

3436  
Reprinted, with original page numbers,  
from the "JOURNAL OF THE ROYAL  
SOCIETY OF WESTERN AUSTRALIA,"  
Vol. XX., 1933-34.

W. L. BROWN  
1933-34  
C |

WILLIAM L. BROWN

1934 h

7a, c  
Ph

7.—CONTRIBUTIONS TO THE FAUNA OF ROTTNES  
ISLAND, WESTERN AUSTRALIA.

No. IX.—THE ANTS.

BY

WILLIAM MORTON WHEELER.

## 7.—CONTRIBUTIONS TO THE FAUNA OF ROTTNESST ISLAND WESTERN AUSTRALIA.

### No. IX.—THE ANTS.

BY

WILLIAM MORTON WHEELER.

Read 10th May, 1934. Published 5th October, 1934.

*Communicated by L. Glauert.*

### INTRODUCTION.

From the twenty-first to the twenty-fifth of October, 1931, Dr. P. J. Darlington, Dr. Ira Dixon and myself, as members of the Harvard Expedition to Australia, were able to study the insect fauna of Rottnest Island through the courtesy of Mr. J. F. Allen, chairman of its Board of Control, and Mr. L. Glauert, Curator of the Museum of Western Australia. These gentlemen not only provided every comfort for our sojourn on the island but gave us facilities for visiting many parts of it. The following pages are devoted to an account of the Formicidæ which we secured and of additional collections made by Mr. Glauert since our return to the United States.

For several years Mr. Glauert has been intensively studying the ecological conditions and fauna, both terrestrial and marine, of Rottnest. I cannot do better, therefore, than quote the general topographical description with which he introduces his first contribution to the fauna of the island.<sup>1</sup>

"Rottnest Island lies about 12 miles westerly of Fremantle, the port at the mouth of the Swan River, and is the first glimpse of Australia obtained by vessels approaching the Continent from South Africa and Ceylon. The island, which forms the northern extremity of two submerged ridges, the Five Fathom Bank, and that of which Garden Island and Carnac are elevated portions, is rather limited in extent. It measures less than seven miles from east to west and has a maximum north to south diameter of about  $3\frac{3}{4}$  miles. The surface of the island is irregular, the highest point, Lighthouse Hill, 154 feet, is situated close to the centre of the island and overlooks much low-lying land to the north and east, including the numerous and extensive Salt Lakes, which in the winter time present most charming expanses of water whose place is taken by glistening stretches of snow-white salt in the later summer months, the area of the water being considerably reduced.

"In the main, the land rises towards the north and west, where the 'coastal limestone series' of which it is composed, has weathered to form rugged cliffs and prominent headlands separated here and there by smooth, sandy beaches which vary with the season. The sand from these beaches is blown inland by the winds and has given rise to sandhills which fortunately are

<sup>1</sup> Contributions to the Fauna of Rottnest Island. No. 1. Introduction and Vertebrates. Journ. Roy. Soc. W. Austr. 15, 1929, pp. 37-46, map.

more or less anchored by the established vegetation. On the adjacent mainland this encroachment is slowly but surely advancing in spite of the efforts made to control it, and we may assume that the same is occurring upon Rott-nest. At the 'west end' some of these sandy patches are tunnelled like a rabbit warren owing to the activities of the Petrels that have selected this part of the island as the site of a breeding colony.

"The surface soil is generally white and rich in lime and to it is added a certain amount of humus in sheltered corners in the hollows, and particularly near the few small freshwater swamps to be found here and there on the island. On the flats between the hills in the north-eastern quadrant marly soil with *Coxiella* is either exposed on the surface or covered with a thin layer of sand. The rich animal life in the lakelets and pools of this area contrasts very markedly with that of the salt lakes whose fauna seems to be limited to the larvæ of a dipterous insect (? *Ephydra* sp.), Phyllopods (*Artemia salina*) and the Oniscids *Haloniscus* and *Deto*.

"Much of the island is clothed with dense wattle scrub tangled with creepers and undergrowth and traversed in all directions by the runs of *Setonix brachyurus* [the quokka, or Rottnest Island wallaby] and by the tracks opened up to facilitate the passage of visitors from place to place or to provide the firewood used in the settlement during the summer season."

Fortunately, through the efforts of Mr. Allen and other citizens, Rott-nest Island has been made a wild life reservation. It would probably be difficult to find in Australia a more promising site for the establishment of a laboratory for the investigation of marine, lacustrine and terrestrial organisms. The wealth of the insect fauna is indicated by the number and variety of the Formicidæ. Of the 48 different forms, representing 22 genera, recorded in this paper, 42 have been taken on the island, an increase of 33 over Clark's list published in 1929.<sup>1</sup> Of course, many of the mainland forms are absent from the island fauna. Conspicuous examples of these absentees are the large species of *Myrmecia*, or bull-dog ants, and *Aphaenogaster* (*Nystalomyrma*) *barbigula* Wheeler, which is very common along the West Australian coast, where it occupies much the same ecological environment as *A. (N.) longiceps* F. Smith in New South Wales and Queensland. Of the 17 new forms (11 species, 3 subspecies, 3 varieties) which are described, 8 species and a variety are known only from the island. To these *Rhytidoponera punctata* var. *levior* should be added, since it has not been taken on the mainland. The endemicity of several or all of these forms, however, is doubtful, both because the island is so near the mainland and because our knowledge of the West Australian ant fauna is still very imperfect, notwithstanding Forel's work, based on the extensive collections of the Hamburg Expedition of 1905,<sup>2</sup> and the numerous contributions of J. Clark and W. C. Crawley within more recent years. The large collection of Formicidæ amassed by the Harvard Expedition of 1931-32 shows that the West Australian fauna is much richer than had been supposed. When this material has been carefully studied and the local entomologists have collected ants more intensively and extensively, especially in such very promising regions as the Darling Range and the north-western and south-western corners of the State, the myrmecologist should have something of interest to contribute toward the solution

<sup>1</sup> Contributions to the Fauna of Rottnest Island. No. 3. The Ants. Journ. Roy. Soc. W. Austr. 15, 1929, pp. 55-56.

<sup>2</sup> Forel, A. Formicidæ, in Michaëlsen and Hartmeyer, Ergebnisse der Hamburger südwestaustralischen Forschungsreise, 1905, 1907, pp. 264-310.

of the important biogeographical problems discussed by Prof. G. E. Nicholls in his recent paper on the composition and relations of what he calls the "Hesperonotian Region" of West Australia.<sup>1</sup>

FAMILY FORMICIDÆ.

SUBFAMILY PONERINÆ.

*Myrmecia infima* Forel.

Several workers swept from flowers by Dr. Darlington and myself near Government House (X. 21, '31, and X. 22, '31) and White Hill (X. 23, '31). According to Clark, who records this diminutive bull-dog ant from Rottnest Island, it occurs along the West Australian coast from Geraldton to Albany. I have taken it at Geraldton, in King's Park, Perth, and at Margaret River, always on flowers or foliage, but have never been able to find its nest.

*Rhytidoponera punctata* F. Smith. = *R. convexa* Forel, n. nov.  
var. *levior* Crawley. Bull. 1952

Numerous workers from a few large crater nests near the Tourist Camp Reserve at the eastern end of the island (Wheeler, X. 22, '31) and at the extreme western and near Cape Vlaming (Darlington, X. 23, '31). Rottnest Island is the type-locality of this variety, which is unknown from the mainland.

*Rhytidoponera convexa* F. Smith. = *R. violacea*.  
subsp. *violacea* Forel var. *gemma* Forel.

Several workers from a flourishing colony nesting in a rough crater near Government House (X. 22, '31), and one taken by Mr. Glauert X. 13, '32). These have the head and thorax dull purple and the postpetiole and gaster, bright metallic green. The variety is common about Perth, where it nests even in the city streets. Among several series taken in this and other West Australian localities as far south as Bridgetown, I find considerable variation in the brilliancy and coloration of the postpetiole and gaster, these parts being in some specimens purple as in the typical *violaceum*, in others dull green or even black. Perhaps the var. *gemma* is not worth recognizing.

*Chalcoponera metallica* F. Smith. = *R.*  
var. *carbonaria* var. nov. ✓✓

Worker. Length 4.3 — 5 mm.

Closely related to the var. *inornata* Crawley, of about the same size and also without any traces of metallic reflections, but differing in colour and sculpture, being very dark brown or coal black, with the mandibles, trochanters, tips of coxæ, extreme bases of femora, terminal tarsal joints, gastric incisures and sting reddish yellow. Head posteriorly as in Emery's var. *cristulata*, with a more or less distinct transverse crista at the posterior border, the occipital surface rather flat and the posterior corners but slightly produced. The rugose sculpture of the thorax and petiole is distinctly finer, but the arcuate striæ interspersed with punctures on the post-petiole are decidedly coarser as are also the arcuate striæ on the first gastric segment, so that the surface is less shining.

<sup>1</sup> The Composition and Biogeographical Relations of the Fauna of Western Australia. Rep. Austr. and New Zealand Ass. Adv. Sci. 21, 1933, pp. 93-138.

Described from numerous specimens which I collected near White Hill (X. 23, '31) and Tourists' Camp Reserve (X. 24, '31), and one taken by Mr. Glauert near the west end of the island. They have been compared with a couple of cotypes of the var. *inornata* received from Mr. John Clark. I have taken a very similar but somewhat larger variety at Margaret River and Pemberton, Western Australia, with even coarser striae on the first gastric segment.

*Acanthoponera occidentalis* Clark. = *Heteroponera umbellata* n. sp.

