Order 3

Isoptera

Derivation: [Gk. Isos = equal**,** like**: pteron** = a wing**]**

Common name: (Termites, White ants**)**

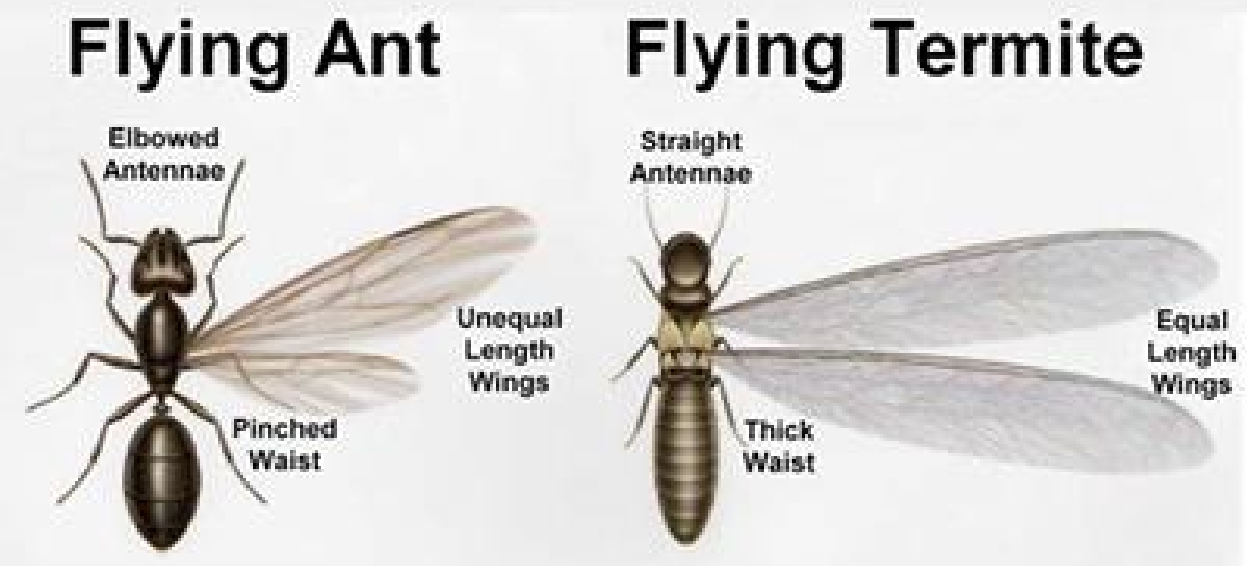
Metamorphosis: Incomplete (Paurometabolous) - **Distribution**: worldwide, but never more than about 50 degrees north or south - **Number of families**: 9

Termites are sometimes called "**white ants**" because their workers are pale-bodied, and because of similarities in their social organization. Termites are not related to true ants (**Formicidae**), but to cockroaches (**Blattodea**). The Isoptera is a small order of some 2500 described species of hemimetabolous neopterans.

A colony, which may vary in size from a small nest with few individuals to a massive air-conditioned mound (**termitaria** - can be more than 6 m high) containing millions of termits, will contains four different castes: **primary reproductives**, **supplementary reproductives**, **soldiers** and **workers**. Primary reproductives (the kings and queens) are large, darkly sclerotized individuals whose sole job is to reproduce. They were once winged termites that left the colony to found a new one, and shed their pairs of wings after a short dispersal or nuptial flight. Colonies normally have a single queen and a few reproductive males. Supplementary reproductives are less sclerotized than kings and queens and these will be reproductive if anything happens to the king or the queen. Soldiers and workers are sterile apterous individuals of both sexes (males and females); the former (Soldiers) are variously armed with large jaws, with heavily sclerotized and modified pear-shaped heads. The latter (workers) are normally blind with simple chewing mouthparts. All castes are small to moderately sized (usually 3-20 mm), queens can up to 100 mm.

