

These ants have evolved a complex system of battlefield triage and rescue

April 17 2018, by Mike Jeffries



Credit: Erik Frank

Ants are scary. They have a remorseless quality, seemingly indifferent to their individual welfare, their whole lives submerged in the collective. And that's just the small ones. Super-sized versions are the stuff of

classic horror, radioactively enhanced, famously threatening American cities from down the storm drains in [Them!](#) to terrorising Joan Collins up the jungle in Empire of the Ants.

Try watching a single ant and you'll soon lose sight of it the scurrying horde. The very best we have to say of them is their worthy but unlovely penchant for hard work, which is [noted in the Bible](#). Even the fable of [the ant and the grasshopper](#) suggests a mean spiritedness by the hard working ant, who turns away the desperate grasshopper at the end of summer.

But researchers at the University of Würzburg in Germany recently looked at one of Africa's most implacably ferocious [ants](#), and [their work](#) revealed a startling tale of possible battlefield comradeship and care.

Matabele ants, aka *Megaponera analis*, are centimetre-long raiders who specialise in attacking and eating termites, in particular the family Macrotermitinae – aka the [fungus-growing termites](#).

These ants are fast and agile, with a bite and sting that even humans do well to avoid. When looking for termites, the Matabele ants first send out scouts to locate a vulnerable nest, and the scouts then summon a raiding party of several hundred comrades. The ants [target entrances to the termites' nest](#), the largest piling in to rip open the entrance so that the raiders can storm through.

Termites are not defenceless though. The 3,000 or so species display a remarkable variety of weapons primarily to fend off ants: huge jaws to crush or pierce, nozzle-like heads to squirt noxious glue, even some species where older workers, worn out and not much use, can [explode themselves](#), showering the attacker and martyr with cloying goo.

Macrotermitinae termites rely on soldiers with massive, muscled heads

powering fearsome jaws. As the Matabele ants attack the nest, soldier termites rush to the breach and battle is joined. The ants seldom try to overrun the termites' whole nest, instead pulling back once they have killed enough [termites](#) to carry back home as booty. But [termite soldiers](#) sell their lives dearly. There are fatalities among the ants and many are left with legs or antennae lopped off, struggling to stand.

It is the fate of these casualties that is startling: the German researchers found that wounded ants can be rescued by their fellow workers. Injured ants release a chemical signalling for help, and change their behaviour if nest mates are nearby, in particular moving slowly as if to highlight their incapacity. (If the would-be helpers do not respond, the limping ant soon speeds up, often fast enough to rejoin the raiding party.)

Ideally, the wounded ant can be carried back to its nest – if worker ants find an injured nest mate, they may pick her up. This rescue depends partly on the casualty helping the rescue by adopting an easy position for carrying. Injured stragglers hobbling back by themselves are much more vulnerable to predators keen to ambush a disabled meal. Once back at their nest, the injured ants are checked over and their wounds groomed, often for up to an hour. Survival of ants that received this care was markedly higher than ants that were not treated.



Closeup of a freshly-injured ant (left), and a sealed wound after one hour (right, different individual). Credit: Erik Frank

Battlefield rescue of a fallen comrade? Tender, loving care? These are not the ants we know and fear.

Sadly, there is a catch. Checking the [worker ants](#) in Matabele colonies revealed a few with one, two or even three legs missing, but none with worse injuries. There seems to be a threshold for rescue. Wounded ants on the battlefield are [triaged](#) carefully by their comrades. Ones with one or two legs missing are often rescued, but the severely injured are seldom retrieved. The ants do not seem to be counting legs directly, instead badly damaged ants may not be able to adopt the correct position for battlefield rescue. And even if they can get back home, severely injured ants are removed from the [nest](#), cast out to their doom.

The ants' comradeship has its limit: at least three working legs.

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