

ANTS

JUNE

1978-1979

7530-00-243-9369

FEDERAL SUPPLY SERVICE

(GPO)

140

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16 May

SF TR# 8

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	Mura	Syrup
1	~150 M. min, 2 F. pall	20 M. min, 3 F. pall
2	~35 M. min	~50 M. min
3	~15 Myrm. amer	5 M. americana
4	7 Myrmica amer.	23 M. amer.
5	~10 Lasius Lasius	Lasius
6	~4 F. pallide	~10 F. pallide
7	~200 M. min	~150 M. min
8	~100 M. min	~300 M. min
9	~50 M. min	3 M. min
10	2 A. treatae	2 F. pallide
11	~50 M. min	~200 M. min
12	3 Cremat (Celt) ^{lineolata} more w/ry	~75 M. min
13	~50 M. min	4 F. pallid
14	10 M. min treatae	30 M. min
15	1 F. pallide	~20 M. min
16	~100 M. min	1 F. pallide
17	~125 M. min	1 F. pallid
18	1 F. pall.	~40 M. treatae
19	2 A. treatae	0
20	6 A. treatae	6 F. pallide
21	~750 M. min	1 Lept. ambiguus
22	50 M. min	~150 M. min
23	2 F. pallide	~200 F. Pall.
24	~10 Fl. neo	~200 M. min
25	10 L. neo opposite	6 F. pall 6 L. neo
26	8 M. min 3 sides of bait	2 Myrm. amer 2 T. simile
27	~200 M. min	45 L. neo
28		1 L. neo
29		~2 M. min, 1 Myrm. Amer.

Lasius all over fauna; MONOS
 on desc - v. little contact - surge
 Lasius avoid Monoc column

* very fast movement w.
 mutual avo. done by
 all spp.

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moisture probes

depth fr. stream	Knotted	Unknotted
0	8.5	8.5
2	(1.5)	10.0
4	9.25	9.25
6	9.50	9.0
8	9.5	9.5
10m	9.5	9.5

✓ 16 May SF TR#4

Thruva Symp

(stream dry - just wet mud)

0	2 T. sessile	2 T. sessile
2	0	8 T. sessile
4	0	1 Myrmica punct.
6	0 (+ 1 slug)	5 F. subsericea
8m	2 F. subsericea	1 Myrmica 1 F. subsericea
10m	2 F. sub 1 M. punct.	2 T. sess 2 F. sub
15	~40 M. Min 1 F. sub	1 T. sess 5 M. Min 2 F. subsericea
20	~50 M. Min	5 M. Min
25	~20 M. Min	5 M. Min (Pernicia wdg)
30	~50 Cremat. lineolata	3 I. pr. rosaeum
35	~65 M. Min	35 Cremat (coll. in lineolata v. alw. spider)
40	~45 M. Min 1 T. sessile	~9 M. Min 2 I. pr. rosaeum (avoiding M. Min)
45	10 Cremat (coll)	20 I. pr. rosaeum, 1 M. Min
50	~5 I. pr. rosaeum	~30 I. pr. rosaeum
55	~150	~80 M. Min
60	~150 M. Min	~15 M. Min (fighting)

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temp { air 29
ground 35

clear, calm, dry

17 May

Stevens Field

Daisies in bloom everywhere

TR # 9 (Yellow-Field)

tuva

sugar

1	25 M. min 2 F. pallid.	~50 M. min.
2	~15 M. min (+2 hemipt.)	0
3	0	0
4	0	0
5	1 M. min (+2 hemipt)	0
6	0	0
7	0	0
8	0 (+4 hemipt)	0
9	0 (+1 Hemipt)	0
10	1 Ph. davisi	0
11	0	~5 Ph. davisi just off leaf
12	0	0
13	0	0 (Lasius nigr)
14	~10 Ph. davisi (Colony nigr)	0
15	2 F. pallid	~20 L. prinosum *
16	2 L. prinosum	4 F. pallidifolva
17	3 L. prinosum	5 M. min
18	~12 M. min	2 L. prinosum
19	5 L. prinosum	2 L. prinosum
20	~60 M. min	15 M. min
*	4 Lasius neo.	0

* Single Irid. can displace a fornic - they do so continually.

NOTE: lower part of transect (below Sta. 8 or so) becomes drier w. more bare ground showing,

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17 May

Stevens Field

TR # 5

	Tuna	Symp
0	1 C. ferrug. 4 T. sessile	3 T. sessile
2		
4	1 P. melanurus	0
6	1 C. neochloris	0
8	0	0
10	0	0
15	1 T. sessile	2 T. sessile
20	1 T. sessile	1 T. sessile ✓
25	1 H. subsericea	1 T. sessile coll
30	30 M. min 2 F. pal, 1 F. subs.	~40 M. min
35	6 M. min 6 F. pallid.	1 F. pall (dead) 2 Casius (dead)
40	8 Cremat. lineolata ~35 M. min	1 A. tritata, 20 M. min
45	~15 Cremat. lineolata 2 F. pallid	0 (coll covered in mud)
50	~40 Cremat. lineolata 1 A. tritata	2 P. mel. V. Schauf.

* Mostly Separated on opposite sides - a lot of Posturing & pointing abdomen - No real fighting seen

** Formica driven off repeatedly by Single Cremat.

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31 March

TR #1 area

w. Steve Vail looking at P. imparis

Some ♂♂ running around on
leaf litter. Ants active at Tuna bait
(~20 ants). 5 nest entrances
marked in area of ~6 x 6'.

25 P. imparis marked w.
dot of red paint at one nest
on hillside.

P. imp. on tree trunk gathering
sap from saproxylic holes in
Mockernut Hickory at top of TR #1

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12 Sept.

Polyergus lucidus

On the same day Steve Vail & Ed
Bolinley independently discovered
this species - first records for ORCA.
Ed had them coming to bait w.
F. pallidipulva in Sturmsfield
(syrup bait) along TR #4.

Steve found colony along rd to
Western Triangle just w. of "T"
in road below Brownie's trailer.

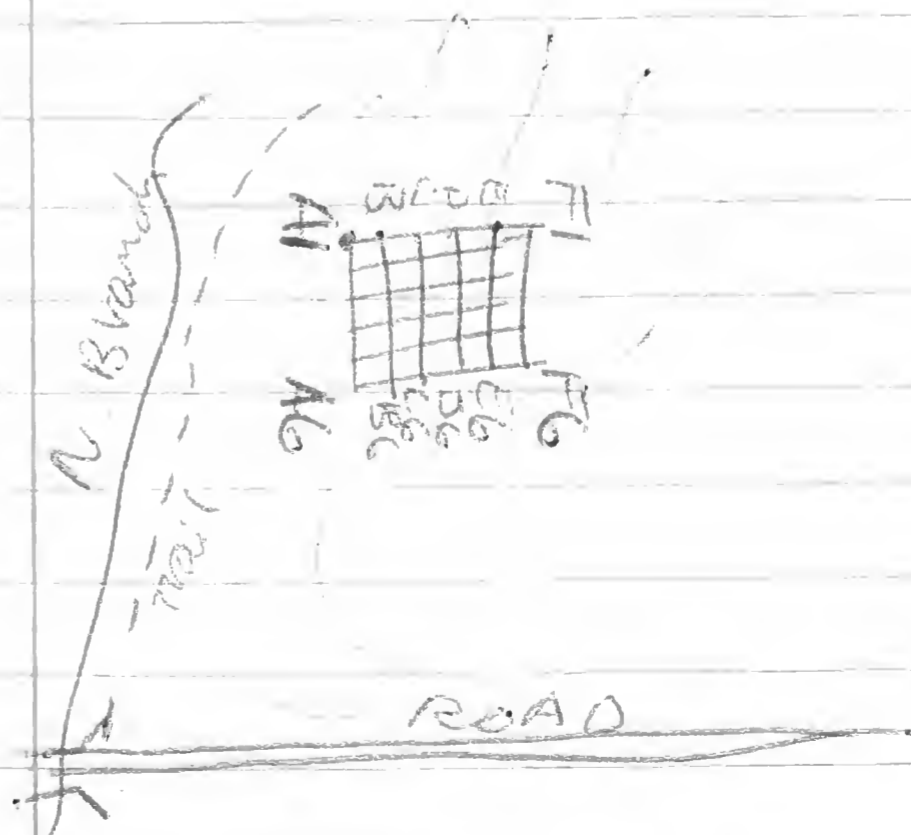
These ants look superficially
like F. integra, but ~~are~~ have
red gaster instead of black.
legs and antennae infuscated
noticeably.

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25 Sept.

1400 - Went out to N. Branch area to work w. Steve Vail locating colonies of ants. He's been surveying 5x5m plots and putting baits out every 1m ($\Sigma = 36$ baits/plot) - Then follows ants home to locate colonies. Warm, pleasant day w. temp in mid 70's. Clear sky & low humidity.

1 set out baits at 1415 & recorded activity periodically (every 0.5h)



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25 Sept.

Check #1

1430-45 [T₀ + 15 min → 30 min]

A1	1 Pump 1 Pmel
A2	1 Anud
A3	(recruited from P42 0.5m away) Pump, 6 Anudis (Pump chases) (avoid avoids)
A4	3 Anudis 1 Pmel
A5	2 Anudis
A6	30 Pump, 1 Anudis (avoids)
B1	MT
B2	3 Anudis, 1 Pump, 4 Pmel
B3	~ 50 Pump
B4	~ 65 Pump
B5	5 Anudis
B6	4 Pump (fighting), 3 Anudis, 2 Pmel
C1	20 Pump, 1 F. Sub (avoiding)
C2	13 Pump
C3	~ 15 Pump
C4	~ 40 Pump (recruiting from previously marked nest P16-1 - 0.3m away - getting tomatoes)
C5	15 Pump
C6	~ 30 Pump
D1	4 Anudis
D2	1 Anudis - avoids Pump
D3	4 Anudis (1 full), 1 Pump
D4	3 Anudis
D5	20 Pump
D6	18 Pump, 2 P. mel (avoid, but Pump doesn't chase)

E1	1 Anudis, 3 P. mel
E2	10 Anudis
E3	1 Anudis (+ 1 cricket)
E4	4 Anudis
E5	~ 12 Anudis
E6	30 Anudis (no fighting)
F1	11 Anudis
F2	~ 35 Pump (recruited from previously marked nest P39) (no fighting)
F3	~ 45 Anudis (no fighting)
F4	5 Anudis
F5	12 Anudis (fighting)
F6	~ 90 Pump (incl. 1 green worked), 1 Pmel

→ nest marked ~ 0.3 m away

- Food items observed:
- 1) several Pump attacking 1.5cm caterpillar
 - 2) Anudis dragging sm. centipede
 - 3) several Pump attacking lg. Mar. band Hemipt
 - 4) Pump carrying termite
 - 5) Pump .. fungus goat

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Check # 2

1500-1515 (T+30.)

A1 ~ 25 Pimp, 2 Pmel (avoid), 1 Dred (avoid)
 A2 ~ 70 Pimp (C. ferr nearby)
 A3 ~ 90 Pimp
 A4 ~ 50 Pimp
 A5 ~ 100 Pimp
 A6 ~ 130 Pimp

B1 ~ 60 Pimp, 1 A. nedis (avoid)
 B2 30 Pimp, 1 A. nedis (avoid)
 B3 ~ 100 Pimp
 B4 50 Pimp
 B5 2 Pimp
 B6 8 Pimp, 3 Pmel, 1 C. curv.

C1 ~ 35 Pimp
 C2 ~ 40 Pimp
 C3 ~ 25 Pimp
 C4 ~ 35 Pimp
 C5 ~ 50 Pimp
 C6 ~ 90 Pimp

D1 6 A. nedis
 D2 ~ 20 Pimp
 D3 ~ 10 A. nedis
 D4 1 A. nedis
 D5 ~ 35 Pimp
 D6 ~ 30 Pimp

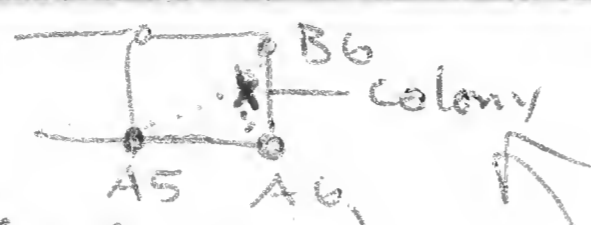
E1 5 Pmel, 1 A. nedis
 E2 12 A. nedis
 E3 2 A. nedis
 E4 9 Aph. (nedis?)
 E5 ~ 30 A. Pimp.
 E6 ~ 25 A. nedis

F1 ~ 90 Pimp
 F2 ~ 150 Pimp
 F3 20 A. nedis
 F4 ~ 125 Pimp
 F5 10 A. nedis (fighting)
 F6 ~ 120 Pimp

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Check #3 25 Sept. (Cont'd)

15:30-45 (7+60 min)



- A1 ~40 Pimp
- A2 ~50 Pimp
- A3 ~120 Pimp
- A4 ~75 Pimp
- A5 ~50 Pimp
- A6 ~80 Pimp - recruiting to same colony as A6 ~1 m away
- B1 ~35 Pimp
- B2 ~40 Pimp
- B3 ~60 Pimp
- B4 ~80 Pimp
- B5 ~45 Pimp (recruiting to 'new' nest ~1 m away)
- B6 ~15 Pimp (recruiting to same colony as A6 ~0.5 away)
- C1 ~30 Pimp, 1 And (Avoids)
- C2 ~60 Pimp
- C3 ~35 Pimp
- C4 ~35 Pimp, 1 Pimp
- C5 ~30 Pimp (possibly recruited from same nest as B5)
- C6 ~160 Pimp
- O1 7 A. nedis
- O2 ~70 Pimp
- O3 8 A. nedis
- O4 5 Pimp, 2 A. nedis
- O5 ~40 Pimp
- O6 ~110 Pimp

- E1 2 Pimp
- E2 ~14 A. nedis
- E3 6 A. nedis
- E4 6 A. nedis
- E5 ~35 Pimp
- E6 ~18 A. nedis
- F1 ~180 Pimp
- F2 ~120 Pimp
- F3 7 A. nedis, 1 Pimp
- F4 ~120 Pimp
- F5 ~30 Pimp (2 are fighting)
- F6 ~100 Pimp

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25 Sept.