Two workers taken by Dr. Darlington near White Hill (X. 23, '31). The species was originally described from the National Park, in the Darling Range. Clark describes the abdomen as having a yellow tinge, but the coloration of this region is inconstant. One of the Rottnest specimens has the postpetiole and first gastric segment very dark brown, except along their posterior borders. Six specimens, which I found under a large, rather deeply imbedded stone in the type-locality, have these parts as dark as, or in a few cases darker, than the thorax and one of three specimens, which I took at Margaret River has the postpetiole and first gastric segment as dark as in the Rottnest specimen. *A. occidentalis* is hypogaedic in habit like *Brachyponera lutea* and the Australian species of *Amblyopone*.

*Euponera* (*Brachyponera*) *lutea* Mayr.

Workers and a dealated female taken near White Hill (Wheeler, X. 23, '31), workers taken by Darlington near Cape Vlaming (X. 23, '31), and by Mr. Glauert at City of York Bay (XII. 13, '32). This is a common species distributed throughout Australia.

*Euponera* (*Trachymesopus*) *clarki* sp. nov. ✓

Worker. Length 4.5 — 5 mm.

Head subquadrate, without the mandibles; only slightly longer than broad, nearly as broad in front as behind, with straight posterior border and nearly straight, sub-parallel and somewhat dorsoventrally compressed sides. Eyes small, situated at the anterior third of the sides, half as long as their distance from the clypeal border, feebly convex. Mandibles with distinctly concave external borders, 10-toothed, the five apical teeth larger, especially the first, second, third and fifth, the five basal teeth small, subequal and blunt. Clypeus very short and transverse, thick and welt-like at the sides, carinate in the middle posteriorly, its anterior border broadly and feebly bisinuate. Frontal carinae with sub-triangular, very closely approximated, almost fused lobes, slightly turned upward laterally, continued for a short distance as delicate posteriorly diverging ridges; frontal groove indistinct, very short, not reaching the middle of the head. Antennae stout, scapes attaining the posterior corners; funicular joints 1 and 2 subequal, nearly twice, joints 3-7 one and one-half times as long as broad; 8-10 slightly broader than long; terminal joint pointed, less than twice as long as the two preceding joints together. Thorax scarcely longer than the head, plus the mandibles, with distinct promesonotal and feeble or even subobsolete mesoepinotal sutures; in profile evenly arcuate above, the outline slightly interrupted at the sutures, the base and declivity of the epinotum subequal, rounding into each other so that in some specimens the two surfaces form an even, sloping convexity; pronotum from above twice as broad as long, semicircularly rounded in front, the mesonotum broadly, transversely subelliptical, the

epinotum nearly one and one-half times as long as broad, the declivity triangular, acutely pointed above and crenulately marginate on the sides. Petiole from above more than twice as broad as long, arcuate in front, straight behind; the scale circular from behind, in profile fully twice as high as long and as high as the epinotum, narrowed above, with distinctly concave anterior and straight superior and posterior faces; ventrally with an elongate but not very deep appendage, which is straight below, obliquely truncated anteriorly and bluntly bidentate posteriorly. Pospetiole and gaster somewhat broader than long, the former sharply, perpendicularly truncated anteriorly. Sting well-developed. Legs rather stout; median tibiæ short and clavate.

Head, thorax, legs and antennæ subopaque, mandibles finely striated and coarsely and sparsely punctate; head and thorax densely and evenly punctate, the cavities of the punctures shining and microscopically striolate; clypeus sparsely punctate; cheeks finely, sides of thorax more coarsely, longitudinally rugulose; declivity of epinotum, anterior and posterior surfaces of petiolar scale smooth and very finely and indistinctly punctulate; post-petiole and first gastric segment punctate like the thorax but more sparsely; remainder of gastric segments transversely shagreened; scapes and legs densely punctulate.

Hairs and pubescence whitish, the former short, erect, rather abundant on the head and thorax, longer on the gula, fore coxæ and abdomen; the pubescence dense and fine but not concealing the integument, appressed, longer on the body than on the appendages. Middle tibiæ with a number of short, stiff bristles on their extensor surfaces as in other species of *Trachymesopus*.

Black; mandibles, frontal carinæ, antennæ, legs and more or less of the medium and hind coxæ, sting and posterior borders of postpetiolar and gastric segments brownish red; median portions of scapes and femora somewhat infuscated.

*Female* (deälated). Length 5.5 mm.

Very similar to the worker, with the usual caste differences; eyes larger, as long as their distance from the clypeus; ocelli rather widely separated; mesonotum larger, one and one-half times as broad as long, semi-circular anteriorly, epinotum with distinct base and declivity, the former horizontal and only one-fifth as long as the latter, which is straight and rather steep. Petiolar scale more compressed anteroposteriorly than in the worker, its superior border indistinctly and bluntly pointed in the middle. Abdomen more voluminous, with longer and more abundant pilosity.

Described from six workers taken near Serpentine Lake, Rottneest Island (X.23.'31) from a small colony nesting under a stone and a female of the same species taken with a few workers at Margaret River, W.A. The species is dedicated to Mr. John Clark who sent me female and worker specimens from Armadale, W.A.

This is the first *Trachymesopus* to be described from West Australia. It is very different from *darwinii* Forel from Queensland, India and Africa, *rotundiceps* Emery of New Caledonia, and *crassinodis* Clark from Victoria, which was referred with some doubt to the subgenus *Trachymesopus*.

*Ponera congrua* sp. nov.

*Worker.* Length 3—3.5 mm.

Head about one-fifth longer than broad, slightly broader behind than in front, with feebly concave posterior border, rounded posterior corners and feebly and evenly convex sides. Eyes minute, consisting of only four or five facets, situated one-fourth the distance from the clypeal suture to the posterior corners. Mandibles large and broad, with straight external and masticatory borders, the latter long, with five larger, blunt, apical teeth and six or seven rather indistinct, irregular, basal denticles. Clypeus convex but not carinate in the middle, its sides depressed, its anterior border broadly rounded and but slightly advanced in the middle. Frontal carinae small, rounded, closely approximated and ciliate; frontal groove distinct, extending well behind the middle of the head. Antennae rather long; scapes reaching the posterior corners, rather slender at the base, enlarged distally; funiculi without distinct club; their first joint slightly more than twice as long as broad, second as long as broad, the succeeding joints, especially 3-6 distinctly shorter than broad, the terminal joint pointed, not longer than the two preceding subequal joints together. Thorax with distinct, arcuate and impressed promesonotal suture, the mesoepinotal suture indistinct or obsolete; posterior portion of pronotum, the mesonotum and base of epinotum in profile nearly straight and horizontal, the epinotal declivity elliptical from behind, narrowed above, as long as the base, straight and sloping, marginate on the sides. Pronotum, without the neck, from above nearly twice as broad as long, broadly rounded in front and broader than the mesonotum which is transversely elliptical and twice as broad as long; epinotum narrower, somewhat longer than broad, parallel-sided and laterally compressed dorsally. Petiole in profile twice as high as long, and as high as the epinotum, its ventral appendage small, elongate, trapezoidal; scale in profile distinctly narrowed dorsally, with straight anterior, superior and posterior surfaces; from above slightly broader than the epinotum, somewhat more than twice as broad as long, broadly arcuate anteriorly and straight posteriorly; from behind nearly circular. Postpetiole and first gastric segment broader than long, the former perpendicularly truncated in front. Legs rather slender.

Shining; dorsal surface of head more opaque. Mandibles smooth, with fine scattered punctures; clypeus and head evenly and densely, remainder of body and legs more finely and more sparsely punctate; antennal scapes subopaque, densely punctulate.

Pilosity and pubescence pale yellowish; the former rather short, erect and abundant, especially on the gaster and thoracic dorsum, the pubescence dense and somewhat oblique, best developed on the head and gaster where it partially conceals the shining integument, very fine on the appendages.

Yellowish red; legs, antennae and tip of gaster paler, yellow; the head above, the epinotum, postpetiole and gaster in some specimens darker and more brownish.

*Female* (deâlated). Length 4-4.2 mm.

Differing from the worker in colour and pilosity, the head, postpetiole, and first and second gastric segments being dark brown or blackish, their posterior borders, the thorax and petiole reddish brown or castaneous, the mandibles, antennae and legs testaceous. Body more opaque than in the worker owing to the longer pubescence; erect hairs, especially on the gaster, epinotum and petiolar scale longer and more abundant. Eyes much larger,

rather convex, nearly as long as their distance from the anterior corners of the head. Frontal groove reaching to the anterior ocellus. Both pro- and mesonotum broader than in the worker, epinotum with feebly convex base, half as long as the straight, sloping declivity. Petiolar scale more compressed above than in the worker, from behind more oval, with the sides less convex and more convergent ventrally. Gaster more voluminous.

Described from 16 workers and 8 females taken by Dr. Darlington and myself near White Hill, nesting in sandy soil covered by the lower branches of some small Malvaceous shrubs (X.23.'31). Mr. Glauert has also contributed a worker from the island (XII.'31). This, the first species of *Ponera* to be described from West Australia, seems to be sufficiently distinct from certain closely allied but as yet undescribed forms which I have taken on the mainland (Margaret River, Pemberton, Geraldton, etc.) and in other parts of Australia.

*Leptogenys (Lobopelta) neutralis* Forel.

A single colony of this very active, jet black ant was taken by myself under a log at the edge of a small pond near Mud Lake (X.23.'31). It is certainly rare on the island and in the vicinity of Perth, but very common at Pemberton and Margaret River. I have figured and discussed it at length in my book "Colony Founding among Ants," Harvard Univ. Press. 1933, pp. 85-90, Fig. 27. Since the female is apterous and ergatomorphic we must suppose this species existed on the Island before its separation from the mainland. The same is true of the two species of *Rhytidoponera* cited above, which possess no female caste distinguishable from the worker.

SUBFAMILY MYRMICINÆ.

*Pheidole hartmeyeri* Forel.

