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INFO C-03 TB-03 VLK-03 P-01 RA-01 PMU-01 EAP-04 X-01
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INFO OCT-00 COPY-01 ADS-00 INR-10 EUR-00 SS-00 10-15
NSF-02 L-03 EAP-00 EPAE-00 OES-00 ACDA-12 MCE-00
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R 21105Z MAY 84
FM AMEMBASSY BANGKOK
TO DIA WASHINGTON DC//DT-3B/DT-5//
CDR/FSTC CHARLOTTESVILLE VA//DRXST-FM/DRXST-CW//
CDR/CROC EDGEWOOD MD//DRSMC-RAI-C/DRSMC-CLB-R//
INFO SECSTATE WASHDC 1318
CORTEU ABERDEEN PROVING GROUND MD//SMCTE-OPE//
CIA WASHDC//OSWR//
USMISSION GENEVA
USMISSION USUN NEW YORK
AMEMBASSY PARIS
AMEMBASSY VIENTIANE
WHITENHOUSE WASHDC
SECDEF WASHDC//OSD-ISA//
USCINCPAC HONOLULU HI
COMIPAC HONOLULU HI
DIRNSA FT GEO MEADE MD
DA WASHDC//DAMI-FIT/DAMO-MCC//
CMOT/USACMS FT MCCLELLAN AL//ATZN-CM-CC/IASSG-MCL//
DIRAFMIC FT DETRICK MD//AFMIC-CR//
CDRUSAMRIID FT DETRICK MD

DAPM

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DEPT FOR PM/TMP COL LEONARD
CIA
SECDEF FOR OSD-ISA LTCOL WISE
DA FOR DAMO-MCC COL ORTON
GENEVA FOR U.S. CD DEL AND USSCC

Bees

EO 12356: NA
TAGS: MOPS, PINR, TH, CB, LA
SUBJECT: CBV SAMPLES; TH-840515-1MS TO 7MS;
TH-840516-1MS TO 4MS, TH-840517-1MS TO 10MS;
TH-840518-10S; TH-840519-10S TO 40S.
REF: A. BKK 10775 28013Z FEB 84, B. BKK 11000
010611Z MAR 84, C. BKK 11615 050148Z MAR 84, D. BKK
11955 070234Z MAR 84, E. BKK 18465 091152Z APR 84,
F. BKK 22780 020919Z MAY 84, G. STATE 139713
120216Z MAY 84.

- 1. THIS IS AN INFO REPORT.
- 2. (U) SHIPPING INFORMATION: TO FOLLOW.
- 3. (U) PHYSICAL DESCRIPTION:

A. KASETSART UNIVERSITY CAMPUS AT KAM PHAENG SAEN DISTRICT, NAKORN PATHOM PROVINCE; MAY 15, 1984.

TH-840515-1MS- MANGO LEAF CONTROL (NO SPOTS).
TH-840515-2MS- BANANA LEAF CONTROL (NO SPOTS).
TH-840515-3MS- BANANA LEAF CONTROL (NO SPOTS).
TH-840515-4MS- MANGO LEAF WITH YELLOW SPOTS.
TH-840515-5MS- LARGE BANANA LEAF WITH YELLOW SPOTS.
TH-840515-6MS- SMALL BANANA LEAF SECTION WITH YELLOW SPOTS.
TH-840515-7MS- ASSORTED LEAVES WITH YELLOW SPOTS.

B. KHAO YAI NATIONAL PARK, NAKORN RACHASIMA PROVINCE; MAY 16, 1984.

TH-840516-1MS- LEAF WITH YELLOW SPOTS.
TH-840516-2MS- LEAF WITH YELLOW SPOTS.
TH-840516-3MS- CONTROL LEAF (NO SPOTS).
TH-840516-4MS- BANANA LEAVES WITH YELLOW SPOTS (UNREFRIGERATED).

C. KHAO YAI NATIONAL PARK; MAY 17, 1984.

TH-840517-1MS THROUGH 10MS-PAPER PANELS WITH YELLOW SPOTS.

