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Domestic Ants

Ants are a kind of the commonly found insects in gardens, fields and forests. They are also found in houses, offices and other buildings where they can find food and water. Ants in houses are domestic ants or household ants. Some ants found indoors are merely foragers. These ants seek food or water in a house but returning to outdoor nests. However, some ants found indoors are permanent residents and establish a nest within a house.

Biology

Household ants like other ants are social insects that live in colonies which may include thousands of individuals. Their life cycle consists of four stages: egg, larva, pupa and adult. There are three types of adults: queens, males and workers. The wingless worker ants are the most common adults seen. The workers collect food and water for themselves and the colony. Ants in houses usually feed on sugars, syrups, honey, fatty substances, meat, fruits, seeds and nuts. Food preferences vary among ant species. Household ants spoil food when they feed on it. Long trails of hundreds of ants may lead from nests to food sources causing nuisance to the occupants. Ants prominently become pests when they are found in homes. The common household ants include *Monomorium pharaonis*, *Pheidole megacephala*, *Tetramorium caespitum* and *Iridomyrmex anceps*.

Among the household ants, *Monomorium pharaonis* is a major indoor pest and is found worldwide. It is also known as Pharaoh ant (Figure 1). Pharaoh ants are minute (about 1.5 to 2 mm long) and light brown in color. They are adapted to nesting in buildings. They feed on a wide range of foods including sweet, fatty or oily foods. Pharaoh ants may frequently move nest location and may split their group to form many colonies in response to disturbances. Nests of Pharaoh ants can spread extensively through a structure. They can nest in cabinet voids, behind refrigerator insulation, inside hollow curtain rods or in the folds of paper due to their tiny size. Thus, it is difficult to control Pharaoh ants.

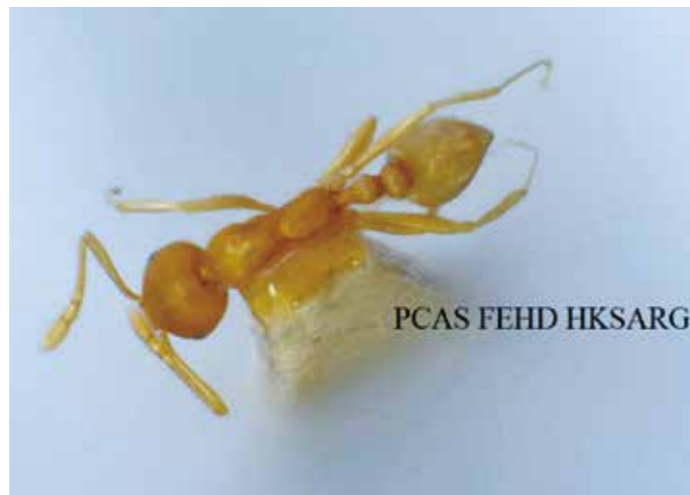


Figure 1: Adult Pharaoh ant (*Monomorium pharaonis*)

Management of household ants

Insecticide products including various sprays, dusts or granules applied to surfaces in houses will often kill only surface foragers, providing only temporary control. The great majority of the ants within the nest will not be affected. The most effective method is to find the nest and destroy it. The use of poisonous ant baits will usually provide a better control. The ants feed on the poisonous baits and bring with them the bait to the colony where the bait is shared with nest mates. The ant colony may ultimately be eliminated by an effective ant baiting.

Hygiene is very important as not to attract ants entering indoors or returning. Food preparation and eating area should be kept free of food particles and waste. Attractive foods such as sugar, syrup and honey should be stored in airtight containers or in the refrigerator. Moreover, area around a household structure should be kept clean as reducing food or nesting sites for ants at the surroundings would minimize ants invading indoors.

By Y.W. LAI, Pest Control Officer

Malaria Vector Prevention

Malaria is a disease caused by plasmodium. Malaria is very popular in some areas of Asia and Africa and may be brought into Hong Kong by infected travelers. Millions of lives are threatened by Malaria over the world each year.

The local vectors responsible for the transmission of malaria are *Anopheles minimus* and *Anopheles jeyporiensis*. A lot of people have a misconception that mosquitoes only breed in polluted or stagnant water; however *Anopheles minimus* breeds in unpolluted hilly streams where water flow is impeded by marginal vegetation; whereas *Anopheles jeyporiensis* breeds in flooded grassfields, particularly found in rice fields and irrigation ditches. Both vectors bite during the night and their activities range can reach two kilometers.



Unpolluted hilly stream – a typical breeding site of *Anopheles minimus*



Irrigation ditch – one of the breeding sites of *Anopheles jeyporiensis*

Malaria was once endemic in Hong Kong. In 1946, there were 2,422 cases resulting in 765 deaths in a population of 1.5 million with a mortality rate of 31.6%. An anti-malaria vector program using mainly environmental control approach has been introduced since early 1930s to eliminate the potential breeding habitats of the local malaria vectors to prevent local transmission of the disease. Though the last local case of malaria was reported in 1998, favourable breeding sites for the two confirmed local malaria vectors can still be found in various parts of the territory. Since transmission can occur efficiently with very small number of the vector, prevention of vector breeding is indispensable to safeguard the lives and health of the citizens.

Recent concern was raised on the work of the Food and Environmental Hygiene Department (FEHD) to control malaria vector in natural streams. The FEHD has adopted an environmentally friendly methodology instead of relying on the relatively destructive chemical control measures in order to strike a balance between the protection of public health and the environment.

Source reduction and environmental control methods, which are recommended by the World Health Organization, have been used by the Hong Kong Government in the prevention and control of malaria vectors since mid 1930s. Keeping the water flow of streams, drainage systems, irrigation ditches, etc. smooth and free of obstructions could prevent malaria vector breeding locally. The following personal protection measures could be taken if needed to minimize the chance of contraction of the disease:



Larvae of *Anopheles* spp. in water

1. Installation of mosquito screens (30-40 meshes per square cm) at window and louvers;
2. Use of mosquito net in bedrooms whenever necessary;
3. Wearing of long sleeved clothes and long trousers during outdoor activities at night;
4. Application of mosquito repellent (containing 10-30% DEET (N, N, diethyl-meta-toluamide)) during outdoor activities at night; and
5. Choosing a camp site preferably at high latitude in a downwind area of 0.8-1.6 km radius apart from nearby streams or water logged fields during camping.

CY TSANG, Pest Control Officer