Urban Entomology

Some of the Insects that Live With Us

Sources of Help

- Cooperative Extension (Extension)
 - Information, pamphlets, identifications
- Lawn Maintenance Operations
- Pest Control Operators (PCOs)
 - "Exterminators"
 - Deal with household/stored product pests
 - Deal with structural pests

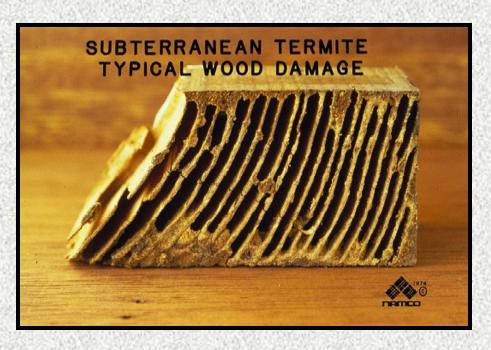
Knowledge Can be a Key

Not all ants are pests!

Structural Pests

- Attack our homes, furnishings, outbuildings
 - Termites
 - Carpenter ants
 - Powderpost beetles

Termites



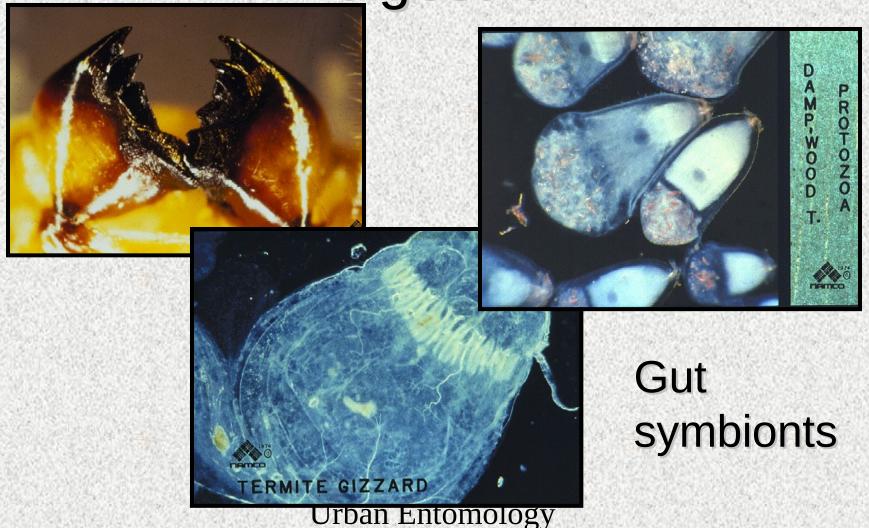
- Most important structural pest group
- \$1-3 billion/year in US
- More common in warm/humid situations
- Feed on cellulose chief substance of wood

Termites are Social Insects

- Division of labor
- Specific reproductives - most are "workers"
- Termites
 - Reproductives
 - Soldiers
 - workers



Termites Eat Wood but cannot digest it!



Insects that Live With Us

Termites are not born with internal symbionts

Food is regurgitated and feed to nymphs

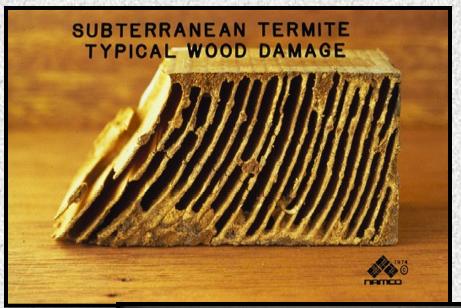
Proctodeal Feeding



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Termites feed on cellulose





Subterranean Termite damage to Holy Bible

ng, and I wharf peradwill come to heet me: he sheweth me I will tell nt to an high place. et Ba'laam: and he said e prepared seven altars. upon every altar a bul-

NUMBERS 23, 24

out a word in Ba'laam's Return unto Balak, and

ed unto him, and, lo, he sacrifice, he, and all the

Moab hath brought me of the mountains of the e, curse me Jacob, and

se, whom God hath not hall I defy, whom the

p of the rocks I see him, I behold him: lo, the alone, and shall not be

the dust of Jacob, and fourth part of Israel? a of the righteous, and

20 Behoto, I have received commo ment to bless; and he hath blessed; at cannot reverse it.

21 He hath not beheld iniquity in Jaco neither hath he seen perverseness in I-

shout of a king is among them.

