

Oh Rats!

I would guess that when many of you saw the title of my talk it brought to mind a Charles Schultz Peanuts character. Charlie Brown, or maybe Lucy, or perhaps Snoopy. That popular use of the word, which was in use by the early nineteenth century, but not defined in dictionaries, is not the subject of my talk. Nor is the definition used famously by James Cagney. Rather, I refer to the primary subject and definition of the word. More specifically, I speak of rats and men, and therein lies an ages-old tale.

The collection hidden in the walls and floors of the house contained bits and pieces of life: a stylish ante-bellum woman's shoe; a gilded hand-carved detail from a piece of furniture; a scrap of Philadelphia mid-nineteenth century newspaper; a gnawed cherry pit; and a variety of cotton print fabrics from between the world wars. These artifacts, and many more of paper, cloth, leather, wood, and food, provide historical glimpses of everyday life in a house: what people ate, what they wore, what they read, things they bought, objects they made, games they played, how they furnished their house, choices of architectural finish, crops grown on the farm, food bought, and some of their habits—even nervous habits. The small things taken and forgotten represented random day-to-day samples of life in a house. The collectors were rats who had not collected this cultural flotsam with material cultural studies in mind, but as resources with which to create the “architecture” of a nest.

The time was 1991 and the place Thomas Jefferson's Poplar Forest. During an architectural investigation focused on understanding changes to the building I discovered the first of many nests in the walls and floors. I already suspected that this material was post-Jefferson due to the disastrous 1845 fire but still, the material provided a cultural glimpse of those living in the house after his time. The significance was clearly apparent. These interior artifacts of paper, cloth, wood, leather, metal and food are ephemeral in an exterior ground context. Consequently, rats' nests contain the complementary missing half of historical archaeological data: the counterparts of the typical ceramic, metal, glass and bone artifacts. While the same types of perishable cultural artifacts found in the indoor nests do survive in other out-of-context places, e.g. museums or private collections, this was every day, site-specific, contextual and commonplace items that might inform history, architectural history, social history, and material culture history. Each nest, or a collection of nests, can span up to hundreds of years, and if analyzed, reflected the material culture of the human inhabitants. In this case the collection spanned from 1846 to the 1970s. The nest artifacts reflected neither the best examples taken nor the lost or discarded pieces found outside in the ground. While these things were taken with a behavioral rationale, for eating, gnawing, and bedding, the choices are apparently non-discriminatory and reflected a good random sampling, as if museum curators were asked to go around your house and sample everything of size that could fit into a small hole.

Over the years as I collected the nests found at Poplar Forest, nagging questions accumulated and slowly shifted my perspective on analysis and interpretation. Sure, rats collect household things. These household things reveal many clues for interpreting

lifestyles, food ways, societal practices, and cultural trends. But why did rats collect certain things? I quickly learned that the “pack rat” often referred to were exterior rats. What about those living in houses? Why were different types of things found in different places within a nest? What motivated rats to do what they did? Were they making choices in their collecting and thinking? If so, did rats have cultural traits as well as being a societal species? Whose material culture and behavior was I studying, the primary makers and users, or the secondary users who adaptively used the initial material culture objects as a “natural” resource? These questions seemed to suggest that I was looking at an acculturation between species. Yet I felt uneasy suggesting that rats have culture, even though there are studies by ethologists and behavioral scientists arguing in favor of the question. Edging my way into an animal behavioral field of which I knew nothing, I simply raised the cultural question while comparing a rat’s use of material culture within shared domestic space in an anthropomorphic manner. The most significant analysis of this study is rather straightforward, learning about the family occupants of a house via the accumulated small things taken and forgotten. My questions were not answered in any published books or articles I could find. I found myself in incognita territory and was puzzled why.

Rats: Seeking a Better Life in America

Museum curators commonly acknowledge that a collection can best be understood through an understanding of the collector. In this case, some basic historical, biological and behavioral understanding of rats was imperative in order to understand why they collected, how they collected, and what they collected. Other than an instinctual

reaction against rats, and hundreds of years of well-founded prejudices, what do we know about rats and man?

Rats come in many types, shapes and colors. To be specific, there are about 120 types of rats. Of these, two have the distinction of being best known: *Ratus ratus*, the black rat, and *Ratus norvegicus*, the brown or Norway rat. The black rat proudly holds the title of “FRA,” First Rats of America. Originally from southern Asia, black rats first hitch-hiked back to Europe with the Crusaders. Other evidence places them in Europe during the Ice Age. The earliest reliable documentation tells us that the black rat immigrated to America with the Jamestown colonists in the early 17C. On the other hand, the brown rat is a relative newcomer, having migrated from Asia to Europe in the early 16C. The first reliable observation in England is documented in 1730, and in America in 1755. The Germans even named the brown rat *de Wanderratte*, translated as the roving or migratory rat. The brown rat landed in America with a vengeance like D-Day invaders and waged a victorious war of “biotic antagonism” against the earlier black rat settlers, eventually driving them into the coastal areas of the southeast, south and in parts of the west. Brown rats are now in every state and are said to “have the widest range of any New World animal except man.” It is estimated that the U.S. contains one rat for every American.

Busy Lives and Fast Times

Rats have been one of the most threatening animals to man. They are as recognizable as any domestic animal. Rats grow to be 7-8” long and can weigh a pound, and in some cases up to two pounds. They live in societal groups with dominate members. They are aggressive, omnivorous, adaptable and prolific. Rats succeed because

of their astounding rate of reproduction. If they are not eating, rats are usually having sex. Male and female rats have sex twenty times a day. Rats reach sexual maturity at 2-3 months; have a gestation period of 21 days, can become pregnant immediately after giving birth, average between 8-10 pups per litter, and can produce up to 20 litters per year, with a mortality rate of about 20 surviving adults per year. In other creepy words, one pair of rats has the potential of 15,000 descendants in a year. Adult rats typically live between one and three years so they make the most of their time. Rats are mostly nocturnal and feed upon almost all animal, fish, grain, vegetable, nut and fruit groups. They will eat a third of their weight in a 24 hour period. They carry food to safe, secure places, eating it in privacy or hoarding it. Whether in ground burrows or in above ground nests, rats build structures for living with internal specialized spaces. Black rats typically live in the higher reaches of a structure, such as attics, walls and ceilings as opposed to their low lying brown brothers who prefer burrows. They can squeeze through a hole the size of a quarter. The word Rat translates into “gnawing animal” because they spend ½ of their waking time gnawing to keep their front incisors from growing too long. Rats can chew through a lead pipe or a cinderblock with teeth that exert up to 24,000 lbs. of pressure per square inch. By one estimate, 26 percent of all electric-cable breaks and 18 percent of all phone-cable breaks are caused by rats. One study also speculates that 25 percent of all fires of unknown origin are rat-caused. Rats have an amazing sense of smell and a much more developed taste than man, detecting poison in only 1 part per million. They can swim half a mile at a stretch and tread water for three days; they can survive being flushed down a toilet-- and stories of them coming the other way are not nice to ponder. They can survive a fall from five stories without injury. They are seldom idle when awake, leading a frenetic life, that gives us the term “rat race.”

Popularity and the Last Laugh

Down through history, through death or damage, the rat has developed a bad image. Historically their European fame is tied to the infamous Black Plague. It is claimed that rats have killed more people than all the wars and revolutions in history. Rats have destroyed more food than all wars or famines. It is estimated that a third of the world's food supply is still destroyed by rats. It is no wonder they have a negative image. Their cousin, on the other hand, *mus musculus*, pronounced M-O-U-S-E, has been the object of fame, fortune and cuteness. A quick look through my own childrens' books twenty years ago showed many examples and exemplars, including mice as heros, as helpers, as educators, as performers, and as collectible decorative arts objects. Another creepy fact is that the rat king in the Nutcracker is based on real rat kings that lead their gangs through city streets. Other rat stories, using the more acceptable mouse as characters, have found their way into any number of children's films, or on TV shows (one of my childhood favorites). However rats proudly perform their own role in literature. Literary comments on rats, mostly negative, can be found in the works of Shakespeare, Browning, Goethe, Defoe, Doyle, Wells, Orwell, Camus, Faulkner, Kafka, Poe, Twain, and Freud, to name but a famous few. They also appear as themselves in New Yorker cartoons, and of course, in Gary Larson's animal antics.

Despite this historical bias, the rat has made a modern comeback as man's hero in laboratory studies. Twenty million laboratory rats a year in the U.S. alone will involuntarily die for your health. We might recall the rodent lessons from Psychology 101. More amazingly, the phenomenal pet rat occupies far more billings on the internet

than its albino brother in the lab. Twenty years ago my web browser search found more than 250 pet rat web sites. Talk about creepy.

Of Rats and Men: Home Sweet Home

Historically, people, houses and rats go together like Texas, beef and barbeque. Examples of rats co-occupying dwellings with people go back to the Ice Age. This co-habitation has resulted in mixed cultural traditions. The Egyptians deified rats believing they symbolized utter destruction as well as wise judgment (they always chose the best bread to eat). The Greeks called Apollo the “rat killer.” In the Roman world rats represented omens, with both good and bad foretelling. In China the rat is the first animal in the Chinese Zodiac calendar. White rats connote happiness and prosperity in Japan. In native Australian cultures the rat is venerated as a totem. The Hindus saw the rat as the most powerful of demons but with a foresight and prudence, and as the vehicle of the god Ganesha. And for the ultimate on the creep scale, temples in India are devoted to rats where priests serve them food.

In America the intrepid first rats that arrived at Jamestown on the Susan Constant, Goodspeed and Discovery quickly ate their way into history by nearly destroying the crucial grain supply. From the first settlement onward, rats became a common, albeit unwelcome, part of domestic colonial life. In describing a fitful night of colic, Colonel Landon Carter of Sabine Hall used an analogy in his 1774 diary entry: “the wind run about by body like the rats behind a Wainscot.” His journal diary for the year 1777 picked-up the same architectural reference when he commented: “Wainscoted rooms

have their [in]conveniences. A dead rat has been stinking behind mine in the hall at least 6 days and is now intolerable in spite of burning tar.”

Rats have inhabited old houses to the extent that it would be harder to find examples of houses without evidence of rat occupation. Co-habitation with people in houses can be gleaned from documentary research and from physical research, the latter being the most important as described in this paper. Physical evidence of rats far outweighs documentary references from colonial times. The Calvert House in Annapolis, Maryland, ca. 1730, had evidence of rats in the hypocaust heating system of the orangery. A 17C French horticulturist commenting on orangery construction recommended applying dung on the walls as an insulation but cautioned that it would become a “retreat for rats and mice,” which apparently were feared less in this case than the “deadly and prenicious” frost. Examples are found in architectural restoration projects where walls and floors are typically opened. But these nests were rarely kept, commented on or documented. In the late twentieth century it is more likely that nests were noted, photographed, picked through, and even exhibited. Examples include the Hammond-Harwood House in Annapolis, the Octagon House in Washington, D.C., the Miles Brewton House in Charleston, and in Virginia: Gunston Hall, Stratford Hall, Mount Vernon, Kenmore, the Wickham House, and Eagles Nest. In the most well-known architectural restoration tales, nests reveal something of use for restoring architectural, furnishing or finishing details, including a famous example at Independence Hall. My experience with rats’ nests at Poplar Forest was not my first rat rodeo. During the restoration of the 1812 Wickham House in Richmond I found a piece of floor cloth and a piece of carpet in a nest under the floor boards of the attic, providing restoration critical

clues. At Eagles Nest, a private restoration of a 17C house in tidewater Virginia, a nest between the studs in the dining room walls yielded fabric, ceramic shards and a silver spoon made by well-known Williamsburg silversmith James Geddy. The fabrics, eventually reproduced by a well-known fabric company, were publically announced to have been collected by animals euphanistically described as “flying squirrels and mice.”

As rats have expertly adapted to their environments, they have also forced man to adapt his houses and farm buildings. A 1797 New England description of granaries advised that “A granary should be so constructed, that corn should be kept free of dampness, insects, and vermine. To avoid the last of these evils, its being mounted on blocks, capped with flat stones, like some of the houses for Indian corn, is no ill expedient.” This precaution describes many granary buildings with the broad stone pier caps like this one at an outdoor museum in England. Landon Carter’s 18C diary mentions “capstones for my pigeon house to keep down the rats.” A typical Connecticut corn house was described as having stone “posts covered with inverted tin pans ... to make it inaccessible to rats and mice.” Or this recommended method in a farmer’s journal. It was an ages-old battle of wits between farmers and rats.

An 1850s wheat threshing barn at Poplar Forest was constructed with a special sub-floor battens to seal the cracks from rats. Almost every farm construction guide or description of food-related farm buildings mentions the control of rats and mice due to the enormous loss they could affect. A rat can consume about 50 lbs. of grain a year. Jefferson referred to his floors and ceilings filled with brick as a fireproof measure but they inevitably acted as a rat barrier as well. In 1819 Jefferson ordered that a map being

sent to Poplar Forest be protected from rats. The “first rate English cheese” sent to Poplar Forest did not make the trip undamaged however.

Rat-proofing measures from any era were accompanied by various extermination solutions. The oldest documented rodenticide is the use of red squill, used around 1500 BC. Medieval rat catchers were so important they even had their own guild. Medieval stories include the famous Pied Piper of Hamelin, made famous in the poem by Robert Browning, who is thought to have been based on travelling rat catchers. In addition to the ever-perfected rat trap, poisons seem to be the treatment of choice. One testimony from The Farm Journal, describes an episode of chlorine gas placed under the garret floor: “All night long, it would seem as if Bedlam had broken loose between the partitions. They decamped, big and little, and stayed away three months.” ... The author concluded: “The best rat trap or rat poison we ever found, is a good cat.” Found in the Poplar Forest attic floor nest was an empty bottle of “vermifuge,” The obvious down side to poisoning is the tell-tale smell of death, as Landon Carter had recorded. Even Napoleon on St. Helena Island complained of dead rats rotting in the walls. Building a better mouse trap has been the holy grail. Modern means of extermination have gone high tech with new electronic gadgets offering a more kindly, gentler manner of simply keeping rats away, rather than killing them. Visual proof to the contrary, the question is whether these devices really work. You can even purchase one such gadget for your loved ones in the current Hammacher Schlemmer Christmas catalog. No one likes to talk about rats but don’t think they have mysteriously disappeared. A recent article on October 13th in the News and Advance reminds us of their presence.

Observation and Analysis

All the specific nest material discussed in this article is from a post-Jefferson context, 1846 to the mid-20C, reflecting the occupancy of the Hutter and Watts families. What great Jefferson era things contained in the house were destroyed in the 1845 fire. A piece of newspaper dated 1846 indicated that the rats who had left the burning house returned to their new abode immediately, with many more hollow walls to inhabit. Mrs. Watts's playfully painted depictions on the stairs to the attic should have given me a clue to what I would discover in the adjacent walls. This particular nest ran up the attic staircase hollow stud wall about 5 feet and then through the attic floor for about 5 feet. Having trained my crew to bag subsequent nests, I was concerned that nothing would be lost.

Paper, in many cases, provides a date and other artifacts can be assigned relative dates through a little research on the style and manufacture. Artifacts from the daily and routine behavior of the Hutter and Watts families tell us what they read; how they communicated; music and games they played; what they wore or decorated with; how they finished the interiors; what medicines and pharmacists they used; how they painted their house; and what they ate ; what they grew on the farm; and many more glimpses of everyday life. Ephemeral and mundane items such as a whittled stick, or a habitually folded piece of paper, might be very rare three-dimensional manifestations of human ruminations and silent thought. All this information can be used in concert with historical documents (letters, accounts, or journals) and with other artifacts. Fabrics in rats' nests might be the equivalent of ceramics in historical archaeology, being datable by style and technology.

The bits of material culture were great but I developed questions regarding the collectors rather than the collection. My questions turned from the goal of understanding an artifact's use in its human society or culture, to a parallel goal of trying to explain the rodent's behavior from the secondary use of the material. I began to see the nests with a new bi-lateral research focus and to question how rats lived and how they formed their nests. I could find no professional literature that explained how rats lived within dwellings or the rationale of their nest construction. What professional studies I could find pertained to laboratory rats, to outdoor rodents who live in the ground, and to the famous "pack rat." I was still left with questions about rats building nests in houses, and this begged the question of Inference.

Inference

On balance, there are two fundamental inferences to be drawn from rat archaeology. First, a rat's nest found inside a human domicile yields cultural artifacts from, and about, the human society that produced and used them. From these artifacts we can ask the questions typically asked of, and explaining, material culture. Again what struck me was that these indoor artifacts were not those found in the ground by archaeologists. Archaeologists find metal, glass, ceramics, and bone.

