

Identification of some common Cockroaches

Small sized cockroaches (<5/8")



German roach



Asian roach



Female



Male



Cuban cockroach



Surinam cockroach



Brown-banded roach



Male



Female

Woods cockroaches

Large sized cockroaches (> 1 1/4")



Florida Woods Roach



Smoky Brown Roach



Australian Cockroach



American cockroach

Cockroaches

A PICTORIAL KEY TO SOME COMMON ADULT COCKROACHES

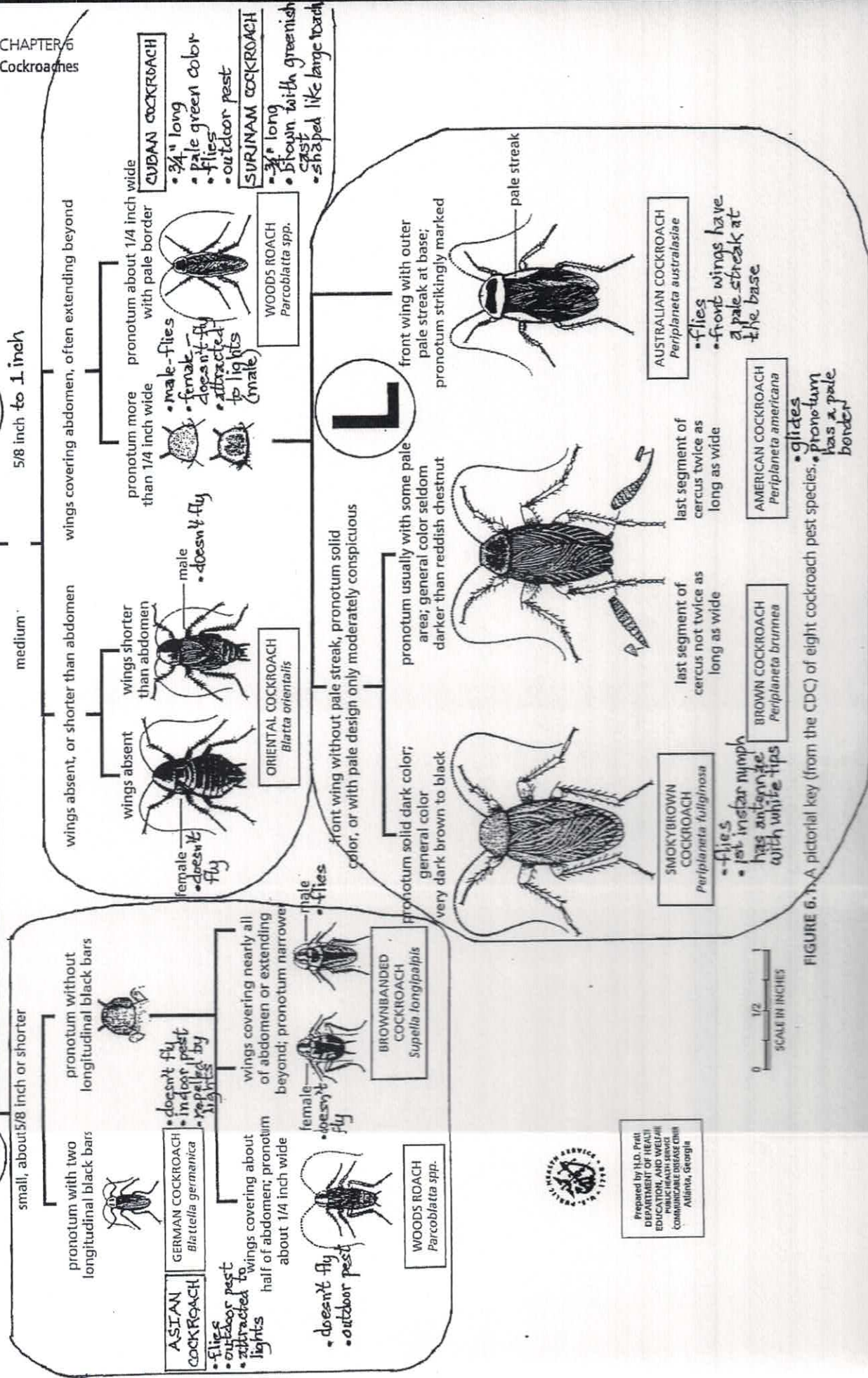
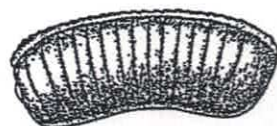


