

## THE ANTS OF VICTORIA

BY J. CLARK, F.L.S.

[PART III.]

In part II. of this series, the habits of the Bull-dog Ants were mentioned. Although not complete, the information given is practically all that is at present known concerning these primitive ants. Most of the species have somewhat similar habits.

To illustrate the various forms, a plate has been included, showing workers, females, and a male. The figures are slightly under natural size, but are all on the same scale. Figure 6 is a male, showing the small head and mandibles, also the long, straight antennae. The male retains the wings attached throughout his short life, which generally terminates with the nuptial flight.

Figure 4 is a normal winged female. After the nuptial flight, the female removes her wings, which are easily detachable, using legs and mandibles for the purpose. It may be noted that, in many cases, a nest will contain members of one sex only, while in others, one sex will far outnumber the other; in a few instances, males and females will be found in almost equal numbers. No doubt this is a provision of nature to prevent the deterioration of the species by inbreeding among the members of the same colony.

With her wings removed, the female appears as in figure 3, which depicts a normal queen found in the nest. Here the large scutellum and small mesonotum are seen. The worker does not possess a scutellum, but the mesonotum is large. Figure 8 represents an ergatoid female; that is, a worker in which the scutellum and other segments are partly developed, but which bears no wings. This form of female usually is larger than the worker, but rarely so large as the true female. The exact position of this form in the colony is at present unknown.

The photograph of *Myrmecia nigriceps* Mayr, a species that was dealt with in part II., is here included to illustrate a side view of the ant, showing the normal position as in life. The ant is enlarged  $2\frac{1}{2}$  times. This illustration is typical of all the species of the genus. The long, powerful sting is to be seen at the apex of the gaster. This is the painful end of the ant. The large jaws cause little or no pain to the victim; they have only sufficient power to enable the ant to cling in order that she may drive her sting into the victim. The sting of the ant is not barbed, and is not left in the victim, as is the case with

the honey-bee. The ant can use her sting repeatedly, and appears to take great delight in doing so.

13. *MYRMECIA TARSATA*, Smith. (Pl. III., figs. 2 and 8). Millgrove (F. E. Wilson).

Smith, Cat. Hymn. Brit. Mus., 6, p. 145, 1858;  
Roger, Berl. Entom. Zeitschr., 5, p. 53, 1861;  
Mayr, Verh. Zool-bot. Ges. Wien., 12, p. 726,  
1862; Forel, Fauna Sudwest Aust. I, p. 265,  
1907; Froggatt, Agric. Gaz., N.S. Wales, pp.  
5 and 10, 1905.

The worker is 19-22 mm. in length, and rather slender. Colour, black, or blackish brown; the mandibles; labrum, antennae, tarsi and the apical segments of the gaster, reddish yellow; postpetiole and gaster, black, with a slight bluish tinge, and smooth and shining.

The female is much larger than the worker, measuring over an inch in length. In colour and sculpture the sexes are very much alike. Figure 8 depicts an ergatoid female of this species, captured, with workers, by Mr. Wilson, at Millgrove.

This species does not appear to be common in Victoria. It was described as from N.S. Wales, and is abundant around Sydney. It occurs also in Queensland. Froggatt calls this the "Black Bull-dog Ant," and says that, "if one or two are captured the other ants retreat into the nest and do not show fight."

14. *MYRMECIA ANALIS*, Mayr. Portland (H. W. Davey).

Mayr, Verh. Zool-bot. Ges. Wien. 12, p. 725,  
1862.

*Myrmecia atriscapa*, Crawley, Ann. Mag. Nat.  
Hist. 9, vol. 16, p. 580, 1925.

The worker is 17-20 mm. in length. Head, thorax, and node light reddish, the head often slightly darker; scapes of the antennae, legs and postpetiole, lighter, more yellowish; mandibles and apex of the gaster, yellowish red; gaster, black, often with the base of the first segment reddish, particularly on the sides; basal two-thirds of the scapes, brown, or blackish.

The female is similar to the worker, but larger. The apex of the gaster is darker, more reddish.

Originally described by Mayr as from Neu Holland, this species has a wide distribution in Southern Australia. It ranges from Bunbury, W.A., to Brisbane, Q. I have frequently found this species nesting in decayed logs and grass-trees (*Xanthorrhoea*). The colonies

usually contain about 200 individuals. They are pugnacious, and will generally follow an intruder for some distance. They readily drop from trees on to a person passing close by.

