

Ameisen: Die heimliche Weltmacht (Ants: Nature's Secret Power) (2004)

Ameisen: Die heimliche Weltmacht (Ants: Nature's Secret Power) is a nature documentary about ants. Wolfgang Thaler wrote, filmed, and directed the film, which focuses on the work of ant researcher Bert Hölldobler. The 2004 film was produced by Adi Mayer Film for Österreichischer Rundfunk (Austrian Broadcasting), a public service broadcaster headquartered in Vienna, Austria. Ants: Nature's Secret Power (Ants) surveys the adaptive and reproductive behaviors of a variety of ant species in both laboratory and natural settings. Thaler's film communicated the reproductive practices of ants to a popular audience in an accessible manner, familiarizing the public with rarely seen aspects of ants.

Hölldobler, an ant researcher whose work is heavily featured in Ants, earned his doctorate at the Universität Würzburg (University of Würzburg) in Würzburg, Germany, in 1965, writing his dissertation on the behavior of male ants in a species of European carpenter ant. In 1969, four years after earning his doctorate, Hölldobler accepted a temporary research associate position at Harvard University in Cambridge, Massachusetts, where he continued his work on ants. Though Hölldobler eventually became a professor of biology at Harvard University, he returned to the University of Würzburg as a zoology professor in 1989. In 1990 he coauthored *The Ants* with Harvard University colleague Edward O. Wilson, a book on ants that won the Pulitzer Prize for general non-fiction in 1991.

According to Hölldobler, Ants was first conceived when Thaler approached Hölldobler about making a documentary film about ants for Austrian Broadcasting's *Universum* series. The *Universum* series is a collection of educational wildlife films funded by Austrian Broadcasting. Hölldobler said that he was retiring from his position at the University of Würzburg when Thaler contacted him about making the film. Hölldobler agreed to Thaler's project after viewing another documentary of Thaler's called *Bees: Tales from the Hive*. Though Ants was originally filmed and narrated in German, the film is also available with English, French, and Japanese voice-overs.

Ants opens with close-up shots of ants moving about a large, glass structure in Hölldobler's University of Würzburg laboratory. The narrator introduces Hölldobler as a scientist who has dedicated his life to researching ants. Then, the film surveys the distinctive behaviors of different ant species, providing general facts about ant reproductive behavior and colony lifecycles along the way. Ants includes footage of many ant species including mealybug herding (*Acropyga acutiventris*), pitcher-plant ants (*Camponotus schmitzi*), Indian jumping ants (*Harpegnathos saltator*), and rattan ants (*Gnamptogenys menadensis*), as well as ants of the genera *Formica* (mound-building wood ants) and *Atta* (leafcutter ants). The film is fifty minutes long and alternates between scenes of Hölldobler speaking to the audience and footage of ant behavior narrated by an unseen speaker. Aside from the natural sounds produced by the insects and their outdoor settings, the film also has an instrumental soundtrack to support the narration.

The narrator begins explaining the most common reproductive scheme in ants while discussing the division of labor in leafcutter ant societies. A colony of leafcutter ants, the narrator explains, includes different types of worker ants that specialize in performing different tasks such as cutting, transporting, and gardening. Of the leafcutter ants, cutter ants have large, muscular jaws for cutting vegetation into transportable strips. Transporter ants have long legs, and can carry strips of vegetation back to the nest site, where it is used to grow fungus. Then gardener ants, smaller ants that rarely leave the nest, tend the fungus gardens that are cultivated in special chambers of their underground nests. The cultivated fungus is the primary food source of the leafcutter ants.

Finally, there is the queen ant, whose body is specially adapted to produce fertilized eggs. All of the leafcutter ant workers develop from eggs laid by the queen.

As discussion of the leafcutter ants continues, the narrator uses the leafcutter worker ants to explain the reproductive practices of the majority of ant species. Female worker ants are diploid females, meaning that they have two complete sets of chromosomes, one inherited from a male ant that inseminated the colony's queen and one from the queen herself. Male ants, on the other hand, develop from unfertilized eggs and are haploid, meaning they have one complete set of chromosomes inherited from their mother, the queen ant. Male ants are produced by the colony only in preparation for mating season, when a newly developed set of males and virgin queens leave the nest to mate with the males and virgin queens of other nests. The male ant dies soon after mating, and the newly inseminated queen founds a new nest and begins producing her first generation of female workers.

A theme of *Ants* is that ant societies lack a central leader. For example, while showing a colony of rattan ants being displaced from their home inside a climbing palm tree, the narrator emphasizes how the colony's search for a new nest site is not directed by any leader ant, such as the queen. Rather, scout ants disperse from the old nest site in all directions, laying chemical trails as they go. When a scout ant discovers a new potential nest site, she lays an even stronger chemical trail on her return journey back to the old nest. The chemical trail attracts more ants to discover the potential nest site. Each ant augments the existing chemical trail with her own chemical trail, making the chemical trail stronger. In this way, one trail to a potential nest site attracts more and more of the scouts until a critical point is reached and the scout ants begin carrying the colony's other ants, queen, eggs, and larvae to the new nest site. Thus, the narrator explains, the seemingly well-organized migration actually arises from the unplanned actions of individual ants. Those individual ants have evolved a series of behaviors that allows them, as a group, to safely relocate the reproductive center of their colony, the queen ant and her larvae.

Ants received international praise since its initial release in Austria. The film won sixteen awards, many of them from film festivals outside of Austria, such as the 2005 Japan Wildlife Festival, the 2005 Włodzimierz Puchalski Nature Film Festival in Poland, and the 2006 Science Film Festival in Bangkok, Thailand. *Ants* also won the special jury prize in the 2005 Jackson Hole Wildlife Film Festival, an international film festival devoted to nature conservation. By 2016, *Ants* was widely available to watch for free on the internet. The English version of the film had logged over two million views on YouTube.

Sources

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