Title:	Males of the parasitoid wasp Nasoniavitripennis can identify which fly hosts contain females.
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Abstract:	The reproductive success of a male is limited by the number of females it can mate with. Thus, males deploy elaborate strategies to maximize access to females. In Nasonia, which are parasitoids of cyclorrhaphous flies, such reproductive strategies are thought to be restricted to competition among males for access to females in the natal patch. This study investigates whether additional strategies are present, especially the capability to identify which fly hosts contain adult females inside. Behavioural assays revealed that only one out of the four species, N. vitripennis, can distinguish which hosts specifically have adult female wasps, indicating a species-specific reproductive strategy. Results of gas chromatography-mass spectrometry analyses and behavioural data suggest that female-signature cuticular hydrocarbons (CHCs) are used as chemical cues, possibly emanating from within the host puparium. Further assays indicated that N. vitripennis males can also detect differences in the intensities of female-signature CHCs, giving them the capability to seek out hosts with maximum number of females. This study uncovers a previously unknown reproductive strategy in one of the most widely studied parasitoid wasps.
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