

UNIVERSITY OF ALASKA
MUSEUM OF THE NORTH

INTEGRATED PEST MANAGEMENT
PLAN
2008
(Updated March 2016)

Approved By:

[signature on file]
Aldona Jonaitis, Museum Director

October 7, 2008
Date

INTEGRATED PEST MANAGEMENT PLAN

TABLE OF CONTENTS

INTRODUCTION	1
1. Avoidance	2
2. Blocking Entrance to the Museum Environment	3
3. Detection / Record-Keeping	4
4. Response	5
5. Recovery	6
APPENDICES	
I. Procedures	i
I.A. Housekeeping Procedures	i
I.B. Housekeeping Schedule	ii
I.C. Blocking Access: Control Procedures	iii
I.D. Monitoring and Inspecting Procedures	v
I.E. Response / Treatment Procedures	vi
II. Pest Identifications	vii
Common Museum Insect Pests	vii
Pests Found in the UAM Facility	ix
III. Museum Floorplan	x
IV. Forms	
IPM Inspection Form	
IPM Infestation Report Form	

Integrated Pest Management Plan - 2008

INTRODUCTION

The University Of Alaska Museum Of The North's (UAMN) collections represent a physical record of the natural and cultural history of Alaska, the circumpolar North, and other regions of the world. The majority of these collections are composed of organic materials such as leather, skin, fur, feathers, and textiles that are subject to irreparable damage and destruction by a variety of museum pests. Most commonly these pests are insects, but organisms ranging from fungi to rodents are a threat to the collections as well.

Protection of the collections is best achieved by a systematic and integrated program that controls the introduction of potentially infested materials into the Museum, requires regular monitoring and inspection of the museum facility and collections, ensures good housekeeping practices, and provides the means to eliminate infestations. Therefore, the Museum has developed an Integrated Pest Management (IPM) policy based on the concepts of avoidance (prevention), detection, response, and recovery.

Since the Museum has a shared collections range where nearly all collections are held, the staff must work together to prevent pest infestations. Everyone working in the UAMN must be familiar with the IPM policy. It is the responsibility of each Department Head to see that his/her staff and all personnel understand and abide by the IPM policy, regardless of their museum status. These include staff, students, visiting researchers, and volunteers/docents.

1. AVOIDANCE:

Goal: To reduce the attractants that invite infestation or increase the pest numbers.

Pests can enter a museum by boring holes or by using existing ones. They can be carried in by staff and enter on objects being accessioned, on loan, on equipment, or on merchandise. Good building design and maintenance can reduce the former, while quarantine, inspection, and treatment will reduce the latter.

EXTERIOR ENVIRONMENT:

Avoidance begins with the establishment of a **pest-unfriendly exterior environment**. The UAMN building has been designed with a ground barrier around the perimeter, which includes a surface layer of gravel or rock. This reduces rodent and insect harborage and keeps standing water away from the structure. The building exterior will be inspected semi-annually to ensure pests are not entering through holes, window, doors, walls, or any other opening.

INTERIOR ENVIRONMENT:

Creating a stable environment is the first step for avoiding pest infestation inside the museum. The UAMN environment is regulated to maintain a **stable temperature and relative humidity** (collections range is set to 68 degrees F with a summer RH of 42% +/- 2% and a winter RH of 35% +/- 2%; 30 day transition between season) that is less likely to support the presence of pests.

Accumulated dirt, dust, and hair from inadequate housekeeping; foodstuffs introduced into storage or exhibition areas; and animal nests and corpses all provide ideal breeding and survival conditions for insects and rodents. Training in **efficient housekeeping practices and timely maintenance** of the museum building contribute greatly to preventing infestations.

Storing specimens and objects appropriately will also help to avoid infestation. Sealed metal cabinets protect collections by keeping pests out as well as helping to prevent the spread of pests from infested material contained inside.

HOUSEKEEPING PROCEDURES:

See Appendix I.A. for a full description of housekeeping procedures for museum staff as well as custodial staff.

2. BLOCKING ENTRANCE TO THE MUSEUM ENVIRONMENT

Goal: To block access for pests to the museum environment, thus helping to lessen the chances of infestation.