22 God brought them out of Egypt; be hath as it were the strength of an unicom. hath as it were the strength of an unicon-23 Surely there is no enchantment against Jacob, neither is there any divina-tion against Israel according to the time that hath God wrought is served to street. What hath God wrought is read to served tion, and the up menel as a young iron-the shall not lie the bloods of the served the prey, and the up menel as a young income the shall not lie the bloods of the stain 23 And Ballak said unto Balsam, Ne-ther curse them at all, nor bless them

all.

28 But Ballaam answered and said unt
Balak, Told not I three, saying, All that the
Lone speaketh, that I must 60?

27 And Balak said unto Balaum, Come,
I pray thee, I will bring the ento another
place; peradventure it unit please God that
thou mayest curse me them from there28 And Balak brought. Balaum tho the
top of Pe'or, that lookuth cursed less's
peace.

God brought hirs forth out of Egypt; which as it were the strength of an unit of a fine and the strength of an unit of a fine and the strength of an unit of a fine and the strength of a fine at the strength of a fine and the strength of t

behold, thou hast altogether blessed them these three firmes.

If Therefore now flee thou to thy place: I thought to promote thee unto great hon-our; but, lo, the Lono hath kept thee back

20 m honour, my 12 And Ballaam said unto Ballak, Spake

2.24 monotoning and the state of the state o

returned to his)

AND Israel people be with the daug 2 And they eat, and boy

3 And Israe all the heads up before the the fierce ang

way from Isi 5 And Mose Mid'i-an-it-i gation of th

Insects that Live With Us

Types of Termites

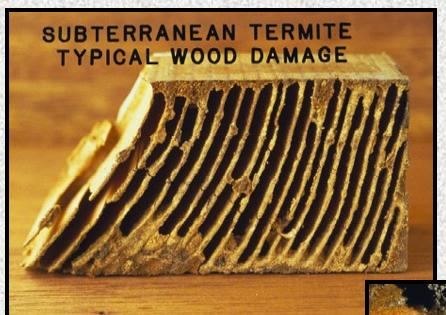
- Subterranean
 - Small
 - Require contact with soil (moisture)
 - White or cream in color
 - Common in and out of doors
 - More common in eastern WA

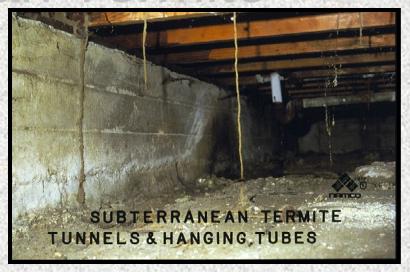
- Dampwood (Dry-)
 - Larger
 - Do not require soil contact
 - Dark in color
 - Common in westernWA

