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ABSTRACTS

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First evidence of a chemical call-for-help in Cataglyphis cursor ants

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Previously we have shown that when *Cataglyphis cursor* ants become trapped and are unable to extricate themselves, nestmates engage in highly sophisticated pro-social behavior, namely rescue behavior, performing two novel behavioral patterns that require them to recognize what, exactly, holds the victim in place. That is, when sand digging and limb pulling, two well-known forms of rescue in ants, did not result in release of victims ensnared with nylon thread and partially buried beneath the sand, rescuers next began to transport sand away from the snare and to direct their behavior to the snare in particular, biting and tugging at the snare itself. To examine the role of chemical signals in victims' call for help, we performed biochemical analyses of released substances by distressed ants, using Solid Phase Micro Extraction (SPME), spectrum-mass chromatography of gland contents, and in vivo application of gland extracts. Here we present the first results of these analyses, which reveal not only the presence of specific volatile components involved in victims' call for help, but also the quantitative and qualitative changes in these substances over the course of two hours, a time period that corresponds to the performance of sustained rescue behavior observed under controlled laboratory conditions.