



ANTS.

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Domestic Insects : Ants.

WITH CATALOGUE OF AUSTRALASIAN SPECIES.

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AUSTRALIA is an ideal place for ant life ; a warm, almost frostless, climate, for the cold is never so intense that it reaches down into the subterranean homes of the ant world. Safe underground, they can lay up through the short winter months free from all the ills to which the less fortunate insects above ground are exposed. Therefore there are fewer checks to their increase than in most lands, and with the first warm weather they swarm out from all quarters ; while in the more northern latitudes they are always in evidence. Wherever one goes he will find some species of ants, though they are usually more plentiful in hilly or forest country, than open plains or river flats.

The difficulties that the housewife in the bush has to contend with are multitudinous in comparison with those of her sister in the city, but none is more annoying than the ant worry, though we sometimes have it in a minor degree in the city and suburban homes. In most bush homes you will find the family safe standing well away from the wall with each leg resting in a sardine-tin half-full of water, or a band of opossum skin tied tightly round each, if they are not treated with tar or encircled with a broad belt of chalk, but these safeguards have to be constantly looked after, for if the water gets choked with dirt or dries up, or the bands get displaced, some wandering ant soon finds it out and passes word on to his clan, and before one can stop it the safe is stormed and the catables are attacked.

The bushman in camp has a simple meat-safe formed out of a corn-sack which, hung up from a neighbouring branch by a couple of wires attached to the sides, with the lower side spread out with a flat board and the mouth tied with a string, forms a safe place for his food supplies from all prowling creatures except the ants, but he stops them by breaking two beer bottles and using the neck part as a funnel through which he passes the suspending wires, plugging the neck with a cork, and filling them with water, thus cutting off the marauding hosts that would otherwise swarm down.

Many inquiries are made every season as to the best methods of getting rid of the small black ants that get into every kind of food ; but unless one can find their nests, which are often hidden away about the foundations of the house, it is simply a matter of perseverance, and constantly waging war upon them until the survivors retreat.

Where nests are found a liberal dose of kerosene will settle them very quickly, but in the house bits of bread or cake that have been sugared placed

in their line of march attracts them, when they can be regularly picked up and dropped into a tin of hot water, or oil and water, the baits being renewed; it is often a slow process but if persevered in is sure.

When the mound ant invades the garden and begins burrowing in the paths and lawns, or is too handy to the house, bisulphide of carbon is the quickest method of exterminating them in one act, and also shatters the underground workings so badly that no fresh colony can take up the empty quarters. The best method of using bisulphide of carbon is to first plug up all but half-a-dozen of the main shafts leading downwards, then pour about a large tablespoonful of bisulphide down each of the openings, and throw a damp bag over the top, which drives the heavy fumes downwards, these soon sink into every gallery in the ground; then in about two minutes pull the damp bag off and apply a lighted match at the end of a short stick to each aperture, when the gas rising upwards, catches fire and ignites down to the bottom of the nest killing everything, the concussion breaking up the galleries and cracking all the surface, but there is no danger to the person operating. This is also a very good method of dealing with the smaller nests of the bull-dog ants when they are found near the homestead.

I treat the bull-dog ants as domestic insects as they are such aggressive creatures that they often wander into the house in the bush and attack anybody that they come across.

The Little Red House Ant (Monomorium pharaonis, Linn.).

This tiny little ant, which was introduced into Australia at a very early date, builds its nest in the floors and walls of houses, and is a very difficult pest to get rid of unless the nest can be located and destroyed, which is usually a difficult matter in a large house. It is well domesticated in some Sydney houses, but nothing like so bad as in Brisbane and the coastal towns of Queensland, where even in many of the large hotels one cannot leave anything about on the dressing-table without them swarming over it, and even the water bottles have to be placed in a saucer full of water to keep them from crawling into the neck. This little pest is almost world-wide in its range over Europe, Asia, Africa, and America; and has been re-described by various writers under a number of different names, since Linné named it in 1758. It measures under one-twelfth of an inch in length, and is of a uniform dull reddish-brown colour.

The Common Black Ant (Iridomyrmex rufoniger, Lowne).

This is the ant that is so troublesome in Sydney houses in summer-time, swarming in over the window-sills or any crack or crevices in the walls or floor, getting into all kinds of food, and having a very objectionable smell when crushed. Forel has made a new variety of this species which he calls *domesticus* from its house-loving proclivities. In its native state it builds its nest under bark on tree-trunks, under stones, and such-like places, forming large colonies, which in the early part of the year will be found full of larvæ and pupæ in all stages of growth. When they come about the house they

are fond of getting under the shelter of a wall, or working out a passage between the bricks or tiles. The genus *Iridomyrmex* is also represented in Central America, Asia, and some of the Islands, but Australia is its stronghold; for out of twenty-one described species over half of them are peculiar to this country.

The Mound Ant (*Iridomyrmex detectus*, Smith).