Mr. Clark states that several specimens of this species, originally described from Fremantle, were taken by Mr. Glauert on Rottnest Island. We did not succeed in finding it during our visit to the island, probably because it is a rather rare or local insect.

*Pheidole ampla* Forel.

Numerous soldiers and workers taken by myself in the vicinity of Government House (X. 21, '31), White Hill (X. 23, '31), Longreach Bay (X. 24, '31) and Nancy Cove (X. 25, '31) and by Mr. Glauert near Lake Herschel (III. 27, '32). All were nesting under stones in open grassy places. The colonies are small or of medium size. Mr. Glauert found that this ant is a true harvester and stores its seeds in the superficial chambers of the nest.

All the Rottnest specimens belong to the typical form of *ampla*, which was described from specimens taken by Walker on the Abrolhos (E. Wallaby Island). Mr. W. E. Schevill, while collecting on West Wallaby Island (X. 24, '31), secured for me a series of topotype soldiers and workers so that I am certain of my identification of the Rottnest material. Varieties of *ampla* (e.g. *perthensis* Crawley) occur on the adjacent mainland and others in Eastern Australia and even on Norfolk Island.

*Pheidole (Anisopheidole) froggatti* Forel.

A few specimens of this extraordinary ant were taken by Dr. Darlington from a small colony at Nancy Cove (X. 24, '31). It is rather rare in the vicinity of Perth but I found many fine colonies at Margaret River. Unlike



nearly all the other species of the huge, cosmopolitan genus *Pheidole*, it is decidedly hypogaeic in habits, has very poorly developed eyes and an extremely polymorphic soldier caste. The colonies must be very difficult to detect during the dry season. In the moist open forests about Margaret River, however, they are easily found under large stones deeply imbedded in the soil. When fully developed the colonies comprise hundreds of individuals and thousands of subspherical larvæ, and it is only in such flourishing colonies that one encounters perfect series of soldiers showing all the transitions between huge, large-headed forms and minute, small-headed workers proper. The appearance and behaviour of this ant is so different from other species of *Pheidole* that I am inclined to regard *Anisopheidole* as an independent, exclusively Australian genus.

*Crematogaster (Acrocoelia) laeviceps* F. Smith var. *chasei* Forel.

I collected many workers and females of this ant near Government House (X. 22, '31, under bark of large *Callitris robusta* trees and running in files on their trunks), near White Hill (X. 23, '31, under stones), near Longreach Bay (X. 24, '31, under stones) and Serpentine Lake (X. 25, '31, on the trunks of wattles and nesting under their bark). This variety has also been taken by Mr. Glauert and was previously recorded from the island by Clark. The typical *laeviceps* was originally described from Queensland, its var. *chasei* from Perth. I append descriptions of the hitherto unknown female and of the male from specimens taken in King's Park, Perth.

*Female* (deälated). Length 7.5-8 mm.

Much larger than the worker, which measures only 3.2-3.7 mm. Head subquadrate, very nearly as long as broad, with straight, subparallel sides, feebly concave posterior border and broadly rounded posterior corners. Eyes feebly convex, as long as their distance from the anterior corners. Antennal scapes reaching slightly beyond the posterior orbits. Thorax elongate-elliptical, somewhat more than twice as long as broad; mesonotum distinctly longer than broad, epinotum with very short, convex base, about one-fourth as long as the abrupt, slightly concave declivity, quite unarmed or with only minute angles representing the spines of the worker epinotum. Gaster long and voluminous, parallel-sided, acuminate at the tip. Sculpture, pilosity and coloration as in the worker, but the front and sides of the head more strongly striated or longitudinally regulose as far back as the level of the posterior orbits.

*Male*. Length 3-3.2 mm.

Head very small, though the eyes nearly one and one-half times as broad as long, with convex and broadly rounded postocular portion and very short cheeks. Mandibles small, narrow, with acute, obscurely tridentate masticatory borders. Clypeus short, convex in the middle, its anterior border straight and transverse. Antennal scapes more slender than the funiculus, cylindrical, one and one-half times as long as broad; funiculi 11-12-jointed; first joint not globular, broader than long, second and third more or less completely fused to form a single joint; fourth as long as broad, remaining joints longer. Thorax short and high; mesonotum very convex in front where it overhangs the neck; scutellum large and protuberant; epinotum small, with subequal base and declivity and indications of a pair of small, broad denticles or angles, the base convex, the declivity abrupt and somewhat concave. Petiole and postpetiole short, their nodes subequal, broad and compactly united, the node of the postpetiole emarginate behind. Legs slender, hind femora bowed. Wings rather broad.

Sculpture and pilosity as in the worker but head subopaque, punctate-rugulose and mesonotum with coarse, scattered, piligerous punctures. Black; mandibles, appendages, thoracic sutures, posterior borders of gastric segments and genitalia piceous; femora infuscated in the middle. Wings white, with white veins and pale brown pterostigma.

*Crematogaster (Orthocrema) dispar* Forel.

A few workers and a dealated female taken by myself near Lady Edeline Beach (X.23.'31). This hypogæic ant is very common on the mainland in the vicinity of Margaret River, Pemberton and Augusta, where it forms populous colonies under stones deeply imbedded in the soil. The brown females measure 7-8 mm. and are very large compared with the yellow workers, which are only 2-2.5 mm. in length. The female larvæ are nearly spherical.

**Monomorium (Notomyrmex) insolescens** sp. nov.

*Worker.* Length 2.5-3 mm.

Head subrectangular, slightly longer than broad and scarcely broader in front than behind, with feebly convex sides and concave posterior border. Eyes rather large, moderately convex, situated about their own length from the anterior corners of the head. Mandibles broad, their masticatory borders with five regular teeth, their external borders rather straight. Clypeus very short, strongly bicarinate, the carinæ projecting anteriorly as two stout teeth, separated by a deep concavity. Frontal carinæ flattened, horizontal, slightly lobulate behind the antennal insertions; frontal area small, indistinct, impressed; frontal furrow obsolete. Antennæ 12-jointed, scapes reaching to about twice their greatest diameter from the posterior corners of the head; joints 2-7 of the funiculi a little broader than long; eighth joint as long as broad; club 3-jointed, its two basal joints subequal and together as long as the terminal joint. Thorax stout, about twice as long as broad, and nearly as broad as the head through the humeri, which are rounded, both the pro-mesonotal and the mesoëpinotal sutures absent. Mesonotum and epinotum laterally compressed. In profile the thorax is convex in front, the dorsal outline straight, without mesoëpinotal impression or constriction, sloping slightly at the base of the epinotum which is feebly angular in the middle in profile, longer than the declivity, which bears at its middle on each side a blunt denticle continued down as a ridge to the well-developed, translucent metasternal angle. Petiole and postpetiole stout, the peduncle of the former very short, the node subcuboidal, a little higher than long, with perpendicular anterior and posterior surfaces and horizontal summit; from above broader than long, rounded in front and straight behind. Postpetiole with a prominent acute tooth at its antero-ventral end, the node somewhat lower than that of the petiole, also subcuboidal in profile, as long as high, rectangular from above, distinctly broader than long and broader than the petiolar node. Gaster small, lenticular, scarcely longer than broad, convex above, with concave anterior border. Legs rather stout.

Shining; mandibles smooth, sparsely punctate; head covered with scattered, piligerous punctures, cheeks and front longitudinally rugulose; thorax, petiole and postpetiole subopaque, densely and finely punctate, except the upper surface of the pronotum which is smooth and shining; meso- and metapleuræ vaguely, longitudinally rugulose. Gaster and legs smooth and shining; sparsely punctate.

Hairs yellow, sparse, erect, moderately long on the body, shorter and more numerous on the legs and scapes.

Red; pedicel and posterior portion of thorax darker; head and antennæ paler; gaster and legs, including coxæ, yellow.

*Male.* Length 2.5 mm.

Heading including the eyes about as long as broad; broadly convex behind; eyes and ocelli very large, cheeks very short; mandibles small, 5-toothed; clypeus convex in the middle, with evenly rounded anterior border; frontal carinæ short but distinct. Antennal scapes four times as long as broad, cylindrical, somewhat curved, first funicular joint as long as broad, not globose, the remaining joints longer but not narrowing distally. Thorax small and short, not broader than the head. Mesonotum convex, overarched the pronotum in front, without notauli (Mayrian furrows); scutellum rather small, not prominent. Epinotum sloping, without distinct base and declivity. Petiolar and postpetiolar nodes similar to those of the worker but smaller, lower and more rounded. Gaster small; genitalia prominent, the stipites thin, broad, rounded and incurved. Legs moderately slender. Wings with well-developed veins and pterostigma, with a discoidal and one cubital cell and the marginal cell open at the apex.

Mandibles shining, sparsely punctate; head opaque, densely and finely punctate; thoracic sculpture much as in the worker, but the sides of the epinotum and pedicel loosely, longitudinally rugulose.

Hairs shorter than in the worker and more abundant on the thorax and appendages.

Black; gaster, thoracic sutures and legs piceous; wings greyish hyaline, with pale brown veins and pterostigma.

Described from six workers and two males taken by W. D. Dodd at Derby, West Australia.

This species is very aberrant in the structure of the thorax and pedicel of the worker and small size of the male, so that its position in the subgenus *Notomyrmex* is somewhat doubtful. It is described here because the following species from Rottnest Island and Ludlow, West Australia, is very similar.

***Monomorium (Notomyrmex) longiceps* sp. nov.**

*Worker.* Length 2.3-2.8 mm.