FIGURE 6.1 A pictorial key (from the CDC) of eight cockroach pest species. • pronotum has a pale border

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EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
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Cockroach Egg Capsules (Ootheca)



Pennsylvania woods roach

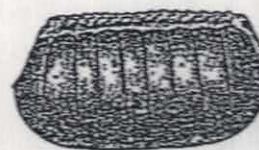
1) Ootheca curved in an inverted half-moon shape; usually contains 16 eggs on each side. Normally found outdoors under bark of old logs and stumps—Pennsylvania woods roach.

1') Ootheca straight, at least on the bottom side. Normally found in buildings.....2



Oriental cockroach

• 8 eggs on each side
• usually drops egg capsule



American cockroach

• 8 eggs on each side
• usually drops egg capsule



Brownbanded cockroach

2) Ootheca 1/4 inch or less in length; no more than nine eggs on each side—brownbanded roach.

2') Ootheca 1/3 inch or more in length.....3

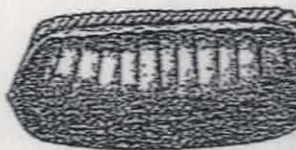


German cockroach

• 12 to 24 eggs on each side
• carried by female about 27 days & dropped a day before hatching

3) Ootheca slender, about 1/3-inch long; light brown. Top and bottom sides parallel; contains 12 to 24 eggs on each side. Carried by the female until a day before hatching—German cockroach.

3') Ootheca purse shaped, not slender; length greater than 1/3 inch; dark brown to black.....4



Smokybrown cockroach

• 12 eggs on each side
• glues to surfaces

4) With 12 eggs on each side—smokybrown cockroach. **

*The ootheca of these species are quite difficult to separate with accuracy.

**The ootheca of the brown cockroach may key out at this point. It is difficult to distinguish between oothecae of these two species.

Identification of some common Ants in Georgia

Small one-nodded ants (about 1/8")



Argentine ant

Can see node - prefers sweets



Odorous House ant

Can't see node - prefers sweets



Crazy ant

Runs erratically - long legs & long 1st antennal segment

Med. - Large one-nodded ants (1/4" - 3/4")



Field ant

Runs rapidly along trails
top of thorax is uneven in shape



**Larger Yellow Ant
(Citronella ant)**

Golden yellow in color with
small eyes - top of thorax
is uneven in shape, worker

2 nodded ant - 3 pr. spines



Leaf cutter ant

3 pair of spines on thorax
builds mounds deep in soil
strips trees and shrubs of leaves



Fire ant

Builds mounds
polymorphic, stings



Pharaoh ant

Extremely small (1/12")
yellow or orange in color

2 nodded ants - 1 pair of spines on thorax



Acrobat ant

Heart shaped abdomen when
viewed from above - raises
abdomen over thorax when
disturbed (nests in dead wood)



Pavement ant

Parallel lines or ridges
on head and thorax



Big-Headed Ant

Enlarged head - two sizes of workers (dimorphic)



Harvester ant
Long hair under head
(nathens seeds)