D. KHUA MUNG BUDDHIST TEMPLE, SARAPHI DISTRICT, CHIANG MAI PROVINCE; MAY 18, 1984.

TH-840518-10S- PIECE OF COMB FROM DORSATA NEST FROM TREE IN TEMPLE GROUNDS.

E. JEDI LUANG BUDDHIST TEMPLE, CHIANG MAI CITY; MAY 19, 1984.

TH-840519-10S- LEAF WITH YELLOW SPOTS.
TH-840519-20S- CONTROL LEAF (NO SPOTS).

F. KHUA MUNG BUDDHIST TEMPLE, MAY 19, 1984.

TH-840519-30S- HONEY MOST PROBABLY FROM APIS DORSATA NEST PREVIOUSLY DONATED BY VILLAGERS TO ABBOT OF TEMPLE.

G. CHIANG MAI CITY; MAY 19, 1984.

TH-840519-40S- COMMERCIAL HONEY FROM APIS MELLIFERA AS A CONTROL FOR DORSATA PRODUCED HONEY.

4. SPECIAL HANDLING REQUIREMENTS: ONE ICE CHEST WITH DRY ICE AND ONE WOODEN CONTAINER WITHOUT ICE.

5. DETAILS OF COLLECTION: THIS SAMPLE SERIES RESULTS FROM THREE TRIPS MADE BY THE TEAM CHIEF, PHYSICIAN, AND DR. PONGTHEP ABRATANAKUL TO INVESTIGATE THE THEORY OF DR. MATTHEW MESELSON THAT SOUTH EAST ASIAN WILD HONEY BEES DEFECATE IN MASS RESULTING IN THE YELLOW SPOTTING OF THE ENVIRONMENT.

A. THE TEAM MEMBERS MET WITH DR. PONGTHEP AT THE KAM PHAENG SAEN CAMPUS OF KASETSART (AGRICULTURE SCIENCE) UNIVERSITY (PR 0752) ON MAY 15, 1984 TO DISCUSS BEE BEHAVIOR AND OBSERVE NESTS OF APIS FLOREA AND APIS DORSATA. SPECIMENS OF SPOTTED LEAVES AND CONTROLS WERE COLLECTED AND IMMEDIATELY PLACED ON ICE AND HAVE BEEN MAINTAINED EVER SINCE IN A COOLED STATE. PICTURES OF SPOTS ON LEAVES WILL BE HAND CARRIED TO WASH. BY TEAM PHYSICIAN FOR PRESENTATION AT THE MAY 23 MEETING AT THE SURGEON GENERAL'S OFFICES. B. ON MAY 16 AND 17, THE TEAM MEMBERS ACCOMPANIED DR. PONGTHEP TO KHAO YAI NATIONAL PARK TO STUDY APIS DORSATA EXCREMENT PATTERNS IN THE WILD. THE AREA OF STUDY (QS 5701) CONTAINED A TREE WITH THREE DORSATA NESTS. THE TEAM OBSERVED A 200 METER BY 135 METER AREA OF YELLOW SPOTS ON VEGETATION AND ROCKS. THE HEAVIEST CONCENTRATION WAS DUE NORTH (HEADING DOWNSLOPE TO VALLEY) OF APPROXIMATELY 36 METERS IN WIDTH AND EXTENDED MORE THAN 135 METERS DOWNSLOPE. THE TEAM DID NOT ATTEMPT TO MEASURE THE FULL NORTHERN LENGTH OF THE SWATH DUE TO THE STEEPNESS OF THE FALL AND HEAVY VEGETATION FURTHER NORTH. DR. PONGTHEP OPINED THAT THE SWATH'S WIDTH WAS AFFECTED BY HIGH TREE LINES AND CURVED TO THE NORTH EAST BECAUSE OF THESE OBSTACLES. THE SPOTS WERE INFREQUENTLY SEEN

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OUTSIDE THE HEAVY CONCENTRATION AREA BUT WITHIN THAT
AREA THE SPOTS WERE VERY EVIDENT. PICTURES WILL BE
PROVIDED BY DR. SAURI FOR THE MAY 21 MEETING.