PHYSICAL CONTROL:

New acquisitions, incoming loans, and objects returned to the collection after loan to another institution sometimes carry pests. Packaging materials such as corrugated cardboard or felt are potential harborages of infestation. Direct physical control begins with the **isolation** of all materials and artifacts entering a collection – inspect them thoroughly and treat suspect material to kill insect pests before integrating them into existing collections. ALL shipments of museum supplies, incoming collections, and field equipment must enter the UAMN facility through the loading dock and must be inspected.

INSPECTION involves opening boxes, cases, or bags and removing all objects to determine if evidence of infestation is present (see Appendix II for examples and descriptions of common museum pests).

TREATMENT at UAMN involves freezing appropriate items in an ultra-cold freezer at a temperature of -40° F for a period of at least 48 hours. All items composed of organic materials, with few exceptions, must be treated in this manner (exceptions include items that are too large to fit in the freezer or are too sensitive to the effects of freezing). The ultra-cold freezers are located in the Pest Control Room, room 115 on the east side of the loading dock and in 118-A.

ALTERNATIVES TO FREEZING can include **quarantining** materials in a pest-proof container, such as a metal cabinet, for a period of at least six weeks. Items may be quarantined in the UAMN facility, but the items must be sealed in a heavy polyethylene bag (at least 6 mil) prior to being removed from the loading dock. Other alternatives can include **anoxic treatments**, which alter the atmosphere that the object and the infesting pest are in. Nitrogen and argon treatments are fastest and under the correct conditions can kill pests in 5 to 10 days. Lastly, staff may choose to **chemically treat** objects, most commonly with Paradichlorobenzene (PDB) for six weeks in an airtight and pest proof container. Appropriate procedures will be designed by the Collections Management Committee.

CONTROL PROCEDURES

See Appendix I.C. for a full-list of control procedures.

3. DETECTION / RECORD-KEEPING

Goal: To monitor the museum facility and regularly and systematically inspect collections in order to detect when and where pest infestation might be occurring, and assessing the severity of the presence. To maintain accurate and up-to-date records of all infestation activity to better assess the situation.

MONITORING:

Monitoring is an important part of the Museum IPM program as it provides baseline information about Museum conditions and identifies pest species in the facility. Monitoring in the UAMN building involves a systematic, facility-wide deployment of non-toxic insect/rodent glue traps that are examined once a month for evidence of museum pests (see Appendix II for examples and descriptions of common museum pests and for examples of pests that have been found in the UAMN facility). In the event that an infestation occurs, the extent of the infestation can be determined by documenting the distribution of pests found in glue traps.

INSPECTING:

Inspection involves the routine examination of the Museum building and of collections and collections storage areas for evidence of museum pests. Regular building inspections are vital. Inspections of the complete interior and exterior of the Museum will identify construction and maintenance problems that permit pest entry and survival. Regular inspection of the collections is equally vital. All pest-vulnerable materials must be inspected on a regular schedule. Certain types of collections may require more vigilant inspection. For example, waterfowl, marine mammal specimens, and anthropological materials made from greasy, protein-based materials are especially prone to infestation and require more frequent inspection. Similarly, certain plant specimens are also prone to infestation by specific pests.

SIGNS OF INSECT ACTIVITY:

- Presence of insects, dead or alive, at various stages of its development (e.g., insect parts, wings, casings, etc.)
- Damaged areas on the building or artifact (loss of hair and fibers, chewed feathers and quills, perforated skins, grazed naps on fabrics, holes in surfaces of wood, etc.)

MONITORING AND INSPECTING PROCEDURES:

See Appendix I.D. for a complete description of procedures for monitoring and inspecting.

RECORDKEEPING:

In order to track the presence of infestations, inspections and infestation events must be documented. Museum Operations will maintain a log of all infestation activity in the building. Each department is responsible for maintaining inspection and infestation event paperwork and providing such documents to Museum Operations, along with any specimens found, for tracking and identification. See Appendix IV for IPM Inspection and IPM Infestation Event forms.