Types of Termites



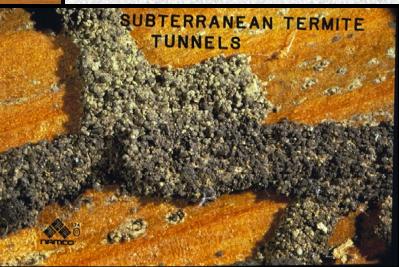
Subterranean Termite



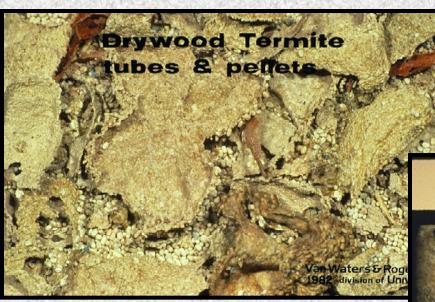


Follow grain

Construct soil tunnels



Dampwood Termite



No soil tunnels

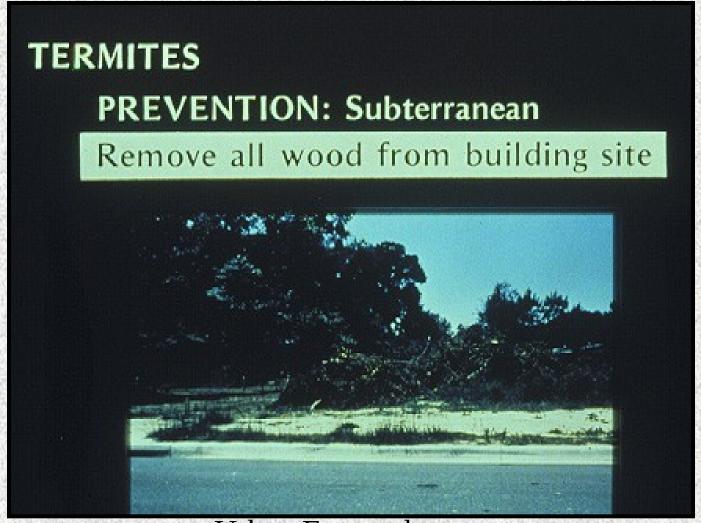
Western Drywood Termite pellets in a cardboard box

Van Waters & Rosens Inc.
1990 Substiliary of Tink

Found throughout structures and in furnishings

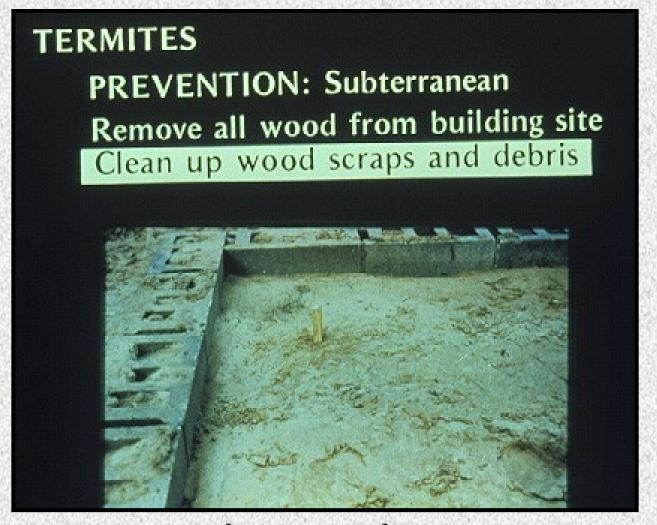
How can one help prevent termite damage?

Remove Natural Wood



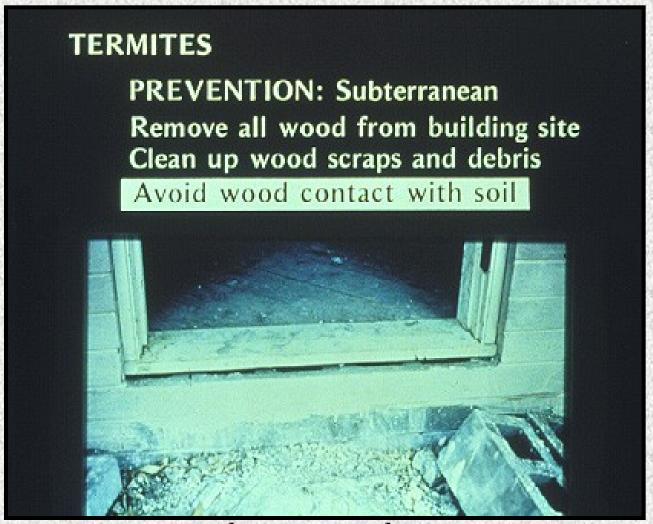
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Remove Wood Debris