From a different analytical perspective, rat's nests can be seen for their ethological value (ethology is the study of animal behavior). The nest can be considered a rat-built structure, architecture if you will, constructed from the "borrowed" bits and pieces of the human's material culture and natural materials. This is where by focus began to blur.

To delve into this societal shift from humans to animals required some acquired knowledge as I said about rat life and behavior. As an architectural historian I definitely ventured into very unknown territory. I briefly dipped into ethology, socio-biology, evolutionary psychology, behavioral ecology, and of course, anthropozoology. Knowing the biological habits of rats helped explain the technomic, or practical, use of material. For example, segregated types of materials such as paper, fabric, grass, food, or droppings, suggested to me different areas with different functions. This functional possibility was answered by behavioral studies of rats indicating that they have separate areas for sleeping/nurturing, eating, and defecating/urinating. This behavior reminded me in an anthropomorphic manner, of a three or four room *en filade* or shotgun house plan. Could I be looking at a domestic abode?

Paper, fabric, string, rope and natural material is used for the entire nest and for the inner sleeping chamber; wooden and hard objects, even metal, are necessary for the necessary rodent gnawing; food is obviously used as food. Other pieces, such as glass, leather, or stones, have no known function. Did the rats use artifacts for status or decorative display? This question actually made me pause and to wonder whether I was out way too far on an intellectual limb. In some archaeological traditions objects of unknown use were labelled ceremonial objects but I knew that was going too far out on the anthropomorphic limb and raised the shaky question of whether rats have a culture. Did rats have a culture? Ethologists' definitions seem to fit. Studies indicated that rats have a genetic template for constructing their nests, not unlike ethnic groups and their

traditional architecture. Did rats share ideas about how to build a better nest?

According to scientific studies, rats do share and communicate environmental information, such as food sources. Is there a pattern to the forms of their nests? Yes, I thought so. Can we infer that the reuse of human artifacts as natural resources by the rats is a type of Diffusion? Diffusion is what anthropologists describe as the exchange of objects between cultures or societies. Demonstrating that rats had culture, as well as society, put me in an uncomfortable position and I was more than happy to offer my off-beat questions for others to ponder and explore—although no one has to my knowledge .

Conclusion

The cycle of man-to-rat-to-man does not have to be a circular mutually independent path of analysis. Certain questions overlap each society and can be answered in a mutually dependent manner. As an architectural historian this episode of research was out-of-the-ordinary to say the least and seemingly pioneering in my profession. If some researchers find themselves heading down a proverbial rabbit hole, I went pretty far down a rat's hole. That detour proved stimulating, but frustrating as I pushed some boundaries and crossed some interesting anthro-zoological bridges. As one historian remarked, "the scholar must begin blind to interpretive possibilities." Overcoming the initial blindness on my part resulted in a pair of bi-focals through which to see two levels of meaning. My academic article on this odd topic twenty years ago still seems to be the only one. You probably didn't think much about the article that made the local paper back then. The story did find its way to the front page article of the Wall Street Journal but my fame was dubiously associated with the picture of a rat. As you

might expect, big cities have big rat populations. In 2004 book review in the New York Times peaked my interest. Robert Sullivan wrote a fascinating but unsettling book about New York rats with the subtitle “Observations on the History and Habitat of the City’s Most Unwanted Inhabitants.” This was the only popular book I had found that documented the modern relationship of rats and man. Disappointedly it didn’t describe the rats’ architecture on Manhattan Island. I still think the cover art for his book is one of my all-time favorites.

Back when I was initially doing this study I responded to an ad for a new magazine called “Nest” since nests were on my mind. Alas, the nests within the magazine were altogether something different. Or were they? Were the rats imitating versions of human dwellings, or have our own nesting instincts evolved from something more animalistic?

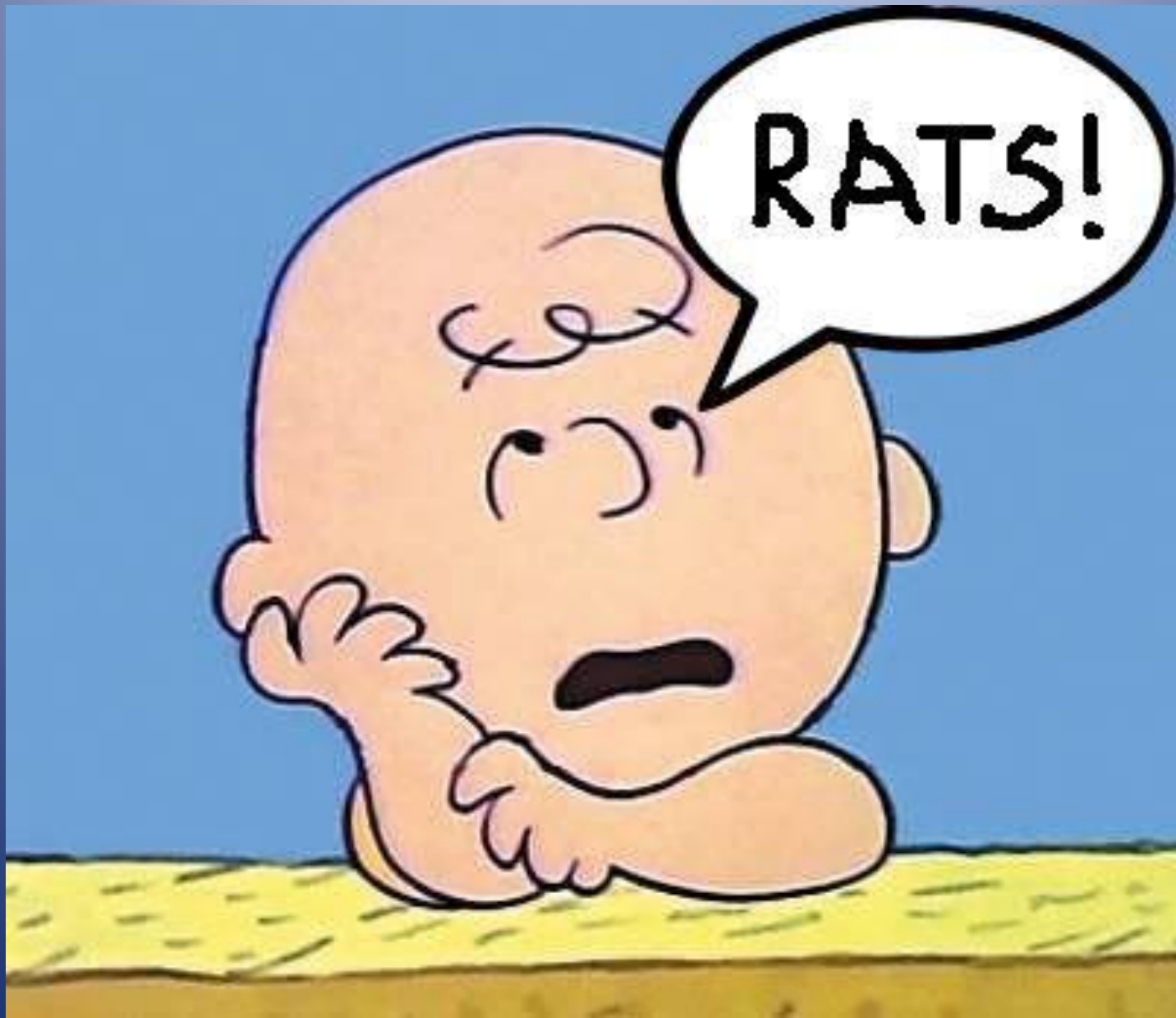
In the beginning, the Chief Rat issued executive order no. 1: Your mission, in addition to thinning out certain populations of humans, is to randomly sample and create a repository of domestic human existence and culture. Live with the humans and adapt to their ways, as they will to yours. Your archival storage space will be small, therefore collect objects in limited sizes. Constantly collect and curate this assemblage, guarding it with your life before passing it on to future generations. Do not expect gratitude.

Oh Rats!

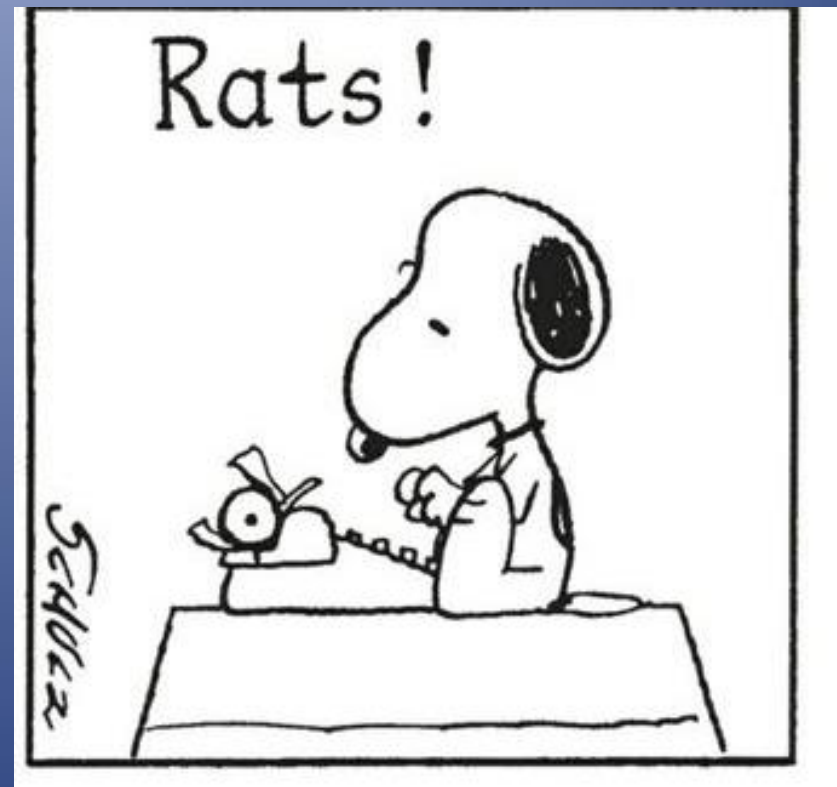
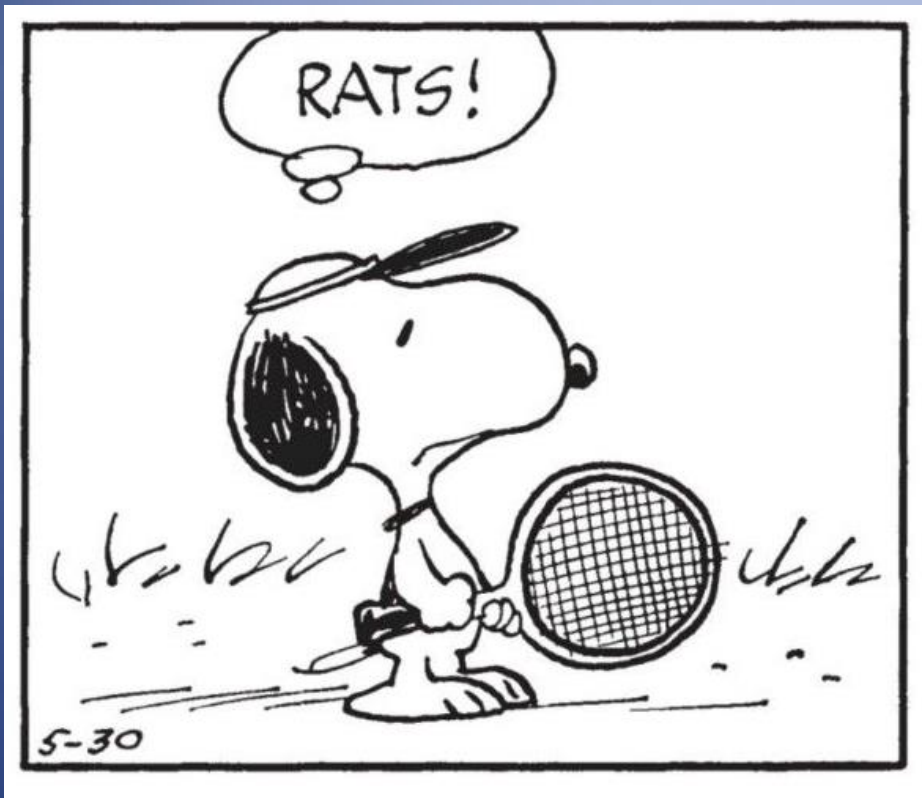
Travis McDonald

Sphex Club

November 4, 2021







“Rats”

An exclamation of frustration, disappointment, or vexation.



Rat



Any of various long-tailed rodents resembling but larger than mice; especially one of the genus *Rattus*.

















**In Search of a
Better Life in
America**







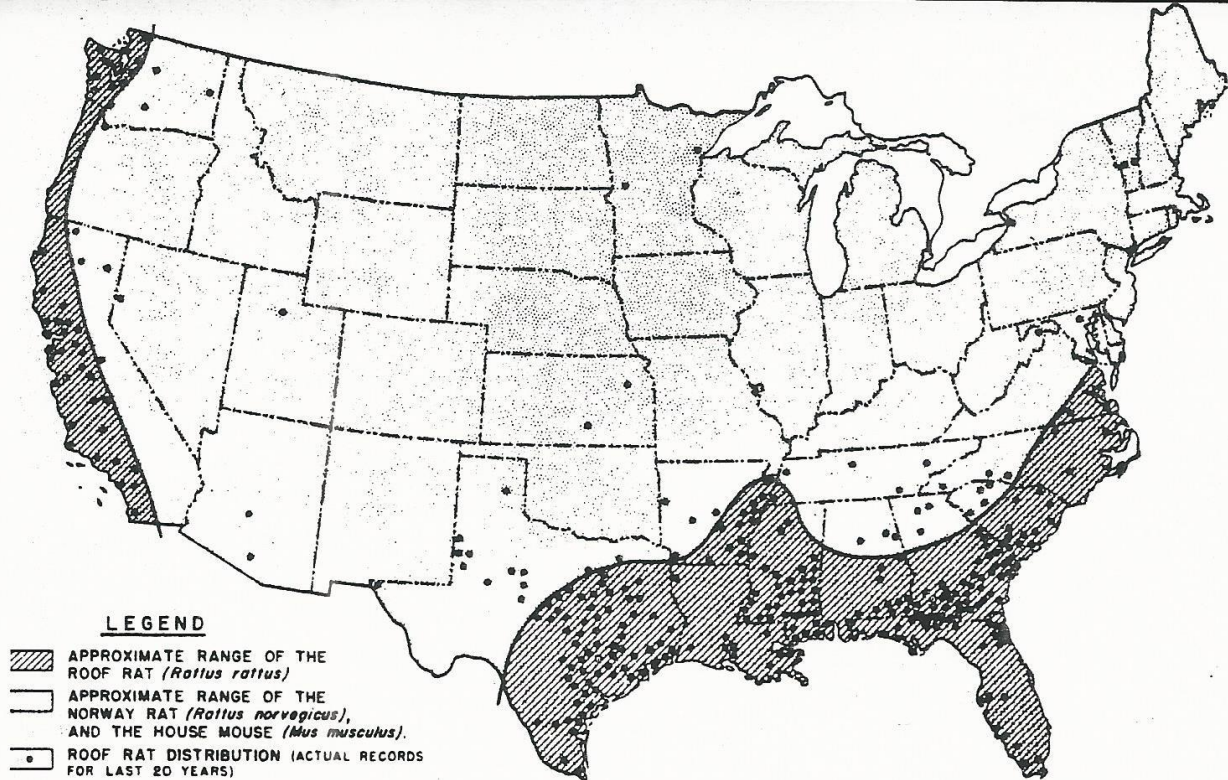
**Busy Lives
and
Fast Times**



Rat Teeth



**Popularity
and
the Last Laugh**



(above) Distribution of domestic rats and mice in the United States (*U.S. Public Health Service*)

JUNE 7, 1908. * *

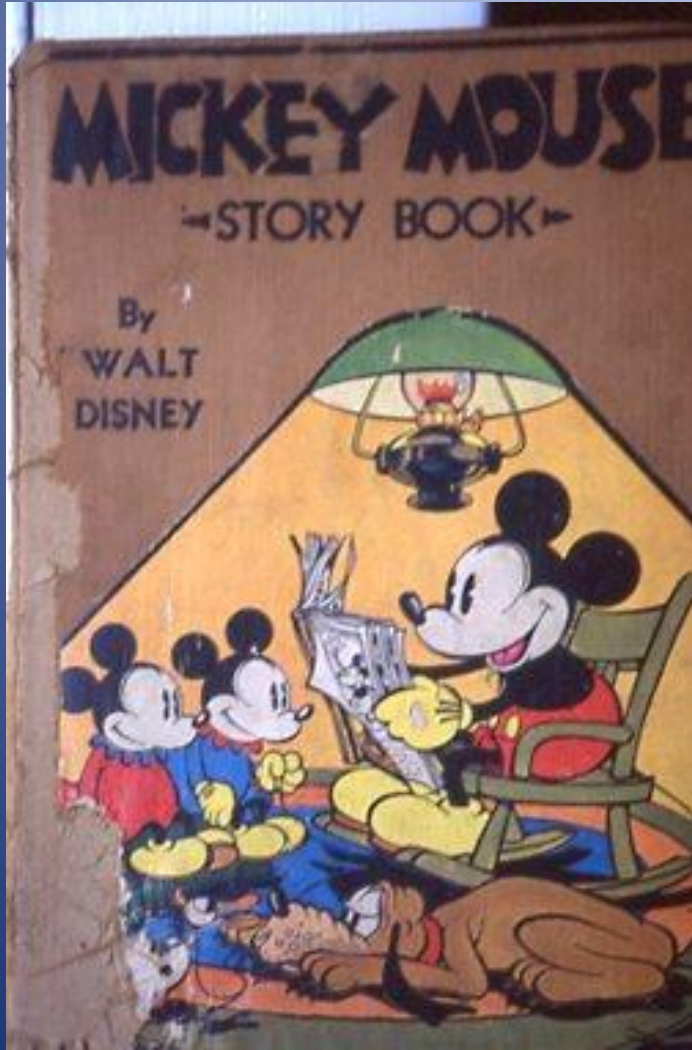
RATS MAY DESTROY THE HUMAN RACE

So Says Dr. A. Calmette, a French
Scientist—Man Must Drive
Out or be Driven.

