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# On new and rare *Clivina* LATR. from northern and western Australia 1.

(Coleoptera, Carabidae, Scaritinae)

By Martin BAEHR

## Abstract

Several little known *Clivina*-species of the *cribrosa*-, *coronata*-, *obliquata*-, *planiceps*- and *heterogena*-groups sensu SLOANE (1896, 1905 a) are recorded from northern and western Australia and eight species of these groups are newly described: *Clivina coryzoides*, sp. n., *C. intersecta*, sp. n., *C. depressicollis*, sp. n., *C. tumidifrons*, sp. n., *C. gerstmeieri*, sp. n., *C. perthensis*, sp. n., *C. inaequalifrons*, sp. n., and *C. rufoniger*, sp. n., and their relationships are discussed.

## Introduction

The genus *Clivina* and its allies is in Australia especially numerous and diverse and numbers currently more than 100 species (MOORE 1987). Grace to the inestimably work of T. G. SLOANE the general systematics is rather well known, because SLOANE revised this genus twice (SLOANE 1896, 1905 a) and divided the Australian species in several apparently well founded groups. Since that time but few species have been described from or detected in Australia (SLOANE 1898, 1905 b, 1907, 1916, 1923, KULT 1951, DARLINGTON 1953, 1962, BAEHR 1987). Although many species are known only from the descriptions and have been never recognized or even revised, the taxonomic confusion is rather low. Hence it is possible to describe new species without a thorough revision, at least in some groups.

During several collecting trips many already known species were discovered in remote areas of northern and western Australia, as well as several new species. Because distribution of most Australian *Clivina* is little documented, any records from those areas are noted. In this account, some unidentified *Clivina* from the Frey Museum, Tutzing, are included, mainly from far Northern Territory. For arrangement, the groups of SLOANE (1896, 1905 a) were used. They are of rather practical use, though they do not always match the real relationships which are not well understood in Australian *Clivina*.

Most of the material was collected at light, some by digging in wet sand or under stones or wet timber, and some in Barber traps exposed on the banks of rivers or creeks.

## Measurements

Length was measured from anterior border of labrum to apex of elytra, length may therefore slightly differ from measurements of other authors.

## Location of material

The holotypes of new species are located in the Australian National Insect Collection, Canberra (ANIC) and in the Frey Museum, Tutzing (FMT). Paratypes are shared with the Western Australian

Museum, Perth (WAM), the Zoologische Staatssammlung, München (ZSM), the working collection of author (CBM), and the collections mentioned above. Most representatives of known species are located in the CBM and FMT, some also in the WAM and ZSM.

### *Clivina cribrosa* PUTZEYS

PUTZEYS, 1868: 20; SLOANE 1896: 1566; CSIKI 1927: 501; MOORE 1987: 68.

A western species, known only from localities in the extreme southwest. I took long series from three localities in the extreme corner of Western Australia, all from the borders of salt lakes.

Records: Western Australia 41, Lake Warden, 3 km N. of Esperance, 11.11.1987, M. BAEHR (CBM, WAM, ZSM); Western Australia 86, Red Lake, c. 100 km WNW. of Mt. Barker, 24.–25.11.1987, M. BAEHR (CBM); Western Australia 116, 2 km E. of Preston Beach, 55 km N. of Bunbury, 4.12.1987, M. BAEHR (CBM, WAM, ZSM).

### *Clivina frenchi* SLOANE

SLOANE, 1896: 159; CSIKI 1927: 505; DARLINGTON 1953: 54; MOORE 1987: 71.

A large species, known from few scattered localities in interior Australia. DARLINGTON (1953) stressed the variable character of the base of elytral striae which is obvious also in my series. Although this species was grouped within the *cribrosa*-group (SLOANE 1896), it has strong affinities also to *C. coronata* PUTZEYS and to some species of the *obliquata*-group (SLOANE 1896). In some specimens the clypeus has even a rather obvious median tooth, thus approaching the clypeus of *C. coronata*.

Records: Western Australia 24, Annean Lake, 40 km S. of Meekatharra, 6.11.1987, M. BAEHR, at light near shore of salt lake (CBM, WAM, ZSM).

### *Clivina coronata* PUTZEYS

PUTZEYS, 1873: 17; SLOANE 1896; CSIKI 1927: 501; MOORE 1987: 68.

This characteristic species was differentiated by SLOANE (1896) from the *obliquata*-group to form an own group by virtue of its 5-dentate clypeus. However, as discussed above under *C. frenchi*, this character is not as unique. In other respects, *C. coronata* matches well some other species, especially the new one described below. It is widely, though sparsely distributed through western and southern Australia.

Records: Western Australia 36, Exclamation Lake, 76 km SSW. Norseman, 10.–11.11.1987, M. BAEHR (CBM); Western Australia 39, 5 km N. of Scaddan, 11.11.1987, M. BAEHR (CBM), at both localities on dry shore of salt lagoon; Western Australia, Hyden, 2.1967, H. DEMARZ (CBM); Western Australia, Lake Grace, 3.1959, H. DEMARZ (FMT). Like many other species of the *cribrosa*-, *coronata*-, *obliquata*-groups rather halophile.

### *Clivina coryzoides* sp. n.

(Figs 1, 9, 10, 22)

Types: Holotype: ♂, Western Australia 24, Annean Lake, 40 km S. of Meekatharra, 6.11.1987, at light, M. BAEHR (ANIC). – Paratypes: 3 ♂♂, 9 ♀♀, same data (ANIC, CBM, WAM, ZSM).

## Diagnosis

With technical characters of *obliquata*-group. Recognized by very elongate, cylindrical shape, light reddish colour, vertex with several conspicuous ridges, strongly advanced median parts and wings of clypeus which makes the clypeus strongly 4-dentate, strongly 4-dentate anterior tibia, and four internal striae free at base.