Little black ant

Extremely small (1/15") - jet
black in color



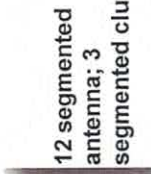
Thief ant

Extremely small (1/20") - stings
dirty yellow or brown in color



Fire ant

10 segmented
antenna; 2
segmented club



Pharaoh ant

Extremely small (1/12")
yellow or orange in color

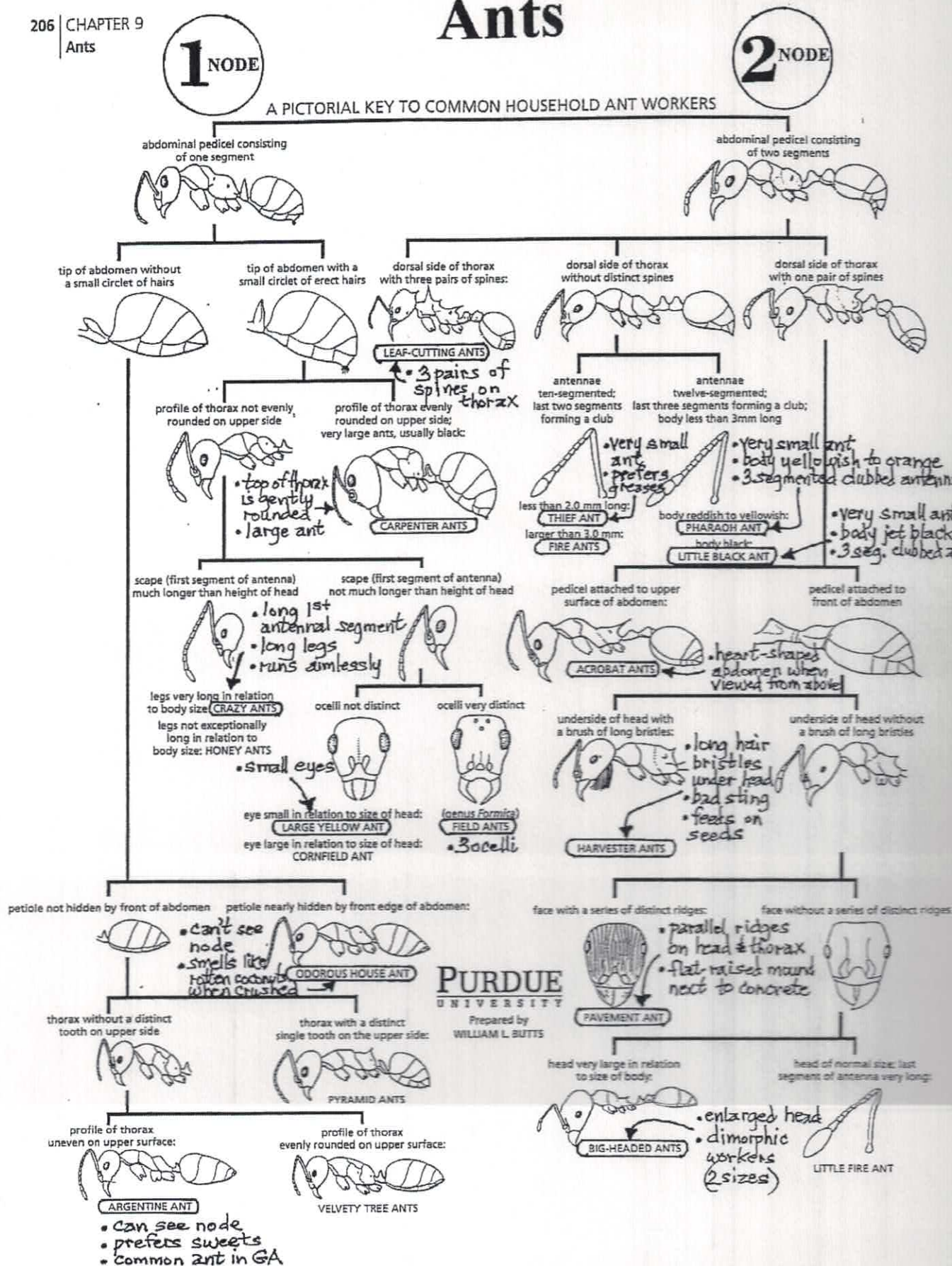


FIGURE 9.4. A pictorial key to common household ant workers. (Purdue; drawing by Provonsha)