1600

Check #4

1190 mm

A1 ~70 Pimp
 A2 ~75 Pimp
 A3 ~150 Pimp
 A4 ~90 Pimp
 A5 ~90 Pimp
 A6 ~40 Pimp

~~A7~~
~~A8~~
~~A9~~
 B1 ~60 Pimp
 B2 ~70 Pimp
 B3 ~60 Pimp
 B4 ~100 Pimp
 B5 ~60 Pimp
 B6 ~60 Pimp

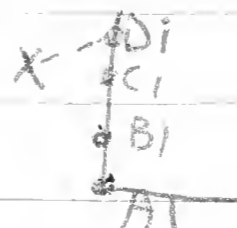
C1 ~50 Pimp
 C2 ~90 Pimp
 C2 ~50 Pimp, 1 Anolis (chased off)
 C3 ~70 Pimp
 C4 ~40 Pimp
 C5 ~35 Pimp
 C6 ~100 Pimp

D1 ~20 Anolis (2 Fighting)
 D2 4 ~~Anolis~~ 50 Pimp, 1 Anolis (chased off)
 D3 11 A. (Fulva?)
 D4 10 Pimp
 D5 ~40 Pimp
 D6 ~120 Pimp

E1 6 Pimp
 E2 5 Anolis, 1 Pimp (more P. i. nearby (A.v. attacks P. i., but seem disoriented))
 E3 6 Anolis
 E4 ~~130~~ 13 Pimp
 E5 ~30 Pimp
 E6 23 Anolis

F1 ~70 Pimp
 F2 ~150 Pimp
 F3 ~15 Anolis
 F4 ~180 Pimp
 F5 ~80 Pimp
 F6 ~150 Pimp

→ recruiting to 'new' colony ~ 1 m. away off grid



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25 Sept.
1630h

Check # 5
T+ 2.25h

A1	~170 Pimp
A2	~90 Pimp
A3	~100 Pimp
A4	~80 Pimp
A5	~80 Pimp
A6	~70 Pimp
A	
B1	~100 Pimp
B2	~70 Pimp
B3	~40 Pimp
B4	~90 Pimp, 1 Anid. (chased off)
B5	~50 Pimp
B6	~60 Pimp
C1	~60 Pimp
C2	~60 Pimp, 1 P. mel
C3	~75 Pimp
C4	~40 Pimp
C5	~30 Pimp
C6	~110 Pimp
D1	13 Anidus
D2	~70 Pimp
D3	2 Anid, 2 Pimp, 1 C. fern
D4	15 Pimp
D5	~30 Pimp
D6	~100 Pimp

E1	~70 Pimp
E2	~25 Pimp
E3	9 Anidus
E4	10 Anidus
E5	~50 Pimp
E6	~22 Anidus
F1	~55 Pimp
F2	~150 Pimp
F3	~30 A. rudis (several fighting)
F4	~130 Pimp
F5	~60 Pimp
F6	~100 Pimp

→ An starts to bite gaster of Pimp, then recoils

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26 Sept. N. Branch area (same as
25 Sept)

10:00 rebaited 36 stations on
The 5x5m quadrat where I
worked yesterday. I'd left tuna
at the bait stations when I
finished yesterday at 16:30,
but racoons had eaten it
all during the night (fresh
scat at edge of yard. *Peromyscus*
seeds in droppings) - noted
Peromyscus mobilized on seats.

Set out baits at 10:00. Temp
= 15°C (ground and air);
Clear, crisp, breezy, dry day -
much like yesterday, but T
lower than yesterday afternoon.

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26 Sept.

10:15

check #1
T₀+15 min

A1	8 Pimp
A2	7 Pimp
A3	~75 Pimp
A4	11 A rudis
A5	30 Pimp, 2 Pmel
A6	5 Pimp
B1	13 A rudis, 1 L. curvispinosus
B2	25 Pimp
B3	35 Pimp
B4	15 Pimp
B5	30 Pimp
B6	25 Pimp, 1 Pmel
C1	40 Pimp
C2	40 Pimp
C3	50 Pimp
C4	25 Pimp
C5	8 Pimp
C6	~60 Pimp
D1	3 Pimp
D2	0
D3	3 Pimp, 1 A rud (avoids)
D4	40 Pimp, 3 Pmel
D5	30 Pimp
D6	~120 Pimp

~~2 Myrmica~~
~~8 A rudis, 4 Pimp - off A.V.~~
~~in attack and drive~~

C1	20 Pimp
C2	1 A rudis
C3	2 Pmel
C4	20 Pimp
C5	5 A rudis, 1 Pimp
E1	8 A rudis, 4 Pimp (Pi. attack and drive off A.V.)
E2	~35 Pimp
E3	1 A rudis, 1 Pimp
E4	40 Pimp, 1 Pmel
E5	3 A rudis
E6	~75 Pimp

→ In 5 minutes I saw many interspecific encounters most fell into 2 categories.

- 1) A rudis detects Pimp (usually w. antennal contact) - avoids
- 2) Pimp detects A.r. - chases.

In two cases Pimp got hold of A.V.; doubled gaster over it appeared to spray A.V. - latter disoriented and STA 60° away

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10:30

T_g = 15°C
T_{air} = 15°C

Check thr
t + 30 min

A1 15 Pimp
 A2 25 Pimp
 A3 ~85 Pimp
 A4 15 A rudis, 3 Pimp
 A5 40 Pimp
 A6 20 Pimp, 1 Anid

A.v. try to attach
 Pimp, which go into
 gash-up depressive
 position of vessel attach

B1 9 A rudis, 1 Pimp (no interaction)
 B2 20 Pimp (incl. one marked green)
 B3 20 Pimp
 B4 18 Pimp
 B5 30 Pimp
 B6 40 Pimp

C1 ~20 Pimp
 C2 ~~20~~ 30 Pimp
 C3 30 Pimp
 C4 25 Pimp, 1 S. nemora (ignored)
 C5 20 Pimp
 C6 ~100 Pimp
 D1 8 Pimp
 D2 ~ 1 Pimp
 D3 15 Pimp
 D4 30 Pimp, 4 Pmel
 D5 25 Pimp
 D6 ~150 Pimp

E1 1 Myrmica
 E2 ~20 Pimp
 E3 1 Pimp
 E4 ~~12 Pimp~~ 12 Pmel
 E5 ~~60 Pimp~~ ~~12 Pimp~~
 E6 ~~5~~ 5 A rudis, 3 Pimp
 E7
 E8 12 Pimp
 E9 ~70 Pimp
 E10 3 A rudis, 1 Pmel
 E11 60 ~~Pimp~~ Pimp
 E12 2 Anid
 E13 ~60 ~~Pimp~~ Pimp

Food items:

~30 Pimp mobilized on dead wood cricket
 1 A. rudis carrying dead Pimp
 1 A. rudis dragging sm. dead beetle
 ~10 Pimp mobilized on dead cricket
 1 Anid carrying dead Pimp

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11:50 AM
T+1h

Check #3

A1	~65 Pimp
A2	~75 Pimp
A3	~120 Pimp
A4	4 Anelis, 3 Pimp
A5	~60 Pimp
A6	~30 Pimp
B1	20 Anelis
B2	15 Pimp, 1 Anel. (1 Pimp marked green)
B3	13 Pimp, 1 Pmel
B4	~20 Pimp
B5	~45 Pimp
B6	~50 Pimp
C1	~110 Pimp
C2	30 30 Pimp
C3	~30 Pimp
C4	~25 Pimp
C5	~35 Pimp
C6	~200 Pimp
D1	~35 Pimp
D2	0
D3	~50 Pimp
D4	~40 Pimp
D5	~25 Pimp
D6	~200 Pimp

E1	1 Myomila
E2	~30 Pimp
E3	~8 Pimp
E4	7 Pmel, 1 Anel
E5	~70 Pimp
E6	~25 Pimp
F1	~50 Pimp
F2	~90 Pimp
F3	2 Anelis, 4 Pmel
F4	~40 Pimp
F5	3 Pimp, 2 Anelis
F6	~70 Pimp

P.mel nest found in deep
litter nr A1 - many alate
♂♂ and ♀♀.

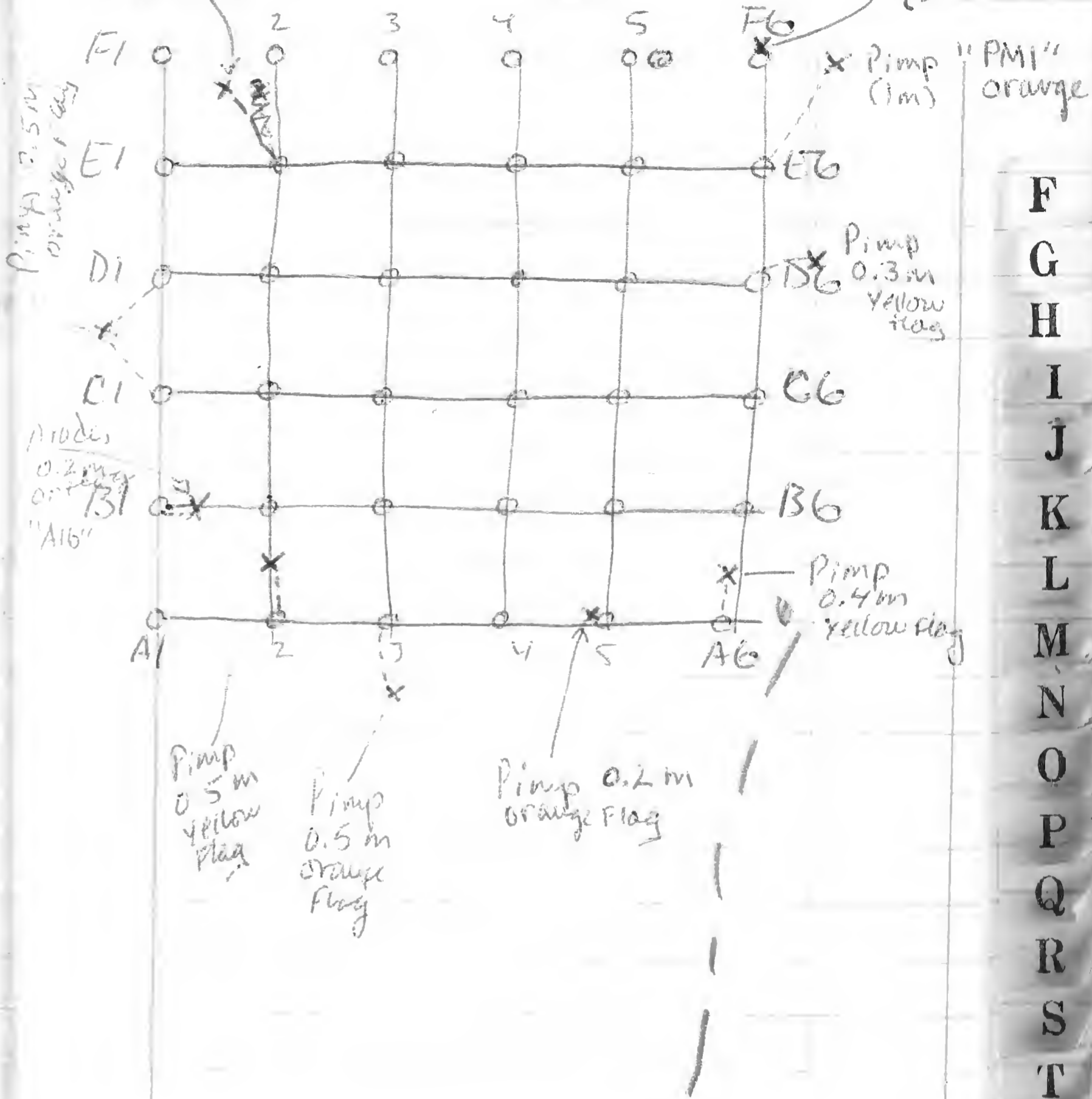
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25-26 SEP T

Location of nests where ants
Mobilizing on grid

Pimp 0.6m
orange flag

Pimp (5cm)



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11:30 AM

Check #4

T = 18°C

T₀ + 1.5

A1 - 100 Pump
 A2 ~ 75 Pump
 A3 ~ 110 Pump
 A4 14 Anolis (2 fighting)
 A5 - 75 Pump
 A6 30 Pump

B1 2) Anolis
 B2 ~ 22 Pump (incl green washed one)
 B3 ~ 70 Pump; 1 Pmel
 B4 ~ 30 Pump
 B5 40 Pump
 B6 35 Pump

C1 ~ 200 Pump
 C2 35 Pump
 C3 45 Pump
 C4 ~ 35 Pump
 C5 ~ 50 Pump
 C6 ~ 150 Pump

D1 40 Pump
 D2 2 Pump
 D3 70 Pump
 D4 40 Pump
 D5 ~ 20 Pump
 D6 ~ 130 Pump

E1 6 Pmel, 2 Myrmica
 E2 35 Pump
 E3 11 Pump
 E4 11 Pmel, 1 Anolis
 E5 ~ 70 Pump
 E6 ~ 60 Pump

F1 ~ 90 Pump
 F2 ~ 90 Pump
 F3 1 Anolis, 8 Pmel
 F4 - 90 Pump
 F5 3 Pump, 1 Anol, 1 Myrmica
 F6 ~ 55 Pump

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12:00

Check 5

17°C
Tot 2h

A1 ~80 Pump
 A2 ~50 Pump
 A3 ~120 Pump
 A4 5 Anidis
 A5 60 ~~the~~ Pump
 A6 ~~~30~~ 35 Pump

B1 19 Anidis
 B2 ~20 Pump (incl. green one)
 B3 ~35 Pump
 B4 ~40 Pump
 B5 30 Pump
 B6 35 Pump

C1 ~150 Pump
 C2 25 Pump
 C3 ~25 Pump
 C4 50 Pump
 C5 ~50 Pump
 C6 ~120 Pump

D1 55 Pump
 D2 2 Pump
 D3 55 Pump
 D4 60 Pump
 D5 25 Pump
 D6 ~150 Pump

E1 8 Pmel
 E2 ~25 Pump
 E3 20 Pump
 E4 12 Pmel, 1 Pump
 E5 ~110 Pump
 E6 ~55 Pump

F1 ~30 Pump
 F2 ~60 Pump
 F3 6 Anidis, 5 Pmel
 F4 ~70 Pump
 F5 3 Pump, 2 Myrmica
 F6 ~60 Pump

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13:00

T = 18°C

Check #6

T₀ + 3h

A1 ~70 Pump
 A2 ~60 Pump
 A3 ~85 Pump
 A4 ~40 Pump, 1 *Arad* (Aradid)
 A5 ~60 Pump
 A6 ~40 Pump

B1 17 *Arad*
 B2 ~20 Pump, 1 *Pmel*
 B3 ~25 Pump
 B4 ~30 Pump
 B5 ~35 Pump
 B6 ~25 Pump

C1 ~200 Pump + 2 ~~Arad~~
 C2 2 *Arad*
 C3 ~30 Pump
 C4 ~40 Pump
 C5 ~60 Pump
 C6 ~60 Pump

D1 ~50 Pump + 2 *E. subsericea* (Aradid)
 D2 ~30 Pump
 D3 ~80 Pump
 D4 ~55 Pump
 D5 ~30 Pump
 D6 ~100 Pump

E1 10 *P. mel*, 1 *P. iamp*
 E2 ~40 Pump
 E3 ~35 Pump
 E4 3 *P. mel*, 1 *Arad*
 E5 ~70 Pump
 E6 ~60 Pump

F1 ~50 Pump
 F2 ~80 Pump
 F3 12 *Arad*, 2 *P. mel*
 F4 ~75 Pump
 F5 8 Pump, 1 *L. curvicauda*
 F6 ~45 Pump

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Time = 1530

Check = 7

T = 18.5°C. ground
T = 17.5°C. air
T₀ + ~~35~~ 5.3h

A1	38 Pimp
A2	40 Pimp
A3	36 Pimp
A4	110 Pimp (dark colored Pimps)
A5	60 Pimp
A6	25 Pimp 1 A.rod 1 P.rod.

