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An Unhealthy Case of Mold

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corresponding to specific departments should be sent to the department chairs in question. Each department chair will be asked to initial or highlight any titles he or other members of his department want retained, and he will be given a deadline of approximately two weeks for returning the section to the library. Books that each department wants retained should be retained, and their titles will be removed from the spreadsheets as well. At the personal level we have found that the department chairs appreciate this approach because it demands relatively little of their time and does not entail a face-to-face meeting, yet gives them an integral role (and a veto) in the weeding process. The librarians like it because it allows us to have a subject specialist vet our tentative weeding lists.

At that point the librarian coordinating the process should personally take the revised version of the spreadsheet and check all the

titles still remaining on it against WorldCat. If the total worldwide holdings of any item number less than ten (10) copies, then the librarian should retain the item for the sake of posterity and remove it from the weeding list.

The next step is for the same librarian to take the weeding list spreadsheet and go to the stacks. He should personally pull the books that are to be weeded. This precludes any error from creeping in at this most critical stage, and it provides one last chance to retain a book that somehow “slipped through the cracks.” One might be tempted to say this is overkill, but I have found many a book at this point in the process, despite all the previous steps, that I have ended up realizing should under no circumstances be weeded. The book carts full of books to be weeded can then be given to the cataloger, and he can begin withdrawing the books from the collection. †

An Unhealthy Case of Mold

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ABSTRACT:

Mold is a serious problem which threatens the well-being of both collections and staff.

Preventative maintenance and a good disaster plan are the most effective way of handling mold. However, unforeseen circumstances can infect a library; in which case, librarians must be able to recognize and treat the problem immediately.

Finances can affect the manner in which the mold is cleaned. Librarians need to be aware of a variety of options open to them, as well as, a variety of resources upon whom to call in the event of a breakout. A low budget process is presented as an alternative to professional remediation services.

Mold is a fungus of which there are thousands of types. As mold only grows on organic surfaces, and it loves paper and glue, books are often victim to it. Some molds are beneficial to people and the environment; although, many are not. Oftentimes mold is allergenic or even toxic. Mildews, mushrooms, and rusts are other types of fungi. Active molds can appear in any color: gray, white, black, red; color is not necessarily indicative of toxicity. Often these molds are furry, slimy, damp, or web-like in appearance and emit a mildew odor. Inactive mold while dry, can also be toxic.

Librarians need to be knowledgeable about mold even if they are not preservationists, mycologists or industrial hygienists. Mold and mildew can be hazardous to the life and health of library collections and the people who serve and use them. Mold eats paper and accelerates the deterioration of books and other library materials. Causing severe allergic reactions, asthma, long-term illness and even death as in

the case of Legionnaire's Disease, mold must be taken seriously. The ability to recognize mold, knowledge of the hazards, constant surveillance of the collection, and action plans are necessary precautions.

Symptoms

Two weeks after I began a new job as Library Director, at Winston-Salem Bible College, I encountered a serious mold infestation in the library. In October 2003, following a particularly rainy, hot, and humid summer, mold was discovered dripping from metal shelves and coating book covers connecting their spines by web-like, gray, fuzzy tentacles. A musty odor permeated these ground level book stacks. The air was stale and dark and had not been air conditioned in at least three years. There had been no librarian during that time, and like many institutions, this institution thought it was saving money by shutting off the air conditioning during the hot months.

The Diagnosis

Three actions needed to be implemented immediately. First, it was necessary to consult a professional conservationist. Therefore, the Northeast Document Conservation Center (NEDCC) in Andover, Massachusetts was contacted by email with a short description of the problem. Our college president was then notified of the potential danger to the college community, and finally the affected room was quarantined.

The next morning a phone call came in from a specialist at the NEDCC advising us to vacate the library and to call in a remediation specialist to study the situation. Preliminary searching for advice about mold on the internet had been overwhelming and confusing. Thankfully, the NEDCC referred us to remediation specialists with whom they had worked previously. With the approval of our college president, the college's insurance agent and several highly recommended mold remediation specialists were then contacted.

We created a committee of library, faculty and college personnel to assist in the decision making process. The entire college community was informed of the situation. Everyone became involved in the remediation procedure. Notices were posted and opinions sought. Our top priority was to protect the community. We did this by posting notices and quarantining the contaminated area.

The next priority was to discover how the problem arose. The source of the mold was discovered to have been an air conditioning water leak which had been left untreated. This was exacerbated by the fact that the air conditioning had been turned off. As a result, our insurance agent informed us there would be no insurance coverage as the situation had been preventable if proper care had been taken.

