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## Deep-sea snail's triple-shell inspires new generation of military armour



The "scaly foot" snail, found in the Indian Ocean

Hannah Devlin

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An armoured deep-sea snail could inspire a new generation of military materials, according to a team of scientists at the Massachusetts Institute of Technology.

The triple-layered shell of the "scaly foot" mollusc gives it one of the strongest exoskeletons seen in nature and scientists say that copying its microstructure could aid the development of protection for soldiers, tanks and helicopters.

*Crysmallon squamiferum* was discovered in 2003 near hydrothermal vents about 2km below the surface of the Indian Ocean. It is approximately the size of a garden snail but, unlike any known species, its shell is made of three composite layers that help to dissipate mechanical energy from potentially penetrating predatory attacks. The MIT study, published in the journal *Proceedings of the National Academy of Sciences*, claims that each of the layers plays a different role in keeping the shell intact. The scientists are now working on the development of new materials that could be used for bulletproof vests and protective coatings for vehicles.

Biomimetrics — designs inspired by nature — is increasingly popular in the development of "smart materials" such as Speedo's Fastskin swimsuit, based on shark's skin.

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