B1	7 A.rod, 1 L. cur.
B2	20 Pimp, 3 P.rod.
B3	25 Pimp, 1 A.rod, 2 P.rod.
B4	45 Pimp.
B5	35 Pimp.
B6	30 Pimp.

C1	200 Pimp.
C2	7 A.rod, 4 Pimp, 2 P.rod.
C3	1 A.rod, 7 Pimp.
C4	45 Pimp, 1 L. cur.
C5	40 Pimp
C6	50 Pimp, 1 P.rod.

D1	45 Pimp
D2	2 A.rod
D3	45 Pimp.
D4	40 Pimp, 1 P.rod.
D5	25 Pimp
D6	85 Pimp

L1	100 Pimp
L2	30 Pimp
L3	30 Pimp
L4	4 A.rod.
L5	70 Pimp, 1 A.rod.
L6	50 Pimp

L7	85 Pimp
L8	55 Pimp
L9	3 P.rod, 6 A.rod.
L10	110 Pimp.
L11	1 A.rod, 1 M. pan, 2 L. cur, 7 Pimp
L12	65 Pimp.

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Time =

Check # 8

T =

A1
 A2
 A3
 A4
 A5
 A6
~~A7~~
 B1
 B2
 B3
 B4
 B5
 B6

 C1
 C2
 C3
 C4
 C5
 C6

 D1
 D2
 D3
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 D6

C1
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 D1
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27 Sept

Experiment to determine influence of distance between colony and food source on size of mobilization.

T=19°C Sunny, dry, sl breeze

F6 Bait 10m B4 Bait

17:50		9:35 RATED
18:06	1st Pump on disc	
18:17	1st Pump on disc	
18:25	2nd Pump on disc, always at distance to food (near 2nd pump) 2nd Pump begins dragging 1st of geckle around edge of bait & moves it to nest 3rd Pump arrives.	
18:35	Milling group of 10 pup issuing from nest in direction of bait	
18:45	1st of new group on disc, soon followed by others. Not at all to target colony - but was less specific.	
18:55	12 Pump, 1 Pencil	
19:05		10 Pump (not on the way) (moved bait to 10m)
19:15	48 Pump (60m)	
19:25	move to 60m	
19:35		34 Pump (move to 6m)
19:50	45 Pump	
20:00	'entire' colony another colony arriving at distal end of water sheet - fighting going on	

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27 Sept Pump Speed test from bait

T: 20°C time 10:00

dist. cm	time (sec)	direction	MT
35-8	20	return	MT
10-11	26	"	"
10-45	42	out	MT
45-8	26	return	repl
10-45	21	out	MT
8-45	17	out	MT
55-8	32	ret	repl
8-65	29	out	MT
8-75	43	out	MT
85-8	53	ret	repl
8-85	39	out	MT
8-95	36	out	MT
95-8	60	ret	repl
95-8	64	ret	repl
95-8	58	ret	repl
8-95	33	out	MT
8-95	38	"	"
8-95	45	"	"
8-75	33	out	MT

note 11:08-11:15

30 second count - ... That I
 tried to monitor reversed direction
 when the fly to 80 cm dist-out
 bait

4.15, one wandered off into sink
 2 1/2 way there

velocity cm/min	dist. cm	time	ret	velocity cm/min
	67-13	33	ret. repl. etc	
	46-8	24	ret repl.	
	8-46	18	out-MT	
11:10	46-13	18	ret repl.	
	8-46	16	out MT	
	46-8	23	ret repl.	
11:10	8-46	21	out MT	
	8-26	6	out MT	
11:10	8-26	7	out MT	
	26-12	8	in-replate	
	26-8	9	in-replate	
	26-8	10	in-replate	
	8-26	7	out MT	
	8-45	16	out-replate	
	8-45	15	out-MT	
	45-6	19	in-replate	
	45-8	31	in-MT	
	8-45	21	out MT	
	8-45	26	out-MT	

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10 Sep +

Turnover data
sweep bait

P. imparis

10:00
start

NO. ANTS Entering & leaving bait in 2 min.

have

enter
|||||
|||||||
|

$\Sigma = 16 = 8/min$ $\Sigma = 15 = 7.5/min$ Bait 100 cm
fr nest

11:50 AM 49 on bait at end

5

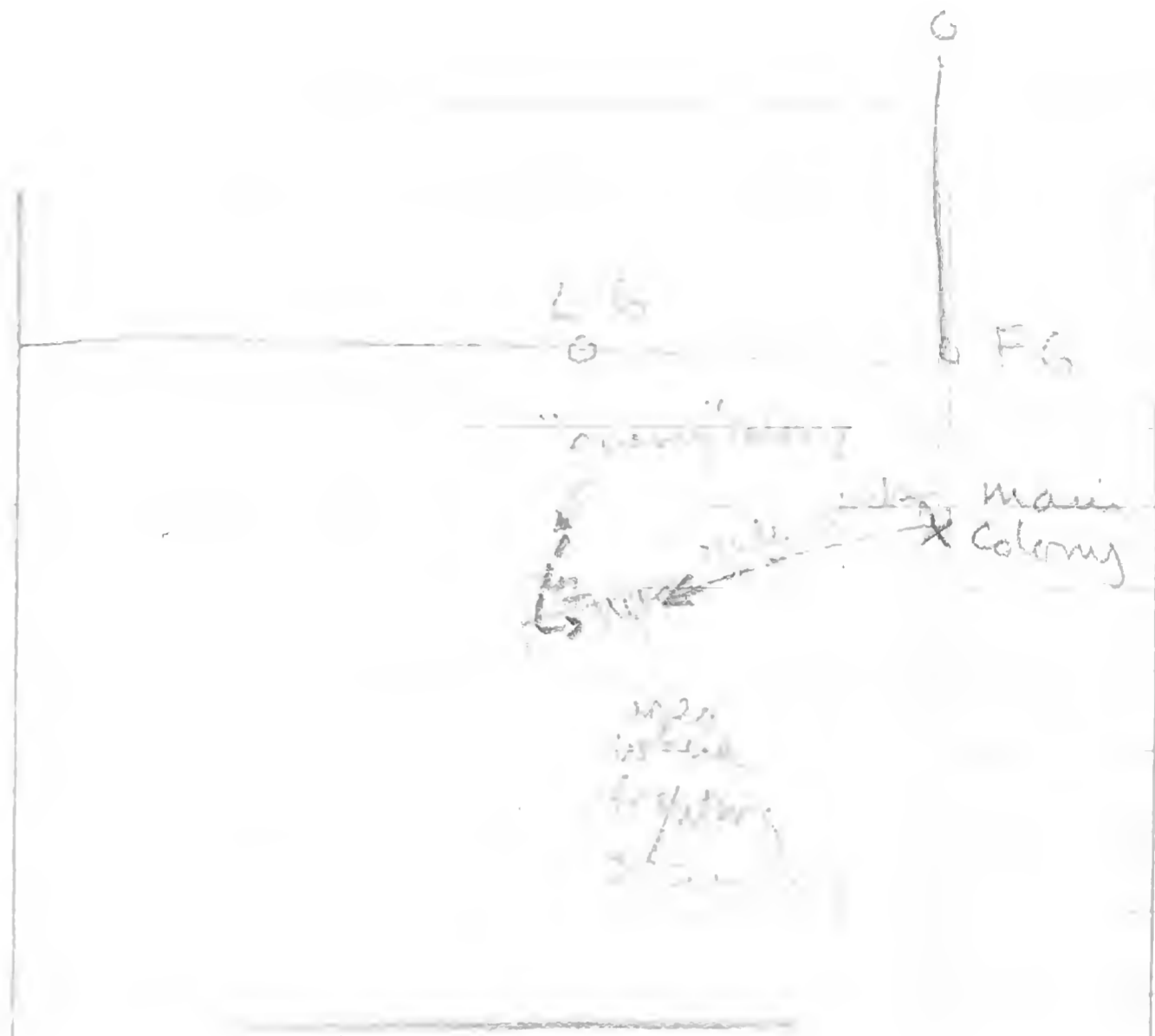
Bait
50 cm
fr nest

$\Sigma = 34$ $\Sigma = 31$
 $= 17/min$ ~ 90 on bait at end $= 15.5/min$

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did ~~the~~ census at 12:00 noon /
 then returned at 1:30
COUNTS

PM:			BY
Tot 15m	17	10cm	10
+ 45	48	50cm	34
+ 80	45	100cm	39
+ 120	90	50cm	74
+ 150	45	10cm	70
+ 240	65	50cm	105
+ 270	60	10cm	100



Notes:

Basic setup ok, but
 need to get into a longer
 time to equilibrate before
 starting manipulations.
 2h would probably be best.

New design: Start 6 lbs.
 colonies. Put bait at 50cm
 from each level for 2h.
 Return & count. Move 3
 colonies to 1m, 3 to 10cm.
 Return after 2h, count
 again.

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Mark recip colony

Painted Blue F6

$$34 + 26 + 24 = 84 \text{ marked}$$

From B4 Colony (Painted white)

$$30 + 31 = 61 \text{ marked}$$

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30 Sept. Same area as first

Retrieved to get more data on
foraging of friends vs distance, and
on their own nests at bait
Set up same 2 baige baits as
before. Time = 1330. T = 22.0°C

Weather sunny & clear. S. breeze in trees
Bait #1 is 20 dm from nest (1.50)

4:03 1st 1. The first bird is seen flying
near the bait. It is laying above the
bait. Nest is not active.

5:10 The 2nd bird is seen. It is
5:40 group of Pump appears at colony
near the bait. It is laying above the
bait. Nest is not active. The 1st bird is seen
near the bait. It is laying above the
bait. Nest is not active.

7:00 13 Pump at bait. Nest is active.
The 1st bird is seen near the bait.
It is laying above the bait. Nest is
not active.

- *10:00 24 Pump at bait
- 15:00 60 Pump (4 of them marked)
- 21:00 50 Pump (3 marked)
- 23:00 marked bait = 40 cm
- 4/ 45 Pump (2 marked)

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30 Sept
(Cont'd)

13 CHS 1518725

BAIT 311 - Start at 20 cm

	Start	End	Dist	Time	repeats?	V (cm/sec)
13:00	6	16	10	6	no	1.67
	6	16	10	5	no	2.00
	6	16	10	13	no	.77
	6	16	10	6	no	1.67
14:00	16	6	10	6	no	1.67
	6	16	10	13	no	.77
	6	16	10	6	no	1.67
	6	16	10	9	no	1.11
	6	16	10	11	no	0.91
	6	16	10	9	no	1.11
	6	16	10	10	no	1.00
	16	6	10	7	yes	1.11
	16	6	10	7	yes	1.11
	16	6	10	8	yes	1.25
	16	6	10	8	yes	1.25
20:00	16	6	10	2	yes	1.67
	16	6	10	10	yes	1.00
	16	6	10	7	yes	1.43
	16	6	10	7		1.11
	16	6	10	7		1.43
----- Moved to 40 cm -----						
	6	36	30	35	no	.86
	6	36	30	25	no	1.20
	6	36	30	27	no	1.11
21:00	6	36	30	32	no	.94
	6	36	30	24	no	1.25

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Part #2

T = 23 minutes	23 Pings (5 marked)
T = 47 min	75 Pings (5 marked)
T = 1 hr, 20 min	66 (5 marked)

Start	End	Dist	Time	Replate	Velocity	unit/sec
36	6	30	44	yes	.68	
36	6	30	25	yes	1.20	
36	6	30	53	yes	0.57	
36	6	30	25	yes	1.20	
36	6	30	18	yes	1.67	
6	36	30	21	no	1.43	I
6	36	30	19	no	1.58	J
6	36	30	20	no	1.50	K
6	36	30	20	no	1.50	L
6	36	30	27	no	1.11	M
36	6	30	18	yes	1.67	N
36	6	30	11	yes	1.58	O
36	6	30	20	yes	1.50	P
36	6	30	27	yes	1.03	Q
36	6	30	27	yes	1.11	R

47. none that
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#2
 $d = 40 \text{ cm}$

velocity

35	2	33	17	1.94	yes
2	35	33	18	1.83	no
35	2	33	13	2.54	yes
2	35	33	29	1.14	no
35	2	33	24	1.38	yes
2	35	33	22	1.50	no
35	2	33	23	1.43	yes
2	35	33	19	1.74	no
35	2	33	19	1.74	yes
2	35	33	14	2.36	no
35	2	33	20	1.65	yes
2	35	33	15	2.20	no
35	2	33	20	1.65	yes
2	35	33	16	2.06	no
35	2	33	18	1.83	yes
2	35	33	18	1.83	no
35	2	33	18	1.83	yes ✓
2	35	33	17	1.94	no
35	2	33	18	1.83	yes
2	35	33	19	1.74	no
now back to 80 cm					
76	2	74	48	1.54	yes
2	76	74	38	1.95	no
76	2	74	43	1.72	yes
2	76	72	34	2.12	no

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turnover (Pond)

Start	end	dist	time	notes	V
76	2	74	47	yes	1.57
2	76	74	47	no	1.57
76	2	74	44	yes	1.68
2	76	74	47	no	1.57
76	2	74	38	yes	1.95
2	76	74	40	no	1.85
76	2	74	36	yes	2.06
2	76	74	60	no	1.85
76	2	74	63	yes	1.17
2	76	74	38	no	1.95
76	2	74	49	yes	1.51
2	68	66	43	no	1.53
76	2	71	48	yes	1.54
2	76	71	50	no	1.18
76	2	74	44	yes	1.68
2	76	74	32	no	2.31

COUNT = 90 on land (3 marked)

turnover

ON	OFF
<hr/>	
21 ON	17 OFF
IN 2 MINUTES	

10.5/min 8.5/min

$$d = 40 \text{ cm}$$

$$\text{mean} = 9.5/\text{min}$$

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3000

1000

T=18°C

Phosphorus 5.2 mg/l
7 mol/broth lengths
(85 cm)

Part 01

T	Time	Notes
1:20	11:00	1 bait
3:00		low
3:30		1. 1 pump
5:15		2 A m... at bait; 1...
7:05		1 pump & 1 pump on...
8:00		2 A m... at bait, 6...
10:00		1 pump & 1 bait...
11:00		1 pump...
11:30		1 pump...
13:00		2 pumps...
13:40		1 pump...
14:00		
14:40		
16:00		
18:00		

3000

T=18°C

Part 02

(12 cm)

T	Time	Notes
2:30		1 Pump & 2...
1:50		1 Pump & 1...
2:00		7 Pumps; 2 Audi approaching
4:00		1 Pump & 1...
4:15		1 Pump streaming to bait
4:30		at bait, 1 Audi...
4:40		1 Pump...
4:50		70 Pumps at bait
5:00		70 Pumps
5:10		100 Pumps
5:20		100 Pumps
5:30		100 Pumps

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3 Oct 78

(cont'd) Bait # 1 cont'd

19:30 5 Pimp, 2 Anas - same same Pimp

22:00 7 Pimp, 2 Anas - both still quite
successful at getting v. lg. clumps
of hum. I try with both same
same time. same same same same
gets away.