Averaging slightly smaller than *inolescens* and differing in the following characters: Head trapezoidal, longer, narrower and more distinctly broader in front than behind, with straight sides; eyes smaller and nearer the middle of the sides; mandibles narrower, 4-toothed; antennal scapes shorter as are also joints 2-8 of the funiculus. Epinotum in profile rectangular, the declivity perpendicular, with the denticles larger and continued as crenulated ridges to the metasternal angles, which are small and poorly developed. Peduncle of petiole longer, more sharply marked off from the node. This and the postpetiole are of the same width but much more rounded and less cuboidal than in *inolescens*; petiolar node from above as long as broad, rather narrowly rounded in front, contracted behind; postpetiole subtrapezoidal, one and one-third times as broad as long, broader in front than behind, with rounded corners and short, straight, posteriorly converging sides.

Sculpture of the head similar to that of *inolescens*, but the longitudinal rugules are continued back beyond its middle and the sparse punctures on its posterior portion are coarser. Mandibles rather coarsely striate-punctate.

Thorax longitudinally rugulose throughout, except the declivity of the epinotum which is transversely striate; dorsal portion of pronotum more loosely rugose and therefore more shining than the remainder of the thorax. Petiolar node above arcuately rugulose; postpetiole with a few short, longitudinal sulci. Gaster smooth and shining, with very sparsely, piligerous punctures.

Pilosity somewhat more abundant than in *insolescens*.

Colour of the head and thorax the same, but the gaster is also red and not yellow and the antennæ and legs are brownish red, darker than the head and thorax, the tarsi paler.

Described from a single specimen which I found running on the ground near Lady Edeline Beach (X.23.'31), and two workers from Ludlow, Western Australia, received from Mr. John Clark.

*Meranoplus ferrugineus* Crawley.

Two dealated females taken by Dr. Darlington at Longreach Bay (X.24.'31) are doubtfully referable to this species. The female of *ferrugineus* has not been described and there are in my collection several closely allied, small, ferruginous, West Australian Meranopli, which have not been described.

*Xiphomyrmex viehmeyeri* Forel.

var. *venustus* var. nov.

*Female* (dealated). Length nearly 4 mm.

Differing from the female of the typical *viehmeyeri* in coloration, the head, thorax, pedicel and antennæ being red, the clypeus, front and gaster castaneous, the mandibles and legs reddish yellow, the mandibular teeth, ocellar triangle, wing-insertions and scutellum black.

A single specimen which I found under a stone near Government House (X.22.'31). I have taken the female of the typical *viehmeyeri* with workers at Meekatharra, Western Australia. In both phases, the head, thorax and pedicel are rich, reddish brown, the gaster yellow.

SUBFAMILY DOLICHODERINE.

*Dolichoderus (Hypoclinea) clusor* Forel.

Numerous workers taken by Dr. Darlington, Dr. Dixon and myself near Government House (X.22.'31) and at Longreach Bay (X.24.'31). In the former locality they were nesting in a mass of dead, compressed grass under a stone. The type-locality of the species is Fremantle.

*Dolichoderus (Hypoclinea) glauerti* sp. nov.

*Worker*. Length 3-3.5 mm.

Head oval, one-fifth longer than broad, rounded behind and strongly narrowed in front, with feebly convex sides; eyes large, convex, at the middle of the sides. Mandibles stout and convex, with straight external borders; masticatory borders with two larger apical teeth and an even series of about 10 basal denticles. Clypeus moderately convex but not carinate in the middle, its anterior border with a deep, broad median emargination and impression. Frontal area distinct, triangular. Frontal carinæ subparallel anteriorly, diverging posteriorly and terminating at the level of the middle of the eyes. Antennæ slender; scapes extending somewhat more than one-fourth their length beyond the posterior border of the head; first and third

funicular joints longer than the second, joints 4-6 about twice as long as broad, remaining joints shorter, except the last which equals the two preceding joints together. Thorax slender, from above narrower than the head, broadest through the pronotum, which is as long as wide, nonepaulate, slightly depressed, in the middle above feebly, on the sides more deeply concave; mesonotum narrower than the pronotum, elliptical, slightly broader than long, moderately convex, sloping; epinotum only half as broad as the pronotum, parallel-sided, half again as long as wide. In profile the dorsal surface of the pro- and mesonotum form a single moderate convexity; mesoepinotal impression short and rather acute, with the metanotal spiracles at its sides; base of epinotum in profile rising rather sharply as a pronounced convexity and passing abruptly into but not over-arching the longer declivity, the superior two-thirds of which are straight and sloping, the inferior third horizontal and concave. The two surfaces are separated by a distinct, transverse margination produced as a small tooth on each side. Petiolar scale in profile high and thin, inclined forward, its anterior and posterior surfaces parallel, its superior border bevelled anteriorly and rather sharp; seen from behind the scale is nearly one and one-half times as high as broad, broad above, with rounded superior border and straight, ventrally converging sides, which merge at the base into a distinct posterior peduncle. Gaster rather voluminous, first segment with a deep impression for the accommodation of the petiolar scale.

Shining, the gaster more so than the remainder of the body. Mandibles coarsely and sparsely punctate. Sides of clypeus, cheeks and sides of front sharply and rather finely longitudinally rugulose, remainder of head finely and regularly reticulate; mesonotum and epinotum transversely rugulose, the former and the base of the latter also irregularly but not sharply foveolate so that the surface is very uneven; sides of thorax longitudinally rugulose; gaster finely, transversely shagreened, with very sparse, fine, piligerous punctures; antennal scapes and legs subopaque, very finely granular and sparsely punctate.

Pilosity greyish, erect on the body, moderately abundant and of very uneven length; short on the appendages, more abundant on the scapes than on the legs. Pubescence absent.

Mandibles, head, thorax, fore coxæ and petiole brownish red or reddish brown; petiole darker brown; gaster black, with dull whitish posterior borders to the segments; antennal scapes yellow; funiculi red; legs and middle and hind coxæ yellowish white; knees and tarsi reddish.

*Male.* Length 3-3.5 mm.

Head one third broader than long, with evenly rounded postocular region and prominent, widely separated ocelli; eyes large and convex, with emarginate internal orbits; cheeks straight, about one third as long as the eyes, anteriorly converging. Mandibles small, acute, with concave external and straight, minutely denticulate masticatory borders. Clypeus similar to that of the worker but the median emargination smaller; frontal carinæ distinct. Antennal scapes stout, a little more than twice as long as broad, first funicular joint slightly longer than broad, second somewhat more than three times as long as broad, remaining joints, except the last, gradually decreasing in length. Thorax short and stout, through the wing-insertions as broad as the head; pronotum and anterior end of mesonotum in profile straight and perpendicular, forming nearly a right angle with the somewhat flattened posterior portion of the mesonotum; scutellum prominent; epinotum higher than

long, the base convex anteriorly, somewhat sloping and passing into the longer, perpendicular declivity through a rounded angle. Mesonotum from above subhexagonal, as broad as long; scutellum nearly as long as broad. Petiole with a low, thick, subcuboidal node, which is nearly twice as broad as long and somewhat narrower in front than behind. Gaster rather slender; stipites of genitalia triangular, slightly longer than broad, acuminate; volsellæ small, cultrate. Legs slender.

Subopaque; gaster shining; head, thorax, petiole and legs finely and sharply reticulate, the head more coarsely; gaster finely shagreened as in the worker. Scutellum with three small pit-like impressions on each side.

Erect hairs shorter and less numerous than in the worker, absent on the gaster, except at its tip. Pubescence present on appendages and gaster, yellowish, rather long and appressed, but dilute.

Black; incisures of gaster and terminal tarsal joints pale piceous; wings white, with brownish veins and dark brown pterostigma.

Described from 16 workers and 6 males taken by Mr. Glauert at City of York Bay, Rottnest Island, Dec. 13, 1932.

This interesting ant differs in the structure of the epinotum of the worker from all the Australian species of *Dolichoderus*, except *D. australis* Ernest André of Victoria. This species, however, is decidedly larger and has a very different sculpture and coloration.

*Iridomyrmex darwinianus* Forel.

var. *fidus* Forel.

Many workers taken under stones near Government House (X. 21, '31) and Longreach Bay (X. 24, '31). This form, originally described from Western Australia (Guildford, Bridgetown, etc.), is a slight variant of the typical *darwinianus* of New South Wales, Victoria and South Australia, which Forel regarded as the type of the subgenus *Doleromyrma*, of the genus *Tapinoma*.

*Iridomyrmex rufoniger* Lowne.

Recorded by Mr. John Clark from Rottnest Island. He remarks that "the examples taken by Mr. Glauert are not quite typical but are too close to separate at present." I did not succeed in finding this species on the island but instead the following two related forms:—

*Iridomyrmex chasei* Forel.

Numerous workers from populous colonies under stones near Government House (X. 22, '31) and Longreach Bay (X. 24, '31) and a series taken by Mr. Glauert at City of York Bay (XII. 13, '32). These specimens were compared with authentic workers taken by the Hamburg Expedition to Western Australia in 1905 at Day Dawn and received from Forel. I have found the typical *chasei* also near Perth, which is the type locality.

*Iridomyrmex chasei* subsp. *yalgooensis* Forel.

This form, described as a variety from Yalgoo, Geraldton, etc., deserves to rank as a subspecies owing to its uniformly smaller size, different coloration and differently shaped epinotum. It is much more abundant on the island than the typical *chasei*. I have taken workers and deâlated females from populus colonies near Garden Lake (X. 21, '31), Government House (X. 21, '31), and Lady Edeline Beach (X. 23, '31).

*Iridomyrmex bicknelli* Emery.var. *splendīdus* Forel.

Numerous workers from crater nests in pure sand near Government House (X. 22, '31) and on Lady Edeline Beach (X. 23, '31). The movements of workers are exceedingly quick, and the colonies are much less populous than those of *chasei* and *yalgoensis*. It is also common along the beaches of the adjacent mainland.

*Iridomyrmex matirolloi* Emery.var. *splendens* Forel.