## Description

Measurements: Length: 5–5.6 mm. Prothorax: Length: 1.35–1.5 mm, width: 1.14–1.25 mm, ratio length/width: 1.18–1.2. Elytra: Length: 2.7–2.95 mm, width: 1.22–1.34 mm, ratio length/width: 2.19–2.22.

Colour: Head, prothorax and anterior pair of legs reddish. Elytra, four posterior legs, antennae and palpi dark yellow. Lower surface light reddish.

Head: Medium sized, as wide as apex of pronotum. Clypeus wide, wings acute, strongly separated from median part as well as from supraantennal plate. Median part with an acute tooth on either side, margin square; hence, anterior border strongly quadridentate. Supraantennal plates very wide, anteriorly slightly rounded, laterally sinuate, then incurved, at widest part almost as wide as eyes. Eyes moderately convex, though largely hidden by supraantennal plates. Median part of clypeus divided from wings by deep circular grooves, posteriorly bordered by a strong, semilunar ridge. Frons uneven, with two conspicuous lateral ridges inside of frontal furrows, prolonged onto occiput, there weakened and curved medially. Occiput in middle with about six additional irregular longitudinal ridges. Also laterally of main ridges with several longitudinal ridges and some punctures. Supraantennal ridge very strong, rather sinuate, anteriorly prolonged onto supraantennal plate. Upper border of eye also with a strong, convex ridge which hides a part of the eye. Pores of supraorbital setae very large, approached. Lateral part of occiput behind eye strongly and rugosely punctate. Dorsal surface of head resembling that of a *Schizogenius* or *Halocoryza*. Labrum square, 7-setose. Mandibles rather elongate, narrow, upper rim carinate. Palpi elongate. Base of antennae almost hidden by supraantennal plate. 2nd and 3rd segments of antenna elongate, outer segments distinctively wider than long.

Pronotum: Elongate, conspicuously narrowed to apex, dorsally strongly convex. Apex slightly sinuate, anterior angles obtusely acute, slightly produced. Lateral border barely incurved to anterior angles, anteriorly straight, from middle evenly rounded to base. Pronotum widest far in front of posterior lateral seta. Epipleura visible from c. posterior third to base. Anterior lateral seta in first third, posterior seta well in posterior declivity, slightly removed from margin. Base straight. Lateral channel narrow, not much narrowed, nor border modified to a knob at position of posterior seta. Anterior line distinct, though slightly interrupted in middle, close to apex. Median line distinct. Lateral basal impressions irregularly curved, rather comma-shaped. Surface highly polished, with minute, in some areas also slightly stronger, irregular punctures, dorsally and laterally irregularly striolate. Epipleurae with minute, isodiametric microsculpture, though rather glossy.

Elytra: Elongate, cylindrical, parallel, dorsally convex. Shoulders rather angulate, lateral border slightly sinuate in anterior third, then slightly convex. Elytra widest in last fourth. Apex regularly curved. Dorsal surface slightly depressed anteriorly. Apical declivity steep. Lateral channel narrow, becoming very wide at apex. Lateral border anteriorly minutely serrate. Striae fairly deep, punctate, not reduced laterally or at apex, intervals convex. 1st–4th striae free at base, 5th and 6th meeting narrow basal carina. At base of 1st and 2nd striae a basal knob. 8th stria narrow at apex, slightly carinate. 3rd stria with four setae, last far down apical declivity. Only c. 14 marginal setae present, widely interrupted in middle. Intervals smooth, glossy, without microsculpture or puncturation, but with several transverse striae. Winged.

Lower surface: Ventral surface finely microreticulate, though rather glossy. Metepisternum very elongate, c. 3× as long as wide. Metasternum longer than metacoxa. Apical setae of terminal abdominal segment widely separated.

Legs: Anterior tibia wide, strongly palmate, 4-dentate, also 4th tooth strongly developed. Inner apical spur elongate, acute, as long as terminal tooth, not incrassate. Tibia strongly compressed at base, almost carinate. Dorsal surface not sulcate. Ventral surface near apex with short, longitudinal keel. Anterior femur large, posterior side of ventral border slightly more curved than anterior, though not lobate. Intermediate tibia short and wide, depressed, with strong dorsal tooth in terminal quarter. Outer edge crenulate. Posterior tibia short, stout, not much longer than intermediate tibia. All tarsi short, especially 1st tarsomere of intermediate and posterior tarsi, these not much longer than following segment.

♂ genitalia: Aedeagus short, evenly curved. Apex acute, with minute lateral teeth on each side before tip. Inner sac strongly coiled. Both parameres rather low, with elongate, acute apices, asetose.

♀ genitalia: Styli straight, elongate, bristles situated close to base, arrangement see fig. 10.

Distribution: Known so far only from type locality in central Western Australia.

Natural history: Apparently mature species collected in November, at light near the shore of Lake Annean, a medium sized salt lake surrounded by saltbush steppe. Collected together with *C. frenchi* SLOANE, *C. wiluna* DARLINGTON, and *C. gerstmeieri*, sp. n.

Derivation of name: From the numerous frontal ridges resembling *Coryza* and allied genera.

#### Relationships

Although *C. coryzoides* shows the technical characters of the *obliquata*-group (base of elytra, clypeus, palmate anterior tibia), the structure of the dorsal surface of head is unique within the Australian *Clivina*, even when compared with *C. sulcaticeps* SLOANE from the Northern Territory which, moreover, belongs to a different group.

#### *Clivina wiluna* DARLINGTON

DARLINGTON, 1953: 56; MOORE 1987: 78.

A member of the *obliquata*-group of SLOANE (1896). Within this group outstanding through its narrow, convex shape, shared only by *C. cylindriciformis* SLOANE and *C. obsoleta* SLOANE, both from north Queensland. Thus far known only from type locality which is about 200 km west of the new record. My specimens are reddish with the elytra dark yellow.