The remediation specialist instructed us on how to properly quarantine the area and what protective clothing to wear. He also referred us to several local environmental hygienists who could take air and surface samples in order to determine the type and quantity of molds present in the library. This information would be essential to assess the level of

danger and determine the correct methods of remediation.

After the environmental study was completed, the remediation specialist worked up a cost estimate to professionally clean the collection and the area. In our case the quantity of mold, rather than the type of mold presented health hazards. Many of the books were beyond repair. This information was then presented to the Board of Trustees who decided that professional cleaning by a remediation specialist was economically impossible. Although the remediation cost would have been expensive, their advice was immeasurable.

Stranded

Without funds to conduct a professional cleaning of the area, we were effectively stranded and on our own. What were our options? Discard the entire collection in the affected area, and clean the shelves, walls, floors, ceilings and air conditioners with bleach, Lysol, X-14 or other biocides? Or, discard only the unsalvageable books and materials and those we could easily afford to weed out? Try to salvage the remainder, the irreplaceable, which is the most valuable part of the collection?

Responsibility

The responsibility for the clean-up lies with the librarian as the library collection presents special conditions which do not conform to general mold clean-up procedures. The librarian is responsible to recognize the mold, maintain constant surveillance of the area and provide a disaster plan. The librarian is also responsible to seek authoritative advice, notify the proper authorities, and protect the community. The librarian must also play a leadership role by forming a committee, creating a plan of action, and presiding over the plan.

Cowboys

There is, however another responsibility which falls to the librarian. This responsibility ensures that the plan is carried out and that well meaning individuals do not circumvent it and take matters into their own hands. I call this interference, the "Cowboy Approach". Well meaning, uninformed individuals frequent every institution and their actions need to be anticipated. We, for example,

Mold and mildew can be hazardous to the life and health of library collections and the people who serve and use them.

discovered a student, who during the absence of the librarian, had been sent to clean the area without wearing protective covering and without knowledge of proper protocol. In order to prevent this from happening again, we found that posting a notice signed by the college president outside the quarantined area forbidding entrance without the express permission of the President or the librarian was a workable preventative measure. Librarians are advised to be aware of outside interference in order to protect the community and the collection.

The Soft-Shoe Approach

Good communication skills must be employed in order to subdue public panic and maintain library services as much as the individual situation allows during the clean-up period. This is where the “soft shoe approach” should be employed. The librarian needs to tap dance as fast as he or she can. In our case, a meeting of the faculty, pertinent staff and the library committee was called to decide on the best course of action. We decided to try to save as much of the collection as possible. Information about the progress of the clean-up was posted. An estimated 13,000 volumes had been contaminated, and we knew that the cleaning of the books would fall on us. A procedure was created by which faculty members would be responsible for recommending discards in their areas of expertise. Using a soft-shoe approach, the librarian needs to involve the community and keep the community informed about the hazards and the safety procedures taken to protect the public. This gives reassurance without creating alarm. Providing information about the situation and the process, and involving the community in the process helps alleviate many irrational fears and rumors.

The Prescription

The room had to be properly sealed off, appropriate gear procured and appropriate notification posted. The doorways were sealed by hanging two layers of heavy plastic over the doors. Each sheet had a vertical slit at the opposite side from its counterpart. The air conditioning was left on to keep the temperature low so that the mold would stay dormant. Each person entering the area wore a shower cap, a respirator with a high

efficiency particulate air (HEPA) filter, gloves, apron and goggles. We also purchased, state of the art, HEPA air cleaners which were placed in the contaminated room and throughout the library.

Each faculty member searched the shelves in his/her subject area and lowered books that could be discarded to a horizontal position so the librarian or a second faculty member could give it a second pass. These volumes were then discarded into buckets, which were taken directly to the dumpsters. We were advised not to sell or give away any of these volumes for fear of spreading contamination. After this process was completed we were ready to clean.

A Shoe-String Budget.

There are some supplies which are imperative to the success of the effort even if the library is on a “shoe-string” budget. These include protective gear, buckets, ladders, book-carts, cleaning supplies, and a HEPA vacuum cleaner. A HEPA air cleaner might be necessary and is certainly recommended.

The library needs to locate a clean, mold-free area into which to move the newly cleaned collection. Returning the cleaned books to the contaminated environment would only re-contaminate them. A team of volunteers must be formed and trained. The cleaning procedures need to be written and volunteers must be supervised.