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SQUARE WERE PLACED IN THE DIRECTION OF MAXIMUM
CONCENTRATION OF OLD SPOTS (WESTWARD FROM THE TREE).
THE PERIOD OF STUDY BETWEEN 1215 HRS AND 1618 HRS ON
MAY 18 PRODUCED THE FOLLOWING RESULTS:

1. ELEVEN 0.4847 METER SQUARE WHITE CARDBOARD
PANELS WERE LAID OUT AT 1430 HOURS ON MAY 16, ALONG
THE SWATH OF HEAVIEST DENSITY 40 METERS TO 135 METERS
FROM THE CENTRAL TREE CONTAINING THE THREE NESTS OF
APIS DORSATA. THE LAYING OUT OF THE PANELS WAS
FACILITATED BY THE MANY WILD ELEPHANT TRAILS IN THE
AREA. THE SHEETS WERE EXAMINED AT THREE SUBSEQUENT
TIMES WITH THE FOLLOWING RESULTS:

CARD NUMBER	TIME 5-16-84 1800 HRS.	TIME 5-17-84 0545 HRS.	TIME 5-17-84 1200 HRS.
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-	1	3	0	LOST
-	2	2	3	2
-	3	1	12	0
-	4	4	1	0
-	5	10	6	0
-	6	10	5	0
-	7	3	5	0
-	8	6	3	2
-	9	14	6	0
-	10	8	1	2
-	11	0	12	0
-	TOTAL	61	54	6

AVERAGE/PANEL 5.6 4.9 0.6

2. PANEL #1 WAS NOT FOUND ON RETURN FOR THE
THIRD READING AND IS MARKED AS LOST.

3. THE REMAINING 10 PAPER PANELS HAVE BEEN
DESIGNATED CBW SAMPLES TN-840517-1MS THROUGH 10MS AND
WILL BE SENT TO CROC IN THE SAME SHIPMENT BUT A
SEPARATE CONTAINER FROM THE SAMPLES MAINTAINED IN A
COOLED STATE.

4. THREE SMALL SPECIMENS (INCLUDING ONE
CONTROL) WERE COLLECTED FROM THE CENTRAL SWATH AREA
AND PLACED IN JARS WHICH WERE IMMEDIATELY PLACED ON
ICE.

5. SEVERAL BANANA LEAVES WERE COLLECTED BY DR.
PONGTHEP AND THESE WERE PLACED IN A MYLAR BAG AND
HAVE BEEN KEPT IN AN UNREFRIGERATED STATE. THEY WILL
BE TRANSMITTED TO CROC IN THE SAME CONTAINER AS THE
10 PAPER PANELS AND THE SITE SKETCHES OF THE
COLLECTION AREAS IN KHAC YAI AND CHIANG MAI.

6. BEES WERE INFREQUENTLY SEEN GATHERING POLLEN
FROM FLOWERS AND SALT FROM TEAM MEMBERS' SWEAT. THE
MAXIMUM RATE OF SPOT DEPOSITION OBSERVED OVER A FIVE
AND ONE HALF HOUR PERIOD WAS 11.1 SPOTS PER SQUARE
METER WHICH OCCURRED OVER THE CENTRAL SWATH DURING
THE AFTERNOON.

C. THE TEAM MEMBERS AND DR. PONGTHEP TRAVELLED TO
CHIANG MAI ON MAY 18 AND 19 AND STUDIED DORSATA
EXCREMENT PATTERNS IN URBAN AND RURAL SETTINGS. THE
STUDY AREAS WERE ON THE GROUNDS OF TWO BUDDHIST
TEMPLES (WATS) AS THE BEES ARE USUALLY PROTECTED FROM
MONEY GATHERERS BY THE MONKS AND THE TEAM COULD WORK
UNDISTURBED BY CROWDS OF ONLOOKERS.

1. THE RURAL STUDY AREA WAS AT VAT KHUA MUNG
(MA 988643) IN SERAPI DISTRICT OF CHIANG MAI
PROVINCE. THE TEMPLE GROUNDS CONTAINED A TREE WITH
30 DORSATA NESTS AND FIVE PAPER PANELS OF 0.42 METER

CARD NUMBER	NUMBER OF SPOTS	
-	1	94
-	2	41
-	3	73
-	4	59
-	5	19

THE CARD AVERAGE IS 57.2 SPOTS OR A CONCENTRATION OF
136.2 SPOTS PER SQUARE METER. THE MAXIMUM RATE OF
SPOTTING OBSERVED WAS 32.2 PER SQUARE METER PER HOUR.

