



Hi, I'm a native New Yorker

An epidemic of bedbugs in the Big Apple has brought panic, revulsion and a nasty little rash to rich and poor alike. Can the city cope, asks **Tim Teeman**

At first May thought that her husband had heat rash. "We were staying at a smart hotel in Cape Cod. Then I developed these hive-like welts on my back and legs." May (not her real name; she is terrified of giving me that) is middle class, in her

late fifties and lives on the Upper West Side, New York, in a well-maintained four-room apartment. When she and her husband returned to the city, one doctor prescribed antihistamines, surmising the couple had reacted to shellfish. She called a dermatologist. "He took one look and said, 'You both have bedbug bites'. My husband turned our mattress over and we saw them. That's

when — no joke, no exaggeration, however ridiculous it may sound — our nightmare began."

The infestation would last five months and cost May and her husband \$15,000 (£10,200) to treat.

The cockroach has scuttled in retreat. Bedbugs have become New York, indeed America's, latest bug noire. These tiny, yellowish creatures (which grow to 4-5mm long), fiendishly difficult to eradicate and understand, have become an obsession for landlords, renters, pest-control experts and scientists. Why do they feed so hungrily on human blood? Why have they proliferated? Why are they so hardy? How can you eradicate them?

"Don't let the bedbugs bite" now has a particularly hollow ring to it: we are almost powerless to stop them. There has been a 71 per cent increase in bedbug infestations since 2001, according to the US National Pest Management Association. In 2004, there were a reported 537 complaints and 82 "violations" (verified infestations) for bedbugs in New York; in 2009, there were

10,985 complaints and 4,084 verified infestations. "That's just the reported cases," says Jeremy Ecker, of Bed Bug Inspectors, a firm that uses two specially trained dogs to sniff out the bugs in apartments before advising occupants and pest exterminators on the best action. "The problem is everywhere, it's growing and it's mostly invisible because of people's embarrassment. People are too ashamed to say anything. If they admit to having bedbugs they're frightened of losing their apartment, of being asked not to go into work, of getting rid of their possessions. We see people in extreme distress."

May says: "We were terrified of our landlord finding out. He could have used it to throw us out or make life difficult." Landlords also embrace ignorance if they find out about an infestation, wary of accepting the costly responsibility of tackling bedbugs that have colonised an entire building, or of frightening off potential renters. May describes five months of hell: from seeing the blackish blotches (her and her husband's dried blood and/or bed-

bug faeces) on the mattress, then constant vacuuming and washing of laundry and clothing, bagging up clothes and household items, vacuuming books, picture frames, wall sockets, throwing furniture and possessions away, sleeping on an air mattress in clothes she would immediately bag up the next morning for laundry...

A female bedbug (official name *Cimex lectularius*) can reproduce 400 offspring so this was not an hysterical overreaction: to eradicate bedbugs requires ruthless planning, "even before the exterminators come in", May says.

It seems laughable that the hokey-sounding bedbug could cause such havoc — and indeed, a spokeswoman for New York City's Health Department says: "Anyone who has had an infestation knows that it can be stressful and unpleasant but while bedbugs are a nuisance, they do not present a health risk or spread disease."

But they are far from dismissable creatures, according to those who have suffered them and the scientists researching them. "It's a plague, an ►

epidemic," says a National Pest Management Association spokeswoman — and although her organisation represents pest exterminators this is not a fear-generating marketing campaign.

"It would not be extreme or hysterical to call this a pandemic," says Tim McCoy, a bedbug research scientist at Virginia Tech University. "We haven't reached the halfway point in bedbug numbers, they're still on the rise."

They show no respect, says Ecker, of class or creed: "We've inspected the fanciest apartments on the Upper East Side and one-room studios downtown. Doesn't matter how big or clean or small or dirty your place is, bedbugs will make themselves at home."

