

## **Dissecting the Myth of the ‘Strong Ant’: A Scientific Comparison of the Compression Resistance of Ants and Humans**

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Abstract

Ten series of strength trials were performed involving two separate insect species, one human, and weights of varying mass. The resulting data reveal an obvious gap between the relative strength of the insects and the human. These results clearly demonstrate the superiority of humans and the fallacy of the ‘strong ant’ myth.

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### **Introduction**

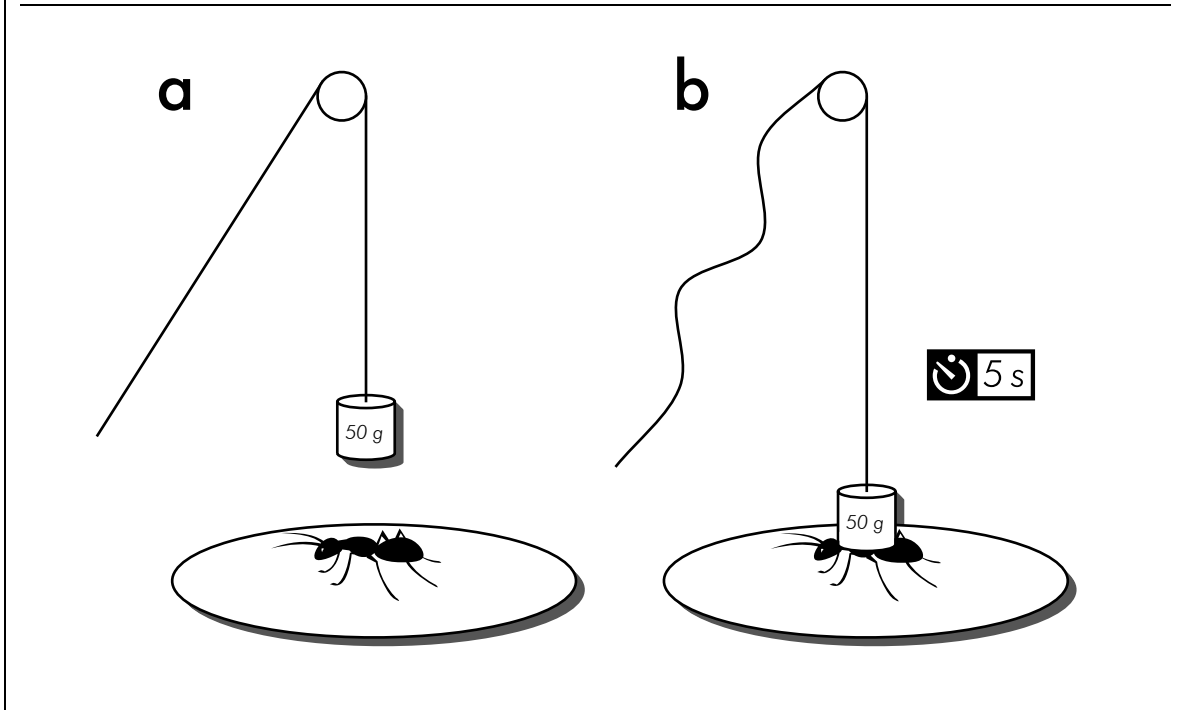
The popular imagination has long held that insects are creatures of astonishing power. From the scarab beetle-worshippers of ancient Egypt to the sago grub-munchers of modern Sarawak, numerous cultures throughout history have viewed insects as being endowed with almost magical properties. While the literature perhaps contains a spattering of research in favour of these notions (Delany, 1976; Stanislov, 1993), by and large the great majority of such beliefs stem primarily from the tales of fairies and silly wives (Corbert, 1934).

Among the countless denizens of the insect world, ants, in particular, are renowned for their incredible feats of strength. We have all heard stories of the famous ant that could purportedly carry ten times its own weight. Humans, on the other hand, while recognized as being of moderate intelligence and

possessing adequate foraging skills, are rarely remarked upon for their physical might. Why is this so? The great pyramids were indeed built by thousands of workers, but it was human slaves labouring under the fear of Pharaoh’s wrath that built them, not worker ants vying for the fleeting attentions of their queen. Do such lasting monuments to human muscle not outshine the sandy, evanescent warrens of lowly ants? Surely we are witnessing a grim injustice, one that undeniably must no longer be perpetuated.