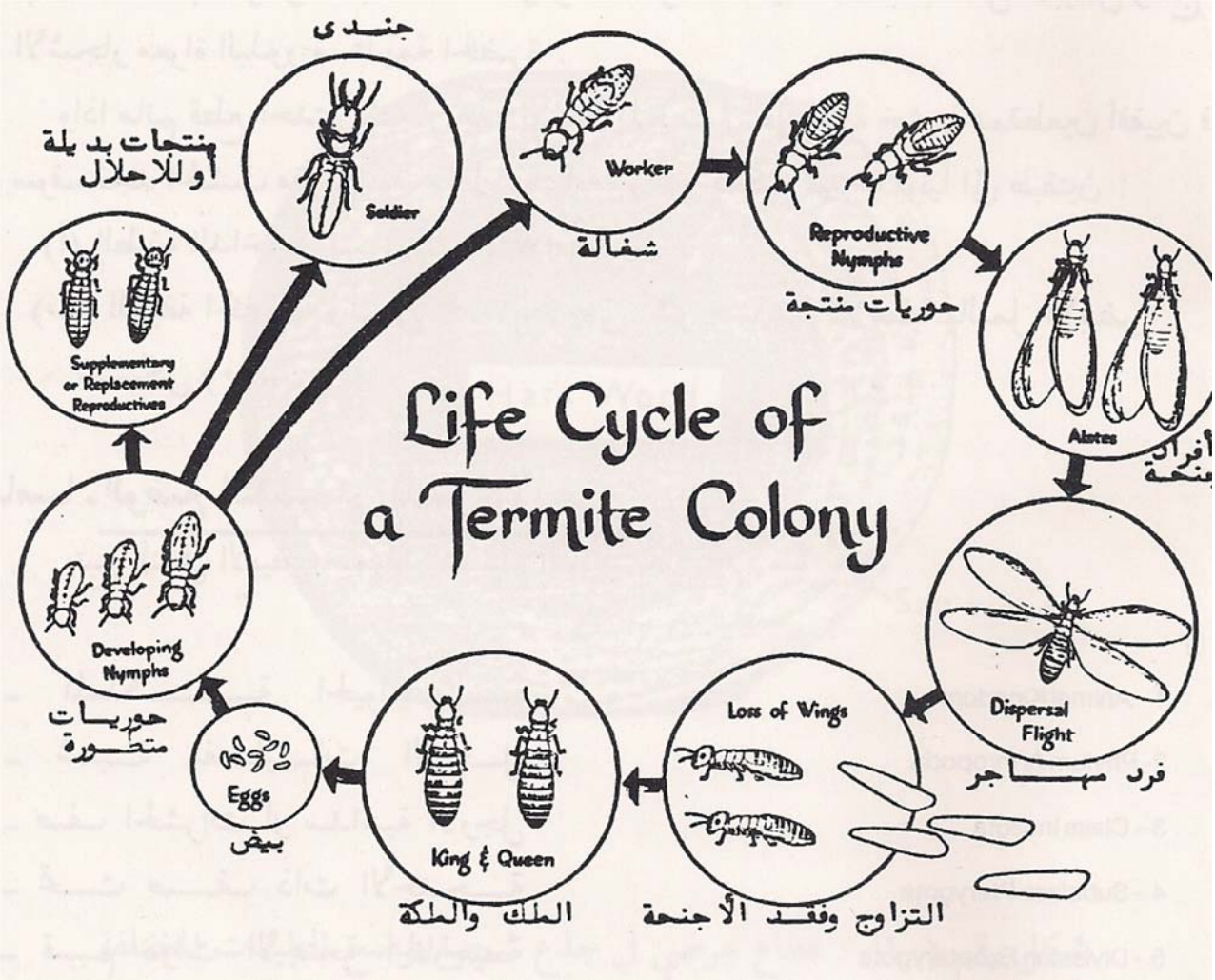
In some species, soldiers have peculiarly asymmetrical jaws designed for delivering powerful blows capable of dismembering ants at a single stroke. Workers build and repair the nest, forage, feed nymphs and groom other colony members.

Termites cause a large loss to buildings and other structures of wood. In their search for cellulose, several kinds of termites invade foundation woodwork of buildings. Books or wooden furniture may be attacked. In the wild, termites eat dead trees, fungi and dried animal remains. The digestion of cellulose is carried out by flagellate protozoans or bacteria, which are mutualistic inhabitants of the gut.



The difference between the White ant (Isoptera) and true ant (Hymenoptera, Formicidae)

