except in emergencies.

Attendance at meetings, however, is down and may be insufficient to continue our monthly meeting in their current format. Suggestions are requested: for instance having fewer general meetings but with more content and activities and/or holding open executive Board of Directors meetings every 2 months and an annual general meeting.

There was no progress was on making the important revisions of By Laws and other HBA documents. We must move ahead on this early in the new year: volunteers are needed. Neither did we achieve all of our goals in the area of public relations, public policy and political and regulatory affairs at state and federal levels. More outreach to community and legislators and federal reps needed to protect and promote Hawai`i apiculture. In particular preventing the importation of diseases and the AHB genes into Hawai`i will require more rigorous regulations. And the US Postal Service regulation prohibiting airmailing of honey bees from Hawai`i the must be amended if we are to exploit our golden opportunity to supply world markets with packaged bees and queens.

Our August Picnic & field day at Papakea, Damon estate was both fun and informative! A special thanks to **Ian and Carlene Damon** and able staff for their hospitality. To continue this theme of learning and camaraderie I will host a FieldSun Day at my apiary located in Diamond Head State park. Suggestions for other Field Day meetings will be appreciated ... ***Hau`oli Makahiki Hou***!

MEMBERS' CORNER

(TO BE DEVELOPED NEXT MONTH:
PLEASE CALL MMK WITH YOUR OWN *MANA`O*)

FOR SALE

MASTER and SPEED KING ELECTRIC KNIVES
New, with build in thermostat; the best un-capping tool ever! Same as Dadant #MOO339 and 340 but with 20% off listed price to HBA members only.
$ 55 + S/H MICHAEL KLIKS 988-7203

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All sizes, both 1 piece and plastic foundation only at about 20% off usual catalog prices to HBA members.
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10 frames each box; unified hive body and honey supper with entrance door; suitable for use as pollination units.
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HONEY EXTRACTOR in Good Condition
Dadant Jr Bench model, 2 frame, manual, with strand. New price is $ 240 + S/H.
$ 150 MICHAEL KLIKS 988-7203

January Field Sunday In The Bee Yard

SUNDAY, JANUARY 23, 2000
11:00 AM – 6:00 PM … Rain or shine!
DIAMOND HEAD STATE PARK

SPONSORED BY:
HAWAI`I BEEKEEPERS' ASSOCIATION
and hosted by Michael Kliks, PhD.

RSVP: Emiko Baker tel: 842-8409
Or e-mail: Nobaker@KSBE.EDU

THINGS TO BRING:
Veil, gloves, smoker, sunscreen, bee-suit, hive tools, honey samples, new gadgets and books to demonstrate. Don't forget anything for sale or trade!

LUNCH: Potluck main dish, salad or dessert and BYO beverages (please, no alcohol).

DIRECTIONS:
From Diamond Head Rd on Mauka side of Diamond Head Crater enter park through tunnel - drive to gate at end of public parking area.
Meet under Kiawe tree next to restrooms.

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Business card size	$ 7.50
Quarter page	$ 20.00
Half page	$ 35.00
Full page	$100.00

Copy, art and payment must be submitted by the 15th of the month prior to publication. Contact the editor for any special requirements and mechanical information.

CLASSIFIED ADS: 30 words, per issue:

HBA members	$ 2.00
Non-members	$ 3.00

MEMBERSHIP AND PUBLICATIONS … RENEW NOW FOR 2000 !!

Membership in the Hawai`i Beekeepers' Association is open to anyone who has an interest in bees and beekeeping. You do not need to own bees or reside in Hawai'i to join. HBA membership is $12 per person and includes a vote in HBA elections, discounts on other bee related publications, a subscription to ***HiBee News*** and more. Foreign membership is $20.

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Additional Voluntary Contribution $ _____. Please apply to (circle one) Research / General Fund.

Start your savings now! Get a discount on the following subscriptions through the HBA:

American Bee Journal	O 1 yr. $14.44	O 2 yrs. $27.38	O 3 yrs. $38.96
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3081 G. Paty Dr
Honolulu, HI 96822