Several workers from a single colony under a stone at Nancy Cove (X. 24, '31).

*Iridomyrmex exsanguis* Forel.

Five workers from Nancy Cove (X. 24, '31).

*Iridomyrmex punctatissimus* Emery.

A dozen workers taken by Mr. Glauert from a single colony at City of York Bay, Dec. 13, '32, agree perfectly with Emery's description of the types from Mt. Victoria, New South Wales, except in their distinctly smaller size. They measure only 1.3-1.5 mm., whereas Emery's measured 2-2.5 mm. Since I have taken specimens of the latter dimensions in King's Park, Perth, and possess others collected by H. H. Elston on Mt. Lofty, near Adelaide, South Australia, I hesitate to regard the Rottnest specimens as representing a distinct variety.

***Tapinoma (Micromyrma) rotnnestense* sp. nov.**

*Worker.* Length:

Head suboblong; about one and one-fourth times as long as broad, as broad in front as behind, with straight posterior and very feebly convex sides. Eyes larger, rather flat, longer than their distance from the anterior corners of the clypeus. Mandibles with moderately convex external and oblique masticatory borders, the latter with two larger apical and six or seven minute basal denticles. Palpi simple. Clypeus convex in middle, depressed on the sides, its anterior border distinctly sinuate in the middle and on each side. Frontal carinae short, distinctly diverging posteriorly; frontal area and groove obsolete. Antennal scapes curved at base, reaching slightly beyond the posterior border of the head; first funicular joint as long as 2 and 3 together, joints 2-10 subequal, nearly one and one-half times as long as broad. Thorax rather slender, laterally compressed behind the pronotum, which is twice as broad as long without the neck, and rounder anteriorly and laterally; mesonotum subtriangular, narrowed behind and almost submarginate on the sides, as long as broad. In profile the dorsal outline of the thorax is nearly straight and horizontal, very slightly impressed at the mesoepinotal suture, so that the base of the epinotum continues the general outline of the thoracic dorsum but forms a distinct obtuse angle with the sloping, longer declivity; from behind the declivity is oval, submarginate on the sides and above.

Petiole small, elliptical, about twice as long as broad, in front with a vestigial, narrow, much inclined scale. Gaster of the usual form, its first segment projecting and covering the petiole.

Slightly shining, head more opaque; surface very finely punctulate; mandibles coarsely and sparsely punctate.

Hairs and pubescence white; the former present only on the mandibles, clypeus and tip of gaster; pubescence very short and fine; not sufficiently dense to conceal the integument; longest in the head, especially on the cheeks and sides.

Reddish brown; the head distinctly darker; mandibles and anterior border of clypeus reddish, the teeth of the former red; antennæ, legs and posterior borders of gastric segments pale yellowish brown; funiculi beyond the first joint and median portions of hind femora and tibiæ dark brown.

Described from four specimens which I found under a stone at Lady Edeline Beach (X. 23, '31).

This species is quite distinct from the East Australian *T. minutum* Mayr and its varieties *integrum* Forel and *cephalicum* Santschi in its longer, much more rectangular head, much larger eyes and much longer funicular joints.

#### SUBFAMILY FORMICINÆ.

#### *Melophorus insularis* sp. nov.

Worker major. Length 5.5 mm.

Head moderately large, subrectangular, about one-fourth broader than long without the mandibles, with straight posterior border, broadly rounded posterior corners and straight, subparallel sides. Eyes rather large and convex, their longest diameter somewhat greater than twice the greatest diameter of the antennal scapes, situated behind the middle of the sides. Mandibles convex, not geniculate at the base, with oblique 5-toothed masticatory borders, the apical tooth long, a short but distinct diastema between the third and fourth and the fourth and fifth tooth, the last turned slightly backward. Clypeus convex and subearinate in the middle, its anterior border produced and very feebly and narrowly sinuate in the middle. Frontal area very distinct, triangular; frontal groove short, reaching only halfway to the anterior ocellus. Antennal scapes extending fully one-fourth their length beyond the posterior border of the head; second and third funicular joints subequal, slightly more than twice as long as broad, distinctly shorter than the first joint. Thorax rather long; pro- and mesonotum, especially the latter, very convex and rounded above, the promesonotal suture strong and impressed, the pronotum without the neck more than twice as broad as long; the mesonotum subcircular; mesoëpinotal impression in profile short, acute and rather deep; epinotum small, much lower than the mesonotum, as broad as long, feebly convex, sloping, without distinct base and declivity. Petiole about twice as high as long, the scale distinctly inclined forward, moderately thick, with flat anterior and posterior surfaces, convexly bevelled above, the superior border entire, broadly arcuate, not sharp, the sides straight and converging ventrally. Gaster large, first segment subtruncate.

Moderately shining; mandibles coarsely, longitudinally rugose, with coarse, elongate punctures between the rugæ. Head, thorax and legs finely and regularly reticulate; the meso- and metapleuræ more coarsely; clypeus, cheeks and front finely and sharply longitudinally striate. Petiole and gaster smoother and more shining, the latter very finely, transversely shagreened and sparsely punctate; antennal scapes subopaque, coarsely reticulate, or granular.



Hairs yellowish, short, very sparse, erect on the head, pronotum and gaster, long on the clypeus and gula but not forming a psammophore; shorter, more numerous and appressed on the appendages, the scapes with a few short erect hairs and the gaster with sparse appressed hairs representing a coarse but very dilute pubescence.

Mandibles, head, thorax, petiole and appendages red; anterior border of pronotum, scapes, coxæ, femora, epinotum and petiole darker, brown; gaster black, with pronounced metallic green reflections. In some specimens the infuscation is deeper and more extensive on the thorax, invading the mesonotum and occiput.

*Worker minor.* Length 3.5-4.5 mm.

Head without mandibles scarcely broader than long, with straight, subparallel sides, sharp anterior corners and the posterior border and corners together broadly arcuate. Clypeus with the anterior border more projecting in the middle and even less distinctly sinuate. Antennæ more slender than in the major, extending about half their length beyond the posterior border of the head. Eyes larger and slightly more convex. Thorax like that of the major, but the promesonotum less convex, the pronotum proportionally longer, the epinotum above straight and sloping, convex only where it rises from the mesoëpinotal impression and at its posterior end. Petiole with lower, thicker scale than in the worker major.

Sculpture and pilosity very similar, but there are no erect hairs on the scapes and the appressed hair, or dilute pubescence on the tip is shorter and sparser.

Black; gaster with metallic green reflections; mandibles, cheek, gula, antennæ and legs castaneous; posterior borders of gastric segments yellowish.

Several specimens taken by Dr. Darlington and myself from a single nest under a stone near White Hill (X.23.'31) and three taken by Mr. Glauert at City of York Bay (XII.13.'32).

This species closely resembles *M. iridescens* Emery but the worker major is quite different in its more slender stature, smaller and differently shaped head, less emarginate clypeus, shorter frontal groove, coarser sculpture, striolate cheeks, shorter scapes and blunter petiolar scale. It differs from *M. curtus* Forel in its larger size, smaller head, longer scapes, less distinct clypeal emargination, more posteriorly placed eyes and in lacking pubescence on the thorax. It differs from *M. constans* Santschi in its larger eyes, less emarginate clypeus, longer scapes, more pronounced mesoëpinotal impression, thicker and less acute petiolar scale and metallic gaster.

*Melophorus turneri* Forel subsp. **perthensis** subsp. nov.

*Worker major.* Length 4.5-5 mm.

Very similar to the subspecies *candidus* Santschi from Victoria but somewhat larger, with mandibles more strongly bent at the base, antennal scapes extending somewhat more than twice their greatest diameter beyond the posterior border of the head and the clypeal border more produced in the middle and not emarginate. Petiolar scale prolonged and narrowed upward, with distinctly emarginate superior border. Epinotal base and declivity forming a distinct obtuse angle in profile, the former convex and little more than half as long as the straight, sloping declivity. Pilosity much less developed than in *candidus*, absent on thorax and petiole and very short

and sparse on the legs, the tibiae with a row of four or five bristles on their flexor surfaces. Head, thorax, petiole, coxae and antennae brownish red or reddish brown, legs brighter yellow or less reddish than in *candidus*. Gaster with metallic blue-green reflections which are quite as vivid as in the typical *turneri*, posterior edges of segments yellowish.

*Worker minor*. Length 3-3.5 mm.

Very similar to the worker major but the smaller head is proportionally narrower, being about one-fourth broader than long. Antennal scapes extending nearly half their length beyond its posterior border. Pronotum less, base of epinotum more convex, the latter longer in proportion to the declivity. Petiolar scale decidedly thicker, lower and blunter, scarcely produced at the summit, which is impressed but not emarginate.

Sculpture and pilosity as in the worker major; head, thorax and petiole darker and more brown, as are also the appendages.

Several specimens taken by Mr. Glauert on Rottneest Island in December, 1931. This subspecies is common also in the sandy portions of King's Park, Perth, which may be regarded as the type-locality. Like most other species of *Melophorus* it makes flat, excentric crater nests. The worker major of the subspecies *aesopus* Forel from Central Australia differs from that of *perthensis* in not having the scapes reaching beyond the posterior border of the head, the eyes are nearer the middle of the sides and the gaster is less metallic. There are in my collection several undescribed forms of *turneri*, which seems to constitute a "Formenkreis" of extensive range on the Australian continent.

✓ *Notoncus gilberti* Forel subsp. *gracilior* Forel. = *N. gilberti* Forel.

*Worker* (undescribed). Length 3-4 mm.