Key to Common Stored Product Pests

Scavengers



Saw-toothed Grain Beetle

6 teeth on each side of pronotum
Can't fly
Found in South



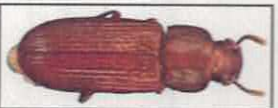
Merchant Grain Beetle

6 teeth on each side of pronotum
Can fly
Found in North



Red Flour Beetle

No teeth on sides of pronotum
3 seg. clubbed antennae
Can fly
Found in South



Confused Flour Beetle

No teeth on sides of pronotum
Gradually enlarged clubbed antennae
Can't fly
Found in North



Rice Weevil

2 spots on each front wing (elytra)
Can fly
Found in South



Granary Weevil

No spots on front wings
Can't fly
Found in North



Lesser Grain Borer

Pits on front wings (elytra)



Bean Weevil

Shortened front wings (elytra)

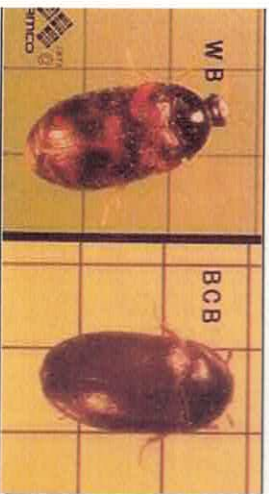


Cow Pea Weevil

Shortened front wings (elytra)

Internal Feeders

External Feeders

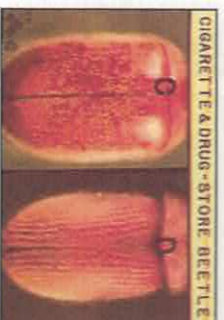


Warehouse Beetle

Mottled body (black & brown)