15. *MYRMECIA LUCIDA*, Forel. Cheltenham (C. Barrett, L.B. Thorn). Ferntree Gully (F. P. Spry).  
Forel, Ann. Soc. Ent. Belg. 37, p. 458, 1893.  
*Myrmecia regularis*, Crawley, Ann. Mag. Nat. Hist. 9, vol. 16, p. 579, 1925.

The worker is 17-20 mm. in length. Shining brownish red; scapes and legs, darker, more brownish; mandibles, ranging from red to brown, in some species; caster, black with the apical segments castaneus.

The female is much larger than the worker, but otherwise similar.

The male is castaneus in colour, excepting the mandibles and antennae, which are slightly darker.

This species was originally described from Tasmania. It is found in various parts of Victoria and Western Australia. The ant faunas of these three States have much in common; this applies particularly to the ancient and primitive forms.

16. *MYRMECIA FORFICATA*, Fabr. (Pl. III. figs. 3 and 7). Widely distributed throughout the State.  
Fabr., Mant. Insect. 1, p. 310, 1787. Smith, Cat. Hymn. Brit. Mus. 6, p. 143, 1858; Mayr, Verh. Zool.-bot. Ges. Wien. 12, p. 726, 1862.  
Forel, Fauna Sudwest Aust. 1, p. 265, 1907.

The worker is 19 to 23 mm. in length. Brownish red; mandibles, clypeus and sometimes the front of the face, lighter red; gaster, black and shining, clothed with long, yellowish hairs, which are longer and more abundant on the apical segments.

The female is considerably larger than the worker, but does not differ in colour. Ergatoid females often are found in the nests of this species. They differ from the normal females only in not having the wing sclerites properly developed.

The male is slightly smaller than the worker. The head, thorax and gaster are black; mandibles, antennae, node, postpetiole, and legs, reddish, or sometimes brownish.

This is the commonest species in South-eastern Australia; but has not been found in W. Australia. It was one of the first species described from the collection made by Banks, in Tasmania.

This appears to be one of the species that were kept in artificial nests by E. E. Barker, and described by him in the *Victorian Naturalist*, 1903.

17. *MYRMECIA FORFICATA*, Fab. var. *BREVINODA*, Forel. Bendigo (L. B. Thorn), Gisborne (W. W. Froggatt, Type locality).

Forel, *Rev. Suisse Zool.* 18, p. 2, 1910.

This form is very much like *forficata*, differing only in having the node shorter. It is slightly smaller, but the colour, sculpture and pilosity are similar.

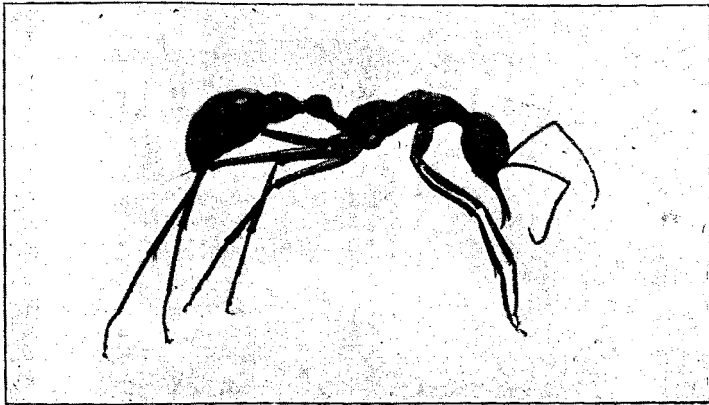


Photo. J. Clark. *MYRMECIA NIGRICEPS*, Mayr.  
Lateral view of worker (x. 2½).

18. *MYRMECIA RUBRA*, Forel. (Pl. III., figs. 1 and 9.) Yarra District (W. W. Froggatt, Type locality); Ferntree Gully (F. P. Spry); Belgrave (F. E. Wilson); Croydon (J. A. Kershaw); Cheltenham (C. Barrett and L. B. Thorn).

*Myrmecia forficata*, Fab. var. *rubra*, Forel. *Rev. Suisse Zool.* 18 p. 3, 1910.

Worker 19-23 mm. Dark red, almost blood-red, the gaster black and shining; mandibles and apical joints of the antennae, lighter in colour, the scapes tinged with brown; yellowish hairs on the gaster are short, and not abundant.

The female, in colour identical, is very slightly larger than the worker, but is more robust in form.

Forel described this species as a variety of *forficata*. It is, however, quite distinct from that species. The

females are even more widely separated than the workers.

