

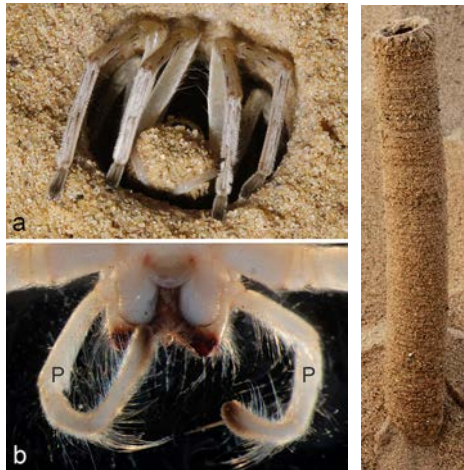


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CONTACT

American Arachnological Society

Paula Cushing, AAS Secretary
303.370.6442

Paula.Cushing@dmns.org



SUBTERRANEAN SPIDER ENGINEERS: SAND CASTLES UNDERGROUND

DENVER—December 11, 2017— Digging a hole in in wet sand is easy – but try it in dry sand and the sides collapse immediately. Yet desert adapted spiders can build underground burrows that maintain their structure despite shifting sands and desert winds. [Rainer Foelix](#) and colleagues have uncovered the secrets of this subterranean engineering feat in a [study published in the *Journal of Arachnology*](#).

Some of these spider engineers have little bristle baskets (psammophores) on their mouthparts that they use to transport sand pellets from 25 cm (10 inches) below ground while reinforcing the walls of the emerging burrow with concentric silk bands. Other species lack psammophores and, instead, tie the dry sand grains together with fine strands of silk as they make 800 - 900 runs underground to dig out the sand, carrying bundles of silk and sand each time until they have completed their tube.

Until now, no one knew how these spiders could build underground burrows and why those burrows did not collapse in the dry sandy soils some spiders call home. This new study provides details about how these arachnid engineers create these robust subterranean structures that will surely surprise human engineer counterparts.

About the American Arachnological Society

The American Arachnological Society was founded in 1975 to further the study of arachnids (spiders and their relatives), foster closer cooperation and understanding between amateur and professional arachnologists, and to publish the [Journal of Arachnology](#), one of the premier scientific journals presenting current research about arachnids. Connect with the AAS on its [website](#) or [Facebook](#).

NOTE: Photos available

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