Head slightly longer than broad, subrectangular, very nearly as broad in front as behind, with straight posterior border and slightly convex sides. Eyes feebly convex, their anterior orbits at the median transverse diameter of the head; ocelli minute, rather widely separated. Mandibles stout, with convex external borders, their masticatory borders with six teeth, all stout, except the third from the tip, which is minute. Clypeus convex and carinate in the middle, its anterior border broadly rounded and feebly and rather broadly sinuate in the middle. Antennal scapes extending fully twice their greatest diameter beyond the posterior corners of the head; first funicular joint as long as 2 and 3 together, joints 2-10 nearly one and one-half times as long as broad, terminal joint slightly shorter than the two preceding together. Pronotum without the neck more than twice as broad as long, produced on each side as a broad, blunt, subtriangular protuberance; mesometanotum in profile straight and horizontal, interrupted by the impressed mesometanotal suture; mesonotum from above broadly elliptical, truncated posteriorly, longer than broad; metanotum semicircular; metaepinotal incision deep, overhung by the posterior, swollen end of the metanotum; epinotum small and low, concave and sloping in the middle, on each side with a strong, thick, rounded, longitudinal thickening or welt so that in profile the base seems to be convex and horizontal, shorter than the abrupt, concave declivity. Petiole less than twice as high as long, the scale in profile cuneate, the anterior and posterior surfaces convex, the apex more compressed and narrowed, the superior border acute and broadly excised. Gaster elliptical. Legs moderately long.

Shining; mandibles finely and superficially striate, very sparsely punctate; clypeus, cheeks and front nearly as far back as the anterior ocellus sharply, longitudinally striate; frontal area and remainder of head smooth and shining, the latter very sparsely punctulate; thorax very smooth and shining, except the neck and extreme anterior border of the mesonotum, which are transversely, and the pleuræ which are in places indistinctly, longitudinally striate. Petiole and gaster smooth and shining, sparsely punctulate; legs more shagreened, with coarser, piligerous punctures, antennal scapes very finely granular, subopaque.

Hairs yellowish, bristly, very sparse, erect and of uneven length on the body and scapes; more numerous and oblique on the legs; pubescence fine and appressed, present only on the scapes, middle and hind coxæ; gaster with some appressed and very short hairs.

Brownish red, gaster blackish or dark brown; femora, tibiæ and in some specimens also the thorax and posterior portion of the head infuscated; thoracic sutures, trochanters, knees, tarsi and posterior borders of gastric segments yellowish; mandibles, except the teeth, which are black, clypeus and cheeks yellow.

Several workers and a female taken by myself near Government House nesting under stones (X. 22, '31), workers and females collected in the vicinity of Perth (King's Park, Monger's Lake and Cottesloe Beach) and three workers from Geraldton.

Forel based this form on a single winged female from Fremantle and regarded it as a mere variety of *gilberti*, originally described from MacKay, Queensland, though he admitted that it might prove to be a subspecies when the worker was found. It seems to me to deserve this rank for geographical reasons and because the worker differs from that of the typical *gilberti*, of which I possess a co-type specimen, in its smaller size (*gilberti* measures 4.8 mm.), less deeply emarginate clypeus, less developed pronotal protuberances, less swollen metanotum, smaller and less sharply angular epinotum, lower petiolar scale, less striated front, smooth mesonotum, yellow instead of red mandibles, clypeus and cheeks, less abundant pilosity, etc. I have not seen the female of the typical *gilberti*, but according to Forel it measures 6.5 mm., its head is as broad as long, the scapes do not extend beyond the posterior border and joints 3-10 of the funiculus are as broad as long, whereas the female *gracilior* measures only 5.5 mm., its head is longer than broad, the antennal scapes extend nearly twice their greatest thickness beyond the posterior border, joints 3-10 of the funiculi are longer than broad and the petiolar scale is less thickened ventrally.

There are in my collection, workers of two forms of *gilberti* from eastern Australia, which closely resemble *gracilior* and may be here briefly described:

11 Subsp. **annectens** subsp. nov. = *N. gilberti* Forel.

Of the same size and colour as the typical *gilberti* but the sculpture more like that of *gracilior*, the meso-, meta- and epinotum microscopically striolate, much more finely than in *gilberti* and slightly less shining than in *gracilior*. Pronotal protuberances more angular and more compressed even than in *gilberti*; epinotum in profile as long as high, with subequal base and declivity meeting at nearly a right angle. Pilosity as in *gracilior*, the emargination of the clypeus and superior border of the petiolar scale as in the typical *gilberti*.

Numerous workers from Enoggera (Wheeler, IX. 14, '14) and Brisbane (H. Hacker), Queensland.

✓ Var. *manni* var. nov. = *M. quadrimaculata* Forc.

Of the same size as *gracilior*. Clypeal and petiolar emarginations deep. Pronotal protuberances higher, more compressed and with more acute tips. Antennal scapes slightly longer. Mandibles, cheeks and antennæ yellow as in *gracilior*. Striation of meso- and metanotum even feebler than in *annectens*.

Six workers collected by Dr. W. M. Mann at Como, near Sydney, New South Wales, and three by myself (XI. 21, '14) at Hornsby in the same part of the Commonwealth.

*Plagiolepis lucidula* sp. nov.,

*Worker*. Length 1—1.5 mm.

Head subtrapezoidal, longer than broad, narrower in front than behind, with straight posterior border, broadly rounded posterior corners and nearly straight sides. Eyes rather large, feebly convex, placed distinctly nearer the posterior than the anterior corners. Mandibles narrow, with oblique 6-toothed masticatory borders, the first, fourth and sixth tooth larger than the others. Clypeus rather short, convex, carinate at the base, its anterior border broadly rounded and entire. Frontal area very distinct, triangular, longer than broad; frontal groove tenuous, distinct as far back as the anterior ocellus. Antennæ slender; scapes extending one-fifth their length beyond the posterior border of the head; funiculi enlarged distally, first joint twice as long as broad, thicker than joints 2 and 3; joint 2 as broad as long, 3 longer, 4 to 6 about one and one-half times as long as broad, 7 to 9 shorter, terminal joint swollen, nearly as long as the three preceding together. Thorax short but not stout, broad through the pronotum which is twice as broad as long without the neck; mesonotum narrower, nearly one and one-third times as broad as long, parallel-sided; mesometanotal suture obsolete or indistinct; metanotum very short, its spiracles prominent, separated by a distance equal to only three times their diameter; metaepinotal suture distinct, epinotum broader than the mesonotum, broader behind than in front, with straight sides. In profile the mesonotum is convex, higher than the pronotum, the metanotal impression shallow, the epinotum long, with the base convex and only about one-fourth as long as the flat, sloping declivity into which it passes without a distinct angle; seen from behind the declivity is broad below, narrowed and rounded above and submarginate at the sides. Petiole low, its scale small, strongly inclined forward and rather thick, its superior border from behind semi-circular above. Gaster broadly elliptical, the first segment large, overlying the petiole.

Shining; mandibles finely shagreened and coarsely punctate; remainder of body very finely and superficially punctulate, the legs and scapes more densely than the body.

Erect hairs sparse, present only on the mandibles and clypeus where they are yellowish, and on the gaster where they are brown and distinctly coarser; pubescence pale, very fine and appressed on the body, not sufficiently dense to conceal the shining integument, denser on the appendages.

Castaneous brown; head somewhat darker than the thorax and gaster; mandibles yellow, with reddish teeth; scapes pale brown; palpi, labium and maxillæ white; tarsi and articulations of legs sordid yellow.

Described from six workers, which I found under stones at Lady Edeline Beach, Rottnest Island (X. 23, '31). The only other *Plagiolepis* described from Australia is *quadrimaculata* Forel from McKay, Queensland, a poorly

differentiated variety of *exigua* Forel, which is really an Indian and Indonesian species. I am therefore adding descriptions of three other forms which suggest that the Old World genus *Plagiolepis* may be well-represented in the Australian fauna. These ants are easily overlooked owing to the number of minute and similarly coloured species of *Iridomyrmex*, *Tapinoma*, *Bothriomyrmex* or *Nylanderia* encountered almost everywhere in the Australian bush.

*Plagiolepis squamulosa* sp. nov.

*Worker.* Length 1.5—2.5 mm.

Head subrectangular, slightly longer than broad, slightly narrower in front than behind, with sinuous posterior border and nearly straight sides. Eyes rather large, feebly convex, placed distinctly nearer the posterior than the anterior corners. Mandibles rather stout, convex, 6-toothed, the apical tooth long, the others small and subequal. Clypeus large, convex but not earinate in the middle, the anterior border advanced, rounded and entire. Frontal area distinct, rather large, triangular, as broad as long; frontal groove distinct, impressed, extending back to the anterior ocellus. Antennae slender; scapes reaching fully one-fourth their length beyond the posterior border of the head; funiculi only feebly enlarged at the tip; first joint two and one half times as long as broad, nearly as long as joints 2 to 4 together, joint 2 small, as long as broad, 3 distinctly shorter, 4 to 9 about one and one-half times as long as broad, the terminal joint longer than the two preceding together. Thorax somewhat more than twice as long as broad, broadest through the pronotum, which is less than twice as broad as long, its sides convex and bluntly angular; mesonotum subrectangular, a little broader than long; mesometanotal suture obsolete; metanotum very short, its spiracles small, not strongly projecting, fully four times as far apart as their diameter; metaepinotal suture distinct; epinotum broader than long, subrectangular, scarcely narrower in front than behind. In profile the mesonotum and posterior portion of the pronotum are nearly straight and horizontal above, the anterior portion of the pronotum steep, the impression at the metanotum feeble, the epinotum with very short, nearly horizontal base, passing gradually into the declivity, which is five times as long as the base, and very sloping, straight anteriorly and distinctly concave posteriorly. Petiole small; its scale low, strongly inclined forward, rather thin, with sharp, broadly rounded superior border. Gaster oval, voluminous, with pointed tip; first segment large, overlying the petiole. Legs slender.