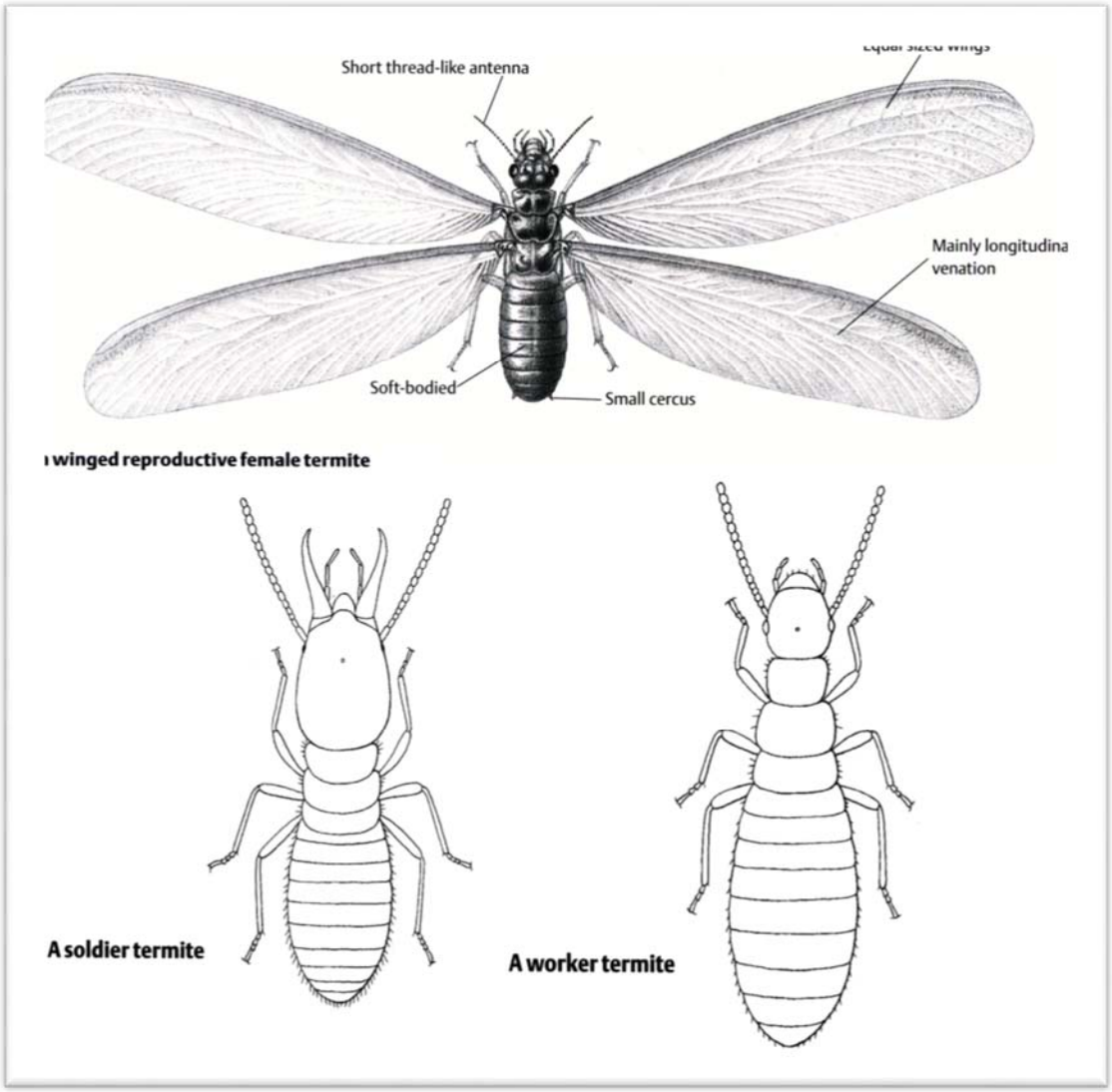
Termitaria



Diagnostic characters:

- *Small to medium-sized, soft-bodied and pale coloured social insects living in large concealed communities composed of reproductive forms together with numerous apterous, sterile soldiers and workers.*
- *Head movably articulated, prognathous with compound eyes in winged forms only.*
- *Mouthparts of the typical biting type; Mandibles small, normal or extremely large and variable in mandibulate soldiers.*
- *Antennae short and moniliform.*
- *Prothorax freely movable, narrower than head, meso- and metathorath wider than long.*
- *Wings very similar in size form and venation, elongate and membranous, folded flat over the back what at rest and capable of being shed by means of basal fracture.*
- *Legs short and stout, with 4-segmented tarsi.*
- *Cerci short or very short.*

- *Genitalia rudimentary or absent in both sexes.*
- *Metamorphosis slight or absent.*



Castes

I- Reproductives (Kings and Queens):

- *They have fully developed wings which are shed after they have swarmed in the process of founding new colonies; the wings are break off along a weakened line, leaving only a stub attached to the thorax.*
- *Their bodies are well-sclerotized and heavily pigmented (more or less dark brown in colour), with compound eyes.*
- *The males are often small, and in some species the queens may become very large (76 mm or more in length).*

