

Preferences At The Silverfish Buffet

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Introduction

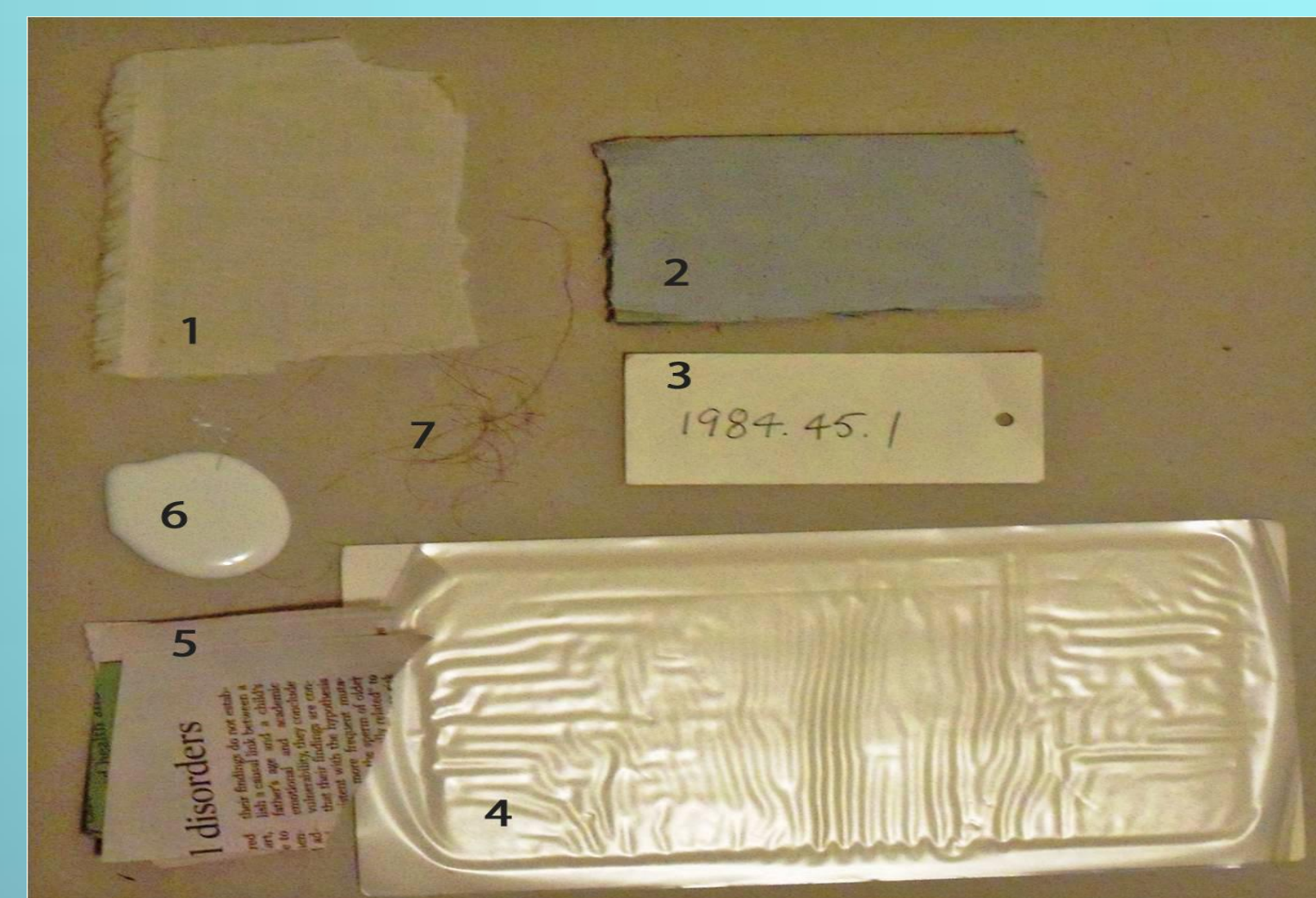
- A silverfish (*Lepisma saccharina*) infestation in a museum storage area became increasingly difficult to resolve when the insects began migrating to adjacent rooms.
- Standard pest control methods were controlling, but not eliminating, the problem. Techniques used included thorough cleanings, barrier spraying, glue traps, granular baits, environmental controls, design changes and removal of known food sources.
- Professional pest control operators could not offer any other suggestions for treatment.
- An eight week non-scientific experiment was conducted using a mixture of known and possible food sources in order to answer two questions:
 - Does baiting glue traps with certain materials make them more attractive to silverfish?
 - Do silverfish demonstrate preferences for a food source when given a choice?
- Baits tested were chosen from materials generally found in museum storage areas and those frequently suggested by non-professional and do-it-yourself pest control sources.

Materials

Nine Trapper® Ltd glue traps, scented Newspaper, wet and dry samples
 Gaylord® pH Neutral White Adhesive
 Strands of human hair
 Cardstock artifact tags
 Unbleached cotton muslin, wet and dry samples
 Perma/Cor E-Flute Corrugated Board, blue.

Method

- One sample of each material was placed on one of the glue traps. The remaining non-baited trap acted as a control.
- Traps were placed in the center of the room, at least six feet from artifacts, walls and shelving and with a minimum of twelve inches of space around and between the traps.
- General observations were made about the number of silverfish caught in each trap.



Materials : 1. cotton muslin 2. archival board
 3. cardboard tag 4. glue trap 5. newspaper
 6. archival glue 7. human hair

Results and Observations

- Immature silverfish appeared on the traps a full twenty four hours before the mature insects.
- The immature insects were first found on the trap baited with the human hair and then with the cardboard tag.
- Mature silverfish were first attracted to the cardboard tag and secondly to the archival board.
- None of the silverfish were attracted to the wet paper, the wet fabric or the wet archival glue.
- Mature silverfish were found on the dry newspaper and the fabric in small numbers during the last days of the experiment.
- Only three silverfish, all mature specimens, were found on the control .

Observed Bait Preferences

Mature Silverfish

1. Cardboard tag (material # 3)
2. Corrugated Board (mat. # 2)
3. Dry Muslin (mat. #1)

Immature Silverfish

1. Human hair (material # 7)
2. Cardboard tag (mat # 3)
3. Muslin (mat # 1)

Conclusion

- Immature and mature silverfish did show preferences for food choices.
- Preferences were related to age of the insect and age of the test materials.
- Baited glue traps produced significantly higher captures than the control.

Recommendations for Further Study

- This study should be replicated in additional storage areas to see if similar results are obtained.
- Since the silverfish demonstrated a preference for materials commonly found in the storage areas, it would be wise to repeat the experiment and add Nyban® granules as one of the test materials. This would determine the effectiveness of one of the pesticides currently in use at the museum.
- Additional research should be conducted with samples of human hair from different sources to see if the use of hair care products may have affected the results. Samples of pet hair should also be tested since it can be carried into storage areas on clothing.
- Try to determine if large numbers of insects on a particular glue trap may have deterred or blocked others from seeking that food bait.

Contact Information

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