IS A MIGRATORY RODENT

Assertion Made That a Single Pair
Will Ordinarily Multiply in Two

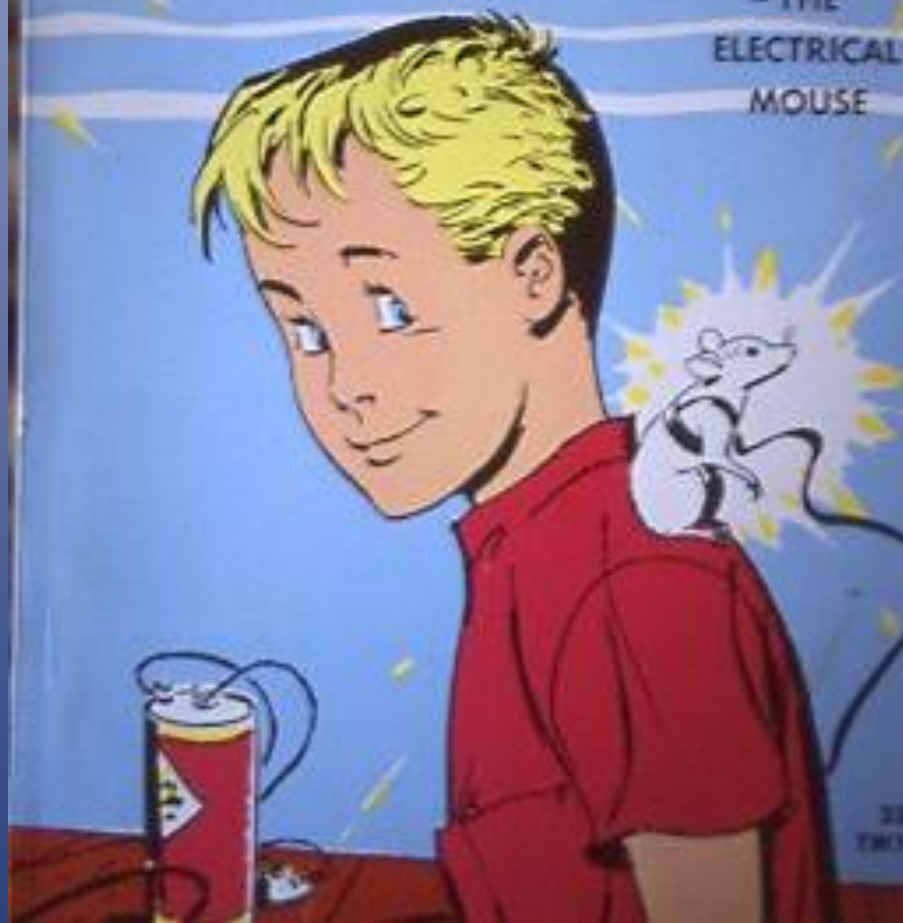






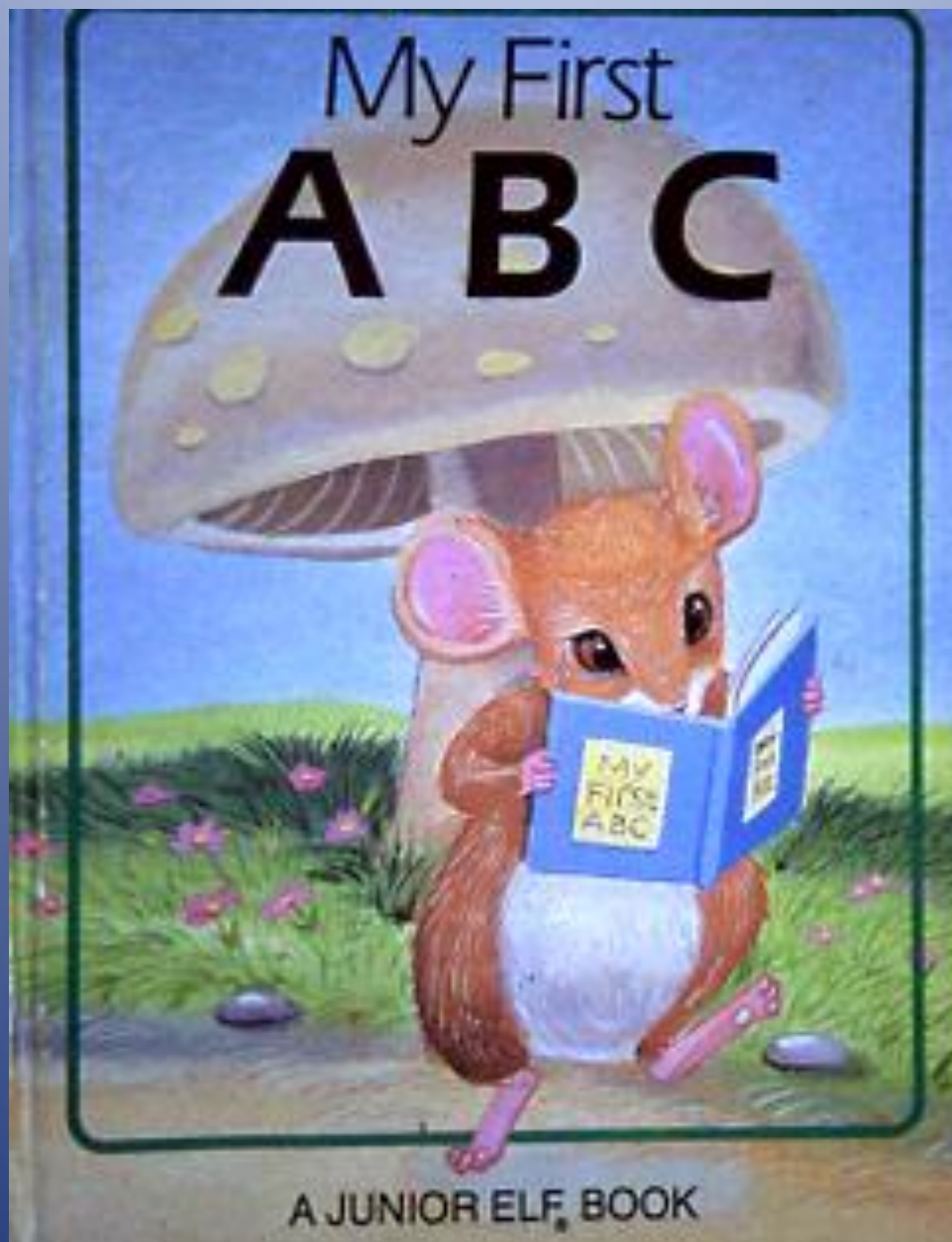
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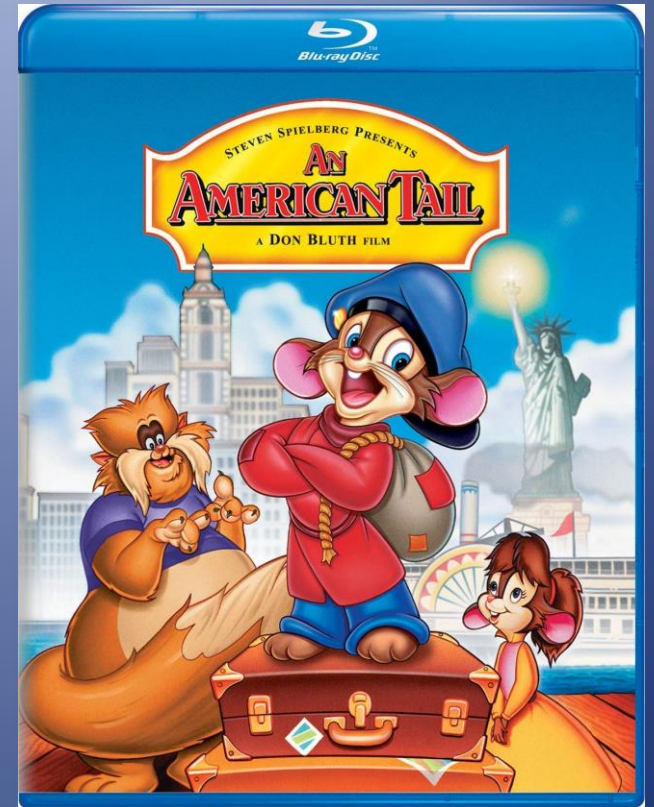
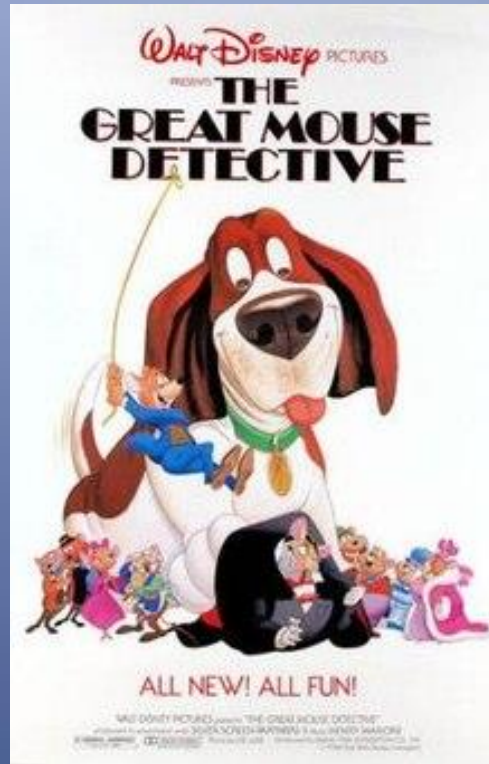
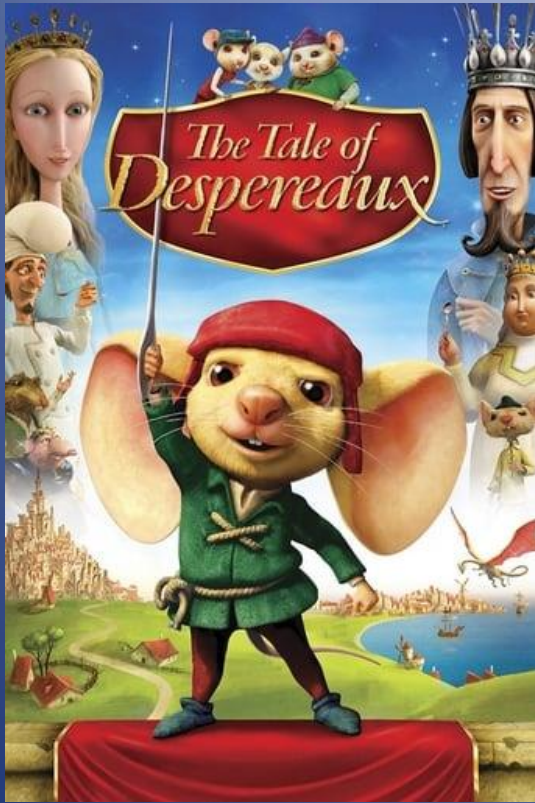
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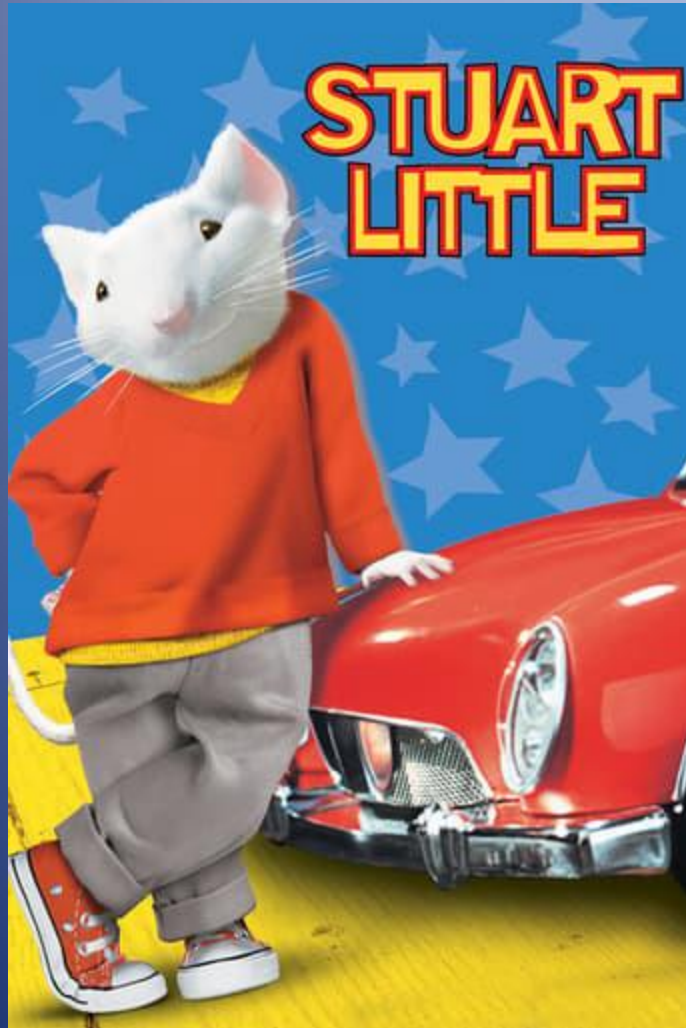


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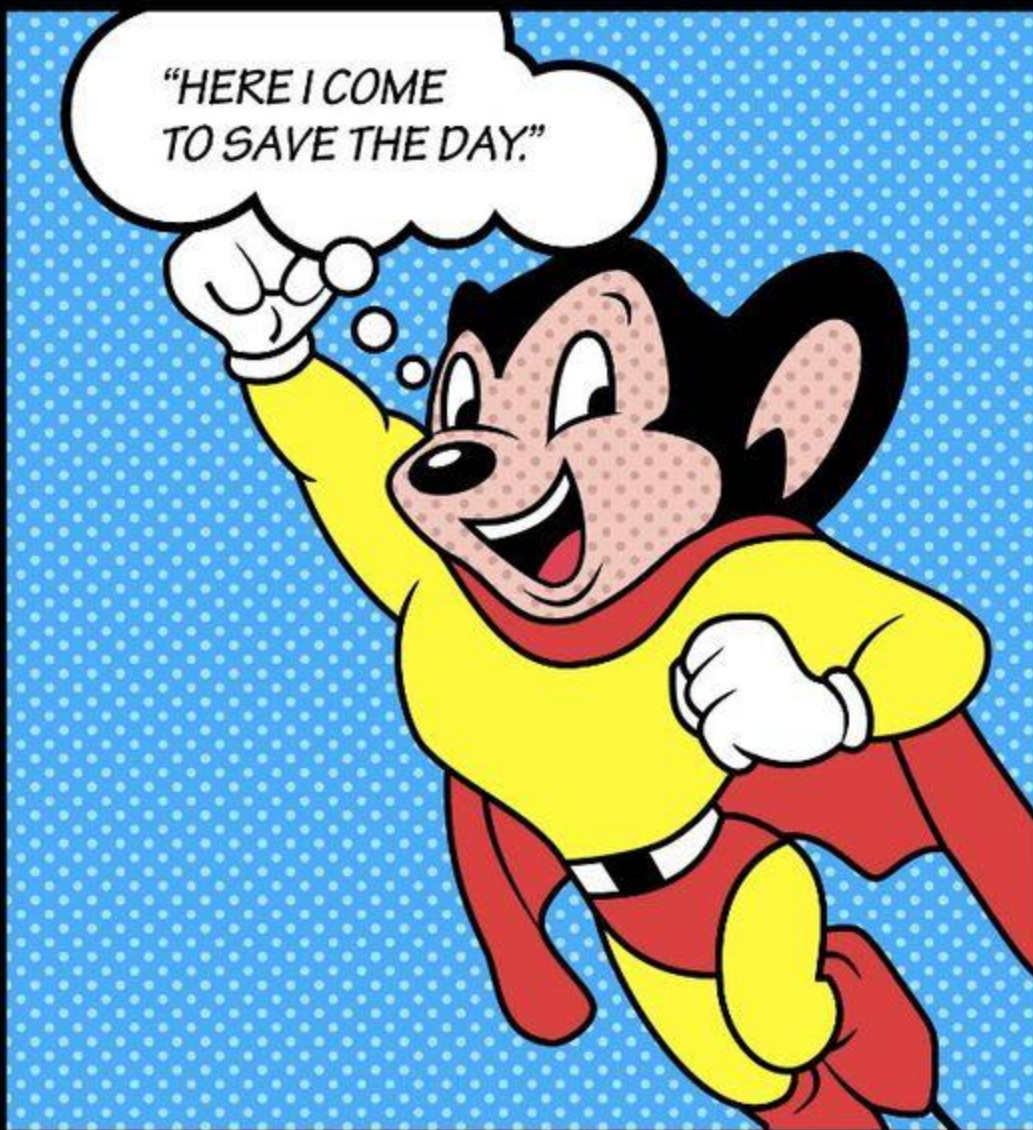
The wonderful Mickey Mouse alarm clock