4. RESPONSE

Goal: To respond quickly, effectively, and safely when an infestation is discovered; to prevent unnecessary spread of the infestation by prompt and effective control techniques.

When, and if, an infestation is discovered, a response is necessary. There must be a balance between the availability of resources and the level of acceptance of pest activity. Infestation refers to the presence of any museum pest in the Museum facility, regardless of the number of individual pests documented. A single live clothes moth or carpet beetle constitutes an infestation. If an infestation is detected in the UAMN facility, treatment of the affected area must begin immediately. **Treatment** involves killing the museum pest and cleaning the infested items and storage area of all pest debris.

UAMN utilizes several techniques for the Physical Control of an infestation:

- Physical treatment through temperature control: Objects are stored in an ultra-cold freezer set to -40 degrees Fahrenheit for 48 hours.
- Anoxic treatments: Altering the atmosphere that the object and pest inhabit in order to kill the infesting pest; treatment might utilize nitrogen, argon or CO₂.
- Chemical treatment: All possible measures must be taken to avoid the use of pesticides in the Museum. If no other solution is acceptable, the use of Paradichlorobenzene (PDB) may be approved.

Any evidence of the following museum pests will require treatment:

- Hide beetle (*Dermestes maculatus*)
- All genera of carpet beetles (e.g. *Anthrenus verbasci* / *Attagenus spp.*)
- Cabinet beetle (*Trogoderma ornatum*)
- Larder beetle (*Dermestes lardarius*)
- Odd beetle (*Thylodrias contractus*)
- Casemaking/Webbing clothes moth (*Tinea pellionella* / *Tineola bisselliella*)
- Vertebrates - all

SPECIMENS PREPARED IN THE DERMESTID BEETLE FACILITY

Specimens prepared in the Mammalogy and Ornithology dermestid colony will have beetle remains on them when they are brought into the UAMN facility. These specimens have been put in the ultra-cold freezer and therefore the beetles, larvae, and eggs associated with them should be dead. All personnel working with these collections must be aware of this and be able to recognize the dermestid species being used in the colony. Finding beetle remains on one of these specimens does not require that it be frozen, but it must be determined that the remains are indeed from the beetles used in the colony and that there are no live beetles or larvae present. For this reason, it is critical that any and all dead dermestids and body parts (e.g., shed exoskeletons from juvenile instars) be removed from specimens and specimen containers prior to installation in the range.

RESPONSE PROCEDURES:

Procedures for the prompt treatment of an infestation are outlined in Appendix I.E.

5. RECOVERY

Goal: To return to normal operating procedures following an infestation event.

Recovery following an infestation includes the following steps:

- Cleaning storage facilities before returning the objects or specimens.
- Cleaning the objects themselves of pest evidence and damage, if necessary.
- Recording all evidence of damage for future reference
 - IPM Infestation Event forms to Museum Operations
 - Documenting the event in the catalog record for the object
 - Completing a current condition report to fully describe the present condition of the object or specimen.
- Repairing the damage to the object, if possible or necessary.

APPENDICES

I. Procedures

II. Pest Identifications

III. Museum Floor Plan

IV. Forms

APPENDIX I: PROCEDURES

I.A. HOUSEKEEPING PROCEDURES

MUSEUM STAFF ACTIVITIES:

- Food is restricted to offices and the kitchens, and will not be stored, prepared, or eaten in laboratories.
- Food must never be taken into the collections storage area.
- Food sold in the Museum Café will be restricted to that space only, or taken directly to one of the kitchen facilities or offices for consumption.
- Live plants or fresh flowers are not allowed in the lower level of the museum, nor in the Exhibits north hallway and offices/labs/shop. If flowers are delivered to a staff member during the day, they will be taken to the Administrative Suite immediately and then taken home at the end of the day.
- All biological waste must be cleaned up and removed from laboratories daily (if materials are to be incinerated then they must be frozen immediately).
- Laboratories must be cleaned, beyond the daily maintenance provided by the custodial staff, at least once a month by Museum staff.
- Empty boxes and miscellaneous containers will not be stored on the floor (this inhibits debris removal by staff & custodians) and provides harborage for pests.
- The collections storage range will be cleaned on a regular basis by departmental staff, not UAF custodial services. A HEPA-filtered vacuum will be used to clean the floors and on tops of the compact mobile storage units.
- Only permanent-collection material will be stored in the collections storage range. Office supplies, packing material, etc. will be stored elsewhere.
- No organic peanuts will be stored in the facility.