24:00 13 Pimp, 3 Anas

37:00 25 Pimp, 5 Anas
(Anas still so same same
but immediately same same by Pimp)

40:00 34 Pimp

3 Oct 78

Bait # 2 (cont'd)

20:00 ~ 120 Pimp

30:00 ~ 100 Pimp

40:00 ~ 100 Pimp

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6 OCT PC, litter wet
 from rain yesterday $T_{air} = 18.0^\circ$
 $T_g = 18.0^\circ$
 Bait #3 (36cm)
 to nest
 of Pimp

$T_0 = 1445$
 elapsed

0:10	3 Pimp at bait, leave quickly
1:10	2 Pimp on dec - seemingly by leaving odor trails
3:00	7 Pimp - now submerging out of nest
4:00	11 Pimp
5:00	17 Pimp
6:00	18 Pimp
8:00	35 Pimp
10:00	~46 Pimp
12:00	52 Pimp
14:00	64 Pimp
18	~70 Pimp
20	~60 Pimp
22	~50
24	55
26	~50 Pimp, 1 <i>Ambis</i> (around Pimp)
28	~55 Pimp
30	55 Pimp
34	~65 Pimp
38	~75 Pimp

6 OCT 15415 + 15
 Bait #4 (160 cm fr nest
 of Pimp)
 32 cm fr *Ambis* nest

3:05	1. <i>A. rudis</i> at bait - soon leaves
7:20	11. <i>A. rudis</i> enters, soon leaves
8:05	11. <i>A. rudis</i> enters
8:30	2nd <i>A. rudis</i> enters (now 2 at bait)
9:40	3rd <i>A. rudis</i> enters
10:15	1 <i>A. rudis</i> w. tumachunk, followed by other 2 (now 3)
11:10	<i>A. rudis</i> enters, then 1st bait (now 4)
12:00	<i>A. rudis</i> enters, then 1st (now 5)
14:40	2 <i>A. rudis</i> enter
14:55	3rd + 4th <i>A. rudis</i> enter
15:05	5th <i>A. rudis</i> (now 5)
15:20	6th <i>A. rudis</i> (now 6)
15:30	<i>Ter. rudis</i> comes
18:00	2 <i>A. rudis</i>
18:30	5 <i>A. rudis</i>
20:00	10 <i>A. rudis</i>
22:00	28 <i>A. rudis</i>
24	34 <i>A. rudis</i>
26	46 <i>A. rudis</i>
28	33
30	35
34	49 <i>A. rudis</i>
36:30	P. Imp enters bait - attracted to <i>A. rudis</i>
38	all by <i>A. rudis</i>
	34 <i>A. rudis</i>

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BAIT #3 - cont'd

42:00 ~90 Pump
 46:00 ~80 Pump
 50:00 ~90 Pump
 54:00 90-100 Pump
 58:00 ~90 Pump
 61:00 ~90-100 Pump

BAIT #4 - cont'd

47:00 31 Ants
 46:00 28
 50:00 31 Ants
 51:20 Pump enters, tussles w Ants W of
 is driven off
 52:00 2 Ants fighting
 54:00 23 Ants - seems to be some
 fighting off but do not appear
 around
 58:00 29 Ants
 61:40 Pump enters - immediately driven
 off
 62:00 ~~off~~ 15 Ants
 Ants seen to attack
 several Pump workers that
 wandered into vicinity of
 Ants nest entrance.

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4 June 79 - active spp. seen on ground in vicinity of baits

Common: P. imp, A. rufis, P. uel

UMC: M. punctiventris, L. curv. spinosus

4 June 79 overcast, moderate breeze Av nest ~60 cm fr bait
 N. Branch area
 a.r = ground = 19.0°C
 ground wet from previous rains
 BAIT #1 20 Pinhead crickets
 Start: 1500 hours # left

15:00:20	Pump on disc	
:40	approaches bait & contacts several crickets	
16:00	lvs crickets and circles disc (<u>A. rufis</u> a few cm fr. disc)	
02:30	Pump lvs w. c (has been "handling" crickets for ~ 2 min. before finally lving w. one)	19 P
2:45	Pump on disc	
3:05	contacts c.c.	
3:30	Pump lvs w. c	18 P
4:10	Ar on & off disc	
4:30	Ar on bait grabs c - lvs turned 17	
9:40	Pump at bait	
9:30	<u>A. rufis</u> at bait	
9:45	Pump lvs w c	16 P
10:10	<u>A. rufis</u> lvs w c	15
13:50	<u>A. rufis</u> on bait	
14:05	<u>A</u> lvs w c	14
15:20	Ar on bait	
:28	lvs w c	13
16:30	Ar at bait	
:40	lvs w c	12
21:00	<u>A. rufis</u> at bait	
:10	lvs w c	11
:25	Ar at bait	
:50	lvs w. c	10

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n.b.
 BAIT #1
 Cont'd 2 pages
 ahead

A & P

A mouse's nest ~ 60 cm
 from bait (hole in dirt)

BAIT #2

Colony ~ 10 cm
 from disc

15:01:30	Pump on disc		P
02:40	1 vs w. C		19
3:15	Pump at bait - contacts C immediately		
4:20	2nd Pump on bait		
4:30	1st Pump vs w. C		18 ^P
4:40	3rd Pump at bait		
4:45	2 nd vs w. C		17 ^P
5:10	3 rd vs w. C		16
5:30	Pump on disc		L
6:00	Ar d 3 more Pumps		M
6:10	Ar vs w. C (now 3 Pumps)	15	N
6:30	Pump vs w. C	14	O
6:40	Ar on disc - avoids Pumps		P
6:55	3 more Pumps		Q
7:10	Pump vs w. C (now 6 left)	13	R
8:00	Pump vs w. C (12 Pumps on bait)	12	S
8:15	" " " C	11	T
8:35	" " " C	10	U
9:05	" " " C	9	V
6:50	" " " C	8	W
10:30	" " " C	7	X
10:40	Audien on disc - avoids Pumps - vs (now 16 Pumps)		Y
11:40	Pump vs w. C	6	
12:00	Pump vs w. 2 cc	4	
	[7 Pump left] (all gone - missed 4)		
	END		

BAIT #1 - cont'd

25:15 Ar on bait (pretty sure this is same one that left at 27:50 followed it to nest - went in w. cricket, immediately emerged, & made beeline back to bait for another)

25:25 Ar lvs w C

28:15 Ar at bait (same one again, I think)

2nd one at same time

1 lvs. bait carrying 2nd toward nest

I think carried Ar has C in jaws ♂

32:15 Ar at bait

33:00 lvs w C

~~Probably left~~
36:05 Ar at bait

37:10 lvs w. C

37:20 Ar on disc

:30 - contacts C

37:45 lvs w C

40:30 Ar at ~~bait~~ disc

41:00 contacts C

:15 lvs w. C

43:40 Ar on disc

44:00 contacts C

44:15 lvs w C

45:00 Ar on disc

48:15 contacts C

48:30 lvs w C

9

87

6

5

4

3

2

BAIT #1 cont'd
~~BAIT #3~~

48:30

Ar on disc

49:15

2nd Ar on disc

49:30

1st one contacts bait

49:40

lvs w. C

50:10

2nd Ar lvs w/o C

50:45

Ar on disc

51:05

" lvs.

51:25

Ar on disc

51:40

contacts C

52:20

lvs w C

END

elapsed time = 52:20

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17 May 79

TR#1 area
 Clear, mild, breezy, low humidity
 T ~ 70°F.

Bait #1 25 cm from active Pimp colony*

Time	Notes	Count
1342:00	T+	
1343:00	1.00 Pimp on bait	
43:45	2nd Pimp	
44:00	1st one leaves, laying odor trail	
45:30	2 more onto bait	
46:45	1 laying odor trail around bait, 4	
47:15	thin one leaves	3
48:00	Coarse hole of wax issuing from nest	
49:30	L. curvi on disc	
49:45	2 Pimp on disc	4
51:00	Pimps ignore L. curvi, which avoids them.	6
52:00		8
53		14
55		17
57		26
14:00		33
14:04		42
14:11:00		56
14:17		77
26:00		69
31:30		88
37:00		~110
42:00		~100
57:00		125
3:10:00		100

* This colony has trail going up trunk of 2' diameter tulip poplar ~ 75 cm from nest entrance. At least 50-60' to first foliage

Bait #2 1 m from Pimp nest

Time	Notes	Count	Ar	Pi
1345:00				
48:00	Arcubis on disc	1	Ar	Pi
48:30	lvs w/o contacting bait	0		
56:00	Arcubis on and off	1		
56:45	Pimp on & off	0		1
14:00:00	1 Arcubis	1		
14:01:30	2nd Arcubis	2		
14:01:45	3rd	3		
02:30	2 leave, dragging gasters - odor trail, carrying	1		1
02:45	Pimp on and off	0		0
03:00	3rd Arcubis leaves	1		0
03:30	Arcubis to bait	0		1
9:10	Pimp on and off	1		0
14:30	Arcubis on bait	0		0
14:15	lvs	0		0
14:45	Pimp on & off	0		1
17:45	Pimp	0		1
18:30	2 more Pimp	0		3
:40	2 leave	0		1
20:30	last Pimp lvs	0		0
21:00	Pimp on	0		1
21:15	2nd Pimp	0		2
21:30	Arcubis on, Pimp leave - 1 back			
22:00	Arcubis snags at Pimp - They spray gaster, Arcubis retreats, lvs			

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Q
R
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V
W
X
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Bait # 1

23:00
24:00

Arvids Pimp

0 2
~~0 2~~

1423:00

24:30

26:00

27:30

29:00

30:00

30:45

32:15

36:00

37:15

38:00

39:00

39:30

42:00

57:00

3:10:00

Pimp

Pimp

Pimp

Pimp

A red on bait - no interactions seen

A red lvs.

1 Arvids on ~~off~~ - circles bait, lvs 1

2 Arvids avoiding Pimp, feeding, A red w.

A red on bait, avoids Pimp

feeds briefly, lvs

Arvid Pimp

2

3

5

6

8

10

12

10

13

2 15

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0 14

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0 15

0 10

0 8

0 3

0 2

22 May. Test of attractiveness of

two particulate bait types -
sesame seeds and rice grains,
both sautéed in butter to make
them more attractive to ants.

Used one of Steve U's 5x5m quadrats
nr. TR#1. Baited on 1x1m grid,
for total of 36 baits. ~~24~~ baits
consisted of disc w. 10 sesame
seeds, 10 rice grains. 12 had
only "dry" (uncoated) sesame seeds.
Periodically patrol baits &
check out action.

In general, Pimps (by far the most abundant
species here) incapable of handling
either grain type - a few sesame
grains moved, some by pres. of Pseudopis.
None could move rice grains.

In contrast, even small Anidis could
carry rice grains unaided; Myrmica
& A. fulva also had no problem.

Pimp kept trying to move bait, but didn't
form large mobilizations - generally
less than 5-6 ants/bait.

overcast, sl. breeze ~ 68°F.

baited at 1450 h

1455
~~5:00~~

5
Pimps at 5-6. Can't handle either
sesame or rice

ditto 5-5

ditto 1-5

3-6-~~10~~

1500
t+10

Ar & Pimp at 6-4. A ^{fulva} riders
drops away rice grain while Pimp
struggles to get sesame seed. Pseudopis
Pimp gets sesame; Ar gets
rice grain

1507
t+17

5-6 - A. n. dragging off
sesame seeds (9 left)

1512
t+22
1517
t+27

~~4-6~~ ^{fulva} A. n. carries off rice (8 left)
4-5 Anidis gets sesame grain -
Pimps unable to lift them

5-6 Anidis carries off sesame (6 left)
Pimp carrying fungus gnat

M
N
O
P
Q
R
S
T
U
V
W
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1520
t+30

4-6 Ant carries off sesame (3 left)

1524
t+34

6-5 A fulva drops off rice grain
(no pimps) - 2 rice left; 6 Ses.

1527
t+37

#6 A. fulva drops off sesame
A. niger drops off another sesame
(1 left + 9 rice)
(several Pimps + leptotlerax on bait)

1531
t+44

#6 A. fulva trying to pick up
last sesame, finally takes
rice grain (1 sesame, 4 rice left)

5-6 A. niger drops off rice
(0 sesame, 8 rice left)

3-6 no ants present, but all
sesame gone & 4 rice left.