The Treatment

We identified a clean room on another floor and began to disassemble shelving. Shelves were cleaned with Lysol, and moved to the other floor and reassembled. Meanwhile, the books to be salvaged were placed in as orderly a manner as possible, on book carts and rolled outdoors where the book covers were wiped down as gently as possible with clean cloths dipped in a mixture of Lysol and water with a small bit of dishwashing detergent which were then wrung almost dry. The books were then fanned out on tables, in the sun, for a period of not longer than twenty minutes. The cleaned books were then carried upstairs to the ‘clean room’ and placed on shelves.

Preservationists now recommend using a vacuum with a HEPA filter and a clean cloth or brush to clean the books rather than a cleaning

solution like the one we were advised to use. (Invasion 7) Some fungicides create hazards to the materials after the cleaning. Bleach, for example, is too strong and will discolor and possibly disintegrate library materials. Other fungicides, such as alcohol are not recommended as they have been found to re-attract mold. It is necessary to seek authoritative advice regarding a particular situation before choosing a cleaning method.

After the contaminated room had been emptied, it was cleaned with a bleach solution. Lysol and X14 are recommended cleaners. All the walls, floors, ceilings, and windows were washed with the fungicide. An air-conditioning biocide was used to clean the air conditioners. The carpet was replaced. If carpets are to be cleaned, it is mandatory to seek expert advice and cleaners. Rental machines or even the institution's own machine are not recommended unless proper preparation is made to clean it according to professional standards as the vacuum cleaner will contaminate any area it touches if not cleaned properly. If a professional carpet cleaning company is selected, advise them of the mold situation so that they will use a fungicide to kill off active mold growth. Ask for their MSDS and whether their workers wear masks and respiration protection. This information will act as a guide in choosing a legitimate mold remediation service. Only after all these procedures are completed and if your team has any energy left, can the collection be moved back into its original space.

Prevention

Preventative maintenance is probably the single most important aspect of this cleanup. According to the Environmental Protection Agency (EPA), "The key to mold control is moisture control. When addressing mold problems... address the source of the moisture problem, or the mold problem may simply reappear! Check for high humidity and condensation problems as well as actual water leaks, maintenance issues and heating, ventilation and air conditioning system (HVAC) problems (Mold 9). In two Preservation Services Leaflets, "Invasion of the Giant Mold Spore" and "Environmental Specifications for the Storage of Library & Archival Materials", the Southeastern Library Network Inc. (SoliNET) advises that: "The

ONLY way to permanently protect a collection from mold is to control the environment by keeping the temperature within 68°–72°F and the relative humidity within 40°–55°F". The industrial hygienist, Jefferson Davis, EI, with whom we worked, recommended that the temperature be kept at about 68° plus or minus 2° and that the relative humidity be kept at 30 to 60% as recommended by the American Society of Heating, Refrigeration & Air Conditioning Engineers, Inc. (ASHRAE 55-92) (personal communication, November 14, 2003). It is also recommended that the fluctuation in temperature and humidity be kept as gradual as possible (Environmental 1). For further clarification concerning a particular situation, seek professional advice.

Air circulation is important. Books must not be packed too tightly on their shelves. Nor should books be shelved against the outside walls or on the bottom shelves as they will be endangered by absorbing moisture from the outside or by flooding. Fans can be used to improve circulation. Portable dehumidifiers can be used. Of course having an HVAC system with humidity control would be ideal.

Sunlight and ultra-violet light will inhibit mold growth. However, light will also fade and deteriorate materials. Therefore, it is necessary to avoid prolonged exposure to light. Live plants should not be kept in the library. Basements and walls below ground level should be waterproofed, and water should not be allowed to collect outside the walls.

Regular inspection of the library should be an ongoing, scheduled activity. An employee should be assigned to make a visual check of the premises on a monthly basis. Ceilings, walls and floors must be checked as well as the collection. Some mold growth can be hidden in spaces "such as the back side of dry wall, wallpaper or paneling, the top of ceiling tiles, or the underside of carpets or pads, etc." (Mold 8) Air condition filters need to be checked and replaced regularly. The best HEPA filters possible should be employed. A HEPA vacuum is a mandatory investment. In order to monitor daily temperature and humidity readings, thermometers and hygrometers need to be utilized. A record of these figures must be kept to insure that a relatively constant temperature

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Knowing how to respond to a disaster is the best insurance a librarian has.

and humidity is maintained. Items indicating mold growth should be isolated immediately. When adding gifts to the collection precautions should be taken to insure that mold is not brought into the collection. Even after a cleaning like ours, mold is still present. At best, one hopes to keep it dormant. Rewriting the gift policy stipulating that the library will not accept books or other items which have been stored in attics, garages or basements should be considered. Protect the library staff from possible contact with mold when opening gift books and other gift materials by requiring that appropriate Personal Protective Equipment (PPE) and HEPA N-95 filtered facemasks be worn. Exposing a staff member to a dangerous mold while opening boxes of gift books must be avoided. And finally, gift boxes should not be opened inside the library itself. A separate area should be maintained for the purpose of receiving and opening gift books.