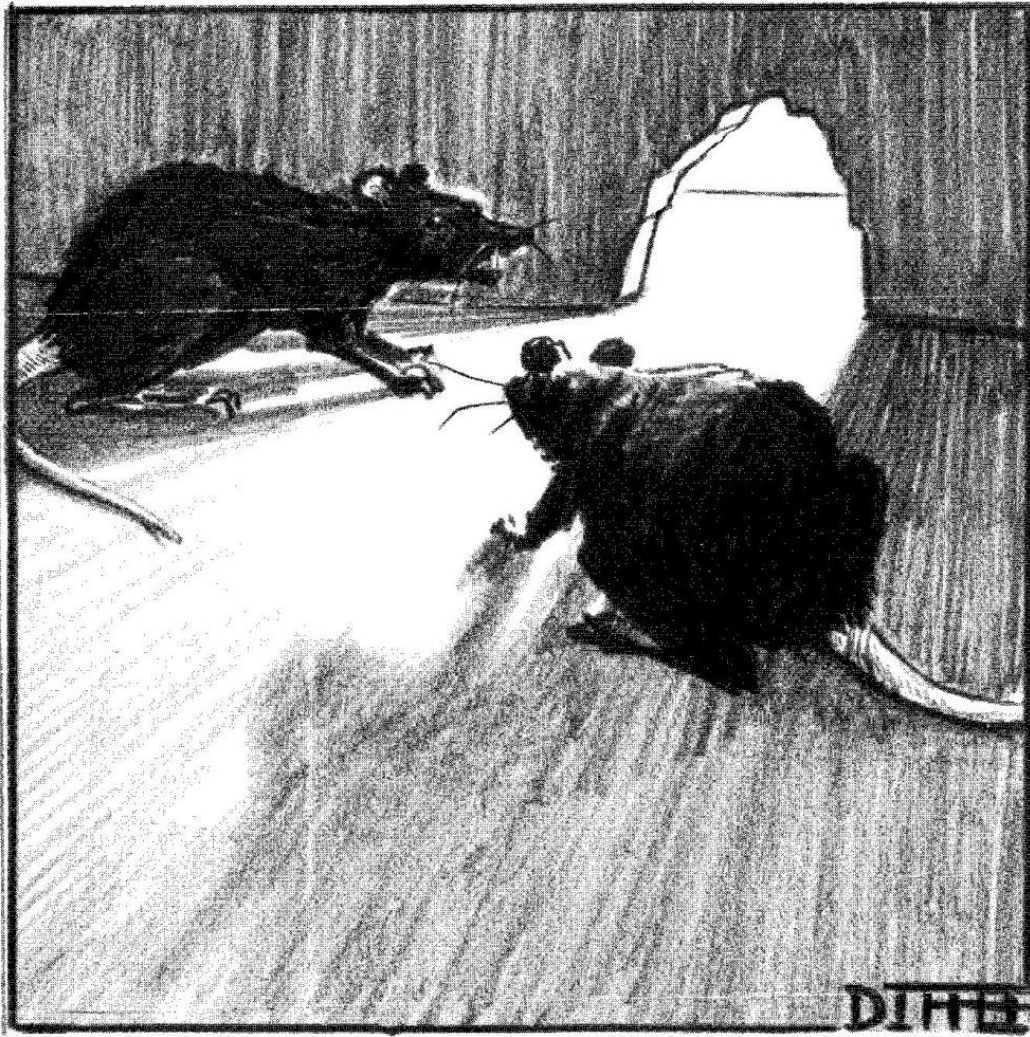






"HERE I COME
TO SAVE THE DAY."

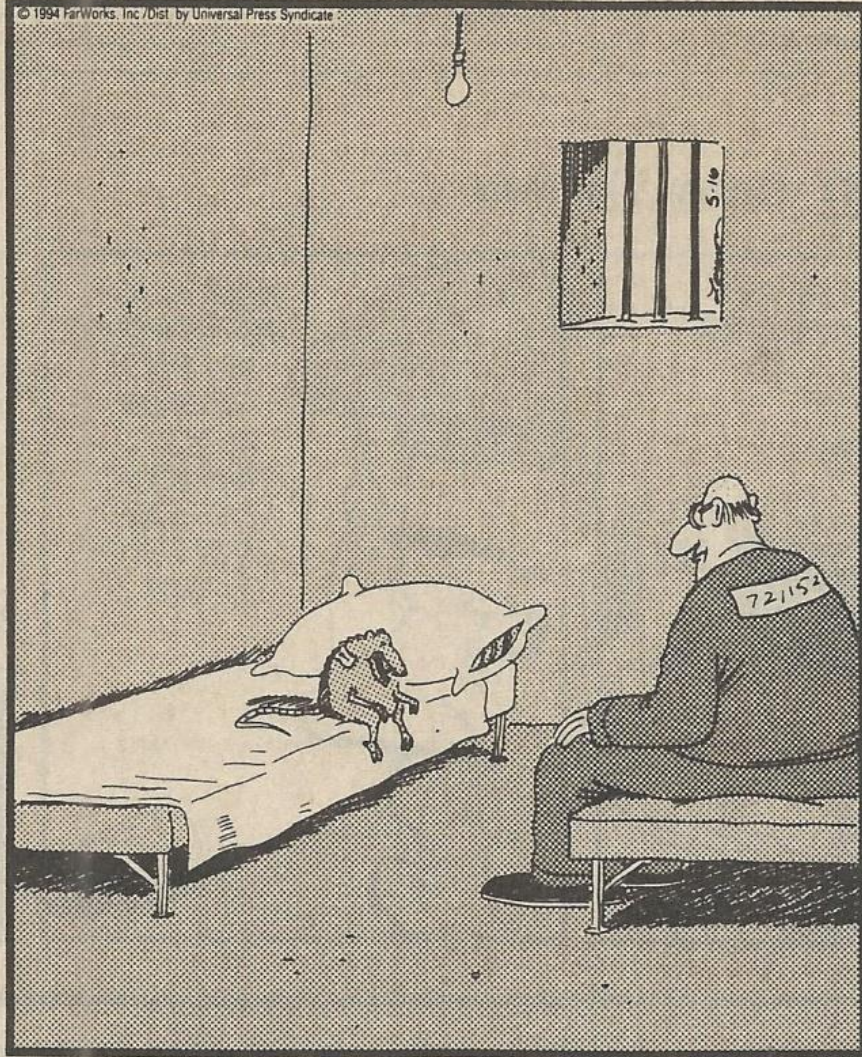




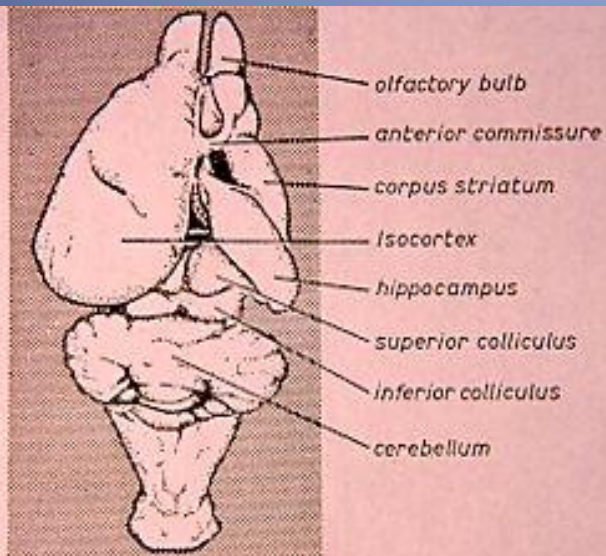
New Yorker, 1/20/03

"Bring in the garbage."

THE FAR SIDE / BY GARY LARSON



"I *would* have gotten away scot free if I had just gotten rid of the evidence. ... But, shoot — I'm a packrat."

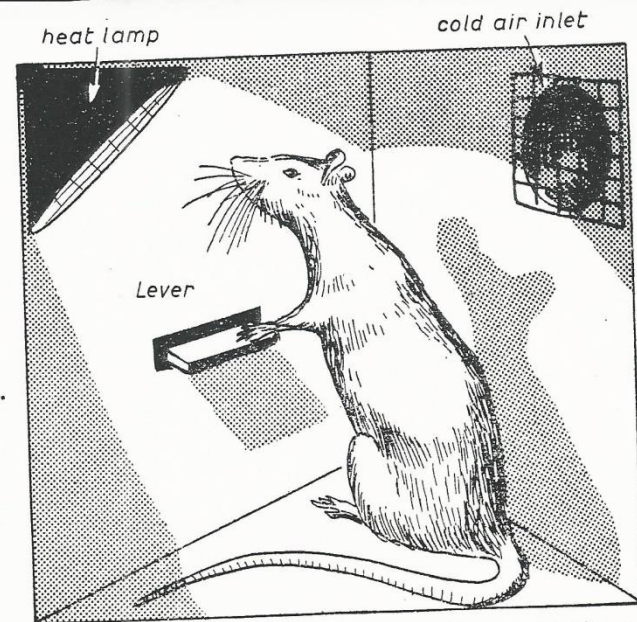
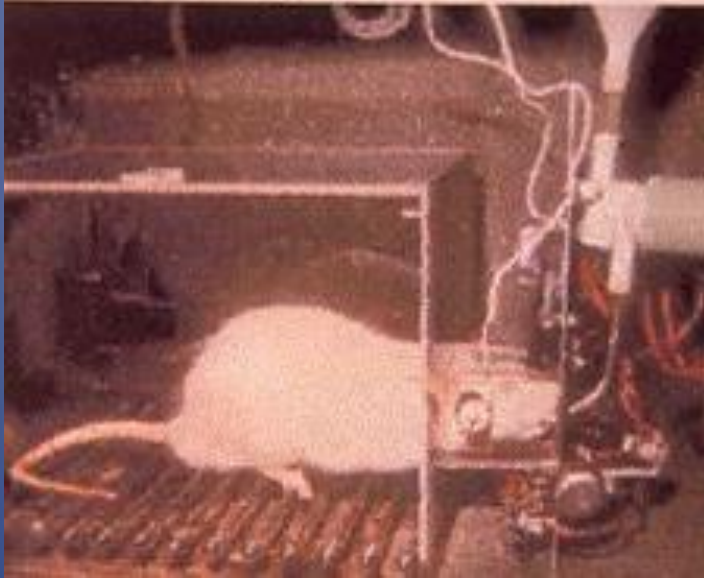


Brain of rat: dorsal view with dorsal cortex and corpus callosum removed on right. (After Beach [36].)

White Lab Rat



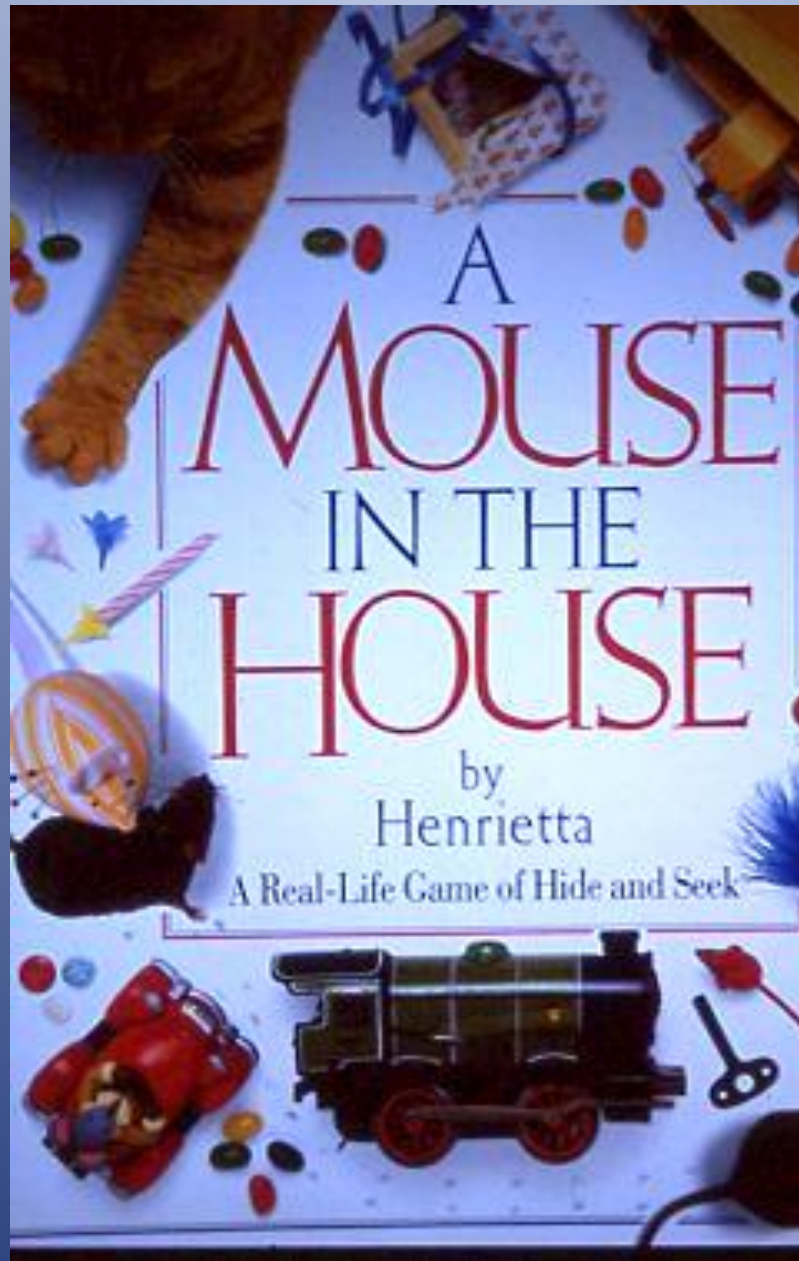
Operant Conditioning



35. Skinner box in which the reward of pressing the panel is the switching on of a source of heat. Rats adjust their rate of response to their need. (After Weiss [329].)

Of Rats and Men

**Home Sweet
Home**



A
MOUSE
IN THE
HOUSE

by
Henrietta

A Real-Life Game of Hide and Seek







No cockle-pull up there as yet.

I fear we shall not get our Cotton planted in time. Hedgers but this day began to ty the corn field wated fence down.

Sorimshaw brought 6 bushels of wheat of Mr. Opies.⁴⁰ Paid 5/. I could only return $1/3$ so that there is 9d due.

Earth very dry, notwithstanding these 6 moist day past, but no rain.

Wainscoted rooms have their [in]conveniencies. A dead rat has been stinking behind mine in the hall at least 6 days and is now intolerable in spite of burning tar.

