

# The Ant and the Mandarin (quả quít)

In 1476, the farmers of Berne in Switzerland decided there was only one way to rid their fields of the cutworms attacking their crops. They took the pests to court. The worms were tried, found guilty and excommunicated by the archbishop. In China, farmers had a more practical approach to pest control. Rather than relying on divine intervention, they put their faith in frogs, ducks and ants. Frogs and ducks were encouraged to snap up the pests in the paddies and the occasional plague of locusts. But the notion of biological control began with an ant. More specifically, it started with the predatory yellow citrus ant *Oecophylla smaragdina*, which has been polishing off pests in the orange groves of southern China for at least 1,700 years. The yellow citrus ant is a type of weaver ant, which binds leaves and twigs with silk to form a neat, tent-like nest. In the beginning, farmers made do with the odd ants' nests here and there. But it wasn't long before growing demand led to the development of a thriving trade in nests and a new type of agriculture - ant farming.

rid A of B: loại bỏ B khỏi A

*a promise to rid the country of nuclear weapons*

cutworm: sâu ngài đêm

excommunicate...: say that someone is no longer a member of the church (as a form of punishment)

archbishop: tổng giám mục

divine: holy

snap up...: to buy sth quickly because you want it

Every time a new model of iPhone is released, people are queuing to snap them up

plague: a large number of things which are unpleasant or likely to cause damage

*The city is under threat from a plague of rats*

locust: con châu chấu

weave/wove/woven: dệt, đan

*to weave a basket*

twig: a small thin branch of a tree or bush

For an insect that bites, the yellow citrus ant is remarkably popular. Even by ant standards, *Oecophylla smaragdina* is a fearsome predator. It's big, runs fast and has a powerful nip - painful to humans but lethal to many of the insects that plague the orange groves of Guangdong and Guangxi in southern China. And for at least 17 centuries, Chinese orange growers have harnessed these six-legged killing machines to keep their fruit groves healthy and productive.

by ... standards: xét theo tiêu chuẩn của...

predator: animal that kills and eats other animals

lethal: causing death, or damage

Citrus fruits evolved in the Far East and the Chinese discovered the delights of their flesh early on. As the ancestral home of oranges, lemons and pomelos, China also has the greatest diversity of citrus pests. And the trees that produce the sweetest fruits, the mandarins - or kan - attract a host of plant-eating insects, from black ants and sap-sucking mealy bugs to leaf-devouring caterpillars. With so many enemies, fruit growers clearly had to have some way of protecting their orchards.

flesh: soft inner part of a fruit

pomelo: quả bưởi

a host of...: a lot of people or things

caterpillar: sâu bướm

The West did not discover the Chinese orange growers' secret weapon until the early 20th century. At the time, Florida was suffering an epidemic of citrus canker and in 1915 Walter Swingle, a plant physiologist working for the US Department of Agriculture, was sent to China in search of varieties of orange that were resistant to the disease. Swingle spent some time studying the citrus orchards around Guangzhou, and there he came across the story of the cultivated ant. These ants, he was told, were "grown" by the people of a small village nearby who sold them to the orange growers by the nestful.

epidemic: a situation in which a disease spreads very quickly and infects many people

citrus canker: bệnh thối mục

be resistant to...: kháng... (thí dụ như vi trùng kháng thuốc)

cultivate...: nuôi...

The earliest report of citrus ants at work among the orange trees appeared in a book on tropical and subtropical botany written by Hsi Han in AD 304. "The people of Chiao-Chih sell in their markets ants in bags of rush matting. The nests are like silk. The bags are all attached to twigs and leaves which, with the ants inside the nests, are for sale. The ants are reddish-yellow in colour, bigger than ordinary ants. In the south, if the kan trees do not have this kind of ant, the fruits will all be damaged by many harmful insects, and not a single fruit will be perfect."

sub-: dưới (bậc nhỏ hơn, cấp thấp hơn) → substandard: dưới tiêu chuẩn, submarine: tàu ngầm, subtropical: cận nhiệt đới

rush matting: chiếu cói

Initially, farmers relied on nests which they collected from the wild or bought in the market where trade in nests was brisk. "It is said that in the south orange trees which are free of ants will have wormy fruits. Therefore, people race to buy nests for their orange trees," wrote Liu Hsun in *Strange Things Noted in the South* in about 890.

The business quickly became more sophisticated. From the 10th century, country people began to trap ants in artificial nests baited with fat. "Fruit-growing families buy these ants from vendors who make a business of collecting and selling such creatures," wrote Chuang Chi-Yu in 1130. "They trap them by filling hogs' or sheep's bladders with fat and placing them with the cavities open next to the ants' nests. They wait until the ants have migrated into the bladders and take them away. This is known as 'rearing orange ants.'" Farmers attached the bladders to their trees, and in time the ants spread to other trees and built new nests.

brisk: quick (trading)

bait: con mồi (để bẫy, hoặc câu cá)

hog: con heo

bladder: bàng quang

migrate: move from one place to another in large groups

By the 17th century, growers were building bamboo walkways between their trees to speed the colonisation of their orchards. The ants ran along these narrow bridges from one tree to another and established nests "by the hundreds of thousands".