1540
t+50

4-6. A. fulva carries off rice
(1 sesame, 3 rice left)

P.
7
L

1540
t+50

Census of grains
Ses rice

66 5 8 (A. niger w. sesame seed)

56 0 6 (3 lept, 2 Pimps on bait)

46 1 3 A. fulva on bait
trying to pick up ses

36 0 1 no ants

26 10 7 no ants

16 5 9 2 lept

65 9 7 no ants

55 10 10 no ants

45 3 10 no ants

35 9 10 no ants

25 8 8 2 Pimps
(1 A. niger
w. rice grain)

15 9 10 no ants

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t+70

Census

~~600h~~

		Ses.	rice	
66	6-6	0	3	(4 A fulva at bait; 2 are dragging rice grains)
65	5-6	0	2	3 left
64	4-6	0	3	0
63	3-6	0	0	1 A fulva on bait disc
62	2-6	9	7	1 Stenamma at rice
61	1-6	5	6	4 left. 1 Pimp
56	6-5	9	7	0
55	5-5	9	10	0
54	4-5	2	10	1 Pimp
53	3-5	9	10	0
52	2-5	8	8	0
51	1-5	8	10	0

~~4~~
1

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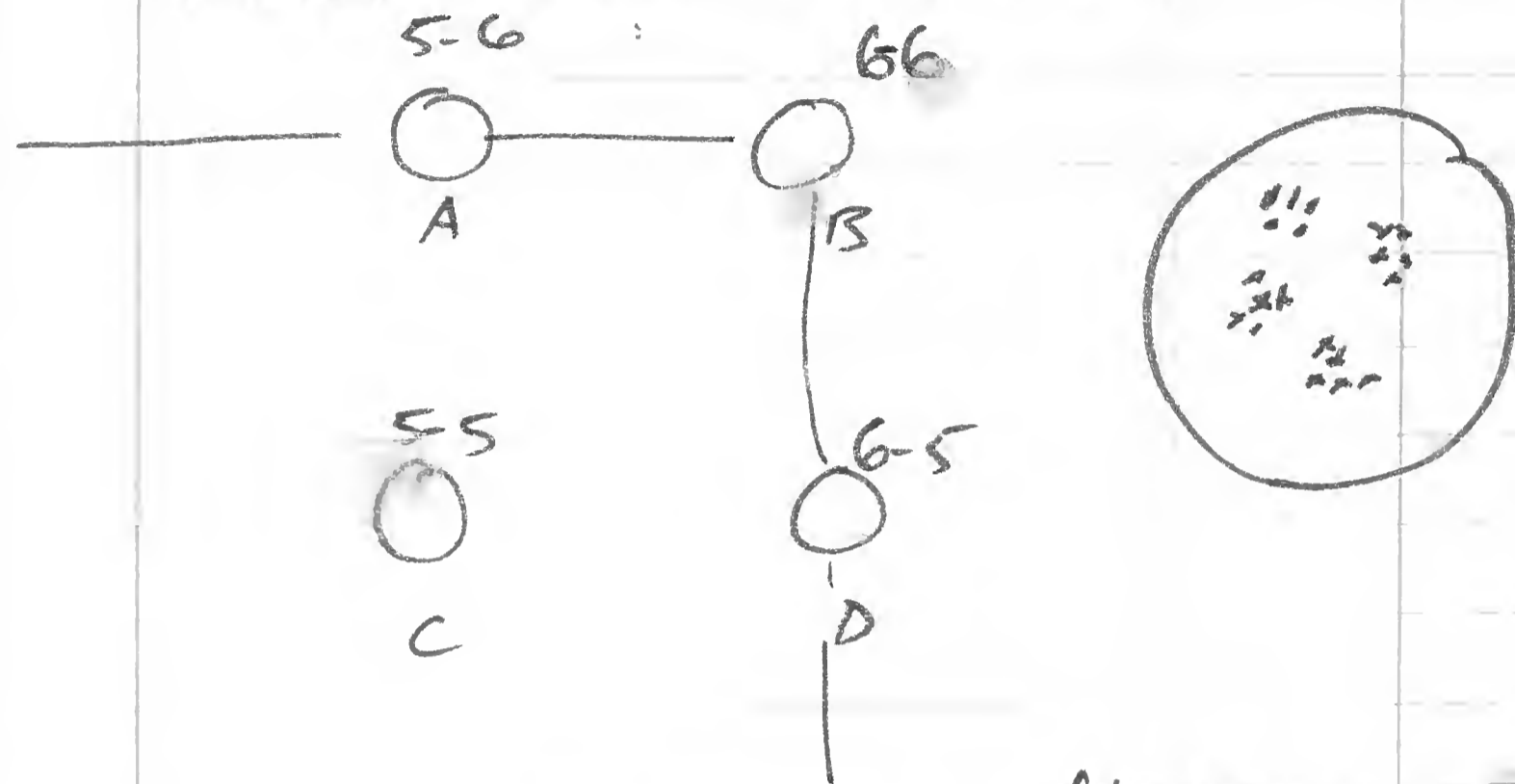
P. mel nest in curled up leaf.
 (incl. several other ♀♀)
 100-200 workers

Fri.
 24 May

hc. TT #1

Start:
 14:25 T=19.0°C
 overcast; ground
 wet fr. recent rain

Put out 4 baits in same grid as
 last time - each w. 20 "pinkhead" baby
 crickets. Census every 5 min.



3:00

A. fulva & P. imp on disc C. ^{All circles, most} A ~~1 vs 100~~
 touching crickets, but Pi gets one

4:15

Af finally finds crickets, gets one

4:45

Pimp takes cricket from A

6:00

A fulva on & off disc C

12:15

Pimp gets cricket from C. Has a
 hard time handling it effectively, but
 finally carries it off

13:45

A ful on bait, C 14:00 - (vs. w. cricket)

15:30

Pimp on C - fumbles around, gets help

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Bait A

4/1/45 Pump finds bait - takes anchor

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24 May

Census

	A	B	C	D
5:00	9	10	8	10
10:00	9	10	8	10
15:00	9	10	7	10
20:00	9	10	6	10

(rain + rat)

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ground = 18.5°C BAIT #1 - randomly placed
 water = 22.0°C - along path

26 May

Vicinity of TR#1 (North Branch)

Baiting experiments with dead tiny crickets
 (pinheads) - 20 per bait

Time	Time	Notes	Count
	14:57:00	Start	
0:50	15:13	2 Pimp on bait	
1:00	15:20	2 carry off crickets	18
1:30	15:30	1 more carry off	16
1:45	15:45	7 more (15 left)	14
3:30	16:30	2 more at bait (11 left)	11
5:15	16:15	Pump on and off disc	
7:30	16:30	Pump on and off disc	
9:00	16:00	Pump on bait - grabs cricket	
9:40	16:40	1 lvs w. cricket (10 left)	10
12:00	17:00	Pump at bait	
12:10	17:10	1 lvs w cricket (9 left)	9
17:30	17:30	Pump at bait	
18:00	15:00	2 more	
18:30	15:30	1 larva w. cricket	8 left
19:00	16:00	2 Pimps at bait	
19:45	16:45	1 lvs without cricket	
20:30	17:30	1 lvs w. cricket	7 left
20:45	17:45	Pump catching bait - lvs.	
25:30	22:30	Pump on and off	
26:30	23:30	Pump on and off	
28:30	25:30	lept. on disc	
29:30	26:30	Pump on disc	
31:00	28:00	Stop	7 left

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28 May

Bait #2 - randomly placed
 > 1 m apart

elapsed time	clock time	start	left
	13:57:00	start	4
2:30	59:30	2 Pimp on bait avg off cricket	18
2:45	1:00	2 more Pimp + <u>capt</u> at bait	
3:15	0:15	2 leave w. cricket	16
4:30	6:1:30	1 at bait (+ capt.)	
4:45	1:15	leaves w. cricket	15 left
5:30	2:30	2 Pimp on and off disc. <u>capt</u> struggling to left wicket	
6:15	3:15	Pimp on bait, struggling to grasp cricket	
6:45	3:45	leaves w. cricket (capt still struggling)	14 left
8:15	5:15	Pimp arrives quickly lvs. w. cricket	
9:30	6:30	Pimp on bait - lvs w cricket (capt still struggling)	13 left
10:40	7:40	Pimp on + off disc.	
12:00	9:00	Pimp on bait at wicket	
12:20	9:20	lvs w. cricket	12 left
12:25	9:25	Pimp on bait	
12:55	9:55	lvs w cricket	11 left
13:30	10:30	Pimp at bait	
13:45	10:45	lvs. w cricket	10 left
15:15	12:15	Pimps at bait	
15:25	12:25	lvs w cricket	9 left
16:30	13:30	Pimp at bait	
18:45	15:45	lvs w cricket	8
21:00	18:00	2 Pimp at bait	
21:15	18:15	3rd Pimp	
21:20	18:20	1 lvs w cricket	7

4
 left
 18
 16
 15 left
 14 left
 13 left
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elapsed time

19:00	22:00	1 lvs. w. cricket	5 left
19:30	22:30	Pump at bait - check // left	
19:45	22:45	Pump lvs w. cricket	4 left
20:00	22:50	Pump on bait	
20:30	23:30	lvs w. cricket	3 left
21:00	24:00	lvs	
21:45	24:45	Pump touches bait - w. without cricket	
22:00	25:00	2 Pump at bait 1 leaves w. cricket	
23:15	26:15	Pump lvs w. cricket (left still there)	2 left
24:15		Pump on bait - pulls	
27:15		cricket away from left	
27:30		Pump lvs w. cricket	1 left
28:00		when approached left lvs still pulls in legs & antennae	
29:45		2 Pumps on disc	
30:55		1 lvs w. cricket	0 left

Σ time = 29 min, 55 sec

18 May BAI = 3

Time	Activity	# left
14:32:00	START	
2:00	Pump at bait	
2:10	leaves w. cricket	20
3:50	Pump at bait - circles & leaves w. cricket after contacting bait	20
5:10	Pump at bait - checks over several diff cricket, circles, leaves w. cricket	20
5:30	Pump at bait	
6:30	lvs w. cricket	19
7:13	Pump on disc	
10:30	lvs w. cricket	18
19:30	Pump at bait	
19:30	lvs w. cricket	17
20:15	Pump on lvs w. cricket within 5 sec	16
24:30	A. tube on bait - lvs within 5 sec w. cricket	15
43:00	A. tube on disc - circles & lvs w. cricket	15
15:00	STOP	

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27 May

Bait #4

cards

cards
left

16:32 1st START

56:30

Pump on disc

57:15

2nd Pump

6:15

1 lvs w. cricket (other 1 left)

19

7:15

2nd Pump on disc - lvs again

11:15

3rd Pump on disc

1 lvs. w cricket

18

12:20

one on disc off (row 1 left)

13:20

3rd on disc (row 2)

14:30

one has been measured & shown to be

both have w/o cricket

18

15:30

2 Pump on disc - 1 lvs w cricket

16:15

finds cricket

17:15

1 lvs w. cricket

17

18:25

2nd lvs w/o bait

Pump on disc

21:15

Pump at bait

lvs w cricket

16

24:00

2 Pump on disc

25:15

3rd Pump

1 lvs w cricket

15

28

1 lvs w/o cricket

15

23:30

1 lvs w cricket

14

24:15

2 Pump on disc

24:30

1 lvs w cricket

13

25:15

Pump arrives (row 2)

1 Pump 1 lvs w cricket (1 left)

12

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26:15

58:15	Pump 1 vs w cricket	11
59:30	3 Pump on bait	
27:40	1 vs. w. cricket	15
28:00	1 IVS w cricket	
60:00	1 vs w cricket	
28:10	1 vs w cricket	
60:10	1 vs w cricket	
60:15	2 Pump	
	3 vs Pump	
28:30	1 IVS w cricket	7
28:50	1 IVS w cricket	5
29:00	1 IVS cricket	5
60:05	2 Pump IV	#3
29:20	1 vs w cricket	#2

30:00	5 on	
62:00	2 IV w cricket	1
30:45	(5 on disc)	
	1 vs w cricket	
	(5 on disc)	

End

TOTAL ESCAPE TIME : 30:45 sec

Ants continue to build up on
 M. ... at 6:50 there was
 ...
 ...

The colony entrance is about 30 cm from bait

Bait # 5

Cont 15:18:00

#1 each lift

	1 Pump on bait	20
	2 on bait	
2:15	1 IVS w cricket	19
	A red on	
4:25	1 vs w cricket	18
4:30	Pump vs w cricket	17
	Pump on bait	
	A red at bait - IVS w cricket	16
8:05	2nd A red on & off	
	1st one IVS w cricket	15
8:50	Pump at bait	
	Princ	
	A red (now 10:00)	
10:00	Princ IVS w cricket	14
10:15	A red IVS w cricket	13
10:30	Pump vs w cricket	12
	(2 more Pump on bait)	
11:00	1 Pump vs w cricket	11
11:30	1 Pump IVS w cricket	10
	Pump on bait	
12:25	1 vs w cricket	9
12:30	A red at bait	
12:55	Pump vs w cricket	8
	Pump on bait	
13:15	A red IVS w cricket	7

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13:30
 14:45
 14:45
 15:30
 15:35
 35:30
 15:45
 15
 35:00
 36:30
 18:45
 19:00
 37:00
 37:15
 19:45
 37:45
 38:00
 38:20
 38:40
 38:50
 39:30
 21:30

Pencil on bait
 Pump on bait
 Pump vs vs. cricket
 Pump vs w cricket
 Pump on bait
 vs w cricket
 Pump on bait
 Pump at bait
 Pump at bait
 17 Pump vs w cricket
 2 vs vs. cricket
 Pump at bait
 Pump vs w cricket
 And on disc - vs
 Pump on disc
 Pump on disc
 Pump vs w cricket
 Pump vs w cricket

6
 5
 4
 3
 2
 1
 0

END

E time = 21m 30 sec

Bait #6
 15:15:00

P. imparis
 colony ~ 15 cm away

17:40
 1:30
 2:00
 2:10
 2:15
 2:30
 3:00
 3:30
 4:00
 4:10
 4:15
 4:45
 5:00
 5:30
 5:50
 6:45
 7:30
 8:15

Pump on bait
 1 vs w cricket
 3 on
 vs w cricket
 1 on
 1 vs w cricket
 1 vs w cricket (1 left)
 1 vs w cricket (2 left)
 1 vs w cricket (3 left)
 1 vs w cricket (1 left)
 2 vs w cricket
 1 vs w cricket
 1 vs w cricket
 1 vs w cricket
 1 vs w cricket
 1 vs w cricket
 3 vs
 1 vs w cricket (3 left)
 1 vs w cricket (3 left)
 1 vs w cricket
 1 vs w bait
 1 vs on bait

18
 18
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 16
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Z time = 48m 15 sec

Clear, breezy

30 May -

20.5 air
19.5 ground

ba. long trials w 20 Pinhead
crickets on plastic disc. Set at
random along path in TR # 1

trial	depart	BAIT #1 * Start	13:35
41:20	6:30	Pump on and off disc	20
42:1	7:00	Pump on and off disc	
43:00	8:00	Pump at bait	
43:45	8:45	1vs. laying odor trail	
44:10	9:20	Pump on and off	20
45:13	11:45	Pump at bait	
46:00	12:50	1vs. w. cricket	19
47:00	13:30	Pump on disc	
48:00	13:45	1vs. w/o cricket	19
49:00	15:30	Pump on	
50:00	16:50	1vs. w cricket	18
51:00	17:30	Pump on and off disc	
52:00	19:30	Pump on and off disc	
53:00	20:30	Pump on disc and off	
54:00	23:00	Pump on and off	
55:00	24:30	Pump on disc	
56:00	24:40	1vs. w cricket	19
57:00	25:00	Pump on and off	
58:00	26:45	Pump at bait	
59:00	27:10	1vs. w cricket	16
60:00	28:00	Pump on disc	
61:00	28:00	off	16
62:00	28:30	2 on disc	
63:00	28:40	bait off - 1 w. cricket	15
64:00	29:35	Pump at bait	
65:00	29:35	1vs. w cricket	14