Bedbug blogs simmer with debate, advice and commiseration. And they have become a political issue. Michael Bloomberg, New York's Mayor, has approved the creation of a bedbug "advisory board" to "evaluate, study, identify and develop appropriate strategies" against the blood-sucking menace.

Earlier this month Linda B. Rosenthal, a New York State Assembly member for the Upper East Side and Hell's Kitchen districts, renewed her demand for legislation that would force building owners to disclose a five-year history of bedbug infestations to renters. She also proposed the city offer a tax credit of up to \$750 per person to those whose homes have been affected by bedbugs. "The whole city is afflicted," says Rosenthal says. "The cost of dealing with bed bugs is exorbitant and while \$750 won't cover it, it will help. It would be much better if the health department put out clear advice on how to rid an entire building of bedbugs, rather than leaving it to individual landlords."

The problem is about to become international (it is already, but under-published). Experts agree that the prime method of bedbug transmission is travel: you go somewhere — like May to a hotel — sleep on an infested bed and pass the bugs on. Bedbugs also nestle in clothing and suitcases. Experts are split on whether they "jump" from person to person on public transport. But they can live on train and cinema seats, on furniture, and take over buildings by burrowing in crevices, nooks and crannies.

New York and other metropolitan centres are bedbug paradises: high populations, high numbers of apartments, people always on the move. Bedbug infestations in London and the Midlands have increased threefold in the past decade. The National Pest Management Association will soon publish a report revealing bedbug infestation figures across the US — and also some choice international findings: 90 per cent of pest-control companies it surveyed in Europe had dealt with bedbug infestations, a spokeswoman reveals.

When it comes to their vampiric feeding, Tim McCoy — who like Jeremy Ecker, lets them sup his blood for research — notes that sometimes you can feel them, sometimes not. But, he says, they scent people emitting CO₂ and heat and scuttle from up to 15ft away for their grub. The most horrible and noticeable thing about a fully grown, fully fed bedbug is that it is bright red, after drinking the blood of its human host.

Some, such as McCoy, do not react to the bites; many others, such as May and her husband, do. "The bedbugs seemed to congregate near the bed, the couch, the netted seating on the office chairs," she says. "You imagined them crawling on you. I saw one on my husband's back. We tried to exterminate them ourselves and realised we couldn't."

Forget the many products on the market or exterminators making claims of being able to turf them out of your house easily and cheaply. The only



ANDREW SYRED/SCIENCE PHOTO LIBRARY

effective treatment, McCoy says, is a series of expensive, extreme-heat treatments — at around 49C (120F) — administered by expert exterminators. Despite calls for extreme pesticides such as DDT and Propoxur to be relegalised, McCoy thinks both may prove ineffectual. "Use the wrong chemicals in the wrong way and you could damage yourself and your home."

"It took me so long to get back into my own bed," says May says. "We are clean, normal people — and this, emotionally, took us to the brink. Living the way we did, having to rid ourselves of things, clean, keep it secret: this was as bad as going through divorce, losing a job. We are ordinary, middle-class New Yorkers. When it was over it was like, 'Can we come out of the air-raid shelter now?'"

For the moment, the scientific mystery of bedbugs' fortune endures. McCoy says that the pest's level of resistance "is off the charts. Spray the most extreme chemical on them and they topple over as if they're giggling, then they get up again. We also don't know why they can go so long — two months — without a blood meal, or how they find their way back to their host."

The biggest mystery is the origin of this pandemic. The bedbug was all but eradicated in the US by the 1950s with the use of strong pesticides. "We think travel to and from the Third World

“No matter how big or clean, small or dirty the home, bedbugs will move in”

bought them back to the US; then the use of softer treatments (such as against the flea) may have helped them to flourish," McCoy says.

"Other theories are unprovable but, for example, we've seen them on the walls of organic-reared chicken sheds. Some foreign workers are married to other foreign workers in hotels and, well, is that how they got into hotels? We don't know."