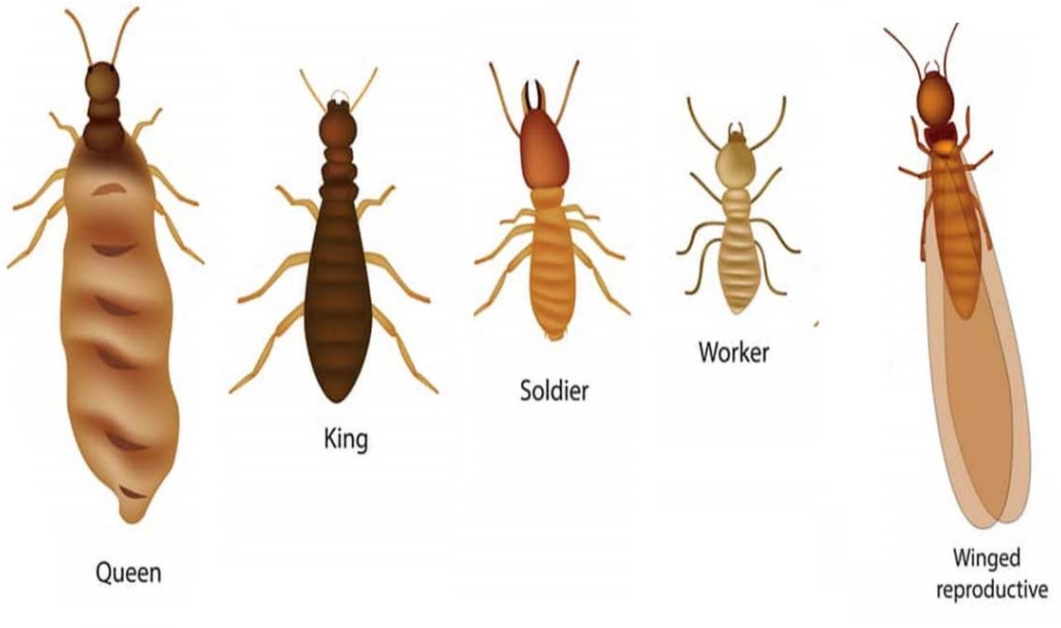
II-Non reproductives (workers and soldiers):

a) Workers

- *They are pale in colour, wingless and lack compound eyes.*
- *Mandibles are relatively small.*

b) The soldiers

- *They have greatly enlarged head and sickle-shaped mandibles, may or may not have compound eyes.*
- *Slightly larger than the workers.*