* 40 cm from

Pump setting

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1335 start

BAIT #1 - cont'd

6:15	3:15 Pump on disc	
6:25	off	
6:30	on - approaches bait	
6:40	3 more on - all approach bait	
7:15	1 vs w cricket	13
7:30	3 more 1 vs w cricket	11
9:00	Pump on disc	
10:15	Pump approaches bait	
1:30	2nd Pump	
1:40	3rd Pump	
1:50	1st one 1 vs w cricket	10
1:55	other 2 1 vs w/o cricket	
12:00	Pump approaches bait	
1:10	1 vs w cricket	9
14:00	3 Pumps at bait	
1:10	1 vs w cricket	8
1:45	1 vs w cricket	7
15:10	1 vs w cricket	6
15:30	Pump at bait	
	1 vs w cricket	5
16:00	2 Pumps at bait	
16:20	1 vs w cricket	4
16:30	Pump at bait	
17:00	1 vs w cricket	3
17:20	3 Pump at bait	
17:45	1 vs w cricket (2 off)	2

30 May - cont'd

BAIT #2

START 13:35:00

31:30	1	Pump at bait	# left
32:00	3:00	Pump vs w cricket	19
47:20		Pump at bait	
57:20	16:20	1 vs w cricket	18
58:00		1 arwisp on disc	
		Pump on disc - approaches bait - struggles to pick up cricket	
61:20	26:50	1 vs w cricket	17
61:50		Pump at bait, Pmel at bait	
6:55	36:35	Pump 1 vs w cricket	16
		Pmel still there, struggling w cricket	
69:00		Pmel 1 vs w/o cricket	
71:15	50:15	Pump takes cricket	15
72:00		2 Pumps at bait	
73:15	59:25	1 vs w cricket, other w/o	14
74:00		<u>STOP</u>	
75:30		1 approaches bait - struggles w it	
79:00		1 vs w cricket (2 Pumps on disc)	1
80:00		1 vs w cricket (3 Pump at)	0
		<u>END</u>	

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BAIT #3

START 14:28:00

11:00
11:15

A ruidis on ~~1~~
comes off water

19

15:00

STOP

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Bait #4

1.2 m from
Pump colony
elapsed time

START: 14:43:00

4:10	Pump on & off disc		20
4:15	Pump at bait		
4:15	1 vs w. cricket	4:15	19
4:15	Pump at bait		
4:55	1 vs w. cricket	4:55	18
5:00	2 pumps at bait		
5:40	1 vs w. cricket	5:40	17
6:00	2 vs w. cricket	6:00	16
	2 Pump on & off disc		
	Pumps on disc to bait		
7:15	1 vs w. cricket	7:15	15
	Pump at bait		
7:40	1 vs w. cricket	7:40	14
	Pump at bait, 2nd on disc		
9:10	1 vs w. cricket	9:10	13
	Pump at bait		
10:00	1 vs w. cricket	10:00	12
	Pump on disc		
10:30	contacts bait		
10:30	1 vs w. cricket	10:30	11
	Pump at bait		
11:40	1 vs w. cricket	11:40	10
	2 pumps at bait		
12:00	2 1v w. bait	12:00	8
12:30	1 vs w. cricket	12:30	7
12:50	1 vs w. cricket	12:50	6

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Bait #5 Colony at 1 m

1502:00

56:00	13:00	1 lvs w cricket	5
56:15		Pump at bait	
56:40	13:40	1vs w cricket	4
57:30		Pump at bait	
57:40	14:40	1vs w cricket	3
57:50		Pump on & off disc	
58:00		Pump	
58:40		1 Pump at bait, 2 on disc	
59:00	15:50	1vs w cricket	2
		(2 Pups left)	
59:30		3 Pumps on disc - 4	
59:50		1 cricket cricket	
60:16:00		1vs w cricket	1
60:16:50		2nd lvs w cricket	0

END

59:55	19	Pump at bait - carries off light
59:58		Pump at bait
60:00	18	carries off cricket
60:05	17	Pump at bait - carries off cricket
60:15		Pump at bait
60:25	16	carries off cricket
60:35		Pump at bait
60:45	15	1vs w cricket
60:50		Pump at bait
61:00	14	1vs w cricket
61:10		Pump at bait
61:20	13	1vs w cricket
61:30		Pump at bait
61:40		Pump at bait (new 2)
61:50	12	1 lvs w cricket
62:00	11	2nd lvs w. Cricket
62:10	10	3rd lvs w cricket
62:20		Pump at bait
62:30	9	1vs w cricket
62:40		Pump at bait
62:50	8	1vs w cricket
63:00		2 Pump on disc - one to bait
63:10	7	1vs w cricket
63:20		Pump at bait
63:30	6	1vs w cricket
63:40		Pump at bait
63:50	5	1vs w cricket

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BAIT #6 Colony 15m

Start: 15:14:00

15:14:40	Pump at bait	
15:15:00	1 vs w cricket	4
8 15:30	13:30 Pump at bait	
15:40	13:40 2 was on disc (now 3)	
15:50	13:50 1 vs w cricket	3
16:15	Pump on disc	
17:00	2 nd Pump at bait	
17:15	15:15 1 vs w cricket	2
17:25	15:25 2 vs 1 vs w cricket	1
17:35	3 Pump on disc =	
18:00	one controls bait (now 4)	
18:20	16:20 1 vs w cricket (now 3)	0

End

16:40	4:40 Pump at bait - tabular	19
17:15	5: " " "	
17:40	5:40 " " "	18
18:10	6 Pump at bait	
18:25	6:25 1 vs w cricket	17
18:45	Pump at bait	
19:00	7:30 1 vs w cricket	16
19:10	8:10 Pump 1 vs w cricket	15
19:40	Pump at bait	
19:50	9:20 1 vs w cricket	14
20:40	Pump at bait	
21:00	A ruder on disc	
21:15	11:00 Pump 1 vs w cricket	13
21:30	Pump at bait	
21:50	11:50 1 vs w cricket	12
22:15	Pump at bait	
22:35	12:15 1 vs w cricket	11
22:50	Pump at bait	
23:10	12:40 1 vs w cricket	10
23:20	2 Pump at bait	
23:40	13:20 1 vs w cricket (now 2 ruder)	9
23:50	13:40 2 vs w crickets	7
24:00	13:40 A ruder on disc - controls Pump	
24:10	4 leaves	
24:10	Pump at bait	

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15:30h air 21.5
ground 21.5

14:30	28:30	Pump 1 vs w cricket	6
	28:50	Pump on disc	
16:20	29:30	2 Pump on disc (now 3)	5
	30:20	1 vs w cricket	
	31:15	4 Pump at bait	
17:25	31:55	1 vs w cricket	4
18:25	32:25	1 vs w cricket (now 2)	2
18:40	32:40	1 vs w cricket (now 2)	1
	33:20	Pump at bait (2 more added)	
19:20	33:30	1 vs w cricket	0

End

30 May 79

Note: Ed van Briting transect
1. At 50m station, C. pennsylvanica & P. imparis disputing bait.
No doubt as to victor - P. imparis

No match for C. pen - no dead
P. imparis at baits - crushed by
C. pen. Major C. pen workers
seen to patrol periphery of baits -
workers are not so responsive to
other ants.

A. rudis in area - no interactions
noted - watched one A. rudis
itself among C. pen w/o response.

- Ants active today:
- P. imparis - v. abund.
 - P. niger - common
 - L. curvis - v. common
 - A. rudis - common.
 - C. pennsylvanica - 1 colony seen
 - C. ferrugineus - common - nr. road

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N.B.

4 June (cont'd) (BAITS #1 & 2 on pages before start of '79 notes)

17:20	Bait #3 - 15:16:00 Pump on disc - quickly approaches bait	
2:15 18:05	1 vs. w. c	19 Pump
22:00 22:20	P. mel. on bait 1 vs w. c	18 P. mel
22:25	P. imp at bait	
28:25	P. mel at bait P. mel at bait	
30:30	Pump 1 vs. w. c	17 Pump
33:30	P. imp at bait	
17:40 33:40	1 vs w. c (P. mel still at bait, struggling to pick up c)	16 Pump
38:00	P. mel still at bait trying to pick up c	
44:00	2nd P. mel on disc - 1st one still there	
48:00	1 vs. w/o c	
49:00	2nd vs w/o c	
56:30	P. mel on disc	
56:40	1 vs w/o c	
16:00:00	P. mel on disc	
:01:15	1 vs w. c	15 Pump
18:30	P. mel at bait - struggles to pick up several diff. cc	
18:35	1 vs w. c	14 P. mel
25:40	Pump on bait	
35:05	1 vs w. c	13 Pump

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Bait # 3 - cont'd

1635:30	P mel on bait - contacts cc immediately
37:30	Pump on bait - starts to drag off c, Then drops it & runs quickly away
55:00	STP 13 left

4 June BAIT # 4 20 pinbeads

(cont'd)	15:55:00 - start	#cc left
redel time elapsed T		
1607:15	M. punct. at bait	
1607:40 12:40	1 vs w c	19
166:20	L. curv: on bait - moves to c to e trying to pick them up - no luck	
26:30	Pump on disc	
40	contacts c, moves to another, then 3rd, 4th, etc. doesn't	
	[L. curv: - curv: do]	
	fully pick up but tries	
30:30	Pump 1 vs w/c cricket (L. curv: still at bait)	
25:00	at bait	
45:00	L. curv: still at bait	
47:00	2nd L. curv: - fighting w. 1st - one move to other side of disc	
52:40	Aradia on bait	
53:30	1 vs w c	18
	(still 2 L. curv: sp.)	
55:00	STOP	18 cc
	(2 L. curv: at bait)	
54:30	Pump at bait	
55:00	Pump 1 vs w c	17
	STOP at 1 hour	

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BAITING trials - 20 pinhead crickets. Hazy sunshine, breezy, soil damp from previous rain. Pimp actively foraging $T_A = 21.0^\circ\text{C}$

5 June

11:15:00 START $T_g = 18.5$

elapsed	time	observations	count	notes
		BAIT #1		Pimp colony ~ 1 m away
7:20	22:20	Pimp on disc goes immediately to C		
7:30	22:30	lvs w c	19	Pi
		Pimp on bait		
13:35	35	lvs w c	18	Pi
		looks like 1. Hke phalanx of Pimps approaching bait fr. direction. This Pimp is heading		
	11:30:00	Pimp on bait		
15:10	110	lvs w c	17	Pm
	3:25	Pimp on and off disc quickly		
	3:30	Pimp on disc - goes to bait quickly		
22:05	37:05	lvs w c	16	Pi
	3:40	Ar on disc - off again w/o contacting cc		
	3:45	Pimp on disc - goes right to C		
25:00	41:00	Pimp lvs w c	15	Pm
	4:10	Ar on bait		
26:20	43:20	lvs w c	14	Ar
	4:35	Ar on bait		
27:10	44:10	lvs w c	13	Ar
	4:45	Pimp		
	4:47:10	Ar		
34:20	49:20	Ar lvs w c	12	Ar
34:33	49:33	Pimp lvs w c	11	Pm

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Time	Event	Count	Species	Elapsed
50:00	Pump on bait			
50:10	lvs w c	10	Pi	35:00
51:20	Ar on bait			
51:35	lvs w. 2cc	8	Ar, Ar	36:35
53:30	Pump & Ar arrive at same time		Pi	
53:50	Pump lvs w c	7	Pi	38:30
54:00	Ar lvs w 2 cc	5	Ar, Ar	38:30
54:00	Pmel arr			
54:25	Pmel lvs w c	4	Pm	39:25
59:00				
59:30	Pump on disc			
:40	Ar on disc		Ar	
:55	Ar lvs w c	3	Ar	44:55
60:20	Pmel on disc		Pi	
60:30	Pump lvs w c	2	Pi	45:30
61:15	Pmel lvs w/o conta			
62:40	Ar on disc		Ar	
:50	lvs w/c	1	Ar	47:50
65:00	Ar on disc - circling edge			
65:45	Pump on disc		Pi	
67:10	lvs w c (one other Pump on disc)	0		

End

Pump, Ar, Pmel, Mpmud all seen foraging in vicinity of baits

5 June Ar colony ~ 90 cm fr. bait

BAIT # 2 11/5:00 Start

Time	Event	Count	Species	Elapsed	# crickets left
17:15	Ar on disc - carries off c				
:40	Ar on disc				19
19:00	off w/o c				2:40
19:10	Pump on disc				
20:20	Contacts c - moves from one to another, circles entire disc, seem				
20:35	Ar on disc				
21:40	lvs w c				18
:50	(Pump still cruising around disc)				7:50
23:15	Pump lvs w/o c				
24:00	Pump on disc - goes directly to cc				
24:30	lvs w/o c				
25:40	Ar on disc goes right to cc				
28:00	lvs w c				17
29:25	(Pump on disc)				12:00
30:40	lvs w/o c				
31:50	Ar on bait				
32:10	lvs w c				16
33:10	Pump back on disc				16:10
34:20	2nd Pump on disc				
35:25	Ar on disc				
40	lvs w c				15
35:40	1 Pump lvs w/c				19:40
38:10	Ar on disc				

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2 - cont'd

38:15	Ar lvs w c	14	23:15
40:10	Ar on boat		
40:15	lvs w c	13	25:15
43:50	Ar on disc		
	2 nd Ar		
44:00	1 st lvs w c	12	29:00
44:20	3 rd Ar on disc		
44:30	2 nd lvs w c	11	29:30
44:45	3 rd lvs w c	10	29:45
47:20	Pump on disc		
48:00	2 Ar on disc - one		
	awaits pump when contacted		
48:15	Ar lvs w c	9	33:15
48:50	2 nd Ar lvs w/o c (now just Pump)		
51:40	2 Ar		
52:20	Ar lvs w. c	8	37:20
	Other lvs w/o c (still Pump here)		
52:50	Ar back on disc - goes to boat		
53:20	lvs w 2 cc	6	38:20
55:50	Ar at boat		
56:10	lvs w c	5	41:10
56:50	Ar on boat		
58:15	lvs w c	4	42:15

2 - cont'd

57:30	Ar on disc		
58:10	lvs w c	3	42:40
59:55	Ar on disc		
60:05	Ar lvs w c	2	45:05
61:00	Ar on disc		
61:10	Contacts c		
61:20	lvs w c	1	46:20
61:30	Ar on disc		
61:40	lvs w c	0	46:40