2. AN ATTEMPT WAS MADE TO STUDY THE TEMPORAL
DISTRIBUTION OF SPOTTING AS WAS DONE IN KHAC YAI
NATIONAL PARK BUT A HEAVY WIND STORM AT 2230 HOURS ON
MAY 18, SCATTERED THE PANELS AND THE MONKS BROUGHT
THEM INDOORS TO PRESERVE THEM.

3. A COMB THAT HAD BEEN PREVIOUSLY DISLOOSED BY
WIND FROM THE TREE IN THE KHUA MUNG TEMPLE GROUNDS
WAS DONATED TO THE TEAM BY *(Signature)* A
PIECE OF THIS IS CBW SAMPLE TN-840518-10S. IT HAS
BEEN FROZEN 24 HOURS TO KILL BEE MITE EGGS AND COMB
MOTHS. IT IS OFFERED TO EXPLORE THE POSSIBILITY OF
FUSARIUM GROWTH AND TRICOTHECENE PRODUCTION IN THE
BEES' IMMEDIATE ENVIRONMENT.

4. THE TEAM PHYSICIAN AND THAI NATIONAL ETHNIC
HMONG INTERPRETER WERE CAUGHT IN A SMALL BEE FECES
SHOWER AT APPROXIMATELY 1630 HOURS ON MAY 18. THE
BEES WERE SEEN FLYING APPROXIMATELY 40 TO 50 FEET
ABOVE AND PASSING OVER AT A SPEED OF APPROXIMATELY 20
MPH. THE DEFECATING BEES WERE SEEN ONLY WITH
DIFFICULTY.

5. DURING THE SHOWER, THE TEAM CHIEF WAS
CONSULTING WITH THE TEMPLE'S ABBOT WHO CONFIRMED THAT
BEE FECES SHOWERS REGULARLY TAKE PLACE ON THE TEMPLE
GROUNDS.

6. THE ABBOT DONATED ONE BOTTLE OF HONEY TO THE
TEAM. DR. PONGTHEP OPINED THAT IT IS DORSATA HONEY
PRODUCED FROM BEES COLLECTING NECTAR FROM LONG AN
FLOWERS. IT IS OFFERED TO EXPLORE THE POSSIBILITY OF
FUSARIUM GROWTH AND TRICOTHECENE PRODUCTION IN
DORSATA HONEY. IT HAS BEEN REFRIGERATED SINCE MAY 20
BUT HAS MOST PROBABLY BEEN UNREFRIGERATED FOR AN
EXTENDED PERIOD BEFORE THAT.

7. NEAR WAT KHUA MUNG WAS ANOTHER TEMPLE. NEAR
THAT TEMPLE STANDS A TREE WITH DORSATA NESTS. DR.
PONGTHEP INFORMED THE TEAM THAT BEES FROM THAT NEST
HAD SHOWERED BEE FECES ON DR. MEELSON AND DR. SEELEY
DURING THEIR TRIP TO THAILAND IN MARCH 1984. THAT
AREA WAS NOT STUDIED NOR WAS THE SURVEY AT VAT KHUA
MUNG REPEATED BECAUSE OF TIME CONSTRAINTS.

8. WAT JEDI (LUANG (MA 989769) IN THE OLD
POSITION OF CHIANG MAI CITY CONTAINED A TREE WITH 12
DORSATA NESTS. FIVE 0.42 SQUARE METER PAPER PANELS
WERE PLACED ALONG THE TRACKS OF MAXIMUM SPOTTING (TO
THE NORTH) AT 1512 HOURS ON MAY 18 AND AT 1840 HOURS
THE SAME DAY THE FOLLOWING READING WAS TAKEN:

CARD NUMBER	NUMBER OF SPOTS
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THE AVERAGE PANEL SPOTTING WAS 15.4 SPOTS OR AN AVERAGE CONCENTRATION OF 35.6 SPOTS PER SQUARE METER. THE RATE OF SPOTTING DURING THIS PERIOD WAS 11.1 SPOTS PER SQUARE METER PER HOUR.