This is one of the largest species of the genus, and is popularly known in the bush as the "meat ant," though omnivorous in their habits and storing up all kinds of food in their nests. They always find out fresh meat or offal about a camp, and where sheep have been worried by dogs and died in the scrub I have seen great holes excavated in the carcass and strings of ants carrying off bits of flesh in their stout jaws; I also knew a man, who in a fit of the "horrors" climbing up a tree—probably under the idea he was an opossum—fell down into one of their nests where he remained insensible for some time, and when found had the tip of his nose and portions of his lips gnawed away by those ants. In museum collections this ant is better known under the name of *Iridomyrmex purpureus*, as Smith described the female under this name, at the same time naming the male form *I. detectus*. These ants construct very extensive nests, forming large mounds several yards in circumference, and often raised several feet above the surface, through the excavated soil being brought to the surface. From the rounded summit many vertical circular shafts lead downwards into the net-work of galleries and irregular chambers beneath, tenanted by countless thousands of busy workers, winged males, females, pupæ, and larvæ in all stages of growth. At the least disturbance the workers swarm up through the openings biting with their stout jaws at any strange object they find trespassing in their domain, and though not furnished with a sting, can bite very sharply with their powerful nippers and make themselves very unpleasant. In the forest they have regular beaten tracks leading out from the nests quite bare of grass through the myriads of tiny feet constantly passing backwards and forwards. During the long-continued drought in the interior, I am told they have greatly increased in numbers, and on a recent visit to the Darling River country I noticed their nests, scattered all over the country—usually much more raised and conical than those in the coastal districts.

It is puzzling to understand how such immense numbers of these insects find enough food to maintain the life of these nests, for in many districts every tree-trunk is covered with columns of them hunting all over branches where everything seems to be fish that comes to their net, as they get the honeydew from the aphids and froghoppers, hunt over the orchard trees for exudations of all kinds of scale insects, which by their presence, they protect to a certain extent from their numerous enemies, and are therefore no friends to the gardener; some orchardists go so far as to say that they carry scale and aphids from dirty to clean trees, but if they do it is probably unintentionally—the larval insect has simply taken a free ride. When they settle down and form a nest in a lawn or garden path they are a great nuisance,

and have to be driven out. The workers (which are the only forms in evidence) measure slightly over one-fourth of an inch in length, and are of a general reddish-brown tint, except the abdomen which is blackish, shiny, clothed with very fine hairs which are not noticeable unless examined under a lens. The head and thorax, viewed in a bright light, have a rich purple sheen. The winged males and females are much larger with well-developed wings, and can be generally found in the galleries near the summit of the nest.

The Green Head (Ectatomma metallicum, Smith).

This is one of our commonest species, being as common in the garden as it is in the bush, and constructing similar nests in both places, though in the bush the nests are more regular in form, as they are excavated under logs or stones into galleries or chambers. The communities are usually small, sometimes consisting of only a few dozen. The pupæ are enclosed in a stout brown cylindrical cocoon. This is the ant that so often stings one in the garden, when you are sitting about on the lawn or grass plots; but though a very unpleasant sensation at the moment it is not a very serious thing to the ordinary person. The "green head" is a somewhat sluggish black ant, about one-fourth of an inch in length; the head, thorax, and first joint of the body deeply and coarsely punctured like a thimble, and giving a deep metallic green tint in a bright light, while the abdomen is smoother, the segments round to a blunt tip and showing a more coppery tint. The antennæ and legs are of a dull reddish-brown colour, the small eyes brown. The short blunt jaws, when closed, form a rounded tip. The sting short and stout.

The Dark Red and Black Bull-dog Ant (Myrmecia forficata, Fabr.).

This is one of the largest and commonest species found about Sydney; it was one of the first bull-dog ants described in Bank's collection from Tasmania in 1787. It has a wide range over Victoria to North Queensland. They live in small communities, digging a cylindrical shaft down to irregular galleries and chambers extending a couple of feet in depth, the material excavated being brought to the surface and forms an elevated ring round the opening. In the early summer they sometimes form a rounded mound above the nest containing a few large chambers in which the pupæ, enclosed in stout brown silken sacks, are brought and kept until the perfect insects emerge. The workers vary considerably in size, measuring up to nearly an inch in length, the whole insect (except the eyes and abdomen which are shining black) is dull reddish-brown, the long jaws projecting in front, armed with fine teeth like a saw; the head finely roughened with parallel lines, and the thorax with transverse ones; the first two nodes (contracted segments) of the abdomen, reddish and shining; the rest heart-shaped, shining, and furnished with a long slender sting, and lightly clothed at the tip with fine hairs.

When they form a nest under a log their nest is much more irregular in form, and the community is much larger than in the regular isolated nest.