Betty made and put up 3 groce of mould tallow candles, wanting eight; which it seems is all our tallow to this day. My this year's fattened heaves were





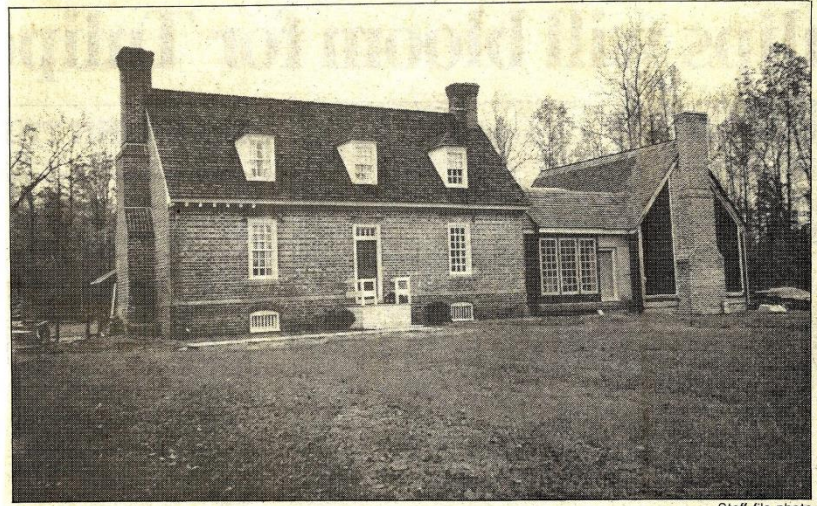




Staff photo by Wallace Huey Clark

NEW FROM OLD — Scalmandré has reproduced this design based on old fabric found buried in walls of the Thomas W. Wood house in Charles City County.

day, March 24, 1991



Staff file photo

AS IT IS NOW — When Mr. and Mrs. Thomas W. Wood started restoring this old Charles City County house, they found fabrics that generations of animals had fashioned into a nest in the wall. The kitchen and sunroom-bedroom addition to the right are part of the updating of the house.

House studs yield archival nest

Continued from first page

Wood brought out a "pack of rags ... it really was a very smelly bunch of rags.

"I started to get all excited ... they were a history of the house." What she was holding was a stack of about 10 sizable pieces of fabric gathered in the house by generations of flying squirrels and mice and made into what amounted to an archival nest.

Finding historic fabrics in odd places is nothing new to Scalmandré. Mrs. Bitter recalled her father going to Mount Vernon to discuss fabrics when that house was being restored years ago and every-

faded," said Mrs. Wood.

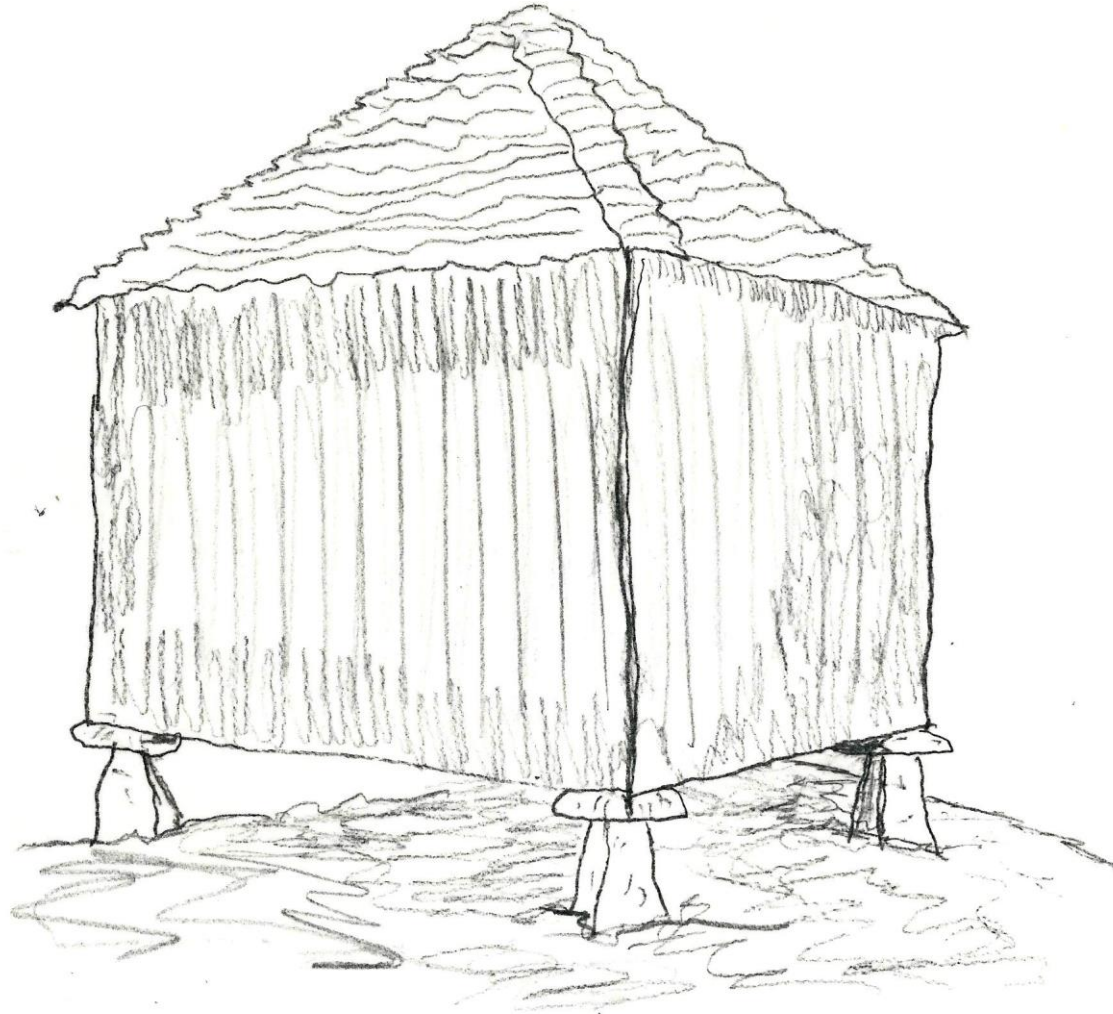
On her return to New York, Mrs. Bitter sent back acid-free tissue paper for Mrs. Wood to store the scraps in. There were dimities, novelty weaves, and all-over floral patterns.

About two years ago, Scalmandré was looking for patterns for a Classical America collection, which was in the offing for spring 1991 — it takes about two years to bring a pattern to line. A floral print from the Woods' fabrics was researched and was determined to be late 18th century because of the condition of the material and the use of Gothic Revival shells (the revival movement didn't begin until the late

18th century, Mrs. Bitter said).

Because some of the floral islands were missing and some of the shells were moved in the final product, this is called an adaptation, not a reproduction. In its reincarnation, it is a charming print of deep rose, lavender, mauve and blue flowers on branches with green leaves. The background is natural and the fibers are 63 percent cotton and 37 percent linen.

It's called "James River." Why not Chickahominy River, which is the location of the house? "That's a wonderful name. We're going to use that on a dimity [from Eagle's Nest]," said Mrs. Bitter.





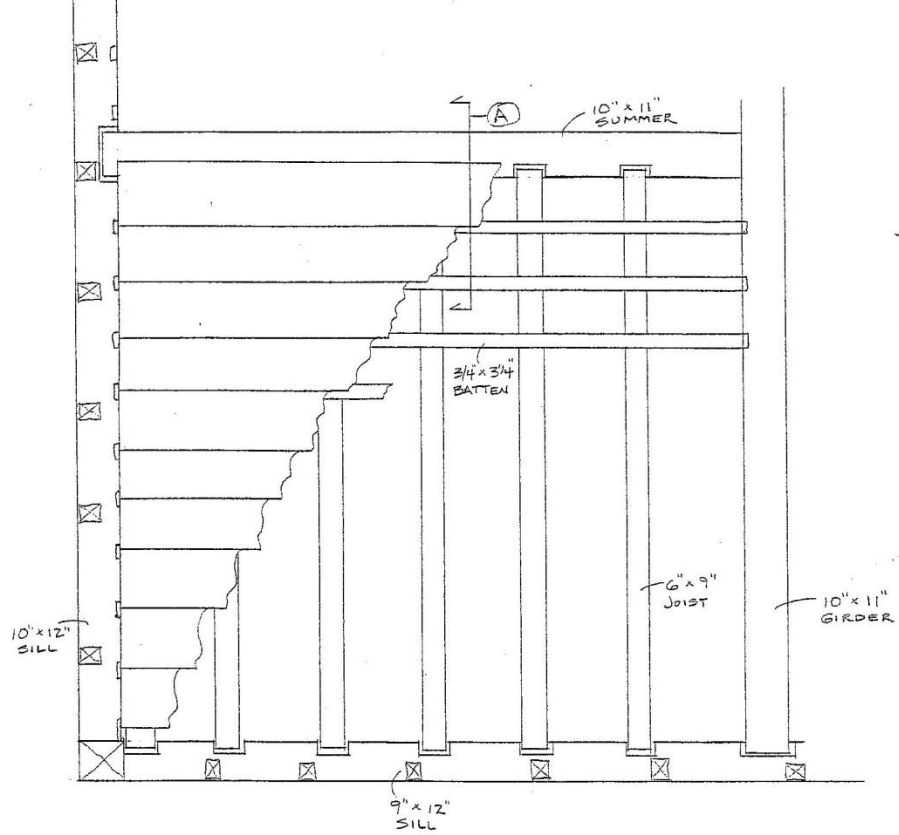
A RAT-GUARD.

To keep rats away from anything that is hung up, the following simple method may be used. Procure the bottoms of some old fruit-cans, by melting the solder which

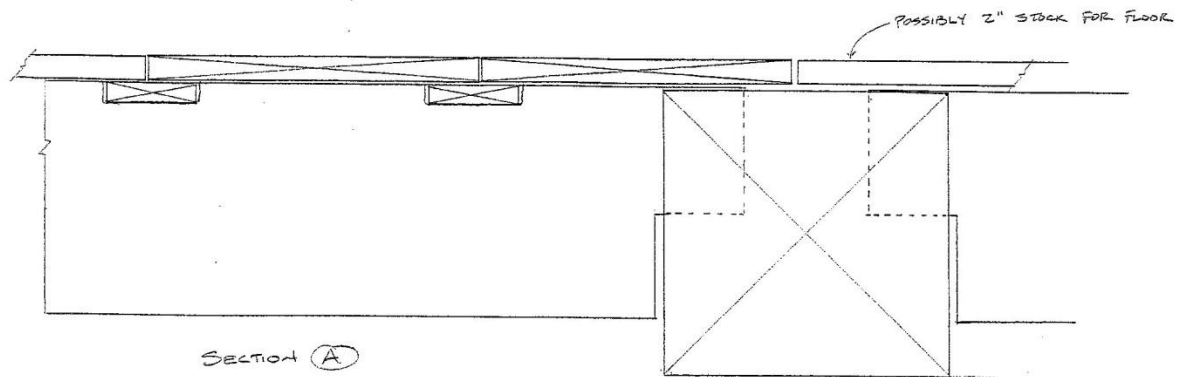


Fig. 120.—GUARD AGAINST RATS.

holds them upon a hot stove. Bore holes in the centre



.....SOUTHWEST CORNER PLAN RECONSTRUCTED.....





Thomas Jefferson at Monticello

to John Hemings at Poplar Forest 14 November 1819

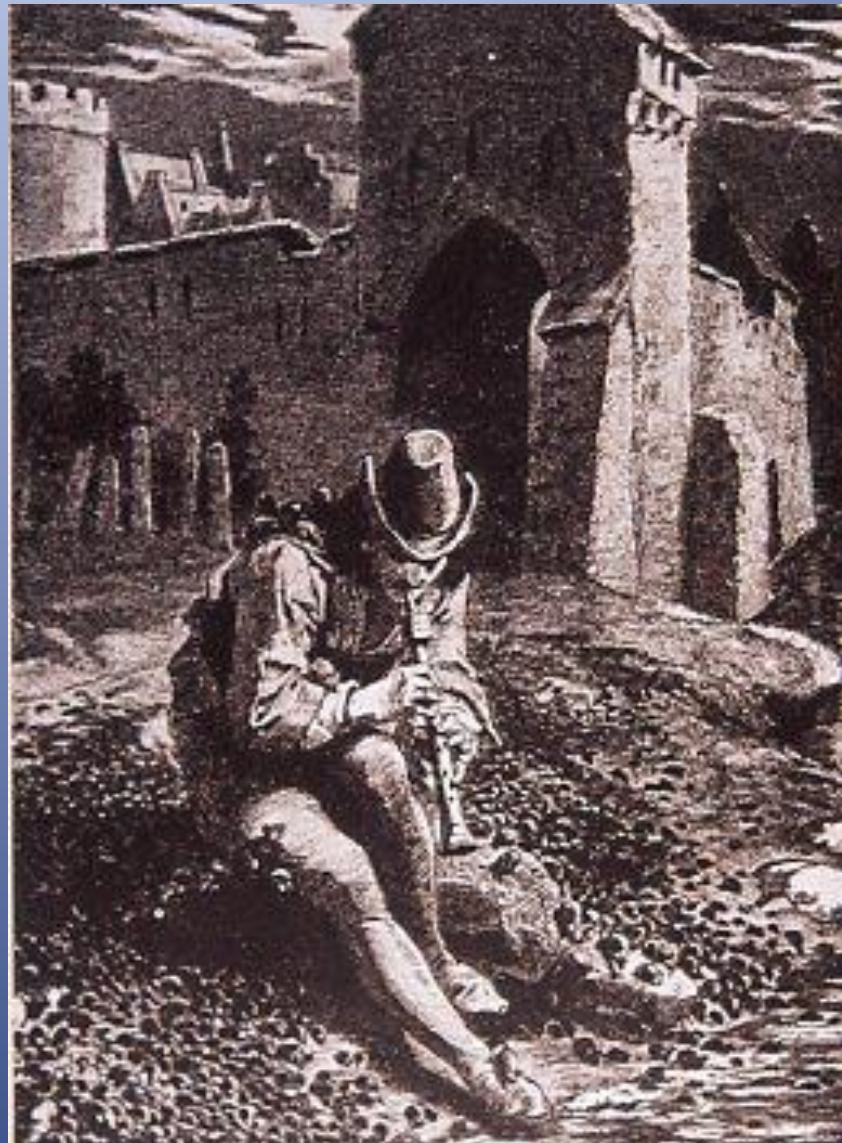
“The cart carries a map which must have the straw taken off and the map put into one of the closed rooms where the rats cannot get at it.”

Joel Yancey at Poplar Forest

To Thomas Jefferson at Monticello 19 November 1819

“By the cart John Hemings has received the map ... The cheese has a small hole in it, about the middle, made by the rats...”



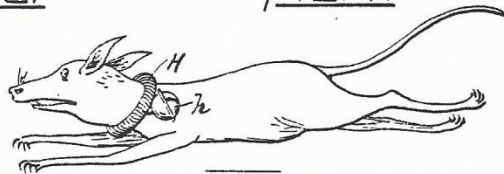
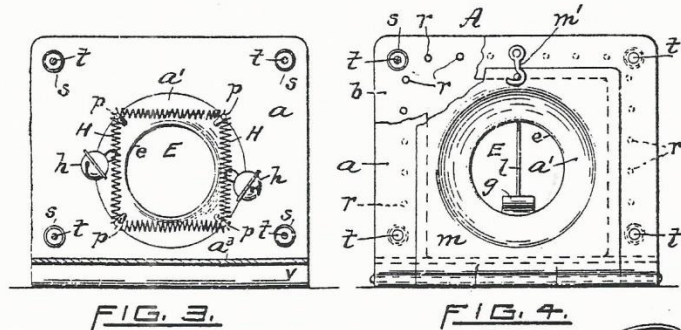
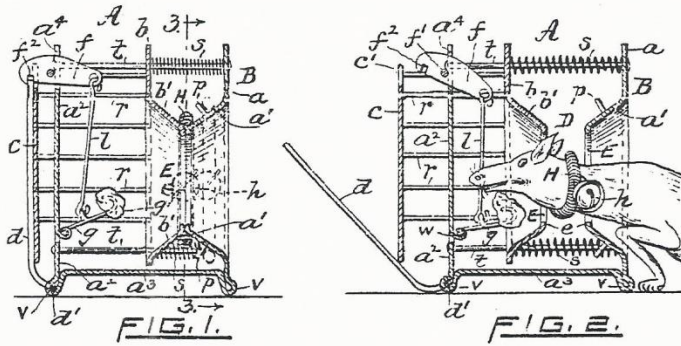




J. BARAD & E. E. MARKOFF.

DEVICE EMPLOYED FOR EXTERMINATING RATS, MICE, AND OTHER ANIMALS.

APPLICATION FILED DEC. 16, 1907.