9. DUE TO THE SAME STORM THAT DISRUPTED THE SURVEY AT WAT KHUA HUNG, THE TEAM LOST TWO OF THE CARDS AND THE REMAINDER HAD BLOWN AWAY FROM THEIR INITIAL PLACEMENT AND FOLDED UPON THEMSELVES. DUE TO TIME CONSTRAINTS, THE TEAM COULD NOT REPEAT THE SURVEY.

10. A LEAF WITH YELLOW SPOTS AND ONE WITHOUT SPOTS (CONTROL) WERE COLLECTED AND REFRIGERATED SOON AFTER.

6. SYMPTOMOLOGY: NONE.

7. THIS SAMPLE HAS NOT BEEN SHARED WITH THE ROYAL THAI ARMED FORCES. DR. PONGTHEP WAS ENCOURAGED TO PROVIDE A REPORT TO CONCERNED THAI ACADEMIC, GOVERNMENTAL, AND MILITARY AUTHORITIES AND HE STATED THAT HE WOULD MAKE SUCH A REPORT. TEAM MEMBERS PROVIDED DR. PONGTHEP WITH TWO PAPER PANELS CONTAINING YELLOW SPOTS FROM THE CHIANG MAI PORTION OF THE INVESTIGATION TO FACILITATE HIS REPORT.

USDAO BANGKOK HAS STATED THAT THE FORWARDING OF THIS INFORMATION IS IN PARTIAL FULFILLMENT OF THE FOLLOWING CIR'S: C-JT2-48484/U-UPH-42715.

8. OTHER DETAILS:

A. PHOTOS OF THE STUDY SITES AND RELATED MATTERS WILL BE PROVIDED BY DR. SAURI AT THE MAY 23 MEETING AT THE SURGEON GENERAL'S OFFICES.

B. SKETCHES OF THE COLLECTION LAYOUTS AT KHAO YAI AND THE TWO TEMPLES IN CHIANG MAI WILL BE SENT WITH THE COLLECTION PANELS FROM KHAO YAI TO CROC.

C. DR. PONGTHEP STATED THAT HE NEVER NOTICED BEE FECES DEPOSITS IN ALL HIS YEARS OF WORK UNTIL THE PRESENT YELLOW RAIN CONTROVERSY AROSE. HE NOTED THAT THE SCIENTIFIC KNOWLEDGE OF THE DEFECACTION HABITS OF THE FOUR SPECIES OF BEES FOUND IN THAILAND IS RATHER SKIMPY. THE FOUR SPECIES ARE APIS FLOREA, APIS CERANA, APIS DORSASTA, APIS MELLIFERA AND THE TRICOMA SPECIES OF WILD STINGLESS HONEY BEES.

D. DR. PONGTHEP STATED THAT HE HAD BEEN ADVISED BY FRIENDS NOT TO ASSIST THE CBW TEAM IN THE STUDY BECAUSE OF ITS POLITICAL CONTENT BUT HE BELIEVED THAT IT WAS HIS DUTY TO PROVIDE FACTS. THE TEAM CHIEF ASSURED DR. PONGTHEP THAT THE TEAM WAS SINCERE AND MOTIVATED BY SCIENTIFIC AND NOT POLITICAL CONSIDERATIONS.

9. COMMENTS: THE YELLOW SPOTS OBSERVED DURING THIS STUDY APPEAR SIMILAR IN SIZE, COLOR, AND CONSISTENCY TO THE YELLOW SPOTS PREVIOUSLY OBSERVED BY TEAM MEMBERS (REFS A THROUGH D). THE ROLE OF SOPHISTICATED CHEMICAL ANALYSIS IN ESTABLISHING THE ORIGIN OF YELLOW SPOTS IS CRITICAL AND, IT APPEARS, THE ONLY WAY TO SEPARATE HUMAN INTERVENTION IN THE FORM OF CHEMICAL WELFARE FROM NATURAL PHENOMENA.

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