Subopaque and lustrous; mandibles very finely striated and coarsely punctate; head, thorax and gaster sharply, regularly and microscopically reticulate, the surface appearing finely squamulate, especially on the gaster where the reticulations are transverse; appendages with similar but even finer sculpture.

Pilosity and pubescence pale, whitish; the former very sparse, erect, present only on the mandibles, clypeus and gaster; the pubescence very fine, short and appressed, rather dense on the head, thoracic dorsum and appendages, sparser on the gaster.

Dark brown; head darker than the thorax which is a shade darker than the gaster; mandibles, sides of clypeus, scapes, first funicular joint, trochanters, knees and tarsi brownish yellow.

Described from nine specimens which I found under a stone at the foot of the huge sand dunes south of Geraldton, Western Australia (X 8, '31). Two of the specimens are honey-storing repletes, with the gaster greatly distended.

*Plagiolepis clarki* sp. nov.

*Worker.* Length 1—1.5 mm.

Head subrectangular, slightly longer than broad, very nearly as broad in front as behind, with nearly straight posterior border and feebly convex sides. Eyes small, flat, near the middle of the sides, less than half as long as their distance from the anterior corners of the head, with only about seven facets in their longest diameter; ocelli very minute. Mandibles rather narrower and convex, 6-toothed, the first, fourth and sixth tooth larger, the fifth very minute. Clypeus short, convex but not carinate in the middle, its anterior border not projecting, broadly rounded and entire. Frontal area distinct, triangular, longer than broad; frontal groove shallow and rather indistinct. Antennæ short; scapes reaching only to the posterior border of the head; funiculi enlarged at the tip; first joint large, as long as joints 2 to 4 together; 2 and 3 small and nearly twice as broad as long; 4 to 9 distinctly broader than long, the terminal joint as long as the four preceding together. Thorax short; pronotum nearly twice as broad as long, with sloping humeri; mesonotum convex, transversely elliptical, somewhat less than twice as broad as long; mesometanotal suture obsolete; metanotum very short and indistinct, its spiracles prominent, separated by a distance equal to about five times their diameter, metaepinotal suture very distinct; epinotum as broad as long, parallel-sided. In profile the anterior end of the pronotum rises steeply, its posterior end, the mesonotum and base of the epinotum forming a flat curve, with only a feeble impression at the metanotum, which is hidden in profile by the prominent spiracle; epinotum long and sloping, the base very short, not distinctly marked off from the declivity. Petiole with higher and less anteriorly inclined scale than in the two preceding species, cuneate in profile, flattened behind, anteriorly concave below and convex above, with sharp superior border, which from behind is broadly rounded, with straight, ventrally converging sides. Gaster large, oval, pointed posteriorly, its first segment bulging forward, overlying the petiole and with a deep impression for its accommodation. Legs rather stout.

Subopaque, somewhat lustrous or glossy; very finely and microscopically punctulate; clypeus smooth and shining; mandibles with elongate punctures.

Hairs and pubescence white, the former very sparse, erect or suberect, confined to the clypeus, the tip of the gaster and the posterior borders of its segments. Pubescence short, fine, appressed, moderately dense over the whole surface of the body and appendages and concealing the shining integument.

Brownish yellow or yellowish brown; mandibles, palpi, clypeus, antennæ and legs, including the coxæ, pale yellow.

*Female* (deälated). Length 3 mm.

Head as broad as long and more rectangular than in the worker; eyes large, moderately convex, longer than their distance from the anterior corners. Antennal scapes extending a little beyond the posterior border of the head. Thorax large, broader than the head, about one and two-thirds longer than broad; mesonotum flattened above, one and one-third times broader than long, broadly arcuate in front, straight behind; epinotum with moderately convex base, which is about half as long as the declivity. Petiolar scale erect, cuneate in profile above, where it is compressed anteroposteriorly and curved backward, so that it is convex in front and concave behind, with acute superior border. From behind the latter is straight or slightly sinuate in the middle, with rounded sides.

Sculpture much as in the worker, but the mesonotum is smoother and more shining.

Pilosity and pubescence yellowish, the former as in the worker, the latter much longer and coarser, especially on the gaster.

Head, thorax and gaster brown, the gaster slightly paler; otherwise like the worker.

*Male.* Length 1.5-1.7 mm.

Head broader than long through the eyes, which are very convex and nearly half as long as the sides; cheeks about one third as long as the eyes, converging anteriorly; postocular portion of head rounded-subrectangular, more than twice as broad as long, with prominent, widely separated ocelli. Mandibles small, slender, falcate and edentate. Clypeus short, three times as broad as long, evenly convex, with nearly straight anterior border. Frontal area broader than long; frontal groove very distinct. Antennæ slender; scapes reaching a little beyond the posterior ocelli; funiculi gradually thickened distally; joints 2 and 3 slightly broader than long, 4 to 10 slightly longer than broad, 11 as long as the three preceding together. Thorax large, broader than the head; mesonotum subcircular, somewhat broader than long, anteriorly very convex and overarching the pronotum; flattened and horizontal posteriorly; epinotum convex, rather abruptly sloping, with indistinct base and declivity. Petiolar scale erect, small and very thin, with sharp superior border, from behind subrectangular, with straight superior border and rounded superior corners. Gaster elongate-elliptical. Stipites of genitalia narrow, triangular and pointed; volsellæ slender, geniculate and deflected; sagittæ large, flat, blade-shaped, their truncated tips terminating above in an acute point. Legs slender. Wings large and broad, with large pterostigma.

Sculpture and pilosity much as in the worker but the dorsal surface of the thorax and gaster more shining owing to the much sparser pubescence on these parts.

Colour like that of the worker, except that the head and thorax are brown and darker than the gaster; antennæ and legs also darker than in the worker. Wings white, with white veins and pterostigma.

Described from seven workers and fifteen males taken by Mr. John Clark at Mundaring Weir, Western Australia (type-locality), four workers from Margaret River (XI. 4, '31) and two colony-founding females from Pemberton (XI. 13, '31), taken by myself. There is little doubt that the females belong to this species, which, judging from the pale colouration and small eyes of the worker, have much the same hypogaedic habits as the species of *Brachymyrmex* of North and South America.

*Plagiolepis clarki* subsp. **impasta** subsp. nov.

*Worker.* Length 1-1.4 mm.

Very similar to the worker of the typical *clarki* but differing in having slightly shorter antennal scapes, which do not quite reach the posterior border of the head, and in having the third to ninth funicular joints distinctly broader in proportion to their length. Especially the thorax and gaster more shining, owing to the somewhat sparser punctulation and pubescence, the latter longer and less appressed, conspicuously longer on the gaster. Yellow colouration of body less brownish than in the typical *clarki*.

Three specimens taken by Mr. J. C. Wiburt at the Jenolan Caves, in the Blue Mountains of New South Wales.

*Stigmacros aemulus* Forel.

*Female* (deälated; undescribed). Length 2-2.6 mm.

Resembling the worker. Head more rectangular, not longer than broad and less narrowed anteriorly. Eyes larger but not more convex than in the worker. Thorax similarly flattened above, about twice as long as broad, as broad through the wing insertions as the head; pronotum more than twice as broad as long, its posterior portion semicircular, embracing the anterior end of the mesonotum which is broader than long, narrowed behind, with excised sides; scutellum small and rather flat; base of epinotum two and one-half times as broad as long, with broadly excised, marginate posterior border; declivity one and two-thirds times as long, flat, more sloping than in the worker, with the lateral, spiracle-bearing teeth stouter. Petiolar scale large, broad, with distinctly sinuate superior border, in profile as high as the thorax, fully three times as high as thick and scarcely thinner above than below, with convex anterior and slightly concave posterior surface. Gaster large, broadly elliptical, its first segment truncated anteriorly.

Sculpture, pilosity and colour as in the worker, but the mesonotum is smoother and more shining and the thorax has the meso- and metapleuræ, the scutellum, metanotum and epinotum, except its superior corners, black or infuscated; the mesonotum is also more or less diffusely infuscated, or with three broad fuscous vittæ, and the pronotum may be spotted or clouded with fuscous.

Two females which I found nesting under a stone at Lady Edeline Beach, Rottneest Island (X. 23, '31) and one female and three workers running on bark of *Callitris robusta* trees near the Tourists Camp (X. 24, '31). The type-locality of the species is Fremantle. I have examined numerous workers and females taken by Mr. John Clark in this and other Western Australian localities (King's Park, Perth; Mundaring Weir, Hovea and Albany).

*Camponotus (Tanæmyrmex) testaceipes* F. Smith.

Numerous workers and a few deälated females taken from several colonies by Dr. Darlington and myself in sandy places on Lady Edeline Beach (X.23.'31) and at Longreach Bay (X.24.'31). Mr. Glauert has also contributed numerous specimens from the west end and other parts of the island.

*C. testaceipes*, originally described from King George Sound, is common locally along the West Australian coast. I have taken it at Geraldton, in several localities in the Darling Range (National Park, Kalamunda, Mundaring Weir), at Perth and Margaret River. There is in the Museum of Comparative Zoology a long series of workers collected by W. S. Brooks at Denmark. It prefers sandy soil, nesting in large, exposed craters 7 to 10 inches in diameter or about the roots of grass tussocks, more rarely under stones. It is evidently nocturnal. At Geraldton specimens were obtained only by digging down several inches into the sand. A colony comprises about 50 to 75 individuals. The largest workers are aggressive and bite rather severely.

*Camponotus (Myrmophyma) chaldeus* Crawley.