MUSEUM CUSTODIAL ACTIVITIES:

- No trash/waste of any kind will be brought into the collections range or the exhibits galleries.
- The custodial storage rooms must be cleaned once a month to remove food sources and minimize harborage for pests.
- No trash/waste will be left in custodial storage rooms after cleaning is done each day.

I.B. HOUSEKEEPING SCHEDULE

Annually		
	Vacuum (HEPA-filtered vac or shop vac - no sweeping)	
	Exhibition Galleries: Horizontal surfaces	Exhibition & Design
Every Six Months (April / October)		
	Vacuum (HEPA-filtered vac or shop vac - no sweeping)	
	Range: Under stationary units	Departments
	Range: Tops of compactors	Departments
	Emergency Supply Room	Operations
	Level 2 store rooms	Fine Art, Mammals
	Pest Control Room / Pest Quarantine room	Operations
Every month		
	Vacuum	
	Range: general space (surrounding area)	Operations
	Range: aisles/rails	Operations
	Store storage	Operations
	Mopping (Simple Green, damp mop)	
	Range: general space	Operations
	Range: aisles (one department each month)	Departments
As needed		
	Departmental Labs	Custodian
	Collections Preparation Laboratory (room 118)	Departments, daily after use (per Use Policy); Monthly by Operations
	Biological Preparation Laboratory (room 116)	Departments, daily after use (per Use Policy)

Supplemental Responsibilities and Documents:Exterior of Building: *Managed by UAF Facility Services*

Landscaping

Future plans (no plantings up to base of building)

Rock slope on N side (maintenance)

Museum Operations – Inspection of Exterior as needed

Facility Services & Museum Operations:

Check all penetrations are sealed

Receiving Dock Protocols:

- Posted Operations Staff Information Website
- Posted in Receiving Dock
- Assistant to the Director (hard copy)

Collections Preparation Laboratory Use Protocols

Biological Preparation Laboratory Use Protocols

I.C. BLOCKING ACCESS: CONTROL PROCEDURES

ITEMS ENTERING MUSEUM RECEIVING DOCK:

All shipments of museum supplies, incoming collections, and field equipment must enter the UAMN collections facility through the receiving dock. Under no circumstances are Museum attendants allowed to accept items intended for curatorial departments without specific arrangements made through the Visitor Services Manager or Assistant Manager. Visitor Services will maintain a call list for delivery to departments.

All crates, boxes, and other containers must be opened on the receiving dock.

No item may leave the receiving dock unless it has been processed (i.e. inspected, frozen, or quarantined).

ITEMS INTENDED FOR UAMN COLLECTIONS:

- When packages containing collection materials or curatorial supplies arrive at the Museum through the mail, it is the responsibility of the Administrative Office to notify the appropriate Curator, or designee. It will be the responsibility of the curatorial staff to process the materials/supplies.
- Skeletal materials coming from the ATCO storage building must never be stored in the Museum facility prior to being processed and will be brought to the Museum only when they can be placed directly into an ultra-cold freezer.
 - These specimens/containers of specimens will be placed in a plastic bag before freezing (this will keep insect remains from contaminating other containers in the freezer).
- All materials brought in by staff, docents/volunteers, or visitors for comparative study or incorporation into the permanent collections must be processed.

LOAN MATERIAL:

- All incoming loan materials must be processed.
- All incoming exhibit objects must be processed.
 - Both the lending and borrowing institutions should agree on pest management procedures for traveling exhibits before exhibits arrive at the UAMN.
 - Traveling exhibits with items too large to freeze must be thoroughly inspected and carefully monitored for the duration of the exhibit by the Exhibits Department.

OTHER TYPES OF MATERIALS ENTERING MUSEUM:

- Field equipment returning from field projects and requiring storage in the Museum will be cleaned outdoors and then processed prior to being put in storage.
- All store inventory, display, and promotional items must be processed.