In summary:

- Be knowledgeable about the hazards of mold growth.
- Schedule monthly inspections.
- Maintain appropriate temperature, relative humidity, air circulation, and light.
- Have clearly defined Disaster and Gift Policies regarding mold.
- Know who the authoritative sources are in your area.
- Seek expert advice immediately if a problem arises.

In the event of a break-out:

- Isolate affected materials, move out of the area if necessary.
- Determine the source of the problem so it can be addressed immediately.
- Inform the proper authorities in your institution.
- Take leadership responsibility for the clean up.
- Create a library-institute committee to assist with the decision-making.
- Notify the community.
- Ward against the interference of “Cowboys.”

- Hire an industrial hygienist to perform a study of the mold in order to determine the correct course of action.
- Hire, if possible, a recommended remediation specialist to clean the area.
- Create policy and procedures to discard books and other materials.
- Clean the books using recommended methods.
- Move clean shelving to a clean area.
- Move cleaned books into the new area.
- After removing the collection, clean the walls, floors, ceiling, windows and air conditioning according to recommended procedures.
- Vacuum with a HEPA vacuum

In a perfect world, preventative maintenance would prevent mold from becoming a problem; however, disasters can occur. Knowing how to respond to a disaster is the best insurance a librarian has. Know who the best authoritative sources of assistance are and remain vigilant. This will protect your community and your collection.

Authoritative websites and bibliography to consult when confronting a disaster or forming a disaster plan for your library:

- American Library Association (ALA) www.ala.org
- Association for Library Collections and Technical Services (ALCTS) www.ala.org/alcts
- Preservation and Reformatting Section (PARS) www.ala.org/alcts/organization/pars/index.html
- Association of College and Research Libraries (ACRL) www.ala.org/acrl.html
- Rare Books & Manuscripts Section (RBMS) www.princeton.edu/~ferguson/rbms.html
- Association of Research Libraries (ARL) <http://arl.cni.org>
- Library Information and Technology Association (LITA) www.lita.org
- The Book Arts Web <http://www.philobiblon.com/site.htm>
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- Conservation: Harry Ransom Center <http://www.hrc.utexas.edu/about/conservation/>
- Conservation Online CoOL <http://palimpsest.stanford.edu/bytopic/mold>
- Cornell University Department of Preservation and Conservation <http://www.library.cornell.edu/preservation/disaster.html>
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- Institute of Paper Conservation <http://www.information@ipc.org.uk>
- Iona College Conservation Committee <http://www.iona.edu/academic/ECC/ECCLink.htm>
- Library of Congress (LC): Preservation Directorate <http://www.loc.gov/preserv/presfaq.html>
- Northeast Document Conservation Center <http://www.nedcc.org/>
- Petherbridge, Guy. *Conservation of Library and Archives Materials and the Graphic Arts*. Butterworths: London, 1987.
- SOLINET Preservation Services www.solinet.net/preservation/preservation_home.cfm
- U.S. Environmental Protection Agency (Individual States) <http://www.epa.gov/iaq/states/northcarolina.html>
- U.S. Environmental Protection Agency (mold cleanup) <http://www.epa.gov/iaq/molds/moldcleanup.html> †

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Improve Your Church Library

John Engle I began my journey as librarian for my church sometime at the end of 2004. I truly enjoyed the library experience at my previous church and wanted my new church home to offer a wide variety of great materials for our congregation. The good news for me was that we already had a room and materials that served as our church library. The bad news was that most of the materials were really outdated and only a very few people were using the library. So, I took a step back and devised a strategy for bringing our library back to life.

Phase one was to organize and catalog what we already had. That was going to take some

time because people had continued to donate materials to the library despite the fact that nobody was serving as the caretaker. So, there were stacks of books to put checkout cards in and put on the shelves. I quickly decided that I would not worry about the Dewey decimal system for now. I just wanted everything to be ready for checkout. Also, I decided that organizing into various topical categories might prove to be a big challenge. So, I decided that I would simply have five categories to choose from: Bibles, Biblical reference, kids books, videos, and everything