Records: Western Australia 24, Annean Lake, 40 km S. of Meekatharra, 6. 11. 1987, M. BAEHR, at light near shore of salt lake (CBM).

#### *Clivina intersecta* sp. n. (Figs 2, 11, 12, 22)

Types: Holotype: ♂, Northam, W. Australien, 7. 53, leg. DEMARZ (FMT). — Paratypes: 3 ♂♂, 1 ♀, same data (CBM, FMT).

#### Diagnosis

With technical characters of *obliquata*-group. Medium sized, parallel, though depressed species, recognized by 4th stria free at base, angles of clypeus barely separated from wings, surface of head strongly punctate, anterior tibia 4-dentate, interstices of elytra with conspicuous transverse striae, and apex of ♂ aedeagus rounded and with strong lateral teeth.

#### Description

Measurements: Length: 5.7–6.3 mm. Prothorax: Length: 1.4–1.6 mm, width: 1.32–1.45 mm, ratio length/width: 1.07–1.10. Elytra: Length: 3.2–3.5 mm, width: 1.46–1.58 mm, ratio length/width: 2.19–2.23.



Colour: Dorsally dark piceous to almost black. Supraantennal plates, mouthparts, antennae, and anterior legs reddish-brown, palpi and median and posterior legs reddish. Ventral surface piceous.

Head: Wide, almost as wide as apex of pronotum. Clypeus wide, wings not distinctly separated from angles, not much surpassing median part, angles somewhat projecting over wings. Wings square, with almost right lateral border. Median excavation of clypeus square, anterior border line distinct. Centre of clypeus slightly raised, clypeus divided from frons by a shallow impression. Supraantennal plates distinctly divided from wings, slightly raised, laterally projecting over wings, though much narrower than eyes. Frons uneven, medially with a light impression, coarsely and densely punctate on whole surface. Occiput sparsely punctate, without transverse depression. Supraocular ridge strong, elongate, anteriorly slightly incurved. Frontal furrows short, strongly curved. Surface of head smooth between punctures. Labrum square, 7-setose. Mandibles short, curved, laterally keeled. Eyes large, almost free, posteriorly not enclosed. Antennae short, terminal segments wider than long.

Pronotum: Rather quadrate, not or feebly narrowed to apex, dorsally moderately convex. Apex slightly sinuate, anterior angles rounded off, not projecting. Lateral borders almost straight to basal angles, then very gently curved or almost straight. Lateral margin narrow, incurved at anterior angles, even narrowed behind the rounded posterior angles. Anterior and median lines distinct, though not deep. Basal grooves deep, narrow, elongate, punctate. Surface of pronotum minutely and rather densely punctate, though without microsculpture, highly polished, with few fine, transverse striae.

Elytra: Elongate and parallel, though quite depressed dorsally. Base square, shoulders not produced. Lateral border almost straight, with a shallow sinuation in anterior half. Apex elongately convex. Lateral channel narrow. 1st–4th striae free at base, 4th not outturned, 5th meeting 6th. Subhumeral marginal carina inconspicuous. All striae attaining at least apical declivity, 8th carinate at apex. Striae deep, coarsely punctate, at least in anterior third. Intervals convex, highly polished, without microsculpture, though with extremely delicate punctures and, especially in apical half, with conspicuous transverse striae. 3rd stria with four setae. C. 23 marginal setae present, slightly interrupted in middle. Winged.

Lower surface: Lateral and ventral surface of head coarsely punctate. Prosternum with intercoxal part attenuate. Proepisternum and part of prosternum rather isodiametrically reticulate and with several dorsoventral wrinkles. Metepisternum very elongate, c. 3× as long as wide. Metasternum longer than metacoxa. Apical setae of terminal abdominal sternite widely separated.

Legs: Anterior femur wide, lower surface but slightly convex. Anterior tibia rather elongate, moderately wide, 4-dentate, but less dentate than in other species of this group (e. g. *C. wiluna*). Dorsal sulcus anteriorly indistinct. Intermediate and posterior tibiae moderately elongate, tarsi medium sized.

♂ genitalia: Aedeagus depressed, ventral surface straight, only near apex distinctly bent downwards. Apex big, obtusely rounded, ventrolaterally with a tiny projection on each side. Inner sac coiled. Both parameres rather stout, apices very acute, right slightly longer than left, asetose.

♀ genitalia: Styli elongate, slightly curved, bristles situated basally, arrangement see fig. 12.

Distribution: Known only from type locality in southwestern Australia.

Natural history: Unknown, perhaps not a halophile species.

Derivation of name: From the conspicuous transverse striae on elytral intervals.

## Relationships

Apparently most closely related to *C. obliquata* PUTZEYS which is, however, wider, more depressed, and has the head much less punctate, and perhaps also to *C. diluta* DARLINGTON which is distinguished, inter alia, by the shape of its clypeus with strongly advanced median teeth, and by its small eyes.

*Clivina suturalis* PUTZEYS

PUTZEYS, 1863: 39; SLOANE 1896: 169; CSIKI 1927: 512; MOORE 1987: 77.

*C. verticalis* PUTZEYS, 1866a: 40.

*C. dorsalis* BLACKBURN, 1889: 20; SLOANE 1896: 169.

A vividly coloured, easily distinguished species, recorded from the whole southern part of Australia.

Records: Western Australia 40, 50 km N. of Esperance, 11. 11. 1987, M. BAEHR (CBM), on shore of small salt lagoon; Western Australia 57, South Dale River, 25 km W. of Pingelly, 15. 11. 1987, M. BAEHR (CBM), edge of small river; Western Australia 86, Red Lake, 100 km WNW. of Mt. Barker, 24. 11. 1987, M. BAEHR (CBM), at shore of dry salt lake; Western Australia 87, 75 km WNW. of Mt. Barker, 25. 11. 1987, M. BAEHR (CBM), on black, swampy soil near water; Western Australia 116, 2 km E. of Preston Beach, 55 km N. of Bunbury, 4. 12. 1987, M. BAEHR (CBM), on shore of salt lagoon; Western Australia, Perth, 9. 1957, H. DEMARZ (CBM, FMT). – Apparently widely distributed in southwestern Australia, and in a multitude of saline and non-saline habitats.