- New equipment and furniture entering the Museum must be visually inspected and packing materials will be discarded immediately.
- Packing materials and cardboard boxes to be kept for future use must be processed.

EXCEPTIONS TO PROCESSING CONTROL PROCEDURES:

- Objects brought in by the general public for identification do not need to be processed, but these materials will not be brought into the collections preparation or storage areas and will not remain in the Museum for more than a few hours.
- Freshly killed animals, such as birds and small mammals, can be brought directly downstairs for immediate preparation or freezing in departmental freezers.

ULTRA-COLD FREEZER USE

Two ultra-cold freezers, reserved for processing materials entering the UAMN facility, are located in room 115 on the east side of the Museum Receiving Dock and room 118-A (see Appendix III). Each department is responsible for freezing its own collection materials. Please be respectful of other department's items. Two logs are kept in the freezer rooms, one for items that have been placed in the freezer, the other for items waiting to be placed in the freezer.

ULTRA-COLD FREEZER USE PROCEDURES

- The ultra-cold freezers are available on a first-come, first-served, basis (be sure to check the Freezer Waiting Log – see Appendix IV).
- All personnel putting items in a freezer must make a complete entry in the Freezer Log (see Appendix IV for example).
- All items/containers, placed in a freezer, must be labeled clearly with the name of the department.
- Items being placed in a freezer should be enclosed in two layers of tied or sealed polyethylene bags to prevent the freeze/thaw cycle from creating condensation on the surface of the object. If items are loose or small, the bags should be placed inside a box for protection.
- Since several departments may have materials waiting for processing, be certain to remove specimens promptly after the 48-hour period and contact the next person listed in the waiting log.
- Do not place items belonging to other departments into a freezer!
- Materials awaiting freezing can be stored in rooms 115, 118, or 118-A (see Appendix III). Do not place items on the receiving dock. Make a complete entry in the Freezer Waiting log.

I.D. MONITORING AND INSPECTING PROCEDURES

- It is the responsibility of each Curator/Coordinator/Manager to schedule inspection¹ of their collections/inventory.
- All curatorial departments must inspect their collections once a year.
- The Education Department must inspect all educational materials once a year.
- The Museum store must inspect all display cases and shelves once a year.
- The Exhibits Department must inspect all long-term displays once a year.
- All storage cases, drawer units, exhibit cases, etc., must be opened and carefully checked.
- Any evidence of museum pest activity must be collected, documented (using the form in Appendix IV), and immediately reported to Museum Operations.
- The Museum Operations department will examine all glue traps and perform an inspection of the Museum building once a month.
- The Museum Operations department will vacuum the collections range on a regular basis, as noted in the Housekeeping Plan (Appendix I.B.)
- Museum Operations will inspect building exterior semi-annually (Exterior Environment).

¹ *Inspection* is defined as “opening boxes, cases or bags and removing all objects to determine if evidence of infestation is present” in section 2.

I.E. RESPONSE / TREATMENT PROCEDURES:

- All items that are infested or have been stored in cabinets, containers, or exhibits cases with infested items must be treated in one of the following ways:
 - Items may be placed in an ultra-cold freezer for a minimum of 48 hours. If time and space allows, items shall be removed from the freezer for 48 hours, then re-frozen for another 48 hours to ensure 100% mortality rate.
 - Items may be quarantined and monitored in a pest proof container for six weeks.
 - Items may be treated using an anoxic treatment method.
 - Items may be fumigated with Paradichlorobenzene (PDB) for six weeks in an airtight and pest proof container (any personnel working with PDB must wear appropriate personal protective equipment).
- Storage cabinets and containers, exhibit cases, and shelving, housing or in contact with infested items, must be wiped down with a 15% bleach solution followed by a rinse with water (this will kill insect eggs, mold, and mold spores).
- Objects/specimens, shelves, cabinets, containers, and exhibits cases must be cleaned of all pest remains and pest debris (this will make it possible to recognize new infestation). If possible, samples should be supplied to the Curator of Entomology for positive identification.
- All packing/padding materials from infested storage cabinets and containers must be frozen.
- An *IPM Infestation Report Form* (see Appendix IV) will be completed and provided to Museum Operations.
- The area where a pest has been documented must be closely monitored for six months (monitoring will be done by Museum Operations and/or the appropriate curatorial staff).