The bedbug isn't dangerous to human health, so US bodies such as the Centres for Disease Control and Prevention and the National Institutes of Health won't fund research, McCoy says. He and May — scientist and sufferer — both warn: remain vigilant. They check the headboards of the hotel beds they sleep in, lift mattresses, shine torchlights into crevices, and vacuum those crevices.

For two years after her infestation, May took a magnifying glass to check each dot and speck in her apartment: "It was always something else, but I was wounded. I know it sounds crazy. I'm not, and I'm not alone."

Don't let the bedbugs bite

Remedies from the real to the ridiculous (and no, we haven't tested any of them out)

● **Bedbugs can't exist at temperatures above 45C, so washing and drying your bedding at a high temperature will provide temporary relief from those in your linen.**

● **They can't fly or climb on polished surfaces so consider coating the legs of your bed in petroleum jelly or placing the bed legs in a container of soapy water to stop the bedbugs reaching your bed.**

● **Bedbugs have well developed immune systems that adapt quickly to pesticide. Many sufferers have relied on the services of professional extermination teams who use pesticides and steam generating devices to eliminate the infestation.**

● **An old wives' tale encourages people to wrap all their clothes and even mattresses in binliners, sealing them and placing them in sunlight for as long as possible. The heat, it's thought, will loosen and kill the bugs, whose bodies can then be removed by washing.**

● **In the 18th century the most common method for combating bedbugs was a mixture of turpentine, henna, flowers and alcohol, which allegedly killed their eggs before they could mature.**

● **Some extermination companies employ specifically trained sniffer dogs to locate infestations.**

● **Bed bugs locate humans by sensing the carbon dioxide they exhale. Dry ice placed in a jug will have the same effect, the carbon dioxide that drifts out tricking them towards a fake source of food and more importantly away from your bed. Place the jug on the floor in a dish filled with water and make a paper gangway from the ground up to it to allow the bed bugs to climb up, fall and drown in the dish.**

● **In his 1933 book *Down and Out in Paris and London*, George Orwell reports the use of black pepper strewn across the sheets to deter the pests.**

● **For a natural method you could use an eye-dropper to apply black walnut-leaf tea in the crevices at the side of your mattress and other possible hiding places around your bed. You could turn the liquid into a spray and cover mattress, pillows and sheets with a light mist.**

● **Another more short-term solution is to rub soap around the edge of the sheet and then bang the mattress to startle the bugs, sending them rushing to the edges of the sheet where they become stuck in the soap.**

Shakespeare — landlord, yokel and dog-hater

Robert Gore-Langton discovers 20 things you didn't know you knew about the Bard

We know the plays, but how much do we really know the man? As Simon Callow sets off on tour in a new one-man show, *Shakespeare: The Man from Stratford*, we felt it was time to put the Shakespeare industry to the test. After all, the Bard is probably the cause of more tree-felling than all other dead authors put together. Every minuscule aspect of his output is pored over by researchers and academics, the answers buried in impossibly dense books that suck the blood out of the playwright.

But Shakespeare was a professional writer and writers have love affairs, rivalries, cash crises, prejudices, off-days, children and mortgages. The assumption is that we know very little about this side of his life. But it's amazing just how much is known and how fascinating it is. So who better to ask about his life than the scholar Jonathan Bate, who is the author of Callow's show and several highly readable books on Shakespeare.

Callow has performed one-man shows before — as Oscar Wilde, as Charles Dickens — but has only acted in three Shakespeare plays. Four, if you include a radio production of *Richard III*. But he is also a professional biographer, who comes to the subject with an avid passion for the life and works. Gately, Bate and Callow agreed to join other experts in bringing their knowledge, guesswork and intuition to bear in 20 questions about Shakespeare you might have felt embarrassed to ask.

Was he gay, straight or just sex-mad?
The sonnets are often cited as evidence of his bisexuality. He may have been in love with his patron the Earl of Southampton, the Earl of Pembroke, or even the playwright John Fletcher. "The fact is he was married and had children," Jonathan Bate says. "But he imagined in his work every type of romantic and sexual love. It is probable Shakespeare, once in London, would have tried anything."