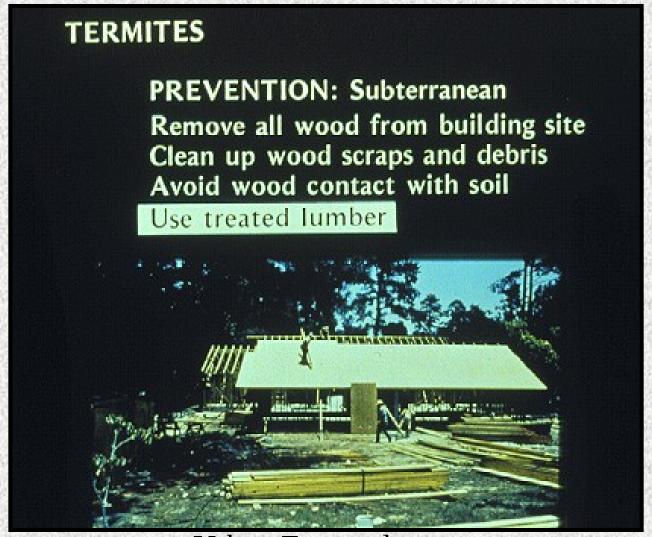
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Avoid Wood/Soil Contact



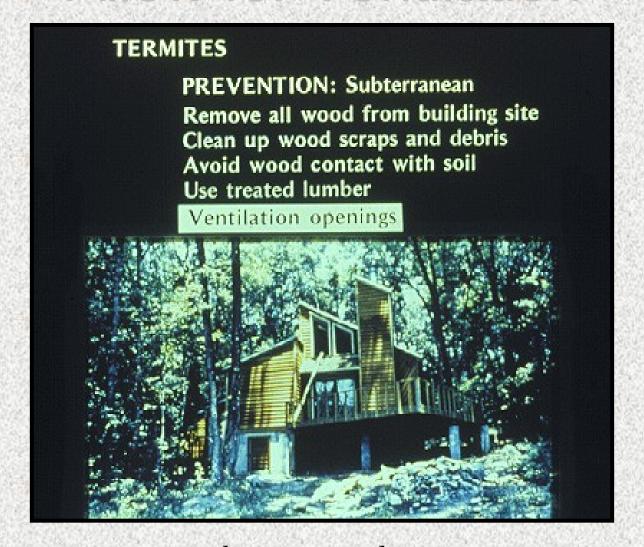
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Use Treated Wood