19. *MYRMECIA PYRIFORMIS*, Smith (Pl. III., figs. 4-6).  
Ferntree Gully (F. P. Spry).

Smith, Cat. Hymn. Brit. Mus. 6, p. 148, 1858,  
pl. 10, f. 1-6; Mayr. Verh. Zool.-bot. Ges.  
Wien. 12, p. 726, 1862; Froggatt, Cat. Aust.  
Ants, Agric. Gaz., N.S. Wales, p. 10, 1905;  
Emery, Gen. Insect. 118, p. 21, 1911.

*Myrmecia forficata*, Fab. r. *pyriformis*, Smith;  
Forel, Rev. Suisse Zool. 18, p. 2, 1910.

This species is much darker and larger than *forficata*. The head is nearly square, whereas, the head of *forficata* is much narrower behind than in front. The gaster is more or less covered with a dense greyish pubescence, not shining, as in *forficata*.

The female is much larger than the worker, but similar in colour and sculpture.

The male is as large as the worker, and is black, with brownish mandibles and antennae.

This species is generally called the Black Bull-ant, but the term is also applied to all the dark species.

20. *MYRMECIA SIMILLIMA*, Smith, var. *VIOLACEA*, Forel.  
Millgrove (F. E. Wilson), Woori Yallock (L. B. Thorn).

*Myrmecia forficata*, r. *simillima*, var. *violacea*,  
Forel. Arkiv. for Zool. 9, 16, p. 5, 1915.

This form is very close to *simillima*, which it closely resembles in all but colour. The sculpture is almost identical. The head and thorax are reddish brown, generally with a slight metallic tint; gaster, black with a violet sheen; node and postpetiole, with a more greenish sheen; mandibles darker in colour than those of *simillima*, but similar in formation.

Some new species still remain to be added to the Victorian list. Several undetermined males are available; but, as they could only be attached to the species with doubt, they have been excluded for the present.

Sub-genus *PROMYRMECIA*, Emery.

Genera Insectorum, 118, p. 19, 1911; Wheeler,  
Biological Bulletin, Vol. XLII., 4, 1922.

*Pristomyrmecia*, Emery (in part) Gen. Insect.  
118, p. 19, 1911.

*Halmanyrmecia*, Wheeler (in part) Biol. Bull.  
XLII., 4, 1922.

I include all the Jumping Bull-dog Ants in this sub-genus. They form a natural section, *Saltatoria*, of the genus *Myrmecia*.

These ants are readily distinguished from the *Gresoria* by their smaller size and more robust form. The mandibles are shorter and the scapes rarely reach to the occipital border of the head. The node is always short and broad, with a very short petiole in front. The femur of the hind leg is slightly thickened near the base; the legs are well adapted for jumping. The formation of the mandibles is variable, but a study of these greatly assists in grouping the species.

All the species are more or less highly coloured. A few, however, are quite black, with little or no variation. Others have the gaster densely clothed with bright golden pubescence, giving the ant a handsome appearance, black and gold.

The jumping habit of these ants is very difficult to account for. Apparently, in their present habits or mode of life, they do not differ from the non-jumping section. It is, however, only when they are disturbed, or excited, that they do leap; at other times they walk, in the manner of the large non-jumpers. The habits of ants of both sections are similar. During the bright sunny hours they hunt on trees and shrubs in flower. All the members of the sub-genus are most active in the late afternoon, from about four o'clock until sundown, when they retire for the night. They come out in the morning as soon as the sun is high.

Nesting habits do not differ greatly in the two groups. A few species of jumpers construct nests similar to, but smaller than, those made by non-jumpers. All the members nest in the ground, usually deep down, the depth ranging from 18 inches to 2 feet, rarely more. Some species construct their nest under stones or logs, but others prefer the open spaces, with no covering stone or log. *Promyrmecia picta* very rarely has any cover. The nest is deep underground, and its existence is indicated only by the small holes forming the entrance, or exit. A typical nest closely examined was two feet square, and had five entrances, each just large enough to admit one ant at a time. This nest, as is usual, was constructed near the base of a tree. The ground was strewn with fallen bark. Another nest was constructed at the side of a foot-track through the bush; all the entrances being protected by small plants. This is rather unusual with the species.

A few species of jumpers seem to prefer to make their nests in Termites' mounds; some species being found mainly in such situations.

Like the non-jumpers, the ants will always show fight when the nest is approached. They rush out from all the exits. Their sight is very keen; they come straight at the intruder, even when he is several feet away from the nest. They will also follow one for a considerable distance.