*Clivina denticollis* SLOANE

SLOANE, 1896: 171; CSIKI 1927: 501; MOORE 1987: 69.

*C. eyrensis* BLACKBURN, 1900: 35.

An unique species, whose elytral structure and shape of head merits an own group. Known so far from few localities in the north and the interior.

Records: Western Australia, 26 km E. of Napier Downs, Kimberley Division, 23. 11. 1984, M. BAEHR (CBM), at light in tropical Savannah Woodland and on sandy beach of a small river.

*Clivina carpentaria* SLOANE

SLOANE, 1896: 175; CSIKI 1927: 499; MOORE 1987: 68.

A large species of the *planiceps*-group (SLOANE 1896), known so far only from the type locality "Gulf of Carpentaria, Queensland".

Record: Northern Territory, Anthony Lagoon, 11. 1965, H. DEMARZ (CBM, FMT).

*Clivina punctaticeps* PUTZEYS

PUTZEYS, 1868: 18; SLOANE 1896: 179; CSIKI 1927: 510; MOORE 1987: 75.

Originally given the rank of an own group, together with some other species on behalf of the lobate lower margin of profemur (SLOANE 1896), this species was later, I think correctly, included in the *heterogena*-group (SLOANE 1905a). Thus far recorded from north Queensland only.

Records: Northern Territory, Anthony Lagoon, 9. 1965, H. DEMARZ (CBM, FMT).

*Clivina bitincta* SLOANE

SLOANE, 1905b: 5; CSIKI 1927: 498; MOORE 1987: 67.

*C. bicolor* SLOANE, 1896: 170 (nom. praeocc.)

This small species is at once distinguished by its contrasting colour. Although SLOANE (1896) included it in the *obliquata*-group, my single specimen has a different elytral base. Although the 4th stria is by no means outturned at base, there is a strong transversal carina extending from 7th to base of 4th stria, uniting 4th to outer striae. That exemplifies the somewhat artificial status of the groups and the existence of transitional stages between them. According to MOORE (1987) this species was only known from two localities in southwestern Australia.

Record: Western Australia 39, 5 km N. of Scaddan, 11.11.1987, M. BAEHR (CBM), under dead timber at the shore of a small salt lagoon.

*Clivina depressicollis* sp. n.

(Figs 3, 13, 22)

Holotype: ♀, Western Australia, Ord River nr. Ivanhoe, Kimberley Division, 11.–13.11.1984, at light, M. BAEHR (ANIC).

Diagnosis

With technical characters of *heterogena*-group. Recognized by extremely narrow, elongate, parallel, strongly depressed body, strongly punctate and wrinkled surface of pronotum, 6-setose labrum and 3-dentate anterior tibia.

Description of ♀

Measurements: Length: 4.2 mm. Prothorax: Length: 1.07 mm, width: 0.87 mm, ratio length/width: 1.23. Elytra: Length: 2.3 mm, width: 1 mm, ratio length/width: 2.3.

Colour: Piceous, middle of elytra and lateral parts of head slightly lighter. Mouthparts, antennae, and legs light reddish, anterior legs only slightly darker than posterior four legs. Lower surface red-dish-piceous.

Head: Wide, exactly as wide as prothorax. Median part of clypeus deeply separated from wings, angles of median part dentiform, very acute, slightly surpassing wings, median part slightly trisinate. Wings triangular, acute, strongly divided from supraantennal plates by a deep notch. Clypeus evenly convex, anterior margin not bordered, posteriorly not separated from frons. Frons evenly convex, without any depression or elevation. Frontal furrows shallow, moderately sinuate, ending shortly behind anterior border of eyes. Supraorbital ridges not prominent, short and wide. Occiput with a feebly transverse depression laterally, slightly punctate. Surface of clypeus and frons very glossy, without microsculpture, but with some scattered medium sized punctures mixed with very small ones. Supraantennal plates far projecting from wings of clypeus, anteriorly square, lateral border distinctly sinuate in middle, far less projecting than eyes. Surface depressed, with a short, convex ridge in basal part only. Eyes large, far protruding, anteriorly and dorsally free, though posteriorly well enclosed. Posterior supraorbital seta far removed from posterior border of eye. Labrum square, even slightly concave anteriorly, apparently 6-setose. Mandibles short and wide. Palpi rather big. Antennae short, not attaining posterior angle of pronotum. Median segments about as wide as long.

Pronotum: Elongate, absolutely parallel, very depressed. Apex transverse, anterior angles not surpassing apex, strongly convex, but margin feebly incurved. Sides parallel, only feebly concave in anterior third. Posterior angles marked by an inconspicuous knob, lateral part of base slightly convex, not much convergent, therefore, base very wide. At this part proepisterna visible from above. Lateral channel narrow throughout, not widened at anterior lateral seta. Posterior seta far removed from border by almost twice of diameter of pore, situated well on disk. Anterior line distinct, though shallow, median line deep, punctate, interrupted just in front of base. Basal grooves indistinct because of the very coarse wrinkles on whole disk. Surface glossy, apart from near base and along lateral borders which are microreticulate with slightly transverse meshes. Surface with very coarse, slightly irregular transverse wrinkles and with scattered fine and very coarse punctures.



Elytra: Elongate, parallel, depressed, slightly wider than prothorax. Apical declivity very shallow. All striae distinct, deep, coarsely punctate in anterior half, all attaining apex. Scutellar stria very short, 1st–3rd striae free at base, 4th not outturned, but meeting subhumeral carina by a strong, elongate, transverse carine. Base of 1st and 2nd striae with conspicuous basal tubercles. 8th stria carinate at apex. Intervals rather convex. 3rd stria with four setae, 3rd situated rather posteriorly. C. 28 marginal setae present, barely interrupted in middle. Surface of intervals glossy, without microreticulation, but with some indistinct striae and extremely fine punctures. Winged.