The pupæ being all gathered together in a pile immediately under the log, are seized and carried down into the galleries below as soon as the nest is disturbed. The winged female is furnished with long toothed jaws like the workers, sometimes exceeding them in size, and armed with quite a formidable sting. The winged male is more like the smaller form of worker, and can be easily recognised by his small head and short jaws. They hunt both on the ground and among the foliage of low scrub, and are very aggressive beasts, but when among the foliage, though showing fight drop to the ground—a very bad habit when one is pushing his way through the scrub, as they frequently drop on one's head or neck, and sting very severely, they almost seem to know when they come to an exposed place, and bite and sting for the fun of the thing. Sandy scrub lands along the coast and over the Hawkesbury sandstone are the favorite localities for several of our common bull-dog ants, but a few range right into the western country.

The Red Bull-dog (*M. Gulosa*) figured in the plate is just as common, but is of a lighter red tint, the terminal half of the abdomen being black.

The Black Bull-dog Ant (*Myrmecia tarsata*, *Smith*).

This is the common black bull-dog ant found in the vicinity of Sydney, and extending up the coast into North Queensland. They construct a somewhat similar subterranean nest with irregular chambers extending out from the main shaft to several feet in depth; in the summer the rounded dome above the nest, formed of the material excavated from below, is full of chambers containing the unhatched pupæ enclosed in stout, elongate, oval, brown cocoons over half an inch in length, and the winged males and females. This species is of a uniform black colour, with the large projecting jaws yellow, and the antennæ, tarsi of the legs, dull reddish-brown. The head and thorax finely lined and roughened; the first aborted joint of the abdomen roughened but the rest smooth, shining, lightly clothed with short hairs and tipped with dull yellow at the apex. When disturbed, if one or two are captured, the other ants retreat into their nest and do not show fight. Their favourite hunting-ground is up and down the trunks of the larger forest trees; but their sting is quite as severe as that of the red bull-dog ant.

The Jumper (*Myrmecia nigro-cincta*, *Smith*).

There are no pluckier insects for their size than the jumpers, at the first alarm they come jumping out from the side door of their raised mound, which is generally on the ground level, one after the other like a pack of dogs, and fasten on to the first thing they come across; as there is usually a large opening in the top of the nest, the unwary investigator, who has not learnt about the side door, generally discovers it through a rear attack when the jumpers swarm up his legs and begin their investigations. This is a smaller species, slender in form and under three-quarters of an inch in length, black and slightly pubescent on the body, with the jaws yellow and the front and hind portion of the thorax dull brownish-red or yellow, giving it a very

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distinct colouration by which it can be easily distinguished from all the other species. This species has a wide range along the coast, and extends inland to a considerable distance.

The Sugar Ant (*Camponotus nigriceps*, *Smith*).

There are a great number of different species of this genus found in Australia, but this is our common sugar ant, which often comes into our gardens and lawns, forming underground nests, and comes into the house at night foraging about for sugar or any kind of sweet stuff that it can find unprotected, and in many parts of the bush make themselves very much at home, and are a regular nuisance, though they cannot sting. I have often watched them on a summer evening round the camp fire, prowling round the edge and even running into the ashes to seize some little moth that had flown into the flame and fallen with singed wings, for though sugar lovers they are omnivorous in their tastes and eat anything in the way of food. The structure of their nest is very variable, suited to its surroundings; when under a log or round the butt of a stump it consists of a number of irregular chambers running into each other, with the large naked larvæ piled up in heaps in the centre of the main chamber; but among the sandstone they often build large nests under a stone, when it consists of much larger chambers, containing a great number of both forms of workers, and some winged males and females.

The slender and stout large-headed workers differ considerably from each other in length and bulk, the larger ones measuring up to three-quarters of an inch, and the smaller a quarter less. The large worker has a broad heart-shaped head with the stout short jaws closed in front coming to a blunt tip. The variations of back and yellow are considerable, but the typical forms have the head, antennæ, and apical three-quarters of the abdomen black, the rest dull yellow; in some varieties the upper surface of the thorax is darker brown, but the basal segment of the abdomen is always yellow. This species has a very wide range over Australia and Tasmania.

The Golden Wood Ant (*Polyrachis semi-aurata*, *Mayr.*).

The wood ants are all fair-sized black insects, with the head short and broad, turned down in front; the thorax is flattened on the upper surface, and the sides forming ridges, with the hind margin often bearing stout spines, and the first joint or node of the abdomen also furnished with a pair, and the connection between it and the short globular abdomen proper very slender. Length about half an inch. This species is of the typical form and colour, with the legs of a dull purplish tint, and the upper surface of head and thorax bronzed with golden pubescence, the abdomen smooth, shining, and clothed on the sides with very fine hairs. These ants live in large communities, forming their nests in dead logs or old tree-stumps, and though chiefly found upon tree trunks often make their way into one's camp in the bush. We have specimens taken from the nests about Sydney, and Mackay, Queensland.

(To be continued).