This study, therefore, will demonstrate, through clear and irrefutable evidence, that when compared to humans, ants are, in fact, shockingly feeble. It will further show that insects in general are appallingly weak, deserving neither the attention of humans nor the status given to them by the misinformed.

**Figure 1.** Compressive Force Trials Using Weights of Varying Mass



### Method

Ten series of trials employing weights of varying mass were conducted to compare the relative strength of three subjects<sup>1</sup> (Strømme, *in press*): Subject A, a common fruit fly (*Drosophila melanogaster*); Subject B, a pavement ant (*Tetramorium caespitum*); and Subject C, a human being (*Homo sapiens*). Subjects A and B were purchased through a standard supplier of laboratory animals; Subject C was a friend of a friend. In each series, the subjects were first refrigerated at 3 °C for 15 minutes in order to reduce mobility, thereby preventing accidental release. They were then placed (or instructed to stand) in the middle of a 4

metre by 5 metre testing chamber. A steel weight was attached to a monofilament polypropylene rope and lowered from the ceiling via a single fixed pulley until coming into contact with the subject (Figure 1a). Upon contact, the rope was immediately released. The resulting responses were then classified as either pass or fail. Where the subject was able to keep the weight from touching the surface of the chamber floor for a period of five seconds or more, this was considered a pass. Where the weight touched the chamber floor in less than five seconds, this was considered a fail (Figure 1b). The same test was conducted for each subject a total of ten times, with the amount of weight in each series gradually being increasing from 1 gram up to a maximum of 50

<sup>1</sup> Note that for all subjects, with the exception of the human, multiple specimens were in fact used during the experiment due to frequent mortality.

**Table 1.** Capacity of Differing Species to Withstand Compressive Force

Subject	Series									
	1 1 g	2 5 g	3 10 g	4 50 g	5 100 g	6 500 g	7 1 kg	8 5 kg	9 10 kg	10 50 kg
Subject A	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail
Subject B	Pass	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail	Fail
Subject C	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

kilograms. The results of the experiment are shown in *Table 1*.

### Results

Significant variation was observed in the relative strength of the subjects.<sup>2</sup> Subject A was completely unable to support any weight whatsoever, categorically achieving a fail result in each and every series. Subject B showed little improvement: while a pass result was seen for Series 1, thereafter only fail results were observed for the remaining series. Subject C achieved a pass result in all series with little effort.

### Discussion

It is clear that large variances in strength exist between differing species, with a clear division emerging between the exo- and endo-skeletally endowed. By applying a numerical value of 1 to

the strength of Subject B, two observations can be made: Subject A can be said to have a relative strength of zero; Subject C, on the other hand, is observed as having a relative strength of 50,000. Clearly there is little question as to who is the mightiest of the three. Further studies will be necessary, however, to determine whether such differences can be attributed to heredity, environment, diet or perhaps lifestyle. As well, further corroborative tests including amphibians, reptiles, birds and fish should also be conducted in the future, in order to decisively determine who truly stands above the rest.

One possible source of error in this experiment may have been in the relative sizes of the weights used when compared to the size of the subjects. In some cases failure may have resulted not so much due to lack of strength but rather difficulty in properly balancing the much larger weights. Another source of error may have been the inability of some subjects to comprehend what exactly was being done to them. Other possible sources of error include performance anxiety and over-refrigeration.

<sup>2</sup> This experiment assumes that the relative strength of a species is constant, and considers possible differences in the physical strength of individual specimens within a species to be negligible. Thus, although numerous specimens were in fact used, all fruit fly specimens are collectively referred to as Subject A, all pavement ant specimens are collectively referred to as Subject B, and so forth.

## Conclusions

This study has shown conclusive evidence that insects, and ants in particular, are sadly overrated. While admittedly not the weakest living creature, the ant certainly dwells far below the ranks of even the flabbiest wren or shrew.<sup>3</sup> Humans, meanwhile, should be given the recognition they deserve and placed accordingly in nature's hierarchy of the strong, perhaps somewhere among the lesser pack animals.

## References

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<sup>3</sup> This statement is purely the conjecture of the author; no studies providing any such evidence have yet been conducted.