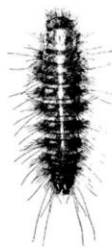
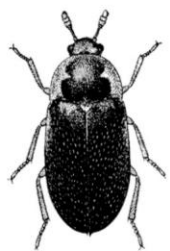
BOOKLICE:

There is an ongoing infestation of booklice (*Liposcelis corrodens*) in the UAMN facility and it has been determined that action will be taken on a case-by-case basis. If there is a detectable infestation in a particular cabinet, or in a specific area, then action must be taken.

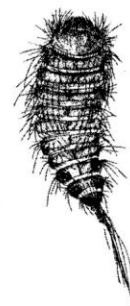
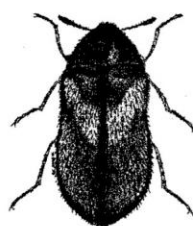
- If the infestation affects an area of the facility larger than the Museum staff can effectively deal with, or if it is necessary to use chemical control methods (other than limited use of PDB), then professional exterminators will be contracted.

APPENDIX II: PEST IDENTIFICATIONS

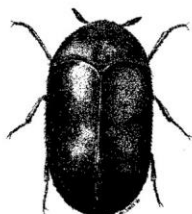
Common Museum Insect Pests



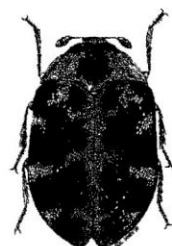
**Adult and Larval
Hide Beetle**
(*Dermestes maculatus*)



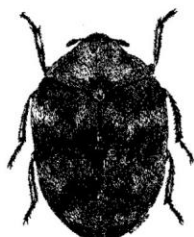
**Adult and Larval
Carpet Beetle**
(*Reesa vespula*)



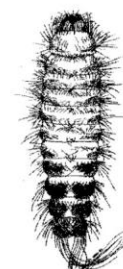
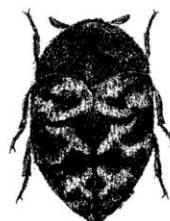
**Adult and Larval
Black Carpet Beetle**
(*Attagenus megatoma*)



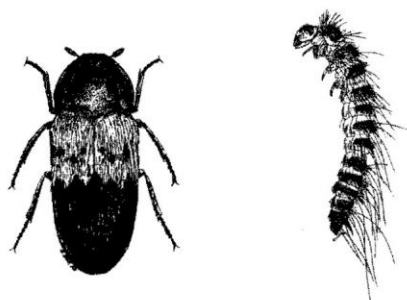
**Adult and Larval
Furniture Carpet Beetle**
(*Anthrenus flavipes*)



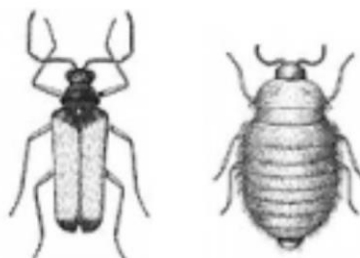
**Adult and Larval
Varied Carpet Beetle**
(*Anthrenus verbasci*)



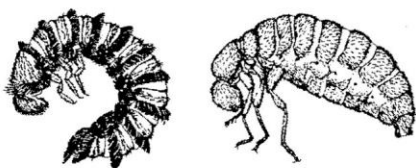
**Adult and Larval
Cabinet Beetle**
(*Trogoderma inclusum*)



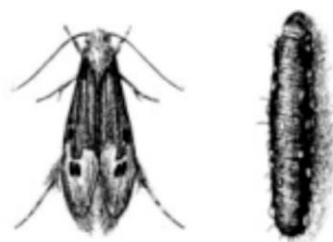
**Adult and Larval
Larder Beetle
(*Dermestes lardarius*)**