WITNESSES:

C. J. Hennigan.
Calvin H. Brown

INVENTORS:

FIG. 5. Joseph Barad.
Edward E. Markoff.
By Geo. H. Remington.
Attorney.



This illustration is part of the patent, granted in 1908, for the "Humane Mousetrap." In short, the device was designed to clamp a bell collar around the rodent's neck and set the animal free, thereby frightening away all the other mice when the now noisy mouse returned to his pack. (U.S. Patent Office)



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Remote Monitoring System](#)

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PestControl

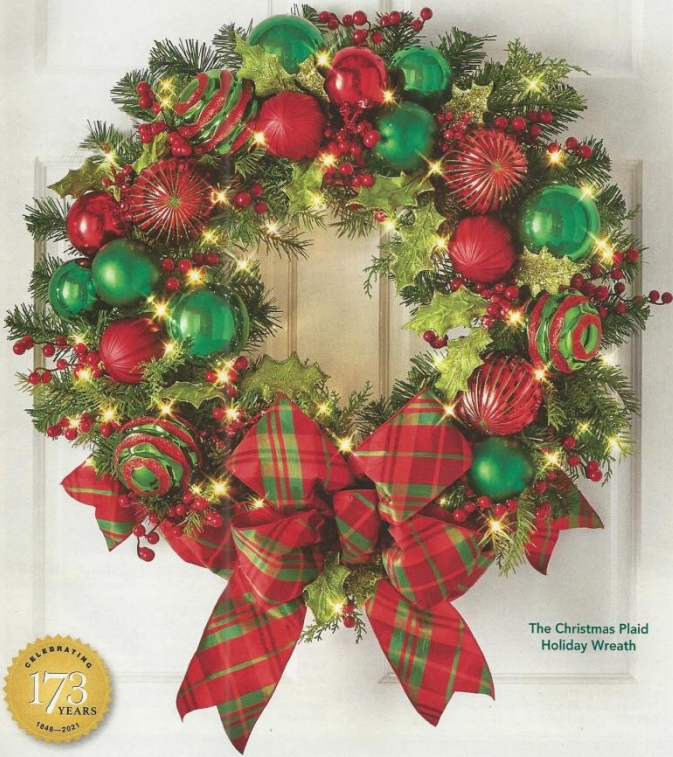
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TO DRIVE AWAY INDOOR
PESTS!**

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Gift Preview 2021



The Cordless Ultrasonic Rodent Repeller

This is the cordless device that can be placed anywhere in a home or garage to deter rodents with an ultrasonic frequency that is inaudible to humans. It emits 88-decibel tones that are harsh and unfriendly to rodents yet beyond the range of human hearing. The device varies its wail between 25 kHz and 32 kHz, preventing rodents from adapting. With LED power indicator and audible test button. Can be wall mounted. Covers up to a 1,500' sq. enclosed space. Requires three AA batteries that power the unit for 6 months. 4¾" L x 3" W x 1½" D. (4 oz.)
VR-84293 \$39.95



LOCAL & STATE



Hunting down Richmond's rats

UR biology professor leads a research project aimed at analyzing city's population of the pests

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ERIC KOLENICH
Richmond Times-Dispatch

RICHMOND — Jonathan Richardson parked his Toyota Tundra in a dirty, grease-coated and garbage-filled alley on Grace Street on a recent morning.

Along the walls and behind the dumpsters, he found a live rat in all eight traps he had set the night before.

It was the first time in his career he achieved a perfect score.

The rats darted back and forth in the cages and squealed. Richardson carefully picked up each cage and placed it in the truck's bed.

A biology professor at the University of Richmond, Richardson and his team of undergraduate researchers are conducting first-of-its-kind research on the city's rat population, the diseases the rats carry, and the risk humans face of contracting those diseases. The city's homeless and low-income residents are likely the most vulnerable, because less attention is paid to these communities, for pest mitigation, infrastructure and sanitation, Richardson said.

One such disease is leptospirosis, which can cause a



BOB BROWN PHOTOS, RICHMOND TIMES-DISPATCH

University of Richmond biology professor Jonathan Richardson carries a rat he trapped in downtown Richmond last month. He said no one has ever studied the city's rat population and its overall level of disease.



A tetanus shot is sometimes needed.

No one has ever studied Richmond's rat population and its overall level of disease, Richardson said. By the time

sicker or more dangerous to humans.

Elmer Sobalbarro-Umana, a junior biology major from New Jersey, said he's learned that where you live often de-

termines your public health risk.

Observation And Analysis













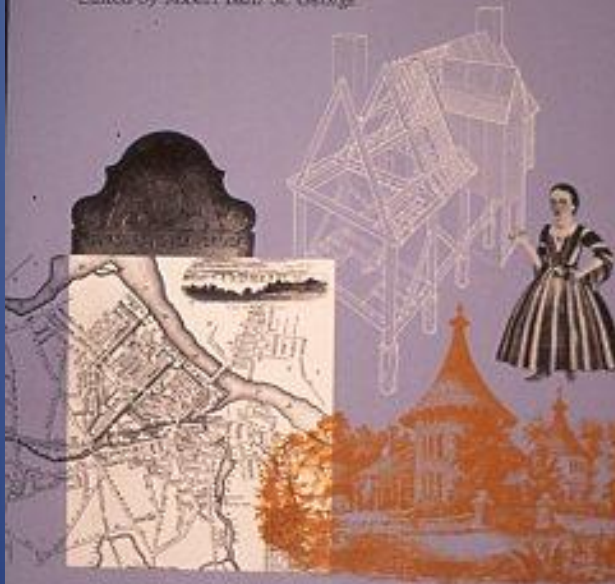






Material Life in America 1600-1860

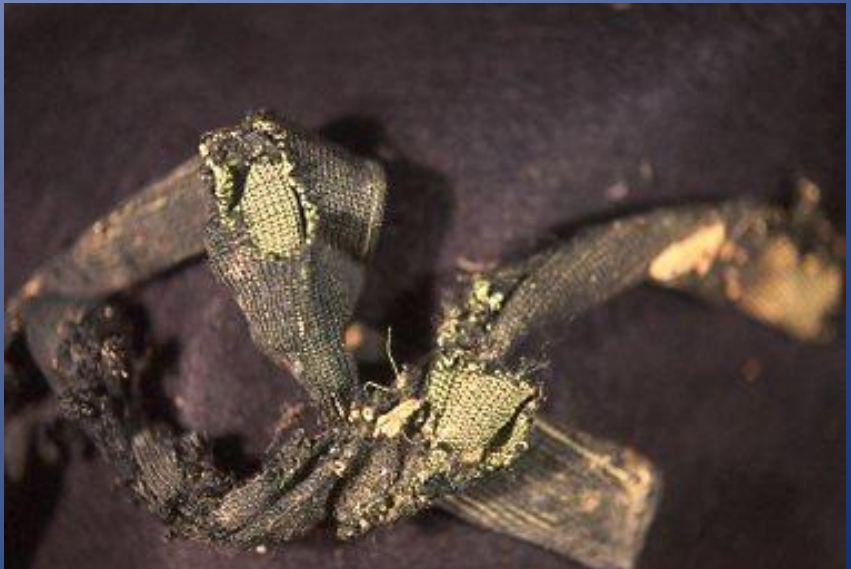
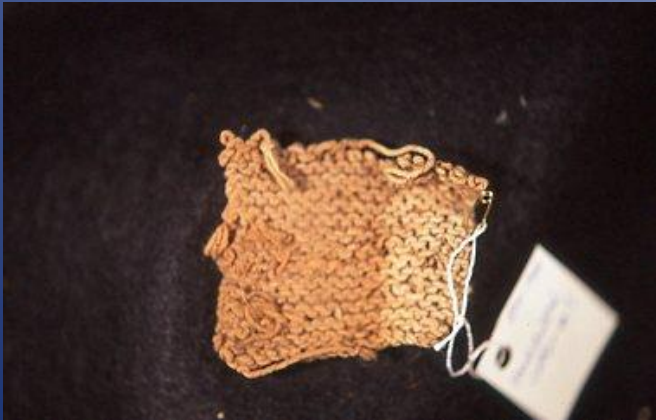
Edited by Robert Blair St. George

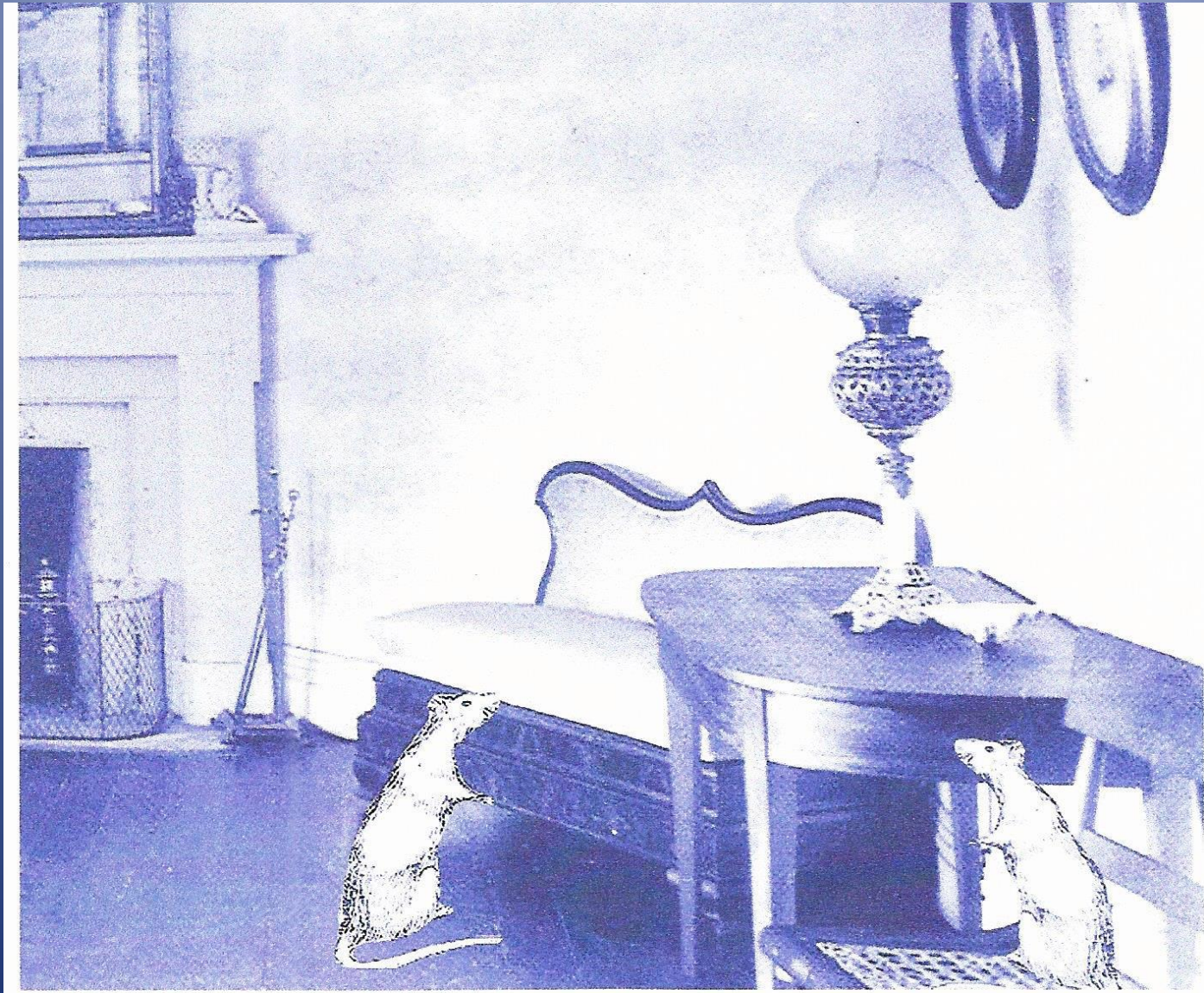


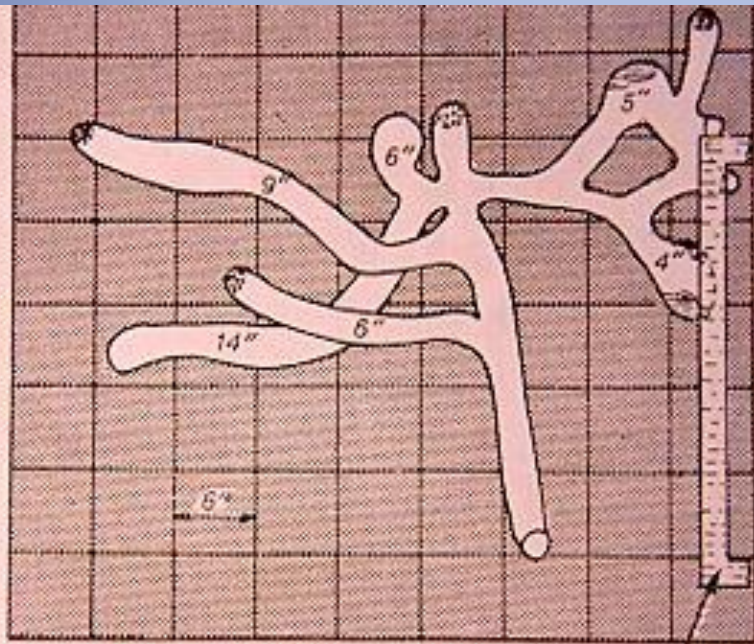
Income and Expenses Recd.

October

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2.395			" 47¢ Land base 17¢ Land side \$4.50
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"	3.45		" peaches 25 - Candy 25¢ - Roy 10¢
new fortunes	43		" Miss Edwards (watch 50 Maine 75) 1.25
on telegraph			" Mend: Stock 20¢ - Ribbon 35¢ - Bonnet \$1.
3 months up to			" Elastic slides 38¢ - Calico 1.12
2/9			" Cakes 25¢ (8 th) Seal Edwards