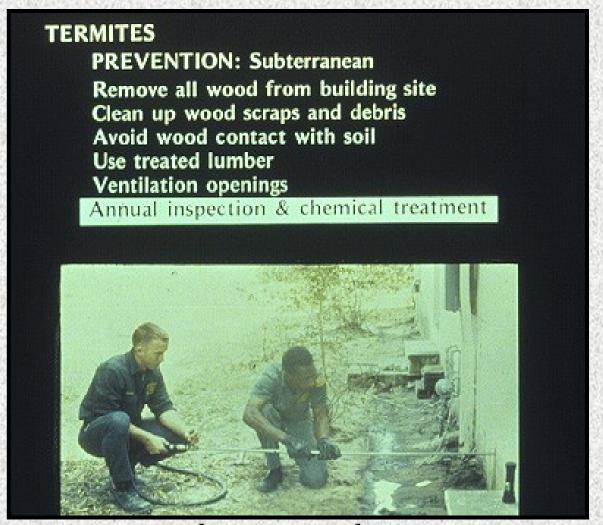


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Allow for Ventilation

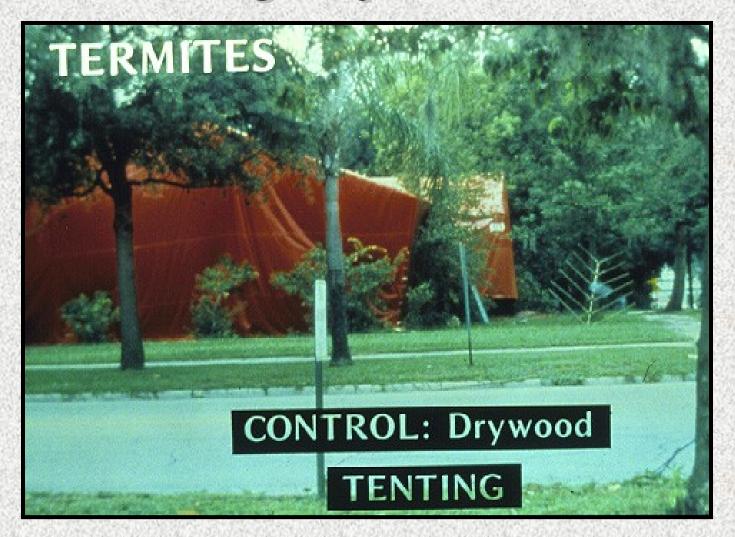


Regular Inspections



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Combating Drywood Termite



Carpenter Ants

- "Nest in wood do not feed on it.
- Common worldwide
- More of a pest in temperate areas
- Social structure much like termites



Common in Wooded Areas

- Beneficial in nature important decomposers
- Predators
- Soil contact not needed
- Always associated with wood



Ants are Holometabolous

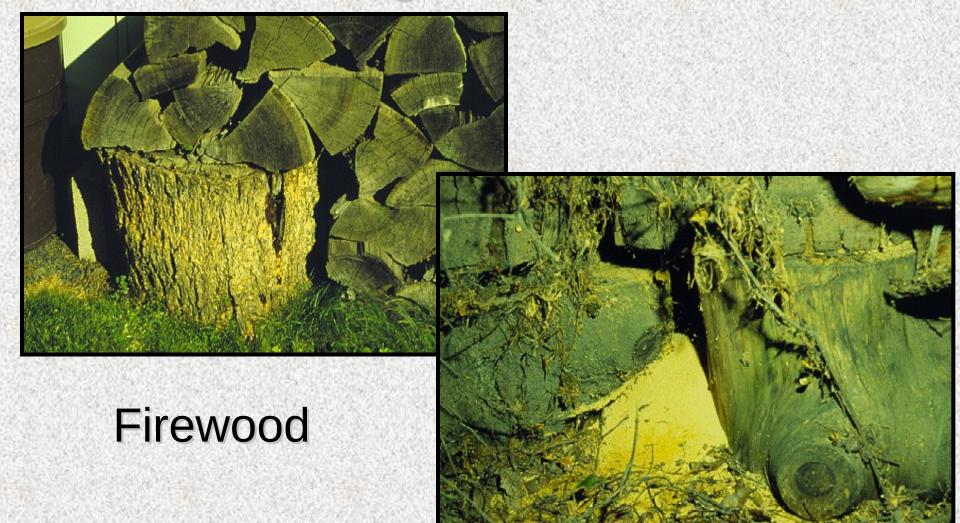


Ants Nest in Wood

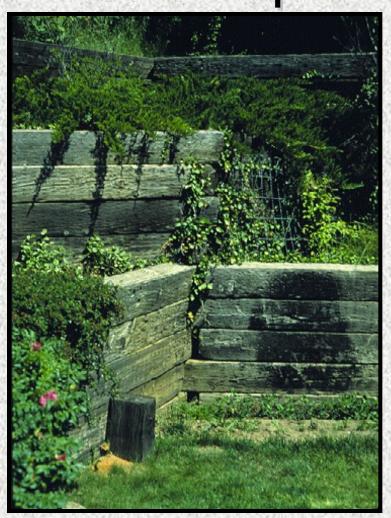
NocturnalMain colony and satellites"Sawdust" often a sign



Introducing Carpenter Ants



Carpenter Ant Colony





Can be very difficult to locate main colony



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Bryant Hall - WSU









Household Pests - Cockroaches!