"If you'd asked him if he was gay he'd have been totally bewildered," Simon Callow reckons. "But his work is drenched in sexuality to an extraordinary degree and his plays cover the entire waterfront of human sexual expression. As Leontes says in *The Winter's Tale*: 'I am a feather for each wind that blows.' Whatever he was, at parties he would certainly have gone home with the best-looking person in the room."

Did his marriage to Anne Hathaway involve her father's shotgun?

Quite possibly. He was 18 and Anne Hathaway was 26. The parish records for Stratford-upon-Avon show that over the 50-year period of Shakespeare's life he is one of just three men in the locality to marry before the age of 20 and the only one whose bride was pregnant. He was so young, in fact, that he needed a special Bishop's Licence, on which his name is spelled Shagspere.

Which living playwright was he most like?

"Tom Stoppard," Bate reckons. "Because wit and wordplay are at the heart of his work. Shakespeare began his career fixing up old plays. He was initially a rewrite man. Hollywood producers get Stoppard to doctor scripts — he's also done a lot of adaptations of other authors work and, like Shakespeare, he's an outsider." Stoppard also cheerfully used Shakespeare as a source for several plays (not least his first, the Hamlet spin-off *Rosencrantz and Guildenstern Are Dead*) and a film (*Shakespeare in Love*), plot theft being a very Shakespearean habit.

What made him different from other playwrights of his day?

"Nothing apart from his genius," says Stanley Wells, a renowned Shakespearean scholar and the author of *Shakespeare: Sex & Love*. "The sheer fundamental brainwork in the plays is remarkable — and it's as a thinker I think he's a bit neglected".

"And don't forget he was an actor," Bate says. "His experience as a writer was grown out of his experience in the rehearsal room and on the stage. The language and jargon of the theatre is everywhere in his work."

What did he spend his money on?

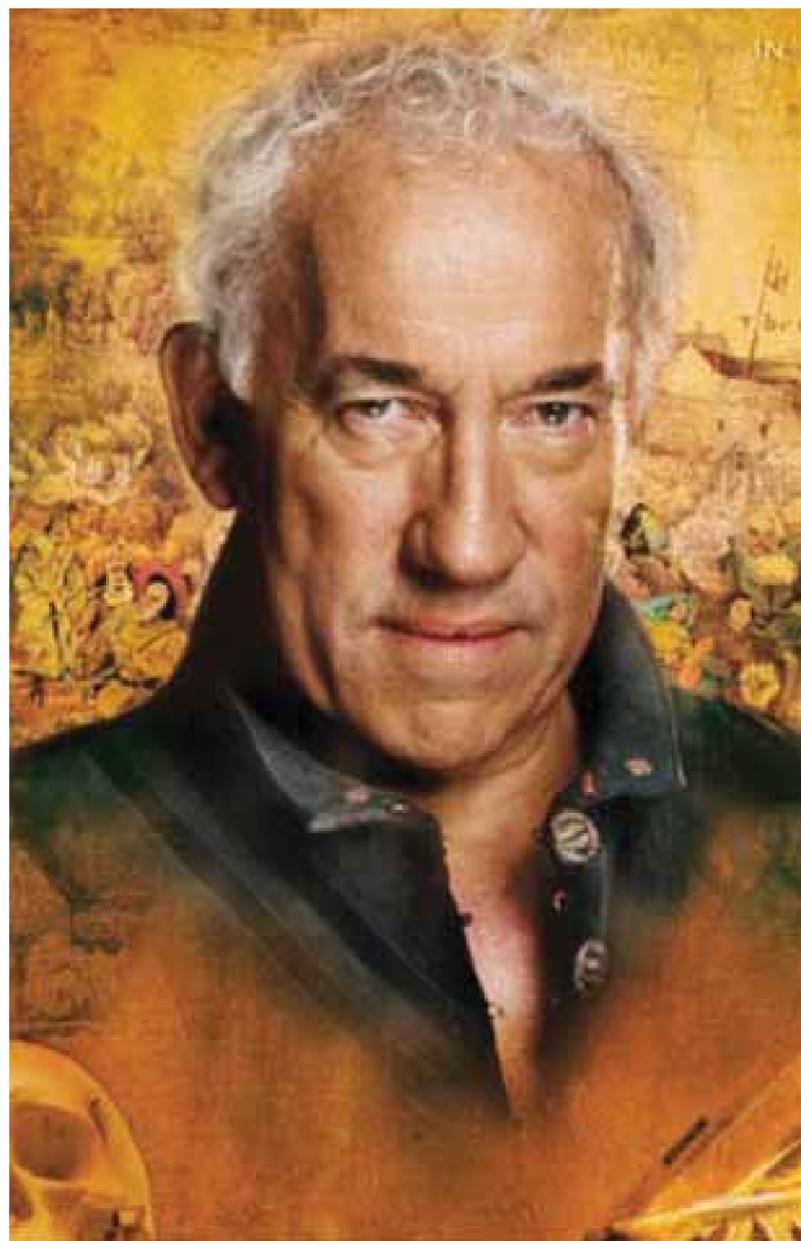
"A substantial buy-to-let property portfolio," Bate says. "He was the first writer in Britain to make serious money out of writing; he was a brilliant businessman. He worked out that by forming a joint-stock company with his actors he could get a share of the box office. All the leading actors in his company got wealthy and bought big houses in nice suburbs around London. Shakespeare bought properties around Stratford and agricultural tithes. He died a very rich man."