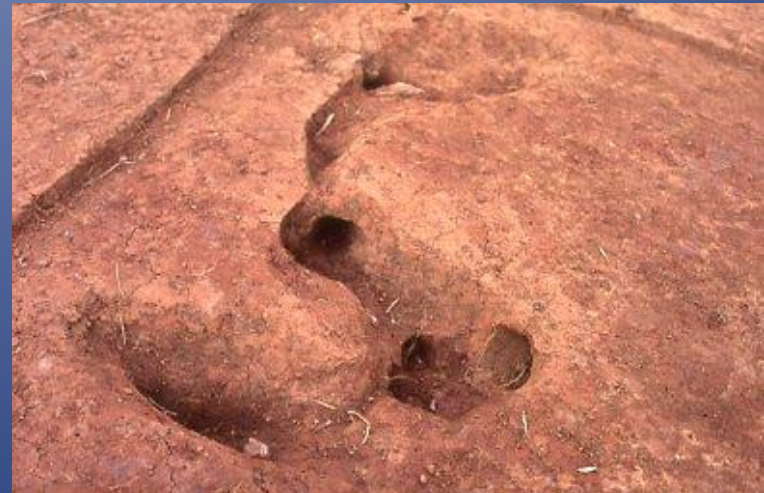






water trough

2. System of earth burrows of *Rattus norvegicus*. Figures show depths. (Pisano & Storer [244].)



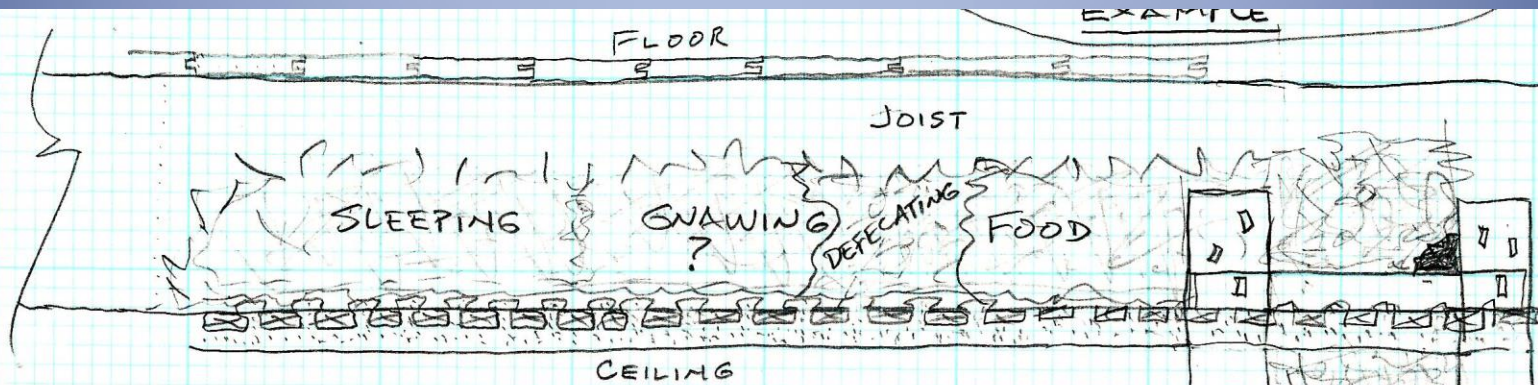


Inference

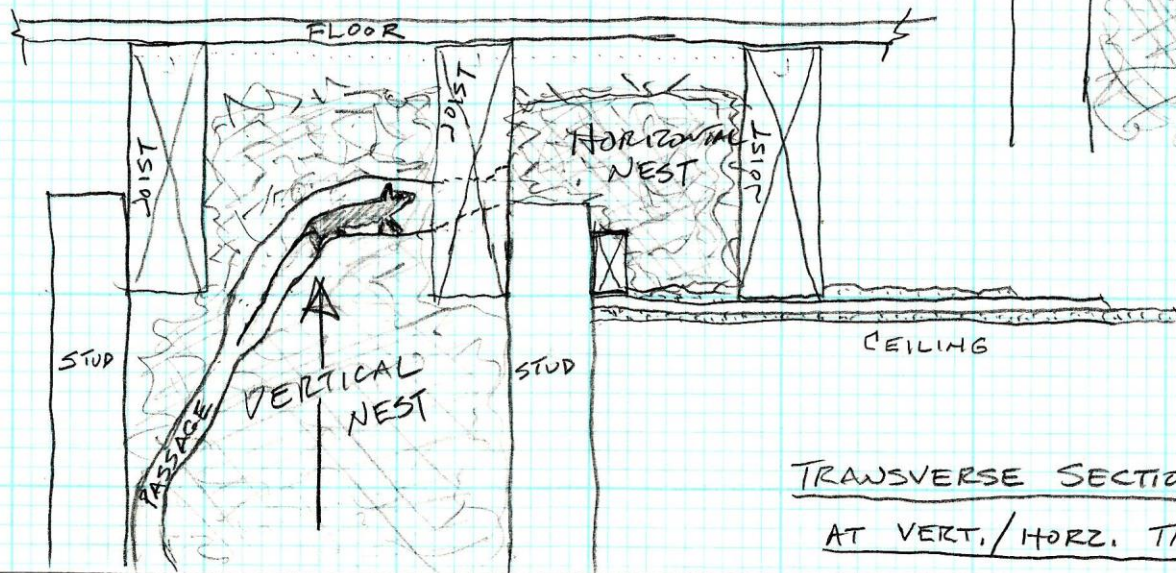






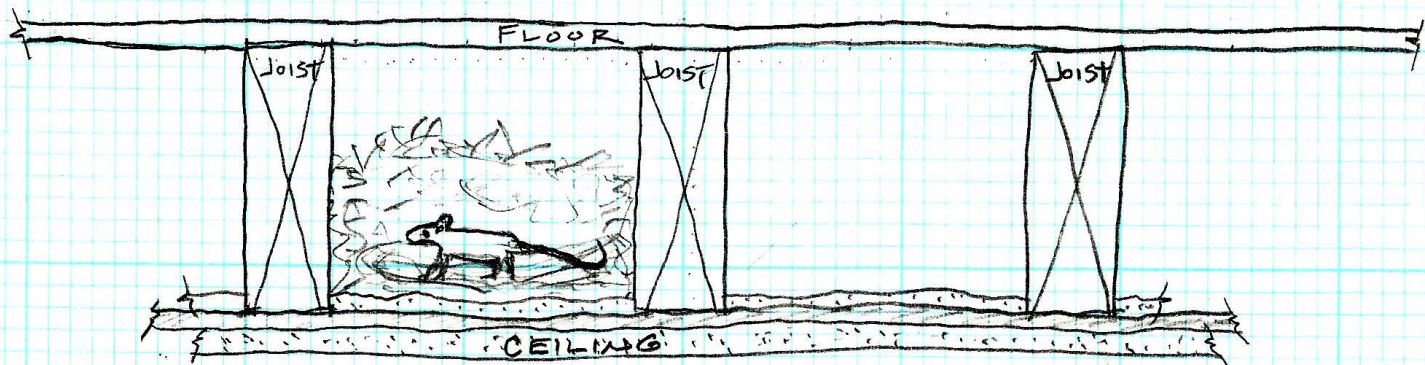
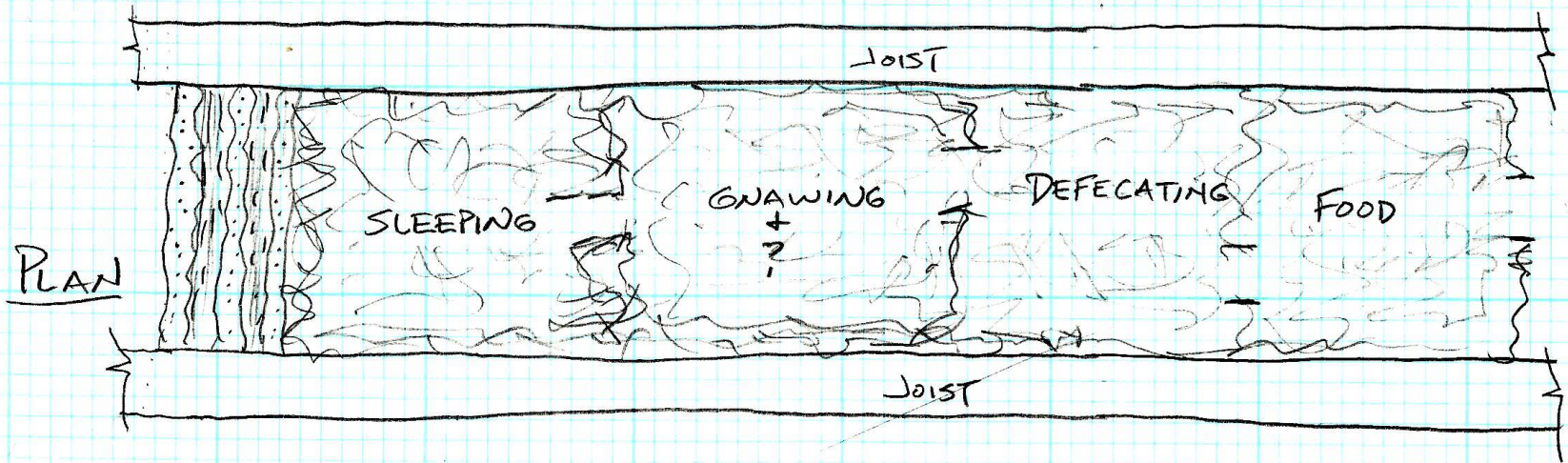


LONGITUDINAL SECTION



TRANSVERSE SECTION

AT VERT./HORZ. TRANSITION

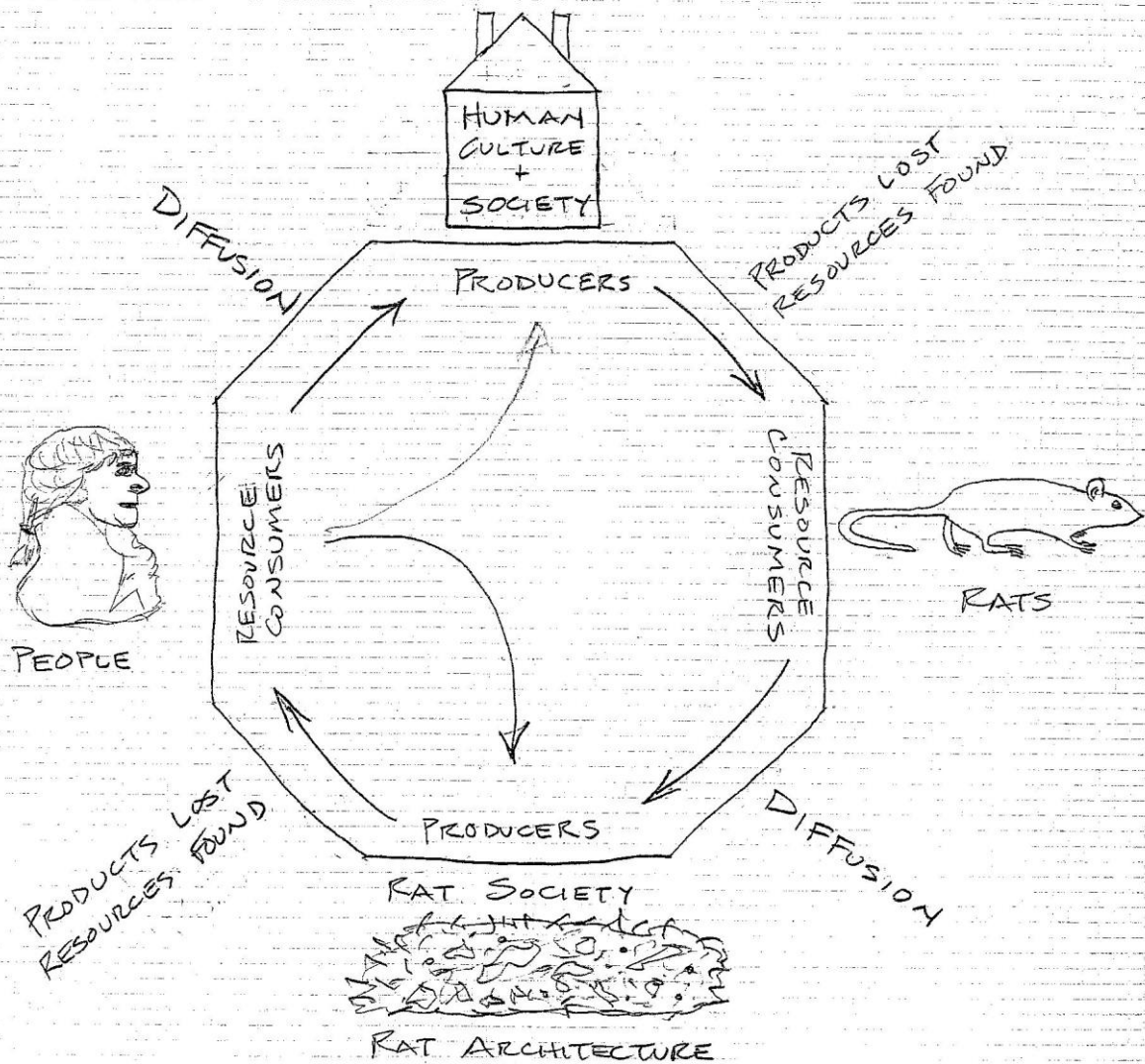








Conclusion ??



LYNCHBURG

5-14-91

COMMUNITY

The News & Daily Advance



Laura Schaufert

Just Wondering

After Jefferson, papers, peaches and old socks

Thank goodness the Hutterers had rats. Without them, said Poplar Forest's restoration coordinator, Travis McDonald, historians would only have half the picture of post-Jeffersonian life at the statesman's former retreat.

McDonald recently discovered about a dozen dead rodents, but

WALL STREET JOURNAL.

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TON

THURSDAY, MARCH 16, 1995

CHARLOTTE, NORTH CAROLINA

75 CENTS

at's News—

Finance

plans to un-
stake in RJR
buying RJR
aged buyout
nfer its 8%
\$640 million,
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A3)

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World-Wide

THE HOUSE DEBATED massive Repub-
lican spending cuts.

Lawmakers began a bruising budget
fight, as the GOP brought a \$17 billion
spending-cut bill to the floor under rules
shielding the Pentagon and forcing trade-
offs for domestic programs. Republicans
won a procedural vote restricting amend-
ments to restore funds for labor, health and
housing programs. Democrats were forced
to join the GOP in gutting Clinton's national
service program in order to protect veterans
programs. (Article on Page A24)

*In the Senate, Democrats mustered
enough votes to turn back a Republican
assault on President Clinton's new
striker-protection policy.*

Sinn Fein's leader was asked by the
U.S. to take a new step toward peace in
Northern Ireland by pushing the Irish Rep-
ublican Army to scrap its weapons. But
Gerry Adams said the next move was up to
British leader Major. Meanwhile, Ireland's
prime minister called on Clinton to inter-
vene once more in the peace process.

Liberals and women's groups appealed
to Clinton to resist political pressure to
retreat on affirmative action. In White
House meetings, Capitol Hill speeches and a
march across Pennsylvania Avenue, the
groups intensified their lobbying as the
president neared the end of his review of
federal programs that favor minorities.

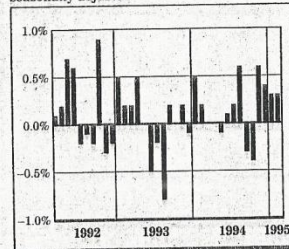
Canada and the European Union moved
closer to settling their fishing dispute, as
the Canadians released a seized Spanish
trawler and Spanish vessels stopped fishing
in a disputed area. Canada said all condi-
tions had been met to resume talks with the
Europeans on the conflict.

Haiti said it asked the U.S. to extradite
two militia leaders accused of killing and
maiming hundreds of Haitians. Extradition
requests for Emmanuel Constant and Louis
Jodel Chamblain were sent to the Justice
Department, Haitian officials said.

Using local blood banks is less costly
than the increasingly popular practice of
banking one's own blood for possible trans-
fusion during surgery, according to a new
study by medical

Producer Prices

Percentage change from previous month,
seasonally adjusted



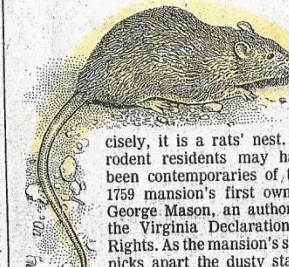
PRODUCER PRICES of finished goods
rose a seasonally adjusted 0.3% in Febru-
ary, the Labor Department reports. (Arti-
cle on page A2.)

Museum Officials Say Some Curators Are Real Vermin

Rats Pack Neat Stuff in Nests
And Collect Bits of History;
The Mount Vernon Rodent

By STEPHEN KREIDER YODER
Staff Reporter of THE WALL STREET JOURNAL
MASON NECK, Va.—Charles Phillips is
searching for decorating tips in Gunston
Hall, a historic home here. So he crawls
through a cupboard, reaches into a small
space behind it and pulls out some inspira-
tion: a matted pile of filthy yarn, paper
scraps and little black oval pellets.

"This," says Mr. Phillips, a restorer of
buildings, "is a time capsule." More pre-



Business Bulletin

A Special Background Report On Trends in Industry And Finance

THE SWOLLEN MIDWEST FARBELT
cautiously prepares for another season.

After last year's record harvests and hog
slaughter, Midwest farmers will plant fewer
acres and rein in herds. Corn and soybean
acreage might drop 5% and 3%, respectively.
Weak grain prices limit the recovery from
the 1993 crop disaster, and hog farmers see
break-even prices all year. "We need a good
year or we'll get tough" with farm bor-
rowers, says Robert Wilwert of First Citiz-
ens National Bank, Kanawha, Iowa. Trac-
tor sales are up a tad at a neighboring Deere
& Co. dealer.

In nearby Clarion, Kelly Wicks's har-
vests doubled last year. But he wants to see
how planting goes before buying 80 more
acres. With good weather, U.S. food prices
might rise just 2% this year. Low prices
could lift corn exports by 50%, topping two
billion bushels for the first time since econ-
omic woes in the former Soviet Union
curbed its demand. Fast-growing China
might import 100 million bushels this year,
traders guess.

*El Nino, the warm spot in the tropical
Pacific, shows signs of weakening, lower-
ing odds that the Midwest will have
average weather this summer.*

COTTON FEVER sweeps Southern
farms in the wake of poor Asian crops.

The 50% price rise since spring 1994 has
many farmers from Texas to the Carolinas
gearing up to plant
cotton for the first
time. Seeding might
climb 20% from last
year to 16.5 million
acres. "I haven't seen
cotton around here
since I was a kid,"
says Mike Jones, 34,
who asks his elders for tips as he prepares to
grow 300 acres of cotton on his family's
Newport, Ark., farm. Georgia is the hottest
spot for new cotton crops, thanks to boll-wee-
vil eradication.

Cotton gins are coming out of mothballs,
and there is a run on harvesting gear.
Farm-equipment maker Case Corp., Racine,
Wis., increases production of cotton pickers
by 50%. Analysts say Delta & Pine Land of
Scott, Miss., sells at least 15% more cotton
seed, helping lift its stock price 24% so far
this year. Crop insurers dread inexperi-
enced growers chasing "white gold."