Did it work? The orange growers clearly thought so. One authority, Chhii Ta-Chun( writing in 1700, stressed how important it was to keep the fruit trees free of insect pests, especially caterpillars. "It is essential to eliminate them so that the trees are not injured. But hand labour is not nearly as efficient as ant power..."

Swingle was just as impressed. Yet despite his reports, many Western biologists were sceptical. In the West, the idea of using one insect to destroy another was new and highly controversial. The first breakthrough had come in 1888, when the infant orange industry in California had been saved from extinction by the Australian vedalia beetle. This beetle was the only thing that had made any inroads into the explosion of cottony cushion scale that was threatening to destroy the state's citrus crops. But, as Swingle now knew, California's "first" was nothing of the sort. The Chinese had been expert in biocontrol for many centuries.

eliminate...: get rid of...

*Many infectious diseases have been virtually eliminated*

sceptical: doubtful

cottony: soft (like cotton)

cushion: miếng đệm

The long tradition of ants in the Chinese orchards only began to waver in the 1950s and 1960s with the introduction of powerful organic insecticides. Although most fruit growers switched to chemicals, a few hung onto their ants. Those who abandoned ants in favour of chemicals quickly became disillusioned. As costs soared and pests began to develop resistance to the chemicals, growers began to revive the old ant patrols in the late 1960s. They had good reason to have faith in their insect workforce.

disillusioned: bị thất vọng

soar: increase quickly

revive: make ... come to life again

*to revive a movement*

Research in the early 1960s showed that as long as there were enough ants in the trees, they did an excellent job of dispatching some pests - mainly the larger insects - and had modest success against others. Trees with yellow ants produced almost 20 per cent more healthy leaves than those without. More recent trials have shown that these trees yield just as big a crop as those protected by expensive chemical sprays.

One apparent drawback of using ants - and one of the main reasons for the early scepticism by Western scientists - was that citrus ants do nothing to control mealy bugs, waxy-coated scale insects which can do considerable damage to fruit trees. In fact, the ants protect mealy bugs in exchange for the sweet honey-dew they secrete. The orange growers always denied this was a problem but Western scientists thought they knew better.

dispatch: to send someone or something somewhere

modest: khiêm tốn

yield: produce

*This tree yields a lot*

secrete: to produce a liquid substance

*Insulin is secreted by the pancreas*

deny that...: to say that something is not true

*Officials deny that drug use is widespread in sport competitions*

Research in the 1980s suggests that the growers were right all along. Where mealy bugs proliferate under the ants' protection, they are usually heavily parasitised and this limits the harm they can do.

Orange growers who rely on carnivorous ants rather than poisonous chemicals maintain a better balance of species in their orchards. While the ants deal with the bigger insect pests, other predatory species keep down the numbers of smaller pests such as scale insects and aphids. In the long run, ants do a lot less damage than chemicals - and they're certainly more effective than excommunication.

proliferate: to quickly increase in number or amount

*Books and articles on the subject have proliferated over the last year*

parasitise: infest (a plant or animal) with a parasite

predator → predatory

**Look at the following events and the list of dates below.**

**Match each event with the correct time A-G.**

**List of Dates**

- |   |          |
|---|----------|
| 14 The first description of citrus ants is traded in the marketplace.                   | A 1888   |
| 15 Swingle came to Asia for research.   | B AD 890 |
| 16 The first record of one insect is used to tackle other insects in the western world. | C AD 304 |
| 17 Chinese fruit growers started to use pesticides in place of citrus ants.             | D 1950s  |
| 18 Some Chinese farmers returned to the traditional bio-method.                         | E 1960s  |
|   | F 1915   |
|   | G 1130   |

**Do the following statements agree with the information given in Reading Passage 2**

- 19 China has more citrus pests than any other country in the world.
- 20 Swingle came to China to search for an insect to bring back to the US.
- 21 Many people were very impressed by Swingle's discovery.
- 22 Chinese farmers found that pesticides became increasingly expensive.
- 23 Some Chinese farmers abandoned the use of pesticide.
- 24 Trees with ants had more leaves fall than those without.
- 25 Fields using ants yield as large a crop as fields using chemical pesticides.
- 26 Citrus ants often cause considerable damage to the bio-environment of the orchards.

## KEY

14C

15F

16A

17D

18E

19true

20false

21false

22true

23true

24false

25true

26false