Many workers and females taken by Mr. Glauert at Bathurst Point (III.28.'32) and other localities on the island and numerous workers by myself in a *Pittosporum* log at Longreach Bay (X.24.'31). I have found



this beautiful and inoffensive ant also at Kalamunda and Roleystone, in the Darling Range, in King's Park, Perth, and at Margaret River, always nesting in logs, or in the stumps of *Xanthorrhoea*. Mr. John Clark collected it at Ludlow. The types were taken by Rowland Turner at Yallingup. In life the head and thorax of the worker have a more or less greenish tint, the gaster varying from bronze to metallic green or purple. The wings of the female (not mentioned by Crawley) are heavily infuscated, especially along their anterior borders, and have the veins and pterostigma dark brown.

*Camponotus (Myrmophyma) claripes* Mayr.

subsp. *minimus* Crawley.

Workers and dealated females from several colonies nesting under stones in the following localities: Government House (X.21.'31), Lady Edeline Beach (X.23.'31), Longreach Bay (X.24.'31) (Wheeler) and City of York Bay (Glauert).

*Camponotus (Myrmophyma) walkeri* Forel.

This species was recorded by Mr. John Clark from Rottneest Island.

*Camponotus (Myrmophyma) darlingtoni* sp. nov.

*Worker maxima*: Length 8-9 mm.

Head subtrapezoidal, as broad as long or somewhat broader than long, high and convex above, flat below, with straight posterior and concave occipital border and convex sides. Eyes small, flat; ocelli present but minute. Mandibles stout, convex, with six subequal teeth. Clypeus subcarinate, its median section as long as broad, its anterior border straight in the middle, deeply sinuate on each side, not projecting beyond the anterior borders of the cheeks. Frontal area triangular, indistinct; frontal groove very distinct; frontal carinae approximated anteriorly, more separated and subparallel posteriorly. Antennae slender; scapes not extending beyond the posterior border of the head. Thorax short, its dorsal outline as far back as the epinotal angle evenly arcuate; promesonotal suture not impressed; metanotum present, but poorly defined posteriorly; epinotum laterally compressed, in profile with subequal base and declivity meeting at a distinct obtuse angle, the base straight and slightly sloping, the declivity more so and slightly concave. Petiolar scale rather high and narrow, thin, with convex anterior and flat posterior surface, the superior border sharp and compressed, from behind semicircularly rounded, the sides feebly convex, converging ventrally. Gaster broadly elliptical. Legs moderately long, the fore femora incrassated; middle and hind tibiae subterete, with a series of five or six short spines on their flexor surfaces.

Finely and sharply shagreened, shining, gaster and posterior portion of head more so than the remainder of the body and the appendages; mandibles subopaque, coarsely punctate and like the clypeus and anterior portion of the head more coarsely shagreened or reticulate than the posterior portion. Cheeks, front and thoracic dorsum sparsely punctate; pleurae finely longitudinally striate; gaster delicately, transversely striolate, with sparser, piligerous punctures.

Hairs white, erect, rather short, flexuous, very sparse; pubescence appressed, very short and sparse on the gaster and cheeks, longer on the pronotum, mesonotum and head, short and abundant on the antennae, longer and coarser on the legs, especially on the tibiae, where it is less appressed.

Black; mandibles, clypeus, anterior border of cheeks, antennæ, neck and posterior border of pronotum castaneous; posterior borders of gastric segments rather broadly, sordid whitish. Legs, including the coxæ, testaceous; tibiæ slightly darker than the femora, tarsi red.

*Worker media.* Length 7-7.5 mm.

Head much smaller than in the maxima, about one-sixth longer than broad, less narrowed anteriorly, with feebly and evenly rounded sides. Antennal scapes extending nearly one-third their length beyond the posterior border of the head. Pronotum semicircular anteriorly, flattened above, with more distinctly marginate sides; in profile with the dorsal outline broadly arcuate and made up of four subequal straight or nearly straight segments corresponding to the pronotum, mesonotum, base and declivity of epinotum, the anterior end of the mesonotum raised rather abruptly above the posterior end of the pronotum and both the base and the slightly shorter declivity of the epinotum distinctly concave so that the angle between them is pronounced. Petiolar scale narrower and thicker than in the maxima, with blunt superior border.

In sculpture, pilosity and colour very much like the maxima but the legs are more brownish testaceous and the basal halves of the coxæ and femora are fuscous, the pale posterior borders of the gastric segments narrower.

*Worker minima.* Length 4-5.5 mm.

Very similar to the media but the head longer, nearly one and one-third times as long as broad, with more subparallel sides, more convex eyes and the antennal scapes extending nearly half their length beyond the posterior border. Sides of pronotum sharply marginate; dorsal outline of thorax similar, but the epinotum lower and more sloping and its base straight and nearly twice as long as the declivity. Petiolar scale much thicker and narrower, in profile almost subcuboidal, with straight anterior and posterior surfaces and horizontal, feebly rounded superior surface.

Pilosity and colouration as in the media, but the head and thorax more opaque and more sharply shagreened; legs usually even more brownish.

*Female* (dealtated). Length 11 mm.

Head trapezoidal, very nearly as broad as long, with straight posterior border and nearly straight, anteriorly converging sides. Eyes small but somewhat more convex than in the maxima. Antennal scapes reaching about one-fifth their length beyond the posterior border of the head. Thorax oval, about twice as long as broad, anteriorly distinctly broader than the head; mesonotum slightly broader than long, flattened posteriorly; epinotum short, its base convex, much shorter than the steep, concave declivity into which it passes without an angle. Petiolar scale like that of the maxima, but thicker and broader, compressed above, with its superior border somewhat produced upward in the middle. Gaster elongate-elliptical.

Sculpture, pilosity and colour as in the maxima, but the whole pronotum castaneous.

Described from numerous specimens found nesting under logs and stones at Margaret River, Western Australia (type-locality) during October and November, 1931, a single worker maxima and several minimæ taken by Dr. Darlington and myself at Longreach Bay (X.24.'31) and Government House, Rottnest Island (X.21.'31), and a single small worker from King's Park, Perth (X.15.'31).

I have specimens of nearly all of the more than fifty described species, subspecies, and varieties belonging to the Australian subgenus *Myrmophyma* as defined by Emery in the "Genera Insectorum," but *darlingtoni* differs from all of them, particularly in the structure of the thorax of the media and minima, with its peculiarly broken dorsal outline.

*Camponotus (Colobopsis) gasseri* Forel.

subsp. *caloratus* subsp. nov.

*Soldier*: Length 5-6.5 mm.

Differing from the typical *gasseri* in its smaller average size, smaller head, less convex pro- and mesonotum, shallower metanotal impression, slightly thinner and dorsally less obtuse petiolar scale and in coloration, the red of the anterior portion of the head being more vivid, or more yellowish and extending farther back of the truncation over the cheeks and the whole front. The ventral portions of the thorax and petiole, and the dorsal sutures of the former are red or reddish brown and the bases of the first and second gastric segments are ivory yellow. The antennæ and legs are also distinctly paler, being red or brownish red.

*Worker*: Length 3-4 mm.

Also smaller than the worker *gasseri*, with the same differences as the worker in the coloration of the thorax and appendages, the cheeks and often also the clypeus yellowish red or reddish yellow like the mandibles. In some specimens only the posterior half of the head is dark brown or black and the thorax is red, with only the discal portions of the pro-, meso- and epinotum black.

*Female* (deälated). Length about 7 mm.

Decidedly smaller than the female of the typical *gasseri* which measures 9mm. Colouration like that of the soldier, but with only the sutural regions reddish. The ivory yellow portions of the first and second gastric segments are more extensive and the third segment has an ivory yellow spot at the base on each side.

*Male*. Length 4.5 mm.

Black, with very dark brown legs and antennal scapes; mandibles, funiculi and genitalia dull piceous; wings whitish with very pale brown veins and pterostigma. Fore femora strongly bowed.

Described from many specimens from several populous colonies found nesting in the wood just under the bark of *Leptospermum*, *Callitris* and *Acacia* trees near Government House (X.22.'31). The nest entrances were small, perfectly circular holes in the bark. No doubt, these entrances are guarded by the soldiers as in other species of *Colobopsis*.

*C. gasseri* was originally described from Perth. I have taken specimens near Pemberton, Western Australia, nesting in the branches of a huge, recently felled Karri tree (*Eucalyptus diversicolor*), and have received others collected by Mr. John Clark at Mundaring Weir. The species is widely distributed over southern and eastern Australia from Queensland to Tasmania. The Tasmanian form was described by Forel as var. *lysias*, that from Queensland as subsp. *obtusitruncatus*. The specimens which I have taken in New South Wales and have received from several localities in South Australia are only slight variants of the typical form from Western Australia.

*Polyrhachis (Campomyrma) sidnica* Mayrvar. *perthensis* Crawley.

Fourteen workers and a dealated female from a single colony nesting under a stone near Government House (X. 21, '31).

The undescribed female of this variety measures about 8 mm. and differs from the worker, apart from the usual caste characters, in having the pair of lateral petiolar spines even longer, stouter and more curved, and the median pair reduced to very small, broad teeth.

*Polyrhachis (Campomyrma) micans* Mayrsubsp. *ops* Forel.

A single dealated female found running on the ground near White Hill (X. 23, '31).

*Paratrechina (Nylanderia) minutula* Forel.

Numerous workers and a dealated female found nesting under stones at Lady Edeline Beach (X. 23, '31) and several workers taken by Mr. Glauert at City of York Bay (XII. 13, '32).

The worker of this species varies considerably in colour from pale brownish yellow to rather dark brown. The female measures nearly 3 mm. and is pale castaneous with more yellowish mandibles, antennæ and legs. I have seen worker specimens from a wide area in Australia, e.g. Bulli Pass, New South Wales (Wheeler); Adelaide, South Australia (A. M. Lea) and Bribie Island, Queensland (H. Hacker). The cotypes, of which I possess one, are from New South Wales (Froggatt). Varieties are known from the Bismarek Archipelago, the island of Guam and the island of Formosa.