The jumpers are widely distributed throughout Australia, but are more abundant in the South than in the North. One species, belonging to this sub-genus, has been described from New Caledonia. This is the only Bull-dog Ant found outside of the Commonwealth of Australia.

Ten species are known in this State; many of these are also found elsewhere.

21. MYRMECIA (PROMYRMECIA) ABERRANS, Forel.  
*Myrmecia aberrans*, Forel, Ann. Soc. Ent. Belg. 44, p. 54, 1900. Rev. Suisse Zool. 18, p. 9, 1910.  
Froggatt, Agric. Gaz. N.S.W., p. 8, 1905.  
*Myrmecia (Promyrmecia) aberrans*, Forel, Emery, Gen. Insect. 118, p. 19, pl. 1, fig. 10, 1911.

The worker is 10 to 15 mm. in length. Black, the head, parts of the thorax, and the node, red; mandibles and labrum, yellowish red. The mandibles are short, and broad; the scapes do not reach the back of the head.

This is a very rare ant; so far only odd specimens have been obtained—by the late Mr. F. P. Spry, and by Mr. C. Oke, at Broadmeadows and Coburg.

22. MYRMECIA (PROMYRMECIA) PICTA, Smit. Sea Lake and Maldon (J. C. Goudie); Lake Hattah (J. E. Dixon).

Smith, Cat. Hymn. Brit. Mus. 6, p. 146, 1858.  
Lowne, The Entomologist, London, 2, p. 336, 1865; Mayr. Jour. Mus. Godeff. Mayr, Verh. Zool-bot. Ges. Wien. 12, p. 727, 1862.

Length of the worker, 9 to 12 mm. This species is most variable in colour, generally black, more or less marked with red. Some examples are wholly black; others, red. The mandibles, clypeus and front of the face are, however, always yellow. The antennae and front legs are reddish yellow; middle and hind legs more brownish.

The female is larger than the worker, but similar in colour and sculpture. Ergatoid females often are found

in the nests of this species; and I have frequently found several active females in the nests. It is very unusual to find more than one female in a nest of any species of this genus.

The male is as large as the worker; black, with the mandibles, front of the face, and whole of the legs yellow.

For more than fifty years this species has been confounded with another species, *urens* Lowne, which it somewhat resembles. Apparently it had not been seen since Smith described it, from Adelaide, in 1858. It is an inland species, not ranging on the coast. On the other hand, *urens* is a coastal species, not found inland. The two species are not connected, although both have a somewhat similar range of colour varieties. Forel has described two varieties of *picta*; these, however, should be attached to *urens*, as Forel identified this species as *picta*. One of the varieties described, *nigra* Forel, is not a variety; it is the black form of the typical *urens* Lowne.

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#### KEY TO PLATE III.

Fig. 1, *Myrmecia rubra*, Forel, female. Fig. 2, *M. tarsata*, Smith, worker. Fig. 3, *M. forficata*, Fabr., female. Fig. 4, *M. pyriformis*, Smith, female. Fig. 5, *M. pyriformis*, Smith, worker. Fig. 6, *M. pyriformis*, Smith, male. Fig. 7, *M. forficata*, Fabr., worker. Fig. 8, *M. tarsata*, Smith, female. Fig. 9, *M. rubra*, Forel, worker.

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#### NATURAL HISTORY EXHIBITION.

The Club's natural history exhibition will be held on July 20th, in the Independent Hall, Melbourne. All branches will be represented, it is hoped, from entomology to ethnology. Members of the Club have been appointed to organise the various sections; and already some fine exhibits have been promised. Tickets will be posted to members, who are asked by the committee to do all they can to assure the success of the exhibition.

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#### A BIRD TRAGEDY.

When driving from Glenthompson to Moyston, some years ago, my attention was attracted to the extraordinary poise of a bird over a pool of water by the roadside. I stopped and watched, and found that the bird, a Pipit, *Anthus australis*, was perfectly motionless, with outspread wings, and with no apparent support. Closer examination showed that it was supported by a piece of fencing wire, against which it had flown and become impaled. The sharp iron had penetrated its chest at the neck, causing it to remain poised in the wonderfully life-like manner in which I found it, probably some weeks after the accident.—H. B. WILLIAMSON.

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*Correction.*—The plates in May, 1927, issue of the *Naturalist*, should have been numbered I. and II. respectively, instead of xxii. and xxiii.



Plate III.