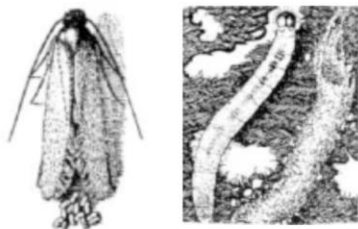
**Adult Male and Adult Larvaform Female
Odd Beetle
(*Thylodrias contracta*)**



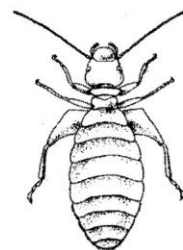
**Larval and Adult Larvaform Female
Odd Beetle
(*Thylodrias contracta*)**



**Adult and Larval
Casemaking Clothes Moth
(*Tinea pellionella*)**



**Adult and Larval
Webbing Clothes Moth
(*Tineola bisselliella*)**



**Adult Death Watch
(*Trogium pulsatorium*)
and
Booklouse
(*Liposcelis sp.*)**

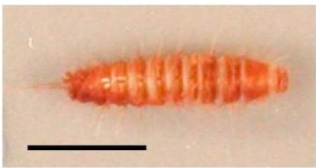
Pests Found In The UAM Facility



**Adult and Larval Hide Beetle
From UAM Mammalogy Dept.
Dermestid Colony
(scale bar = 1 cm)**



**Casings of an Unidentified Dermestid Beetle
Found in the UAM Exhibits Gallery
(scale bar = 1 cm)**



**Black Carpet Beetle Larva
Found in a UAM Herbarium Cabinet
(scale bar = 5 mm)**



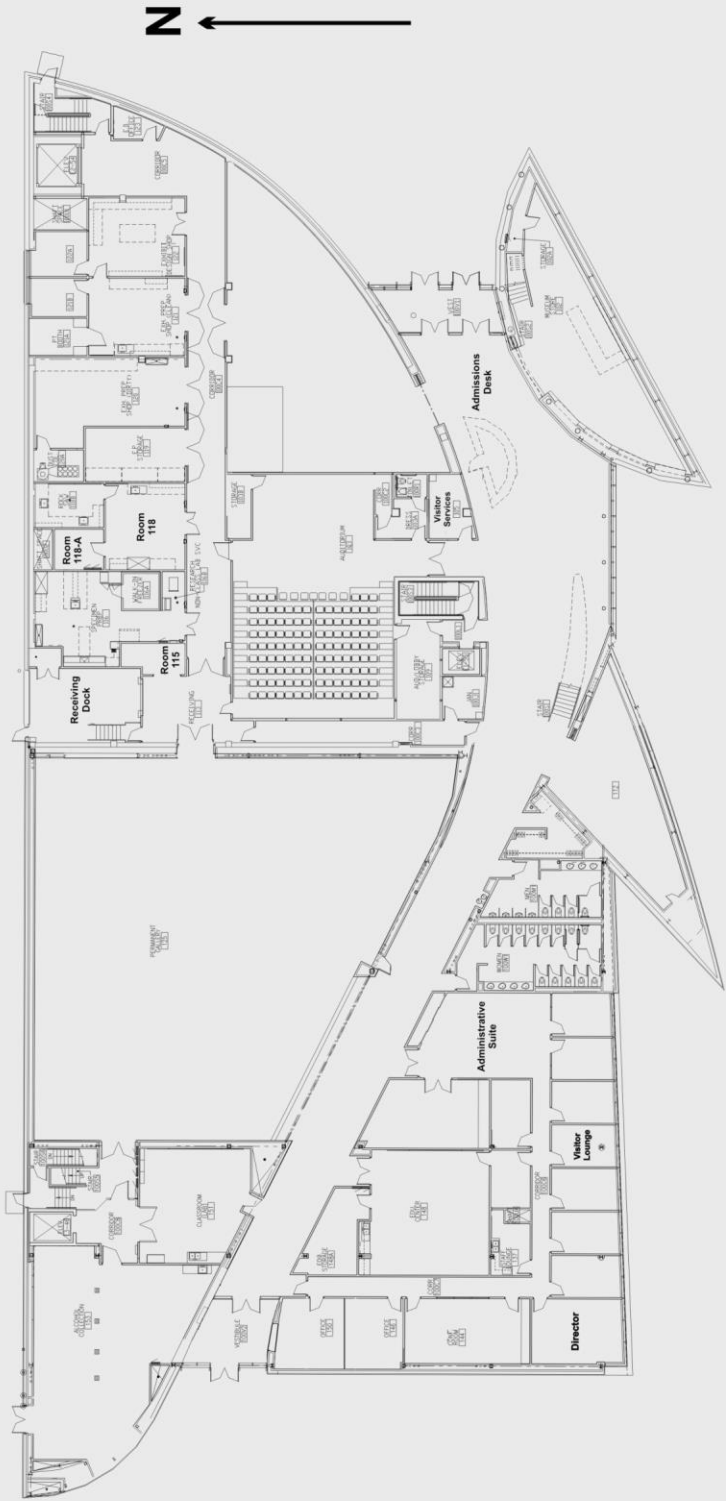
**Webbing Clothes Moth Pupal Case (left)
and Feeding Damage (right)
Found on Fur Parka in UAM Exhibits Gallery
(scale bar = 1 cm)**