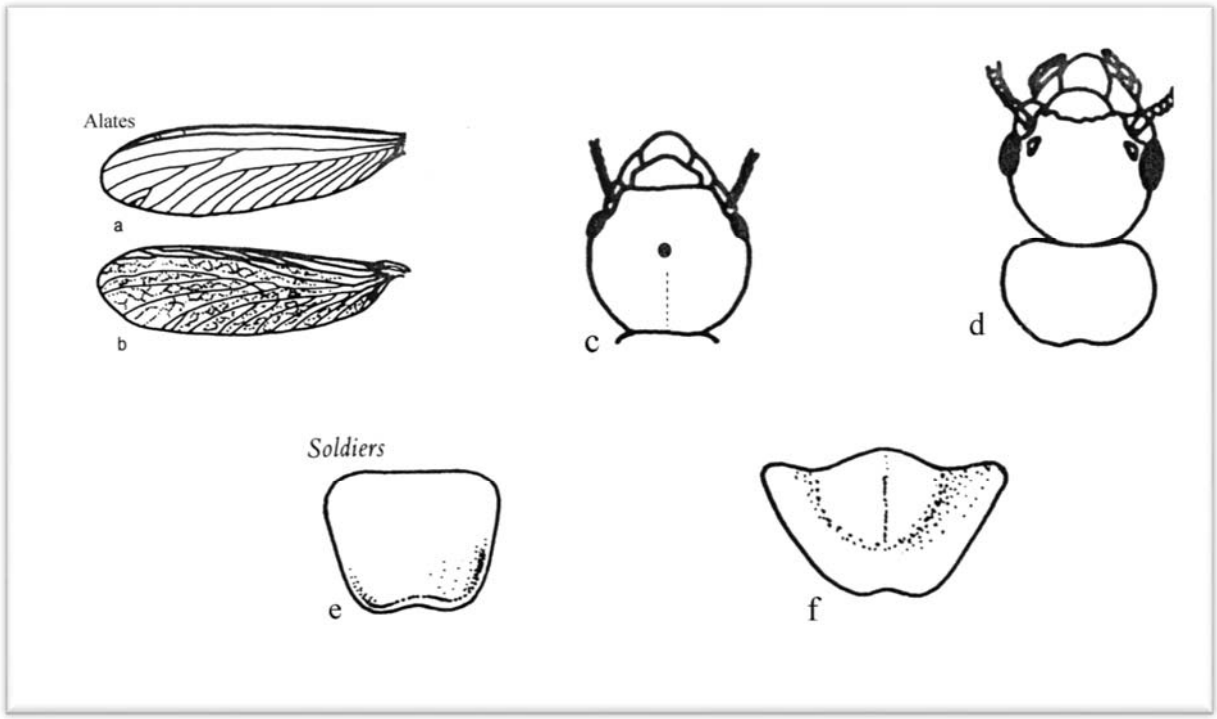
Key to some families of isoptera

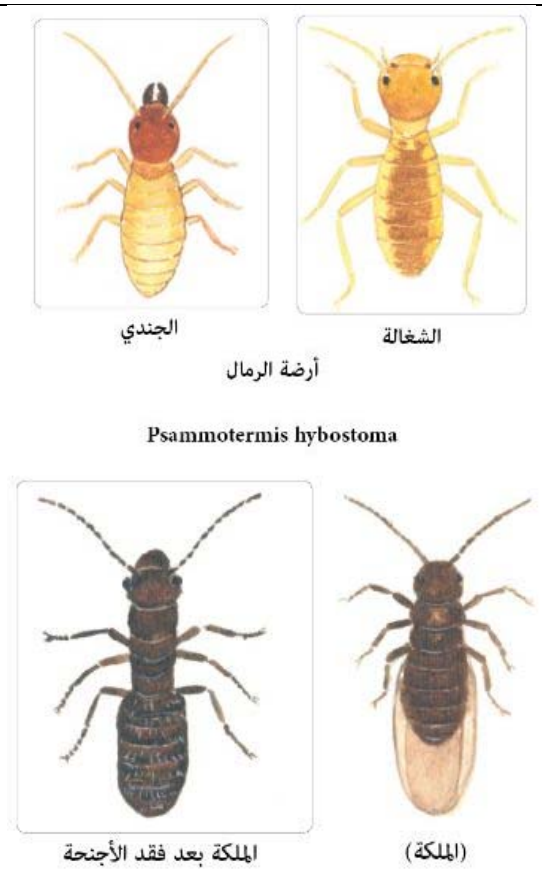
Alates

1. Anterior wing scales short, not reaching base of posterior scales; wings not wholly reticulate (Fig. a) .....Termitidae
– Anterior wing scales covering at least the base of the posterior scales; wings reticulate (Fig. b) 2
2. Ocelli present (Fig. d) 3
– Ocelli absent .....Hodotermitidae
3. Fontanelle present (Fig. c) .....Rhinotermitidae
– Fontanelle absent .....Kalotermitidae

Soldiers

1. Eyes pigmented; cerci large .....Hodotermitdae
– Eyes absent or unpigmented; cerci absent 2
2. Fontanelle present 3
- Fontanelle absent ..... Kalotermitidae
3. Pronotum flat without anterior lobes (Fig. e)..... Rhinotermitidae
- Pronotum saddle-shaped with anterior lobes (Fig. f)..... Termitidae



Order: Isoptera **Family: Rhinotermitidae:** ***Psammotermis hybostoma*** **النمل الابيض الصغير**	
Family: Hodotermitidae ***Anacanthotermes ochraceus* (Burm.)** **النمل الابيض الكبير**	

أضرار النمل الأبيض:

يصنع النمل الأبيض لنفسه أنفاقا وممرات من الطين ليتغذى من خلالها عموماً على المواد التي تحتوي على مادة السليلوز، كجذوع وأغصان وأوراق النباتات، والأعشاب الجافة، والأخشاب المصنعة (الأبواب والنوافذ والأثاث) ، والأعمدة الخشبية التي تستخدم في عمل الأسيجة حول المزارع، وقطع الأخشاب المتناثرة، والدفونه في التربة، والصناديق الورقية (الكرتون)، والورق والكتب، والحصر والموكيت، والخيش والاقمشة. أما النمل الأبيض من جنس *Microtermes* فإنه يفضل النباتات الحية التي تشمل الكثير من نباتات الخضر، وأشجار الفاكهة، والغابات.