Black Carpet Beetle

Black body
Brown legs



Cigarette Beetle

Adult - no lines on front wings, humpbacked side profile
Can fly

Drugstore Beetle

Adult - lines on front wings, flattened side profile
Can fly



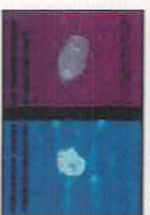
Psocid

1 - 2 mm long
6 legs



Spider Beetle

Looks like spider, but it has 6 legs and is a beetle



Grain mite

8 legs, 1 mm or <
Long hairs



Yellow Mealworm

Adult - 1/2" & shiny black; Larva - Yellow

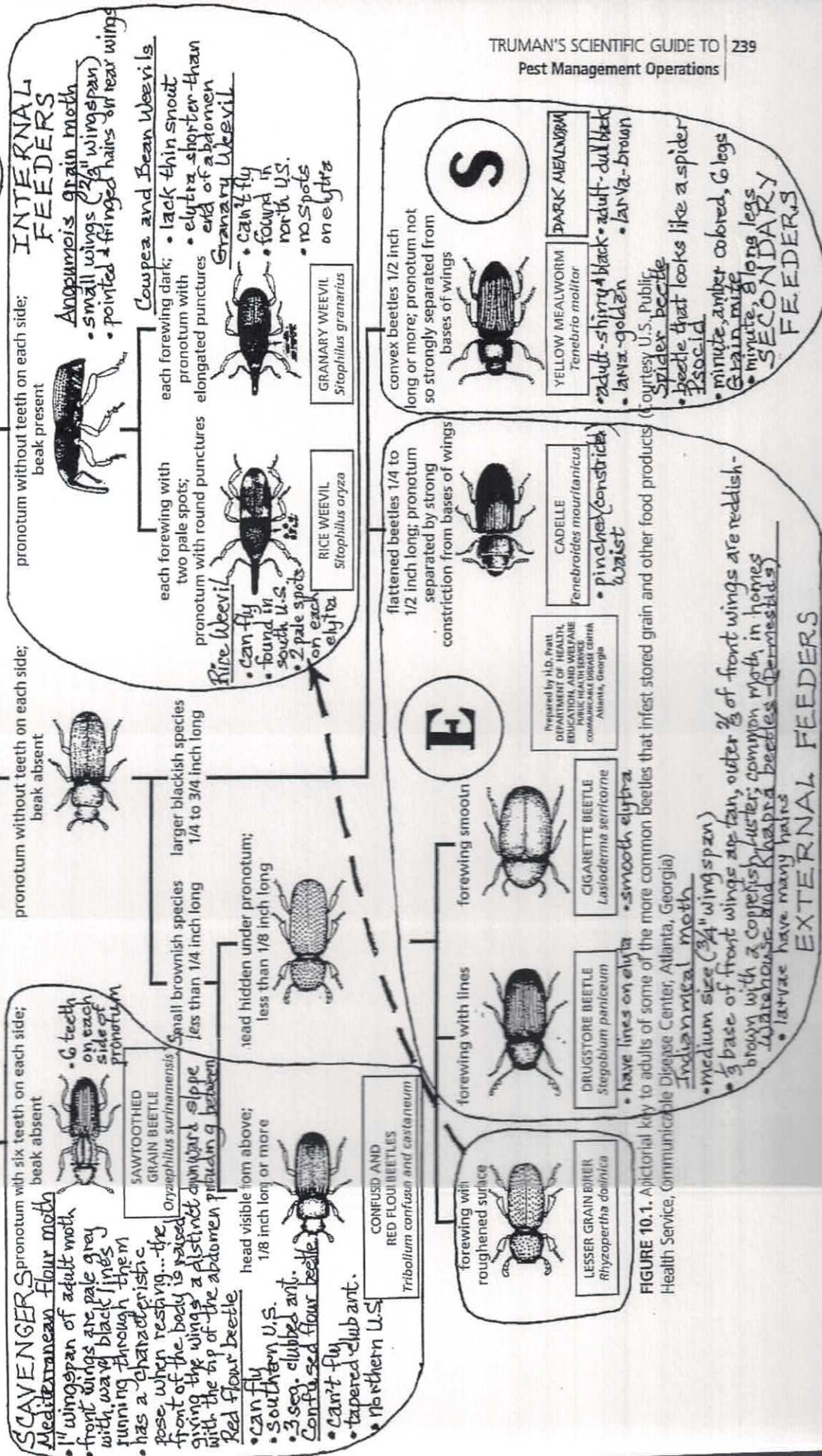
Cadelle

Adult - Black - 1/3"
Constricted waist



Stored Product Pests

A PICTORIAL KEY TO SOME COMMON BEETLES
ASSOCIATED WITH STORED FOODS



Stored Product Pest Adult Moths

Mediterranean flour moth:

The front wings are pale grey with wavy black lines running through them. It strikes a characteristic pose when resting...the front of its body is raised, giving the wings a distinct downward slope.

Its wings have a 1" wingspan



Indianmeal moth:

Its front wings are tan along the 1/3rd base and are reddish-brown with a copper luster on the outer 2/3's.

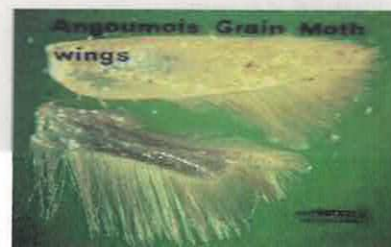
Its wings have a 3/4" wingspan.



Angoumois moth:

The Angoumois moth has hind wings that are characteristically pointed and fringed with hairs (feather-like in appearance).

Its wings have a 2/3" wingspan.



Stored Product Pest Moths

Type of feeder

SCAVENGER

M

Mediterranean Flour Moth



INTERNAL

A

Angomouis Gain Moth



V = VIET NAM

In Viet Nam, when soldiers did not wash their uniforms, they got soiled and Stored Product moths laid eggs on them...and they got damaged by the Stored Product moth larvae.