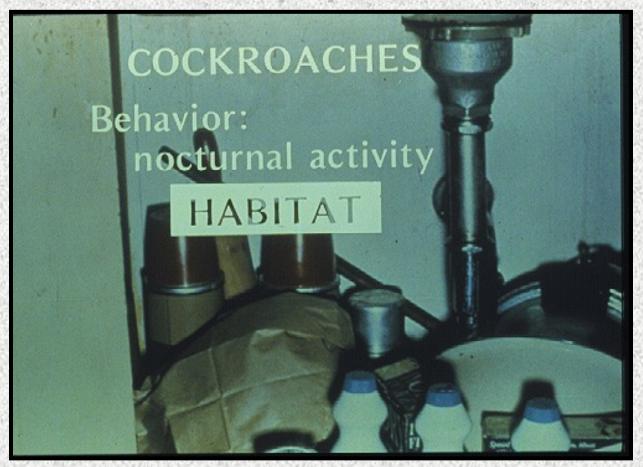


Are Roaches Misunderstood?

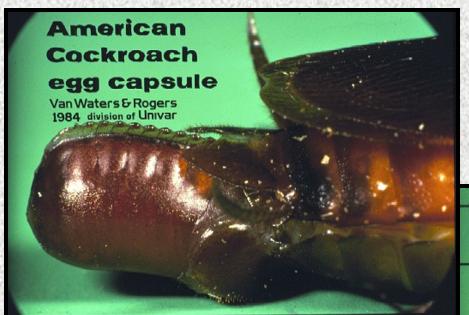
- Nocturnal
- Tropical like hot and humid
- Important decomposers in nature
- Omnivorous
- Anthropogenic



Roaches like dark, warm, damp places



Oötheca



Allows dispersal of young

Cockroach Egg Capsules

American

Oriental

Brownbanded

VanWaters & Rogers
1984 division of Univer

Different in differing species

Cockroach Lifecycle



German Cockroach

- Very active species
- Adults almost 1 inch in length
- Introduced in grocery bags, laundry, cardboard boxes, potato sacks
- "Water Bug"



Brown-banded Cockroach

- Almost 1 inch in length
- Frequent cracks and crevices
- Often in woodwork and furniture



American Cockroach

- Larger, adults 2 inches in length
- Long lifespan (up to one year)
- Common in damp basements and sewers
- Females produce 500-700 young

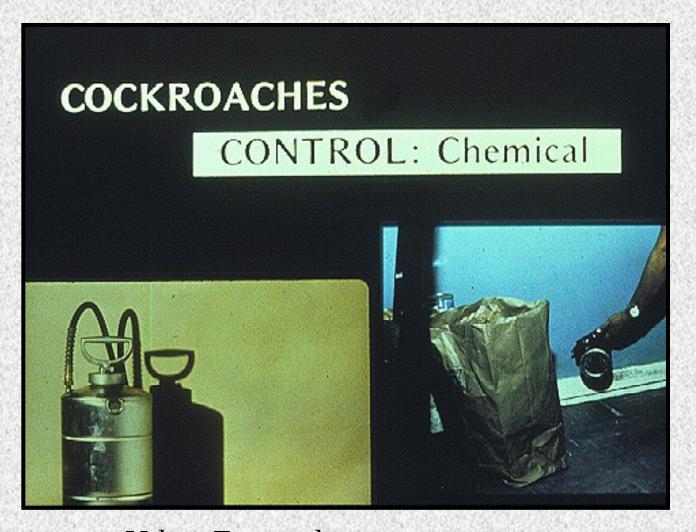


Cockroach Management



Cockroach Management

Some IGRs being used



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