Did he keep a pet?

If he did, it certainly wasn't a dog. He hated them, especially fawning spaniels. "Dogs have very negative associations in the plays," Bate says. "The murderers in *Macbeth* are compared to a list of breeds of dog." The one dog to get a (non-speaking) part in the works is Crab, in *The Two Gentlemen of Verona*, who lifts his leg in a dining room.

Did he have a chip on his shoulder?

Yes, a social whopper. The main feature on the family coat-of-arms that Shakespeare took so much trouble to obtain (his father having applied and failed to become a gentleman) was a yellow spear, the colour of which Ben Jonson ridiculed — together with Shake-



speare's motto "Not Without Right" — in his play *Every Man Out of His Humour*. Jonson turned the motto into "Not Without Mustard".

What was his most overrated play?

"*Hamlet* gets my vote," Bate says. "There are a lot of problems with it: the fact that he wrote three different versions shows that he thought so too. He became so obsessed with the character of Hamlet that he became too big for his own play."

Did he go in for lighting and sound effects?

Yes, the Blackfriars indoor theatre (which was used from 1608) in London was candlelit. His last plays have a clear five-act structure, and the reason for this was that candles lasted only so long;

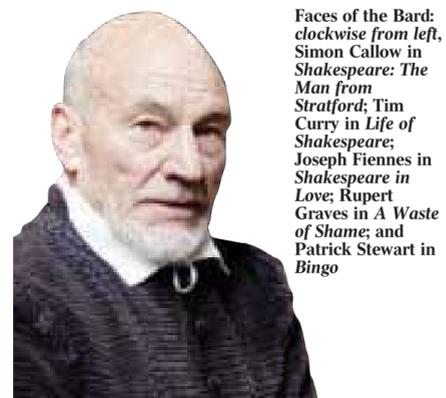
you needed four points in the action in which the play could stop, music play and the (brief) candles be changed. Sound effects were popular too. Sparks from canon fire during a performance of *Henry VIII* burnt the Globe theatre down in 1613.

What were his favourite books?

He had two permanently on his writing desk: Montaigne's *Essays* and Ovid's *Metamorphoses*. Terry Hands, the former boss of the Royal Shakespeare Company, sticks his neck out with the choice of *The Faerie Queen* by Edmund Spenser. "Underneath all of Shakespeare is a deep Spenserian acceptance of what is virtue, what is excess."