I Indian Meal Moth

EXTERNAL FEEDER

Comparison of the CLOTHES MOTHS

Webbing clothes moth

It has no dark spots on its wings and has a tuft of red setae (hairs) on its head



Webbing clothes moth larvae



Casemaking clothes moth

The adult moth has a pair of three dark spots on its front wings



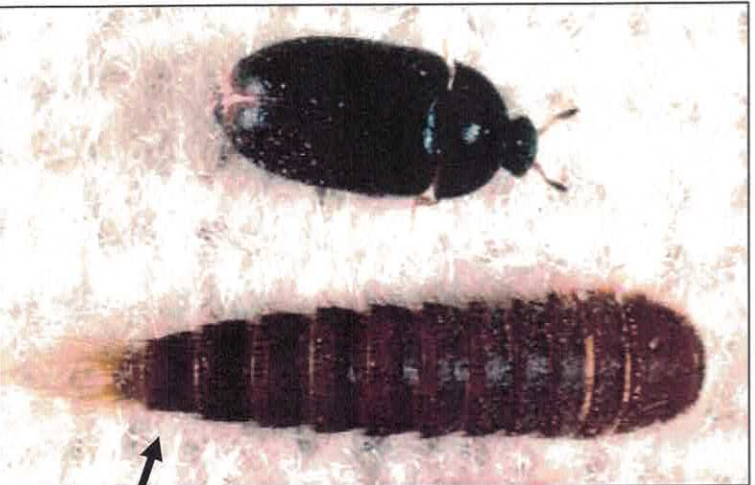
Casemaking clothes moth larvae

The larva carries a small silken cell, bag or case around it when it moves



Comparison of the CARPET BEETLES

Black carpet beetle



Common carpet beetle

Continuous series of red scales running down the middle of the body where the wings meet



Varied carpet beetle

Body scales distinctly narrow, more than twice as long as wide



Furniture carpet beetle

Body scales distinctly broadened, less than twice as long as wide



The adult Black carpet beetle is entirely dark brown to black without scales.

The larva is shaped like a carrot or cigar and has long brushy tail bristles



The larva of the Varied carpet beetle has many spear-shaped hairs called haustisetae that arise near its rear end in dense clumps



Key to some Common Flies

Small flies



Fruit fly (family Drosophilidae)

1/8" (2.5 mm), normally has red eyes, develops in freshly decaying fruits and vegetables, found in drains plants



Phorid fly

4-6 mm, humpbacked, normally has dark eyes found in more advanced decaying food (putrid) and decaying dead animals, found in drains



Moth fly (Drain fly)

2-2.5 mm looks like a moth, hairy body and wings, weak flier, often hops on ground often found in drains



Fungus gnat

2 - 5 mm, dark colored, looks like a mosquito without scales on wings, often found in over-watered potted

Medium to large flies



Flesh fly (family Sarcophagidae)

2 to 3 times larger than a house fly, 3 dark stripes on the thorax, grey and black checker-board abdomen, adult females opportunistically deposit hatched or hatching maggots instead of eggs on carrion, dung, decaying material or open wounds of mammals.



Bottle & blow flies (family Calliphoridae)

Roughly twice the size of a house fly, metallic-colored, sponging/lapping mouthparts, develops on dead animal carcasses



Common House fly (family Muscidae)

6 to 7 mm in length, 4 dark stripes on the thorax, sponging/lapping mouthparts, adults feed on fresh and fermenting/rotting food and garbage, adults inactive at night

Key to some Common Flies

Some biting flies



Horse fly

Horse-flies or horseflies are true flies in the family Tabanidae in the insect order Diptera. They are often large flies and are agile in flight. The females bite animals, including humans to obtain a blood meal. They prefer to fly in sunlight, avoiding dark and shady areas. They are inactive at night. They tend to drive people mad with their persistent pursuit to bite man.