Lower surface: Proepisternum slightly microreticulate and with conspicuous transverse wrinkles. Intercoxal part of prosternum attenuate. Mesosternal concavity punctulate. Metepisternum very elongate, more than  $3\times$  as long as wide. metasternum c.  $1.5\times$  as long as metacoxa. Apical setae of terminal abdominal sternite widely separated.

Legs: Anterior coxa rather wide, ventrally slightly convex. Protibia moderately wide, 3-dentate, with a small, not projecting tubercle above 3rd tooth. Lower surface smooth, depressed. Dorsal surface not sulcate. Paronychium acute. Meso- and metatibiae medium-sized, spur of mesotibia very elongate, situated at posterior third. Tarsi moderate, 1st tarsomere slightly shorter than 2nd and 3rd segments together.

♂ genitalia: Unknown.

♀ genitalia: Styli moderately elongate, slightly curved. Bristles close to base, arrangement see fig. 13.

Distribution: Known from type locality only in extreme northern Western Australia, adjacent to Northern Territory.

Natural history: Collected at light on the sandy bank of a large, water bearing river.

Derivation of name: From the extremely depressed pronotum.

#### Relationships:

Perhaps most closely related to *C. bitincta* SLOANE which belongs actually to the *heterogena*-group, too. Distinguished from this species by yet more elongate and depressed body, less vivid pattern, 3-dentate anterior tibia, apparently 6-setose labrum, much larger eyes, and absolutely even surface of clypeus and frons.

### *Clivina heterogena* PUTZEYS

PUTZEYS, 1866a: 41; SLOANE 1896: 187; CSIKI 1927: 505; MOORE 1987: 71.

*C. angustula* PUTZEYS, 1866a: 42; SLOANE 1896: 189.

*C. deplanata* PUTZEYS, 1866b: 190.

Apparently a widely distributed and rather variable species. However, I find no striking differences between specimens from central New South Wales (FMT) and such from northwestern Australia.

Records: Northern Territory, Anthony Lagoon, 11.1965, DEMARZ (FMT); Northern Territory, 17 km NE. of Willeroo, 8.11.1984, M. BAEHR; Northern Territory, Victoria River, 11 km W. of Timber Creek, 9.11.1984, M. BAEHR; Western Australia, Ord River nr. Ivanhoe, 11.–13.11.1984, M. BAEHR; Western Australia, Fitzroy River at Fitzroy Crossing, 18.–20.11.1984, M. BAEHR (all CBM); Western Australia, Carnarvon, 4.1967, H. DEMARZ (FMT). Specimens were collected either at light, sometimes apparently far away from open water, or at or near to the banks of large rivers. Apparently widely distributed in northwestern Australia.

### *Clivina tumidifrons* sp. n.

(Figs 4, 14, 15, 23)

Types: Holotype: ♂, NT, 1 km W. of Humpty Doo, 1.–5.11.1984, M. BAEHR (ANIC). — Paratypes: 2 ♂♂, 2 ♀♀, NT. Katherine, 12.57, leg. H. DEMARZ (CBM, FMT); 1 ♀, NT. Beswick, 1.1958, leg. H. DEMARZ (FMT); 1 ♂, 2 ♀♀, WA, Ord River nr. Ivanhoe, 11.–13.11.1984, M. BAEHR (CBM, WAM).



## Diagnosis

With technical characters of *heterogena*-group. Medium sized, rather elongate species with median angle of clypeus divided from wings and 4th stria united with 5th, distinguished from related species by clypeus with distinct, semilunar elevation and pronotum longer than wide and considerably narrowed to apex.

## Description

Measurements: Length: 5.7–6.55 mm. Pronotum: Length: 1.55–1.8 mm, width: 1.4–1.63 mm, ratio length/width: 1.08–1.10. Elytra: length: 3.05–3.5 mm, width: 1.53–1.75 mm, ratio length/width: 1.98–2.02.

Colour: Chestnut brown to dark piceous, in light specimens head slightly darker than body. Palpi and antennae reddish, anterior leg piceous, four posterior legs reddish. Ventral surface reddish-piceous.

Head: Moderately wide, distinctly narrower than apex of pronotum. Median part of clypeus divided from wings by a deep notch, slightly sinuate, angles not produced, on same level as wings. Wings slightly rounded, divided from supraantennal plates by a distinct notch. Clypeus anteriorly with distinct margin, posteriorly not divided from frons. Surface of clypeus with a strongly transverse, anteriorly convex elevation. Frons rather even, with shallow median impression. Supraantennal plates laterally much projecting over wings of clypeus, border rather oblique, dorsal surface convex. Eyes far projecting from supraantennal plates, convex, though behind well enclosed. Frontal furrows sinuate, slightly irregular. Supraorbital ridge elongate, straight, strong, prolonged far behind eye. Occiput not transversely impressed. Whole frons with rather dense, anteriorly coarse, posteriorly coarse and fine punctures. Labrum square, 7-setose. Mandibles short, wide. Antennae short, median segments slightly wider than long.

Pronotum: Longer than wide and distinctly narrowed to apex. Anterior angles slightly projecting, though rounded off, apex slightly excised. Lateral border almost straight. Posterior angles situated slightly behind widest diameter, marked by a small knob. Basal border then rather straight. Marginal channel moderate, considerably incurved at anterior angles, widened at anterior lateral seta. Posterior seta removed from lateral border by c. diameter of pore. Anterior line deep, punctate, slightly concave. Median line distinct, though less deep. Basal impressions distinct, but short, rather shallow, linear, feebly punctate. Dorsal surface with more or less weak microreticulation, more distinct near base, consisting of isodiametric meshes, and with more or less dense puncturation of very fine and slightly coarser punctures. Also with some transverse wrinkles. In spite of presence of microsculpture, surface rather glossy.