How did he commute from Stratford to London?

"He went to London at the very least once a year for the summer season at the Globe," says Peter Whelan, who has written two acclaimed plays about Shakespeare. "I think he'd have come down the Thames in May. Going back



Faces of the Bard: clockwise from left, Simon Callow in *Shakespeare: The Man from Stratford*; Tim Curry in *Life of Shakespeare*; Joseph Fiennes in *Shakespeare in Love*; Rupert Graves in *A Waste of Shame*; and Patrick Stewart in *Bingo*

He would have had a Midlands accent, although he probably got rid of it once in London. "Banquo in *Macbeth* is described as 'blood bolter'd' and boltered is a Warwickshire expression," Bate says.

"The dramatists who dominated the stage when he arrived in town all had Oxbridge educations: they sounded posh, for want of a better word. Shakespeare came from the backwoods and would have sounded like it. He has a joke at his own expense in *As You Like It* with its bumbling peasant much teased by sophisticated court characters. He's called William."

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Shakespeare may have lived in genuine fear of the Protestant Tudor Taleban. "In our play we allude to a real event before Shakespeare was born, when his father, as mayor, had to employ workmen to deface the frescoes in the Guild Chapel at Stratford. Intriguingly they were only whitewashed so that they could be restored later, which they were."

Did he go down the pub?

"There's a well-attested early anecdote that he kept himself apart in his lodgings in Shoreditch; his fellow actors would invite him out on the town and he'd plead a headache," Bate says.

"I am absolutely certain he was monosyllabic to meet," Callow says. "If Shakespeare had a conversation with you, he'd have done a lot of listening and you'd have done the talking."

Whelan thinks differently. "If you could ever find the real Shakespeare in the plays, I think you'd find a very good drinking companion."

What would have been his specialist subject on *Mastermind*?

"Glove-making, his father's trade in Stratford," Bate believes. "He grew up among the smell of leather. In three of his plays Shakespeare mentions the elastic property of fine leather called cheveril. There was a backroom workshop full of it in his home in Henley Street".

"It wasn't glove-making; it was love-making," Wells argues.

Did he hate actors?

"No, he absolutely loved them," Bate says. "But there was a particular kind of actor who really annoyed him. That was the clown who ad-libbed too much. The company funny man, Will Kemp, left because of creative differences in 1599. He had just played Falstaff and the epilogue to *Henry IV (Part Two)* promises that he'll make a future appearance in *Henry V*. He doesn't because by then Kemp had stormed out. After that they hired Robert Armin, who was less trouble."

Why are Shakespeare's jokes so bad?

"They are no worse than anyone else's of the period," Wells says. "It's the word-play we find difficult."

His worst joke? Bate reckons it's the Fool's in King Lear: "The reason why the seven stars are no more than seven... Because they are not eight." "It's very hard to believe that ever got a laugh."

Did he really never cross out as he wrote?

"It's myth that he wrote cleanly, put about by Ben Jonson, who said that 'he scarce ever blotted a line'," Bate says. "The only thing that survives where we can see the speed of his hand is one scene he wrote for *Sir Thomas More*, a multi-author play in which Shakespeare wrote and crossed out. But the fact is he revised much of his work."

What would be the ultimate Shakespeare find?

"*Love's Labour's Won*, which is believed to be the sequel to *Love's Labour's Lost*. There is evidence that it was printed, so it may turn up one day. It would be the find of the millennium. That, or a private letter revealing something of his inner emotional life," Bate says.

"I'd love to find a document linking the Shakespeare of Stratford irrefutably to the plays," Wells says. "It would save the world so much wasted paper on the subject of who wrote Shakespeare."

The Man from Stratford opens its tour at the Plymouth Theatre Royal, June 10-12 (www.manfromstratford.co.uk)