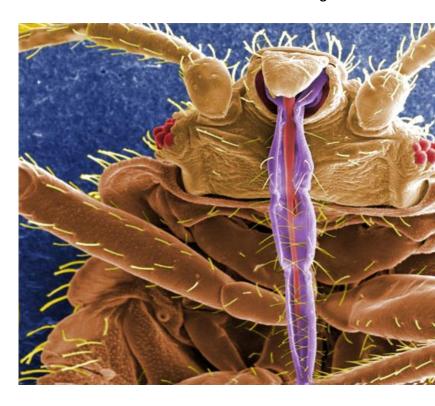
Written by Kyle Hill Thursday, 28 February 2013 09:00

SkyMall bugs me. It bugs me not just because it sells a helmet lined with LEDs that is supposed to regrow hair for \$700. SkyMall bugs me because of how it claims to handle the bed bug.



Bed bug

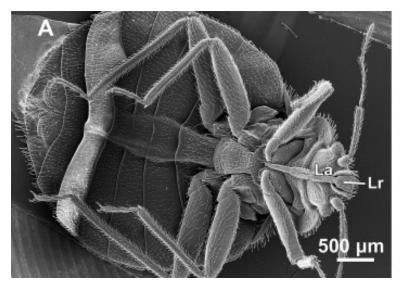
proboscis/CDC

The recent resurgence in bed bug infestation, notably in New York, is nothing to laugh at. But I just couldn't help but chuckle at SkyMall's answer to the outbreak: the Bed Bug Sleeping Cocoon. For the low price of \$80, you can sleep in an anti-bed bug sleeping bag capable of keeping "100% of bed bugs from penetrating the fabric." Because the fabric is woven so that the pore size—or the open distance between adjacent fibers—is one micrometer (10^-6 meters) or less, bed bugs cannot possibly get to you, or so SkyMallclaims.

Looking at the cocoon one thing is clear: this product will not keep you from getting your blood drained by these parasites. Unless you envelop your entire body, bed bugs will bite you in exposed areas. The cocoon leaves your face wide open to attack, and bed bugs are known to make a meal out of your tasty cheeks and neck.

Used as intended, the Bed Bug Sleeping Cocoon won't stop bed bugs, especially in an infested house. But I wonder if you actually cocooned yourself—if you were sealed in a fabric

with pores one micrometer or less in size—would you be bed bug bite free?







From Krenn &

Aspock, 2012

Last year, researchers looked at the mouthparts of a few famous bloodsuckers. Among them was the bed bug. Looking at the figure above (B), we can see that the proboscis—or feeding mouthpart of the bed bug—is maybe 100 micrometers wide or more. But this is not what actually pierces a host's skin; it is mostly a sheath. The actual piercing parts are much thinner. Looking at section C in the figure above, we can see the piercing mandibles (Ma) and other mouthparts. These are no greater than 10 micrometers in width. The tube that slurps up mammalian blood is the food canal (Fc above), and is not much wider. Knowing this, SkyMall's claim about keeping all hungry bed bugs at bay with their fabric seems legitimate. I find it hard to believe that squeezing a mouth through a hole ten to a hundred times smaller than required is an easy task.

Indeed, we have gotten amazingly good at weaving our fabrics. We can get the pore sizes down to single digits (in micrometers), and these materials are effective in keeping out cat and dust mite allergens. At these microscopic levels, you are bite-proof.

It is feasible that if you were feelings adventurous, you could completely seal yourself inside Bed Bug Sleeping Cocoon fabric and lie in an infested bed unbitten. But the far more practical thing to do would be to hire an exterminator for your home, try to prevent infestation in the first place, or avoid a hotel that has had bed bug reports. You don't want to spend every night as the butterfly that emerged from the cocoon.

SkyMall Bugs Me

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There is a grain of truth in the SkyMall claim: bed bugs probably would not be able to bite you through their fabric. But SkyMall completely ignores the fact that bed bugs can move around and are known to sip from slumbering faces. It is as though you are a giant dragon with impenetrable armor, and the only way the advancing bed bug army can slay you is by striking at the curiously exposed weak spot. That bugs me.

References:

Krenn, H. W., & Aspock, H. (2012). Form, function and evolution of the mouthparts of blood-feeding Arthropoda. Arthropod Structure & Development, 101-118.

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