On the Road

As Mutual Funds Face Growing Competition, 'Wholesalers' Struggle

The Job of Selling to Brokers
Requires Very Long Days
And a Very Tough Hide

By SARA CALLAN

Staff Reporter of THE WALL STREET JOURNAL
Heather Sabo pitches mutual funds
more than 12 hours a day, Friday nights
and Saturday mornings. A McDonald's
french fry is stuck on the floor of her car,
an empty Budweiser can rolls around the
trunk. Lugging a pile of fund literature,
she drives nearly 2,500 miles a month.

Mrs. Sabo works in a unadvertised,
little-known wing of the \$2.2 trillion mu-
tual-fund industry. A member of a scrappy
breed of fund-company employees who the
industry calls "wholesalers," she sells
funds to the brokers who sell them to you.

Hopping out of her dark-red Saab in
Richmond, Va., Mrs. Sabo gives a speech
to a bored-looking group of sandwich-
chewing brokers at Wheat First Butcher
Singer Inc. Wearing a tailored dress, scarf
flawlessly in place, the 30-year-old sales-
woman at the lectern looks like television's
Heather Locklear but talks with the gritty
urgency of a Crazy Eddie commercial.

Armed With Numbers

"I'm armed and dangerous," she says
to one broker after plugging several funds
of her employer, Van Kampen/American
Capital. "I'll be right down to your office
with all the statistics."

No sale today, though. "There's no
longer any gravy," she says with a sigh. "I
work for every single bit of business."

Forget Peter Lynch and the star mu-
tual-fund managers you see on television.
Wholesalers such as Mrs. Sabo are finan-
cial gypsies who travel from town to town,
winning and dining brokers, bankers and
the increasingly important financial plan-
ners who together sell more than half of all
mutual funds. Prodding and cajoling, more
than 5,000 wholesalers devise myriad ways
to woo buyers, including promising to send
some business along to the broker's
brother-in-law and taking brokers' chil-

Museum Officials Say Some Curators Are Real Vermin

* * *

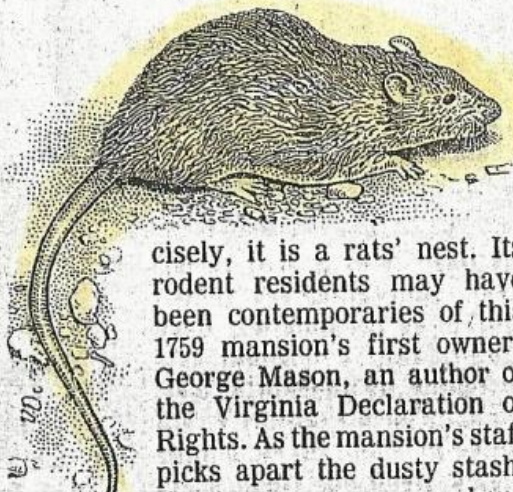
Rats Pack Neat Stuff in Nests And Collect Bits of History; The Mount Vernon Rodent

By STEPHEN KREIDER YODER

Staff Reporter of THE WALL STREET JOURNAL

MASON NECK, Va.—Charles Phillips is searching for decorating tips in Gunston Hall, a historic home here. So he crawls through a cupboard, reaches into a small space behind it and pulls out some inspiration: a matted pile of filthy yarn, paper scraps and little black oval pellets.

"This," says Mr. Phillips, a restorer of buildings, "is a time capsule." More pre-



cisely, it is a rats' nest. Its rodent residents may have been contemporaries of this 1759 mansion's first owner: George Mason, an author of the Virginia Declaration of Rights. As the mansion's staff picks apart the dusty stash,

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and preserves. Thinking about all that work makes me glad those days

made my appointment and found the people there very

one black pump and one navy and white spectator.

have arrived at the point in my life. At I won't even be able

New York struggles with millions of rats

By LUKAS I. ALPERT
The Associated Press

NEW YORK — Swarms of foot-long, mangy rats are the stuff of nightmares, but for residents of the Baruch Houses it's just another evening in lower Manhattan.

Thousands of rats, stirred from their homes by construction, have swarmed into the public housing development.

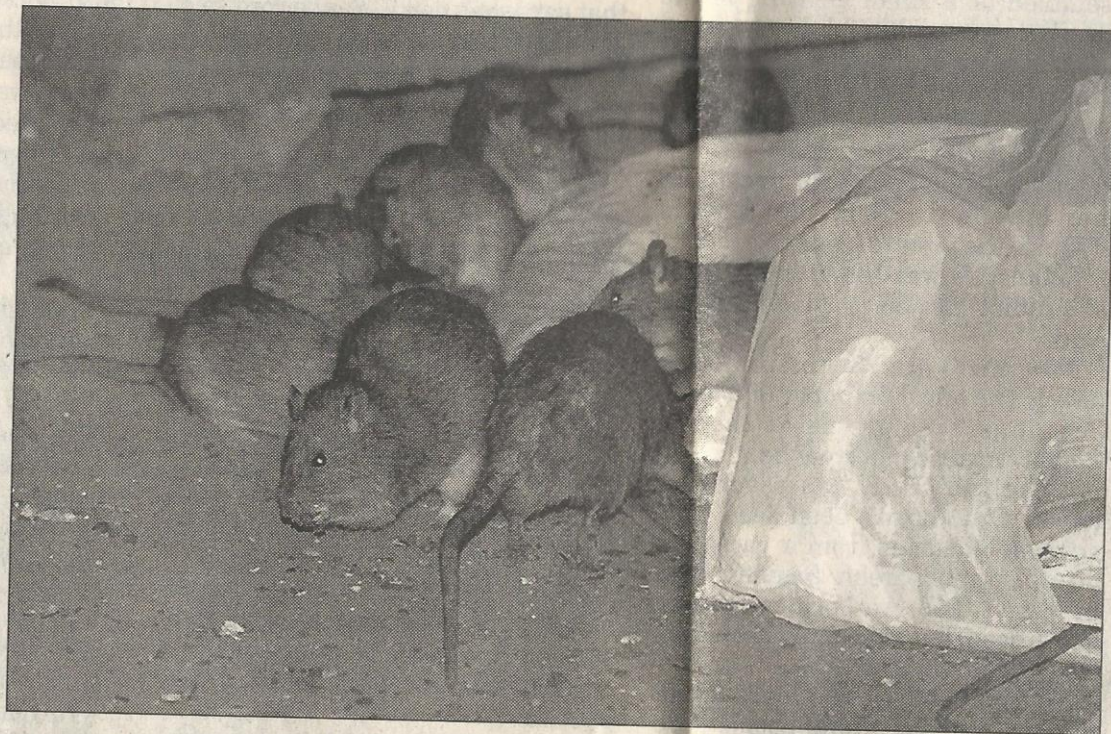
"I have to shake my keys and throw rocks at them just to get out of my building. I can't live like this," said resident Christine Morton, 22.

New York's rat problem extends far beyond the halls of its public housing. Bill Perkins, chairman of the City Council's Select Committee on Pest Control, estimates that there are nine rats for every person in the city — a rat population of about 70 million.

"They're everywhere — parks, city-owned buildings, they're even showing up in our schools," Perkins said.

Perkins blames the growing rat problem on increased construction, poor garbage disposal and a lack of coordination in the city's response to rat infestations.

"I've never seen rats like this," said



Rats swarm around and in a bag of garbage in front of a Dumpster in the Baruch Houses late Friday in New York.

ROBERT MECEA/The Associated Press

grounds were crawling with hundreds of the beasts again, brazenly picking their way through tenants' garbage.

leather," Thomas said. "They are very comfortable around human activity."

The danger is the diseases the rats can

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LITM

P.A 23 NY Times July 2, 2002

Rats Love New York, but New York Fights Back

By N. R. KLEINFELD

They've been living here as long as anyone else, and you have to hand it to them, they're really good at making the city work for them. They'll raise a family of 20 or 30 in a space you'd be embarrassed to call a broom closet. They like a nice well-balanced meal as much as anyone, but if they can't even get a slice of pizza — and they love pizza — they'll settle for some ants. And they sleep right through the noise.

Being a rat, however, does have certain drawbacks in New York. Not too many humans will take your side. And now the mayor has made it clear: he truly hates rats.

Appalled that rats have had the temerity to wander across the porch of Gracie Mansion in his presence, Mayor Rudolph W. Giuliani announced the formation of a city task force the other day to determine how to reduce the city's rat population already.

Good luck.

Rats genuinely like New York, and the New York rat has adapted itself quite nicely to the vagaries of New York life. Don't bet on its just packing up and going to Jersey City.

No one knows how many rats live in the city. Some citizens have lamented that there have to be at least eight or nine rats per person. A more common conclusion is one rat per human. City health officials



Associated Press

Rats will eat anything that humans will, and they will return

opening as small as a nickel.

Various traps are employed — cage traps, snap traps, glue traps — as well as a variety of poisons. But rats are shrewd. "They seem to know when to be wary when people leave things to catch them," Dr. Wharton said.

Gil Bloom, the vice president of Standard Exterminating, a Long Island City pest control company that has been fighting rats and other interlopers for 70 years, said that he had not only seen rats learn to stay away from traps, but he had also seen rats scurry through a building and avoid an area where a trap had once been, though it was no longer there.

Rats can be highly destructive. They are known to gnaw through the seats of tractors and bulldozers in pursuit of the salt in the sweat of the operators who had been sitting on them. They'll chew through a car seat to get at popcorn dropped behind the cushions. Lost dimes and quarters, they don't care about.

Three years ago, the city raised the rat control budget to about \$13 million, from \$5.5 million. Among other things, the city's pest control people began studying complaints to identify clusters where rat infestation was heaviest and then to home in on those clusters.

Even though he wants some more gone, Mayor Giuliani, in announcing his task force, claimed that the city had killed more rats in

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A *NEW YORK TIMES* BESTSELLER
WITH AN ALL-NEW AFTERWORD BY THE AUTHOR

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OBSERVATIONS *on the* HISTORY & HABITAT
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and yes, appealing.”

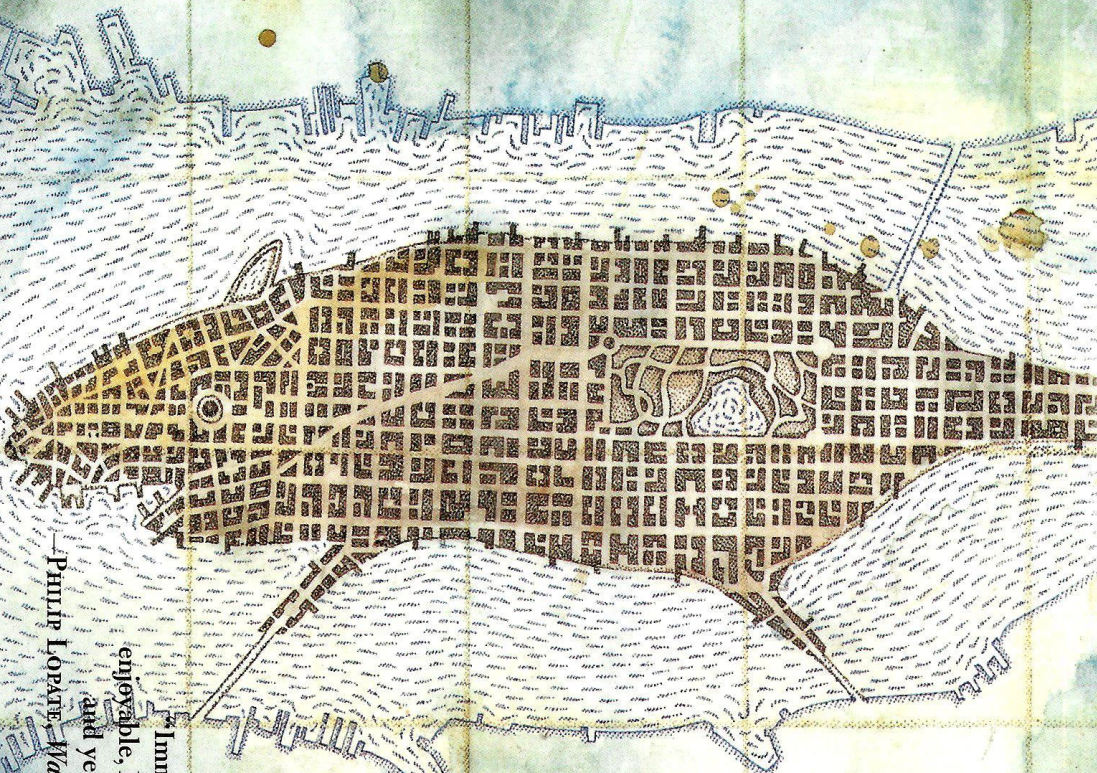
—PHILIP LOPATE, *Washington Post*

ROBERT SULLIVAN

A NEW YORK TIMES BESTSELLER
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REALTIES

OBSERVATIONS *on the* HISTORY & HABITAT
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INHABITANTS



“Immensely lively,
enjoyable, learned, witty
and yes, appealing.”

—Philip Lopate, *Washington Post*

ROBERT SULLIVAN

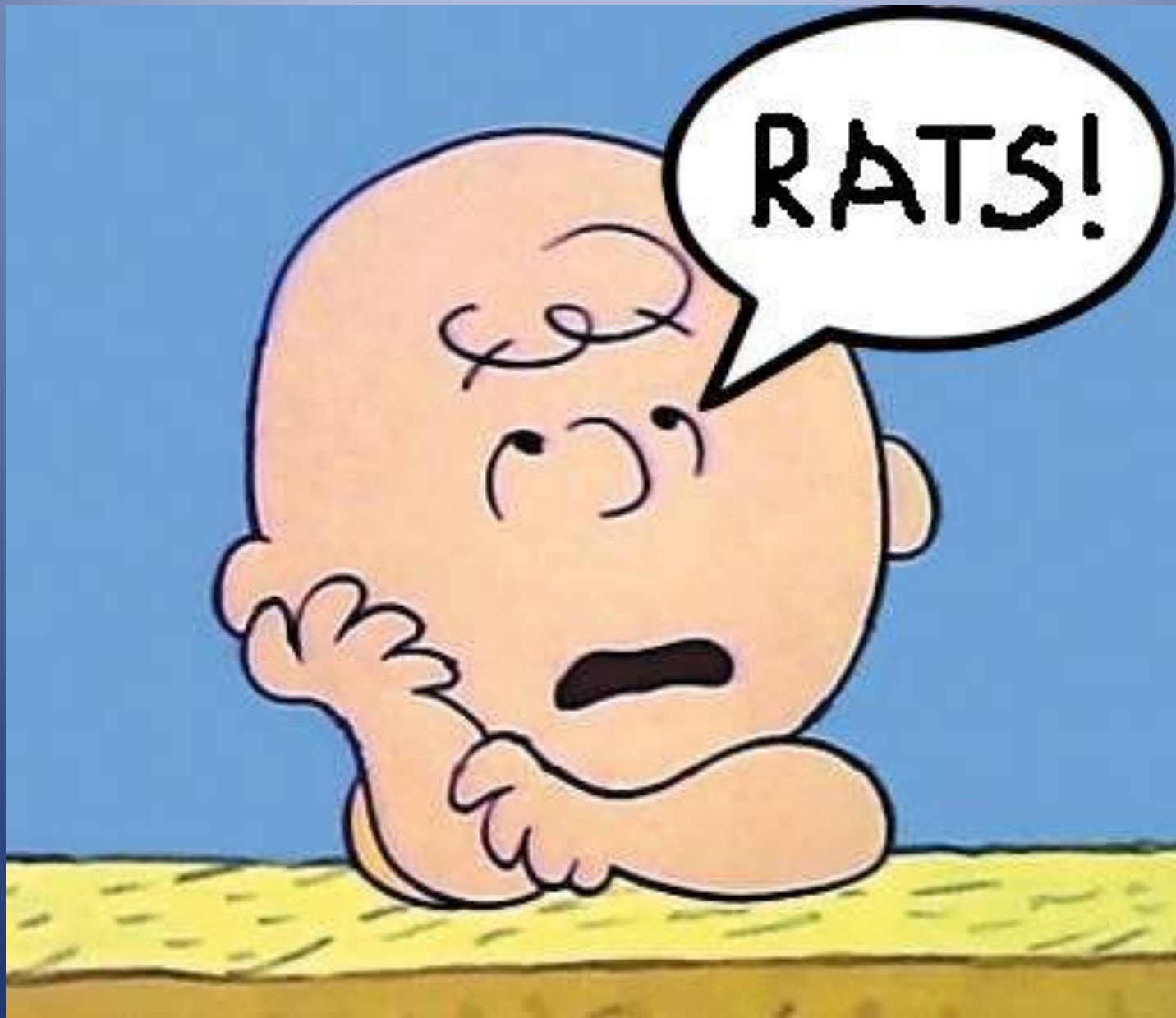


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RATS!