Elytra: Moderately elongate, slightly widened behind, moderately convex. Shoulders rounded, base straight. Apical declivity rather shallow. All striae distinct to apical declivity, moderately punctate in basal two thirds. 1st–3rd striae free at base, 4th outturned, meeting the strong, elongate subhumeral carina. 8th stria carinate at apex. Base of 1st and 2nd striae with basal tubercles. Intervals moderately convex, more or less superficially microreticulate and with some transverse striae. In spite of microsculpture surface rather glossy. 3rd stria with four setae. Marginal setae very numerous, c. 32–34, not interrupted in middle. Winged.

Lower surface: Intercoxal part of prosternum narrow, anteriorly attenuate. ♂ with a very small pectoral nodule. Proepisternum and prosternum with isodiametric microsculpture. Lateral concavity of mesosternum strongly punctate. Metepisternum elongate, c. 2.5× as long as wide, metasternum longer than metacoxa. Abdominal sternites rather smooth. Apical setae of terminal abdominal segment widely separated.

Legs: Anterior coxa wide, lower surface almost straight. Protibia fairly elongate, 4-dentate, 4th tooth distinctly projecting beyond tibia. Paronychium of ♂ incassate, obtuse at apex. Sulcus of dorsal surface weak. Intermediate tibia elongate with long spur in terminal fourth. Posterior tibia elongate, tarsi elongate, 1st tarsomere of posterior leg as long as 2nd and 3rd segments together.

♂ genitalia: Aedeagus big, apex angulately bent downwards, elongate, spatulate, laterally dentate. Inner sac strongly folded, strongly sclerotized. Both parameres short, with very short apex, left very wide.

♀ genitalia: Stylus short, big, straight, base elongate. Elongate bristles situated close to base, arrangement see fig. 15.

Variation: Some variation noted in intensity of puncturation of head and microreticulation of pronotum and elytra.

Distribution: Known from northernmost Northern Territory and adjacent northwestern Australia.

Natural History: Judging from my own catches, not a halophile species. Collected on the sandy banks of a large river and on black, muddy soil near a pool in dry river bed.

Derivation of name: From the conspicuous elevation on clypeus.

#### Relationships

Undoubtedly most related to *C. heterogena* PUTZEYS which occurs in the same area and, in some localities, even sympatrically. Most important differences are: *C. tumidifrons* on the average slightly larger, without distinct pattern, clypeus with conspicuous elevation, eyes less projecting, dorsal surface of head more extensively punctate, prothorax longer, more narrowed to apex, apex more excised and anterior angles more protruding.

#### *Clivina gerstmeieri* sp. n.

(Figs 5, 16, 17, 23)

Types: Holotype: ♂, Western Australia 24, Annean Lake, 40 km S. of Meekatharra, 6.11.1987, at light, M. BAEHR (ANIC). — Paratypes: 2 ♂♂, 2 ♀♀, same data (CBM, ZSM).

#### Diagnosis

With technical characters of *heterogena*-group. Rather small, elongate, parallel, dark species with reddish suture, weakly separated median part of clypeus, punctate frons, 4-dentate anterior tibia, and elongate pronotum with weak anterior line.

#### Description

Measurements: Length: 4.75–5.2 mm. Pronotum: Length: 1.25–1.38 mm, width: 1.12–1.23 mm, ratio length/width: 1.11–1.12. Elytra: length: 2.55–2.8 mm, width: 1.22–1.35 mm, ratio length/width: 2.07–2.09.

Colour: Piceous-black, anterior border of supraantennal plates, labrum, mandibles, and elytral suture dark reddish. Anterior legs dark reddish, four posterior legs, antennae, and palpi slightly lighter. Lower surface piceous.

Head: Moderately wide, though narrower than apex of pronotum. Median part of clypeus weakly divided from wings. Angles of median part inconspicuous, only slightly surpassing wings. Median part wide, anterior excision shallow, almost transverse. Wings prominent, rectangular, with sharp lateral edge. Clypeus with conspicuous anterior margin, not divided from frons. Wings sharply separated from supraantennal plates by a deep, rectangular notch. Supraantennal plates anteriorly rectangular, lateral border lightly convex, much surpassing wings of clypeus, though not the eyes. Plates dorsally convex with a strong longitudinal keel. Surface of clypeus convex, basally with a more or less elongate, deep impression prolonged posteriorly to middle of frons. Frons convex. Frontal furrows anteriorly bisinuate, prolonged far onto vertex, there almost straight. Supraorbital ridge conspicuous, strongly keeled, straight, very elongate, far surpassing posterior border of eye. Occiput medially without, laterally with impression. Eyes rather convex, laterally far projecting, posteriorly slightly enclosed. Surface of head with scattered, fine puncturation, punctures somewhat coarser and denser in frontal groove. Occiput laterally strongly punctate. Labrum square, 7-setose. Mandibles short, wide,

outer rim not much keeled. Palpi short and stout, antennae short, median segments slightly wider than long. Surface of head rather glossy, without microsculpture.

Pronotum: Longer than wide, dorsally rather convex, feebly narrowed to apex. Anterior angles slightly produced, though strongly rounded off, apex almost transverse. Sides feebly sinuate in anterior third, then slightly convex. Posterior angles situated behind widest part, completely rounded off, without a tooth or knob. Basal border convex. Lateral channel rather wide, remarkably widened at anterior lateral seta. Posterior seta removed from lateral border by less than diameter of pore. Median line shallow. Anterior line weak, not always contiguous in middle. Basal grooves shallow, elongate, impunctate. Dorsal surface glossy, microreticulation only in basal quarter present, surface with fine punctures and several sharp, transverse lines. Always with some distinct, oblique wrinkles near anterior angles.