**Adult Carpet Beetle
(scale bar = 5mm)**

APPENDIX III: MUSEUM FLOORPLAN

IPM Floorplan - UAMN Level 1



IPM INSPECTION FORM

Date:
Location(s) Inspected:

Object Type(s) Inspected:

Observed Pest Problem (use codes below):

 (e.g., A/1 & 5 = dermestid frass & cast skins)

Type of pest:

- A. Black carpet beetle
- B. Cabinet beetle
- C. Furniture carpet beetle
- D. Larder beetle
- E. Varied carpet beetle
- F. Carpet beetle
- G. Hide beetle

- H. Large pale Trogid
- I. Silverfish
- J. Webbing Clothes Moth
- K. Carpenter ant
- L. Fly/wasp
- M. Rodent
- N. Undetermined
- O. Other: _____

Evidence of infestation:

- 1. frass
- 2. specks
- 3. droppings
- 4. tunnels/holes
- 5. cast skins
- 6. carcass
- 7. webbing
- 8. egg casings
- 9. casings
- 10. other: _____

LIVE PEST: _____

Comments:
Control Measures Suggested:

- ☐ Cleaning
- ☐ Freezing
- ☐ Oxygen Deprivation
- ☐ Chemical Treatment

IPM Infestation Report Form Completed:

- ☐ Yes (see attached)
- ☐ No (explain):



Date: _____ Name: _____
Department: _____

IPM INFESTATION REPORT FORM

Catalog Number: _____ **Object Location:** _____
Object Name: _____
Object Materials: _____
Basic Construction: _____

Observed Pest Problem (use codes below):

(e.g., A/1 & 5 = dermestid frass & cast skins)

Type of pest:

- | | |
|----------------------------|-------------------------|
| A. Black carpet beetle | H. Large pale Trogid |
| B. Cabinet beetle | I. Silverfish |
| C. Furniture carpet beetle | J. Webbing Clothes Moth |
| D. Larder beetle | K. Carpenter ant |
| E. Varied carpet beetle | L. Fly/wasp |
| F. Carpet beetle | M. Rodent |
| G. Hide beetle | N. Undetermined |
| | O. Other: _____ |

Evidence of infestation:

1. frass
2. specks
3. droppings
4. tunnels/holes
5. cast skins
6. carcass
7. webbing
8. egg casings
9. casings
10. other: _____

LIVE PEST: _____

Comments: _____

Control Measures Undertaken:

<input type="checkbox"/> 1a.	Object cleaned of pest debris	<input type="checkbox"/> 1b.	Object sealed in bag for life-cycle observation
<input type="checkbox"/> 2.	Freezing	date:	temp: duration:
<input type="checkbox"/> 3.	Pesticide	date:	pesticide:
Description of treatment process (includes amount and duration):			
<input type="checkbox"/> 4.	Oxygen Deprivation	date:	Description of process:
<input type="checkbox"/> 5.	No action taken (Explain)		