END

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* note - many Pumps involved in raid on Myrmica nest in later part of the night - probably made them less responsive to baits

clear but hazy,
still fairly humid
air = 21°C
ground = 20°C

20 pinbeads

Pump colony at 400m
Myrmica colony at 400m
START AT 09:50

6 June 79

Obs. #	Time	Event	cc left
113	09:50	Ar on & off disc w/o contacting c	
3	10:30	Pump on disc - immer. grab c	
03	10:53:15	Pump vs w c	19
	10:57:45	Pump on disc - directly to c	
7:55	11:05	vs w c	18
	11:12:5	Pump on disc	
10:30	11:30	vs w c	17
	11:45	Myrmica on disc	
	11:55	contacts c	
	12:10	Ar Myrmica	
14:15	12:15	1st time vs w c	16, 15
14:40	12:40	2nd vs w c	14
	12:55	Pump on disc - gradually to c	
22:10	13:10	vs w c	13
	13:20	teeny <u>rudis</u> on disc	
	13:30	Myrmica on disc	
23:45	13:45	rudis vs w c	12
23:55	13:55	Myrmica vs w c	11
	14:05	Pump on & off disc	
	14:45	larger <u>rudis</u> on disc	
	15:30	Pump on disc	
24:55	15:55	rudis vs w c	10
25:00	16:15	Pump vs w c	9
	16:30	small <u>rudis</u> on disc	
26:20	16:20	vs w c	8

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Bait #1 - cont'd

17:50	Pump on disc	7	elapsed
18:10	1 vs w/c		
18:30	2 Myrmica - one 1 vs w/c		28:10
18:50	2nd 1 vs w/c	6	28:50
20:00	Pump on and off		
20:15	Myrmica on		
20:20	2 Pumps on		
	1 black Myrmica sprays it, down		
20:40	1 vs w/c	5	30:40
20:50	2nd 1 vs w/c	4	30:50
20:10	2nd 1 vs w/c		
22:15	Myrmica on and off		
24:00	Myrmica on and off		
25:30	Pump on disc		
26:00	1 vs w/c		
26:10	Pump on disc - 1 vs w/c		
27:00	tiny tubes on disc		
27:00	contacts C		
27:45	1 vs w/c	3	37:45
27:40	Pump and Myrmica on disc		
	Pump on disc		
28:15	Myrmica contacts		
28:20	1 vs w/c	2	38:20
28:30	Pump 1 vs w/c	1	38:50
30:45	A rasis		
31:15	1 vs w/c	0	41:15
	END		

Myrmica nest ~ 1 m
(or a little more)

June 79

Bait #2

START 0950

elapsed T

56:15	Ar on disc		
	contacts		
:50	1 vs w/c	6:50	19
11:15	M. pun on disc - goes directly to C		
11:40	1 vs w/c	10:40	18
12:00	Myrmica on disc		
12:35	1 vs w/c	16:35	17
12:45	M. on disc		
13:00	1 vs w/c	19:00	16
13:30	Pump on disc - goes directly to C		
12:25	1 vs w/c	22:25	15
12:30	Myrmica on disc - goes directly to C		
13:00			
13:05	2nd Myrmica		
13:10	1 vs 1 vs w/c	24:10	14
13:15	1 vs w/c	24:15	13
13:30	Myrmica goes directly to C		
13:40	1 vs w/c	29:40	12
2:00	Myrmica on disc		
2:50	1 vs w/c	32:50	11
3:00	Myrmica		
3:15	1 vs w/c	34:05	10
	FNBS - at 27:00 a 1st pulled out (could have been onto bait)		

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Bait # 2 - 1035

28:15	Myrmica	
38:35	1 vs w/c	9
31:20	Myrmica	
41:30	1 vs w/c	8
33:10	Myrmica	
43:10	1 vs w/c	7
35:10	1 vs w/c	
38:30	Myrmica	
38:35	2nd Myrmica	
39:05	A nedis	
49:10 (2)	Myrmica WS with 2 cc	6.5
49:20	A nedis 1 vs w/c	4
49:25	2nd Myrmica 1 vs w/c	3
41:40	Myrmica - picks up & drops 2cc	
53:25	1 vs w/c	2
43:35	Myrmica	
55:45	1 vs w/c	1
47:30	Myrmica	
40	A nedis	
58:00	48:00 nedis 1 vs w/c	0

Elapsed T = 58:00 min.

BAIT # 3 ^{Ar colony in rotten branch ~80 cm from bait}

1035 START

41:50	A nedis on disc	elapsed T	
41:55	2nd A nedis		
5:00	1 vs w/c	10:00	19
10:30	2nd 1 vs w/c	10:10	18
49:30	Ar on disc		
2:05	1 vs w/c	14:45	17
54:00	Ar 1 vs		
54:15	1 vs w/c	21:15	16
54:30			
45	Ar		
2:10	1 vs w/c	22:10	15
2:30	Ar goes directly to c		
3:30	1 vs w/c	22:30	14
4:10	Ar on and off disc		
10:15	Ar		
5	1 vs w/c	25:25	13
1:20	Ar		
1:30	1 vs w/c	29:10	12
4:15	Pump on disc		
3:30	1 vs w/c	29:30	11
5:10	Ar on disc		
5:20	1 vs w/c	31:20	10
7:20	Ar		
8:30	1 vs w/c	32:30	9
8:00	Pump - goes directly to cc		
8:20	1 vs w/c	33:20	8

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#2 - cont'd

08:50	Arude's		
09:05	1 vs w/c	34:05	7
13:00	Arude's		
11:15	Ar 1 vs w/c	38:15	6
15:00	Ar		
1:08	1 vs w/c	40:08	5
21:00	Ar		
21:10	1 vs w/c	46:10	4
	↓ probably came out		
25:10	1 vs. same hole in log		
27:23	Arude's		
21:50	1 vs w/c	52:50	3
28:20	1 vs 60 feet high		
29:35	reaches log		
35	enters same hole as before		
33:15	Ar arde's		
34:25	1 vs w/c		
35:00	Pump on & off		
37:00	Ar		
37:15	1 vs w/c	62:15	2
41:00	Ar on & off		
1150	<u>STOP</u>		2 left

Oreobird, Cuckoo's calling
 Banned owl hooted by grackles
 B.M. 11/4

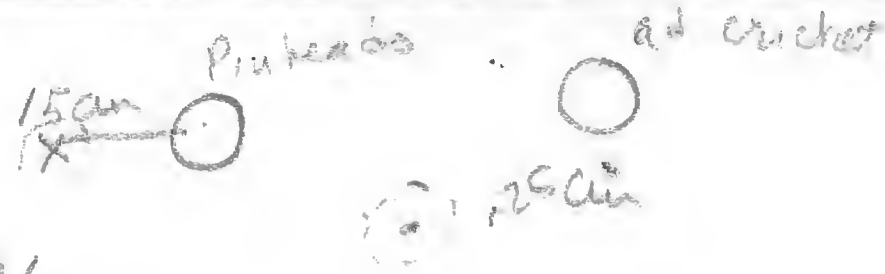
1053:00 START

11:45	Ar arde's		19
11:25	STOP - no activity		
	(4 arde's removed by 11:45 - at least 1 by Arde's)		
	(1. curvisporus arde's)		
	Ar arde's seen through 5 in hole		

Air T = 24°C

Ground T = 22.5°C

U
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2 Pump colonies 25 m away

T_g = 26

T_a = 28.5

#1 - 50 Pin heads

1:10	Pump on & off disc	
2:45	Pump on disc - contacts CC	
4:00	1vs w/c	49✓
4:15	Pump on and off disc	
6:10	Pump on disc - contacts bait	
6:20	1vs w/c	48✓
6:30	Arudis	
6:50	1vs w/c	47✓
8:10	Pump	
8:15	Pump	
8:10	1st 1vs w/c	46
8:40	2nd 1vs w/c	45
9:40	Arudis on disc	
10:00	1vs w/c	44✓
10:50	2 Arudis	
11:15	1 vs w/c	43
11:15	2nd 1vs w/c	42
11:20	Pump + Pmel on disc	
11:35	Pmel 1vs w/c	41
11:50	2nd Pump	
12:30	1st Pump 1vs w/c	40
12:50	3rd Pump on disc	
13:00	2nd 1vs w/c	39
13:20	3rd 1vs w/c	38
14:10	Pump	
14:20	1vs w/c	37

U
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14:30	A reds	36
14:35	1 vs w/c	
15:00	Pump at bait	
15:20	1 vs w/c	35
15:40	Pump	
15:50	1 vs w/c	34
16:00	Pump	
16:10	1 vs w/c	33
16:30	Pump 1 vs w/c	32
16:45	4 Pumps on bait	
16:55	2 1 vs w/c	31, 30
17:30	Pump 1 vs w/c (now 5 at bait)	29
17:40	P 1 vs w/c	28
17:55	" "	27
18:30	3 1 vs w/c	26, 25, 24
18:40	1 1 vs w/c	23
19:00	1 1 vs w/c	22
19:30	4 1 vs w/c	21, 20, 19, 18
19:40	4 " "	17, 16, 15, 14
20:00	2 " (now 7 at bait)	13, 12
20:45	2 1 vs w/c	11, 10
21:15	2 1 vs w/c	9, 8
	(now 6 Pump, 1 Cur.)	
21:30	2 1 vs	7, 6
22:10	2 W	5, 4
22:15	1 vs	3

22:40 - 1 vs w/c 2
 23:10 1 vs w/c (now 1 Pump) 1
 23:30 1 vs w/c 0
 END #2 - large cricket
 Pump colony .25 m away

5:30 Pump on and off disc
 7:30 A red on and off disc
 7:00 A red on disc - checks out
 Cricket thoroughly
 8:30 1 vs.
 8:45 A red on disc
 9:30 1 vs.
 9:40 Pump at cricket - checks out
 10:00 A red ; Pump 1 vs
 10:20 3 pumps arrive - A reds flees
 10:40 4 Pump + 2 A red
 10:50 12 Pump
 11:00 17
 11:10 27 + 1 A red (chased off)
 11:20 ~40 Pump real time = 10:40
 11:30 ~45 Pump 10:45
 11:40 40-45 Pump 10:55
 11:50 40 crushed cricket abdomen at 44:00
 12:00 ~60 Pump 11:05
 12:10 ~50 Pump 11:30
 12:20 ~55 Pump 11:35

U
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W
X
Y

Times of Prip on
lg cricket bait (#2)

18 0 no contact w. bait

46 0 "

1:30 made contact

1:33 " "

5:00 + (still on after 5 min) contact

5:00 + " " "

2:30 contact

2:33 "

1:28 "

3:28 "

5:00 + "

4:12 "

U
V
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tree w. C. Penn nest

1320h

BAIT #3 lg cricket

- 0:40 C penn w at cricket
- 1:00 lvs
- 1:30 Arudis on disc - lvs w/ a contrasting C
- 1:40 F. subsericea on disc - tries to drag C - can't do it
- 2:00 Arudis on disc - immediately contacts C (F sub still on it)
- Arudis - eggs at cricket
- F pal chases Arudis
- 3:40 C. penn w at cricket
- 4:15 A red lvs, F sub lvs
- 4:45 F sub back on bait
- 4:55 A reds at bait
- 5:20 little group of 5 C. penn come down tree trunk together - go directly to bait - F sub & A reds follow
- These must have been recruited by w which left at 1:00.
- 6:15 more C penn - now 9
- 6:40 2 more now 11 (incl. several majors)
- w attempts to cut off chunks of cricket rather than dragging it
- 9:00 now 8 C penn at C

7 June 1320h

BAIT #4 - 50 pinheads

- 1:30 ^{main} C penn on disc - beg. no chewing on cc
- 1:45 lvs w cricket - goes up tree 49
- 2:10 C penn at bait - chewing on cc



Cont'd

U
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H 3

12:35 C. pen w/ w/ cut's at head of
Cuckoo's nest is up tree
(S C pen w/ w/ or C)

16:00 6 C pen at Cuckoo none
have left since w/ w/ head

19:15 1/15 w/ w/ any Cuckoo chunk
flies back up tree

19:20 C Pen down group (now 6)

20:15 major arrives from other nest

24:00 7th C pen arrives

24:15 8th " " "

25:00 9th arrives

C pen, C mantras, A robin, Pimp, P. w/ w/, Fish
all common substrate

H 4

Area group 2 = 27.5

12:20 C pen 1/15 w. 3 CC (Missing
1 antenna) 46

12:45 2 C pen 45

1:50 1/15 w c 45

13:30 C 1/15 w 2CC 43

16:10 C pen 20 d 3

16:15 1/15 w c 42

17:10 C pen w. missing ant. back at bat +
chewing on p. w/ w/

17:40 2nd C pen at bat +
1/15 w/ w/ Cuckoo

18:15 missing ant. one 1/15 w 2CC 40

19:10 C pen

19:35 2nd C pen (w/ w/)

19:50 1st C pen 1/15 w 2CC 3

20:10 Major 1/15 - goes to other nest

21:30 broken ant back

21:40 1/15 w 2CC 26

3:00 C pen

3:15 1/15 w 2CC 29

4:00 missing ant arrives - tranquilly

picks up a number of CC's

4:20 1/15 w/ w/ c

V
W
X
Y

#3 - cont'd

25:20	1 lvs w piece of anchor	
28:00	1 lvs (now 5)	
28:00	C pen w anchor	
28:00	1 lvs w leg of anchor (now 5)	
30:20	#6 C pen	
30:30	1 lvs w leg	
32:15	1 lvs w piece of C (now 4)	
33:00	finally have shored C just off deck (now 3)	
33:50	#4 arrives	
34:30	#5 arrives	
35:15	#6 arrives to other boat	
36:20	3 more arr (now 4)	
40:00	minutes w lg chunks of C (now 8)	

#4 - Cont'd

32:50	1 C pen	
33:50	lvs w 2 C	32
31:40	C pen on deck	
32:00	C pen	
32:10	lvs w C	31
32:40	1 C pen	
32:45	lvs w C	30
32:50	1 C pen	
35:00	lvs w C	29
35:10	Major C arr, master General cc, lvs who taking any	
36:10	returns, lvs again go to other boat	
37:20	C pen must arr	
37:30	lvs w 2 C	27
37:45	C pen on deck	

W
X
Y

Hcy - cont'd

63:20 1 lvs w 1 chunk of c
 (now just 1 med sized piece
 left - impact of Alder in)
 3 c pen on - 3 more mby.

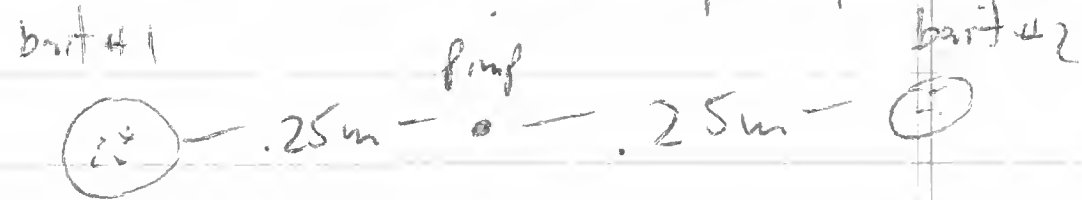
65:00 1 q major picks up 1st chunk
 and carries it up tree.