Elytra: Elongate, rather narrow, convex. Lateral border slightly sinuate in anterior third, then weakly convex, elytra widest in posterior quarter. Base transversal, shoulders rounded, not projecting. Apex widely rounded off, declivity moderate. All striae distinct, reaching far down apical declivity, punctate throughout, puncturation in anterior half strong. 1st–3rd striae free at base, 4th slightly outturned, uniting with strongly developed subhumeral carina. 8th stria carinate at apex. 1st and 2nd striae with basal tubercle. Intervals anteriorly slightly convex, posteriorly almost depressed. Microsculpture superficial, weaker in ♂, isodiametric, intervals also with some transverse striae and extremely fine punctures. 3rd stria with four setae. C. 22 marginal setae present, widely interrupted in middle. Winged.

Lower surface: Proepisternum and prosternum isodiametrically microreticulate. Prosternum attenuate between coxae. Lateral concavity of mesothorax strongly punctate. Abdominal sternites microreticulate. Metepisternum very elongate, c. 2.5× as long as wide, metasternum longer than metacoca. Apical setae of terminal abdominal segment widely separated.

Legs: Anterior coxa large, slightly convex ventrally. Anterior tibia moderately elongate, 4-dentate. Paronychium of ♂ acute. Dorsal sulcus distinct in posterior half, apically weak. Intermediate and posterior tibiae medium-sized, spur of intermediate tibia very long, situated in terminal third. Tarsi moderately elongate, 1st segment in mesotarsus not, in metatarsus barely as long as 2nd and 3rd segments together.

♂ genitalia: Aedeagus low, upper surface near apex humped. Lower surface evenly concave. Apex rounded, without special features, much shorter than tip of inner sac which is strongly folded and sclerotized. Parameres rather narrow, asetose, apices very elongate.

♀ genitalia: Styli rather elongate, straight, bristles close to base, arrangement see fig. 17.

Variation: Little, only puncturation of head and microsculpture of elytra slightly variable, the latter perhaps sexually different.

Distribution: Known only from type locality in central Western Australia.

Natural history: Caught at light near shore of salt lake, in November, together with *C. frenchi* SLOANE, *C. coryzoides*, sp. n., and *C. wiluna* DARLINGTON.

Derivation of name: In honour of R. GERSTMEIER, my attendant during a travel through Western Australia.

#### Relationships

Belongs to the main body of the *heterogena*-group. The elongate pronotum and the elongate, rather convex shape distinguish this species at once from most others, apart from *C. heterogena* PUTZEYS and *C. dampieri* SLOANE. From the former species it is at once distinguished by pattern, more cylindrical shape, longer and more convex pronotum, less projecting eyes and far less separated median part of clypeus. From *C. dampieri* it is distinguished by colour, less separated median part of clypeus, elongate supraorbital ridges, and punctate pronotum.



*Clivina perthensis* sp. n.

(Figs 6, 18, 19, 23)

Types: Holotype: ♂, West Australien, Kenwick, 10. 12. 1955, H. DEMARZ (FMT). — Paratypes: 3 ♀♀, same data (CBM, FMT); 1 ♀, West-Australien, Kenwick, 1. 1957, H. DEMARZ (FMT).

Diagnosis

With technical characters of *heterogena*-group. Medium-sized, uniformly dark, elongate, parallel species with protruding eyes, distinguished by medium part of clypeus divided from wings by a notch and distinctly projecting beyond wings, 4-dentate protibia, almost impunctate pronotum, and parallel, absolutely smooth elytra.

Description

Measurements: Length: 5.5–6 mm. Pronotum: length: 1.35–1.5 mm, width: 1.22–1.35 mm, ratio length/width: 1.10–1.12. Elytra: Length: 3.05–3.35 mm, width: 1.35–1.5 mm, ratio length/width: 2.23–2.26.

Colour: Dark piceous to almost black, sometimes head and pronotum feebly lighter. Lateral border of supraantennal plates, labrum, mouthparts, and antennae reddish. Anterior legs piceous, four posterior legs light reddish. Lower surface of head and prothorax piceous, rest almost black.

Head: Rather wide, not much narrower than apex of pronotum. Median part of clypeus divided from wings by a deep notch, strongly and evenly sinuate, angles distinctly produced beyond wings, though fairly obtuse. Anterior margin inconspicuous. Wings quadrangular, slightly rounded off, separated from supraantennal plates by a notch. Clypeus not divided from frons, surface with more or less distinctive, transverse elevation and a shallow impression behind it. Supraantennal plates surpassing wings laterally, but much less protruding than eyes. Lateral border anteriorly even sinuate, posteriorly strongly curved inwards. Surface convex, though not keeled. Frontal furrows sinuate, shallow on frons. Supraorbital ridge conspicuous, but short. Frons convex with few punctures anteriorly and postero-laterally, largely smooth, without microreticulation. Occiput without transverse furrow, almost impunctate. Eyes large, strongly convex, though somewhat enclosed behind. Labrum square, 7-setose. Mandibles short and wide. Palpi medium-sized. Antennae short, median segments slightly wider than long.

Pronotum: Slightly longer than wide, parallel, feebly narrowed to apex. Surface rather depressed. Anterior angles slightly produced, rounded off. Apex but feebly incised. Sides slightly sinuate in anterior third, curved inwards already in front of posterior angles. Angle consisting of an extremely small tubercle. Basal border barely convex. Lateral channel moderately wide, widened at position of anterior lateral seta. Posterior seta less than diameter of pore removed from border. Basal channel rather wide. Anterior and median lines distinct, though rather shallow, impunctate. Basal impression linear, short, inconspicuous, surrounded by few punctures. Surface smooth, without microreticulation, apart from near base, and with few scattered punctures and few transverse wrinkles.