Deer fly

Deer flies are also Tabanids. They are smaller than wasps and have colored eyes and dark bands across their wings. While males feed on nectar, the female has a painful bite and feeds on blood. Some people have severe allergic reactions to the bite of the female deer fly.



Stable fly

Stable or barn flies are slightly smaller than house flies, but they have biting/piercing-sucking mouthparts and both sexes take a blood meal during the daytime. Their bite is almost painless.



Black fly

They lay their eggs in fast moving streams and their larvae attach to rocks. Adult females feed on blood of man and are a nuisance. They may vector several diseases such as River blindness.



Biting midge

They are often called no-see-ums, punkies or sandflies. They are found in almost any aquatic habitat including mountain areas. Females bite humans, suck blood, and cause an allergic reaction...a red welt that can persist for more than a week.

Overwintering flies

Overwintering flies make their debut in the fall when they fly to the sunny (south & west) sides of structures and crawl through cracks and other openings around windows, doors, siding, utility pipes, chimneys, through damaged screens and vents and underneath the fascia in search of protected sites to survive the Winter. They may overwinter in the attic, in wall voids and over drop-ceilings and emerge inside the home the Spring in a confused attempt to go outside. They are nuisance pests!



Cluster fly

Cluster flies are slightly larger than the common house fly and are rather sluggish fliers and easily "swatted" or captured. They are dull-gray with black markings and have golden-yellow hairs on the thorax, which can give the appearance of a golden sheen. The hairs are more numerous on the under side of the thorax between and near the legs. They lay their eggs on the soil outside. Their larvae find, enter and are parasitic on earthworms.

Face fly

Face flies look similar to house flies, but are slightly larger. They are pasture flies and are not found in feedlots, dry lots or horse stables. It is a non-biting fly that feeds on animal secretions, nectar and dung liquids. Adult female face flies typically cluster around the host animal's eyes, mouth and muzzle, causing extreme annoyance. They are economically important to livestock producers since they can transmit several eye diseases and parasites to cattle.



Characteristics of Rodents

Characteristic	House Mouse	Roof Rat	Norway Rat
General appearance:	small & slender	sleek & graceful	large & robust
Adult size: weight length	0.4 to 1.0 ounce 2 to 3.5 inches	5 to 9 ounces 6 to 8 inches	7 to 18 ounces 7 to 9.5 inches
Shape of snout:	pointed	pointed	blunt
Ears:	large with some hair on them	large, nearly naked	small with short hairs
Eyes:	small	large, prominent	small
Tail:	uniformly dark	uniformly dark	dark above, pale beneath
Fur:	light brown-light gray, smooth	agouti to gray to black venter white, gray, or black	brown with scattered black, venter gray to yellow-white
Droppings:	rod-shaped, 1/8" to 1/4"	spindle shaped, 1/2"	capsule shaped, 3/4" to 1"
Senses: sight taste, smell, touch & hearing	poor, color-blind excellent	poor, color-blind excellent	poor, color-blind excellent
Food:	Omnivorous, cereals & grains	Omnivorous, nuts, grains fruits and vegetables	Omnivorous, meat, fish, grains
Water requirements:	3 to 9 ml/day can subsist on free water	15 to 30 ml/day	15 to 30 ml/day
Feeding habits	Inquisitive, nibbler	shy (new objects), glutton	shy (new objects), glutton
Climbing:	Good climber	Very agile, active climber	Readily climbs, limited agility
Nests:	Inside structures, stored food, burrows	Walls, attics, vines, trees; sometimes burrows	Usually burrows in ground
Swimming:	can swim	can swim	excellent swimmer
Home range:	10 - 33 feet	approx. 100 to 150 feet	approx. 100 to 150 feet
Young per litter:	4 to 7	4 to 8	8 to 12
Young weaned per female per year	30 to 35	20	20
Length of life	1 year	1 year	1 year