67:50	2	2
62:30	1 lvs w c	21
63:20	2 med c pen	
63:40	1 lvs w c, 1 w/c	20
	(1 w/c)	
65:20	1 vs. w 7 cc	18
65:30	c pen on disc	
64:15	1 vs w/c	
67:20	c pen	
67:45	1 vs w 3 cc	15
70:00	c pen	
70:08	1 vs w 2 cc	13
71:20	c pen	
71:35	1 vs w 2 cc	11
77:00	STOP	11 cc left

22 June 79
North Branch

90% cloud cover TA 22.0
hot + humid TG 21.0
start 10:30

2 baits each with 50 pinhead crickets.
approx .25m from pimp colony opening



All Pimps removed from bait #2

	bait #1	bait #2
1:15	○	1 Pimp removed
2:40	○	1 Pimp removed
3:00	1 Pimp on disc	○
3:15	Pimp takes C	○
5:20	○	1 Anolis takes C
5:30	○	1 Pimp removed
7:40	Afulva on + off with C	○
7:45	1 Pimp on disc	○
7:50	Pimp takes C	○
10:00	○	○
15:00	○	○
15:15	1 Afulva on disc	○
15:40	Afulva takes 2 Cs	○
17:00	○	1 Pimp removed
20:00	2 Pimps on disc	○
20:15	Both Pimps take Cs	○

cont.

	bait #1	bait #2
21:00	○	1 Lcuvu
21:20	1 Pimp on disc	"
22:00	1 Pimp on disc	"
22:10	Pimp takes C	"
22:40	1 Pimp on disc	Afulva off with C
22:50	Pimp takes C	1 Lcuvu
23:00	○	Lcuvu Leaves
23:20	Afulva takes C	○
24:30	Pimp on disc	○
	(more Pimps in area)	
24:40	Pimp takes C	1 Pimp removed
24:45	2 Pimps on disc	
24:50	1 Pimp takes C	○
	now 1 Pimp on disc	
25:15	3 Pimps on disc	○
25:20	Pimp takes C	○
	2 Pimps on disc	
	(approx 20 Pimps in area)	
25:40	"	Afulva takes C
26:00	3 Pimps + 1 Afulva on disc	○
26:05	Afulva takes C + 1 Pimp takes C	
26:15	2 Pimps take Cs now	○
	5 Pimps on disc	
26:40	2 Move Pimps take Cs	1 Pimp removed
	30 CRICKETS Remain	

X
Y

bait # 1

bait # 2

bait # 1

bait # 2

27:00

3 Pimps take 3C's

1 Lcuv + 1 Pnel on disc

35:00

~18 Pimps on disc

1 Pnel + 1 Lcuv

28:00

7 Pimps on disc

Pnel takes C

0 crickets left.

END

2 leave with Cs

28:30

~12 Pimps on disc

1 Lcuv

Cs going fast!

29:00

In one minute

1 Pnel on disc

36:00

9 pimps entered disc

36:15

+ 6 left. 5 pimps leaving

36:30

had Cs.

36:40

Pnel took C

30:00

15 Pimps on disc

Pnel takes C



2 Pnel on disc

3 leaving with Cs

another Pnel

Pnel takes C

30:30

7 Cs remain

on disc

Other Pnel take C

3 leaving with Cs

31:00

7 Cs remain

Pnel takes C

37:00

1 Afulva + 2 Pnel on disc

31:30

13 Pimps on disc

O

37:10

Afulva takes C

'

3 Take Cs

37:20

Pnel takes C, still 1 Pnel on disc.

32:00

16 Pimps on disc

1 Pnel

37:40

Another Pnel on disc (2 Pnel)

1 C remains

38:00

Pnel takes C

33:00

14 Pimps on disc

Pnel takes C

38:30

Now 35 Cs remain

1 Cricket left

39:00

O

33:30

Pimps avoiding last C

O

39:45

1 Pnel on disc

34:00

1 Cricket left.

39:50

2 Pnel on disc

~ 15 Pimps on disc

40:00

1 Pnel takes C

34:30 I removed last C & replaced it with another, with 5 sec it was gone

40:15

3 Pnel on disc

40:40

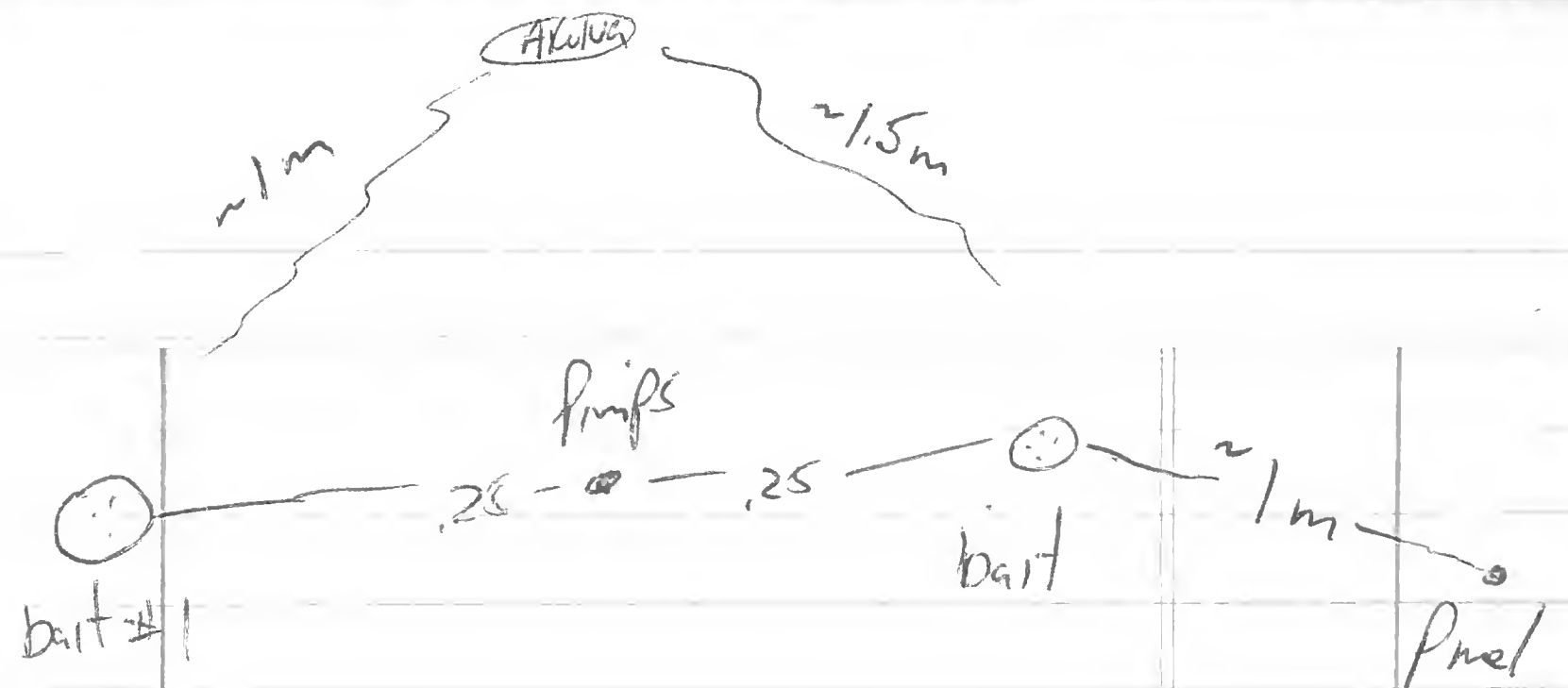
1 Pnel takes C

cont

X
Y

part # 2 cont.

41:00	2 Pnel on disc
41:30	Pnel takes C
41:45	1 Pimp removed - 1 Pnel on disc
42:00	Pnel takes C
43:00	0
43:10	1 Afulva on disc - show off with 2 Cs
44:15	1 Pnel on disc
44:30	Pnel takes C
45:15	1 Pnel on disc
45:20	Pnel takes C
46:00	0
49:20	1 Pnel on + off with C
52:00	1 Pnel on disc
52:25	Pnel takes C
53:00	1 Pnel on disc
53:10	2 Pnel on disc
53:15	1 Pnel takes C
54:00	Pnel takes C
58:20	1 Afulva on + off with C
59:15	1 Pnel on disc
59:35	Pnel takes C
60:00	0
	21 crickets remain



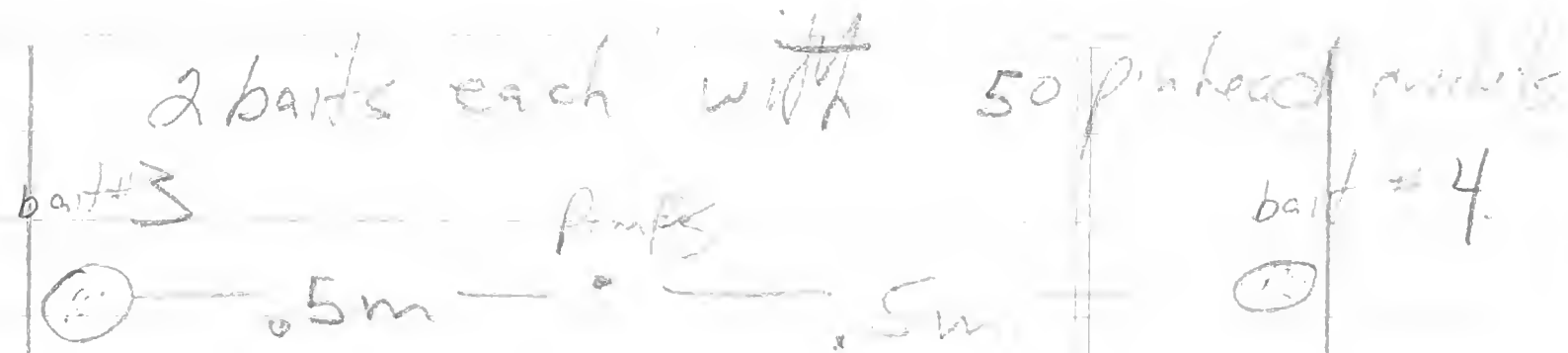
Pnel coming from 1 meter to the right & down hill from disc, Afulva coming down hill to disc's.

70:00	2 Pnel on disc 17 crickets remain
82:00	1 Pnel & 1 Afulva on disc 13 crickets remain
88:00	2 Pnel on disc 10 crickets remain
91:00	1 Pnel on disc 9 crickets left

ENP

1330 HRS
North Branch
22 June 79

Summer hot, humid TA 25°
TB 24°



All Pimps removed from bait #2

	bait #3	bait #4
3:00	1 Arudis on off with C	○
5:00	○	○
6:40	○	1 Leuvu on disc
8:20	○	Leuvu leaves disc
10:00	○	○

Pimps appear to be cleaning out colony opening & not foraging

16:20	○	1 Arudis on disc
16:30	○	Arudis takes C
19:15	○	1 Arudis on disc
19:20	○	Arudis takes C
25:00	1 Pmel on disc	○
25:20	Pmel takes C	○
28:00	○	○
30:00	○	○
31:30	1 Arudis on off with C	○

cont

bait #3

bait #4

36:20	○	1 Pimp removed
41:00	○	1 Pmel on disc
41:10	○	Pmel takes C
46:00	1 Arudis on disc	○
46:05	Arudis takes C	○
47:15	Arudis takes C	○
54:00	Arudis on disc	○
54:10	Arudis takes C	○
59:30	○	1 Pmel on disc
60:00	○	1 Pmel on disc
60:15	○	Pmel takes C

END

44 crickets

46 crickets
female

Remain

Pimps not going from nest opening

X
Y

22 June 79
1530 HR
North Beach

Sunny hot - humid TA 25.5
slight breeze TG 24.0

2 baits each with 50 pinned crickets
25m from pump colour opening

bait #5



bait #6



All Pumps removed from bait #5

bait #5

1 Pump removed

1 Pump removed

0

0

0

0

0

0

0

0

0

5:00 0

5:20 Ant. take

6:00 0

bait #6

1 Pump + 2 Ant. ponds

1 Ant. - 1 Pump take CS

1 Ant. take CS

1 Pump on disc

Pump still on disc

2 Pumps on disc

1 Ant.

4 Pumps on disc

2 Pumps take CS

5 Pumps on disc

Pump from 1:00 still on disc

5 Pumps - 1 Ant. on disc

2 Take CS

Ant. closed without

9 Pumps on disc

1 Ant. take CS

3 Pumps take CS

Bait #5

Bait #6

7:00

0

~10 Pumps many walking around on disc + not touching CS

7:40

0

4 leave with CS

8:00

0

17 Pumps on disc

8:30

0

30 crickets remain

9:00

0

21 Pumps on disc

5umping CS

10-11

0

In one minute 19 Pumps left disc (10 carrying CS) and 13 entered disc

11:30

0

18 Pumps on disc ~12 crickets remain

12:00

0

~23 Pumps 7 crickets remain

12:50

0

~20 Pumps on disc 3 crickets

13:30

0

All crickets gone still ~20 Pumps on disc

15:00

0

~25 Pumps on disc

END

X
Y

cont.

At 20 minutes ~30 Pumps on disc

bait #5

21:00	1 Pimp removed
24:30	1 Amdis on disc
25:10	Amdis finally takes C
30:00	○

At 30 minutes stop
Removing Pimps from disc

33:00	1 Pimp on disc
33:15	Pimp takes C
35:00	Pimp with C entered colour arena
35:00	1 Amdis on disc Amdis ran his antennae over 6-8 painted crickets & finally took one at 35:30
35:45	1 Pimp takes C
36:00	1 Pimp on disc
36:40	Pimp takes C
39:00	1 Pimp on disc
39:10	Pimp takes C
40:10	1 Pimp on disc
41:10	Pimp takes C
41:30	2 Pimps on disc
41:40	1 Pimp takes C

bait #5 cont

* Amdis in bait #6 has 9 Pimps on disc

bait #5

42:00	1 Pimp on disc & 1 Amdis entered. Amdis was carrying a small object, dropped it, picked up 1 cricket and left
44:00	2 Pimps on disc
44:05	Both Pimps leave with CS
44:30	1 Pimp on disc Pimp takes C
44:40	Pimp takes C
45:00	2 Pimps on disc
45:20	1 Pimp takes C
46:00	35 crickets remain
46:30	3 Pimps on disc & a large group of ants now coming towards bait
46:40	2 Pimps take CS
48:00	3 Pimps on disc
48:15	1 Pimp takes C
48:30	5 Pimps on disc
49:00	3 Pimps leave with CS
49:30	8 Pimps on disc
50:00	12 Pimps on disc 4 leaving with CS #6 entering disc

cont.

X
Y

part #5

50:45 ~15 Pimps on disc
17 Cs remain

51:00 15 Pimps on disc
5 taking Cs

52:00 20 Pimps on disc move
in area. A steady line
now going in and out
of opening

53:00 20 Pimps on disc
3 Cs remain

53:45 All cickets gone
Pimps all over disc
~25 Pimps

END