Elytra: Elongate, absolutely parallel, dorsally somewhat depressed. Base slightly excised, though shoulders rounded. Apical declivity shallow. All striae complete, deeply impressed, punctate in anterior two thirds, but puncturation rather inconspicuous. Declivity itself non-striate. 1st–3rd striae free at base, reaching well down basal declivity, 1st with basal tubercle. 4th stria outturned at base, meeting the strong subhumeral carina. 8th stria carinate at apex. Intervals convex till apical declivity, without microsculpture, only with some transverse striae. 3rd stria with four setae. C. 25 marginal setae present, slightly interrupted in middle. Winged.

Lower surface: Proepisternum with strong isodiametric microsculpture and some transverse, elongate wrinkles. Intercostal process narrow between procoxae, anteriorly attenuate. Lateral concavity of mesothorax punctate. Metepisternum very elongate, c. 3.5× as long as wide, metasternum longer than metacoxa. Abdominal sterna microreticulate. Apical setae of terminal abdominal segment widely separated.

Legs: Profemur wide, lower surface posteriorly slightly convex. Anterior tibia moderately wide, 4-dentate. Paronychium of ♂ acute. Dorsal sulcus indistinct near apex. Meso- and metatibiae moderately elongate, spur of mesotibia elongate, far removed from apex, in front of apical third. Tarsi medium-sized, 1st segment barely as long as 2nd and 3rd segments together.

♂ genitalia: Aedeagus slightly curved, apex acute, without special features. Inner sac strongly folded and sclerotized. Parameres rather wide, acute at apex, asetose.

♀ genitalia: Styli widely separated, extremely short, apically square, apex much shorter than base. Bristles therefore very near to apex, arrangement see fig. 19.

Variation: Some variation noted in degree of puncturation on frons and pronotum.

Distribution: Known only from type locality in southwestern Australia.

Natural history: Unknown, but perhaps a non-halophile, ripicolous species.

Derivation of name: After the city of Perth, to which the type locality belongs as a suburb.

## Relationships

Belongs to the main body of the *heterogena*-group. Apparently most closely related to *C. heterogena* PUTZEYS, *C. dampieri* SLOANE, and *C. tumidifrons*, sp. n. It is distinguished from all species by its longer, parallel elytra, the strongly sinuate median part of clypeus, and perhaps by the outstanding short ♀ styli (not known in *C. dampieri*). Additionally, it differs from *C. heterogena* and *C. tumidifrons* by the far less dense puncturation of head and pronotum, and from *C. dampieri* by much more prominent eyes, colour, and even longer elytra.

## *Clivina cava* PUTZEYS

PUTZEYS, 1866: 185; SLOANE 1896: 196; CSIKI 1927: 499; MOORE 1987: 68.

A species originally described from Queensland, but noted also from northwestern Australia (SLOANE 1896, not mentioned in his catalogue by MOORE 1987). I have one specimen, doubtfully identified as that species, mainly by the strongly depressed, slightly excavate surface of head and the shape of the anterior border of clypeus.

Record: Northern Territory, 1 km W. of Humpty Doo, 1.–5.11.1984, M. BAEHR (CBM), in barber trap on black, muddy soil besides of a pool in a creek bed.

## *Clivina inaequalifrons* sp. n. (Figs 7, 20, 24)

Holotype: ♀, W-Australien, Coolgardie, 20.2.1965, DEMARZ (FMT).

## Diagnosis

With technical characters of *heterogena*-group. Medium-sized, light coloured, elongate, parallel species, distinguished by smooth, dorsally very convex pronotum, weakly separated clypeus with median part wide and straight, uneven, bituberculate frons, and 4-dentate tibia.

## Description

Measurements: Length: 6.4 mm. Pronotum: Length: 1.6 mm, width: 1.48 mm, ratio length/width: 1.08. Elytra: Length: 3.6 mm, width: 1.6 mm, ratio length/width: 2.25.

Colour: Reddish. Antennae, palpi, and intermediate and posterior legs dark yellowish, lower surface light reddish.

Head: Rather narrow, much narrower than apex of pronotum. Clypeus very wide, median part feebly divided from wings by a shallow notch. Angles weak, at same level with wings, median part

wide, almost straight. Wings very acute, dentiform, strongly separated from supraantennal plates. Anterior margin of median part distinctly bordered, surface of clypeus with a strong, transverse elevation, behind that with a narrow depression which separates the clypeus from the very convex frons. This anteriorly with an elevation with a shallow impression in middle and a shallow furrow each on sides, giving the anterior part of frons a bituberculate appearance. Posterior part of frons and occiput simply convex, without transverse furrow. Frontal furrows shallow, sinuate, slightly irregular. Supraorbital ridge short, straight, ending shortly behind eye. Supraantennal plate far surpassing wings of clypeus, lateral border slightly convex, laterally bordered, posteriorly keeled, less wide than eye. Eyes large, though fairly depressed, not far projecting from head, though not enclosed on anterior or posterior border. Surface of head without microreticulation, almost without puncturation, only some very indistinct punctures visible in frontal groove. Labrum square, even slightly concave, 7-setose. Mandibles short and wide. Palpi medium-sized. Antennae short, attaining only middle of pronotum, median segments clearly wider than long.

Pronotum: Elongate, fairly parallel, dorsally strongly convex. Apex straight, anterior angles strongly rounded, even less projecting than apex. Sides slightly widened to posterior angles, lateral channel narrow throughout. Posterior angles completely rounded, without a tooth or knob, lateral border slightly sinuate just in front of angles. Lateral part of base oblique, straight. Posterior lateral seta removed from border by less than diameter of pore. Anterior and median lines distinct, impunctate. Basal grooves distinct, linear, rather elongate. Dorsal surface without microreticulation (only present at the very base), absolutely smooth, only with very few, inconspicuous, superficial transverse lines laterally.

Elytra: Absolutely parallel, cylindrical, only dorsally slightly depressed. All striae complete, reaching to near apex, fairly deep, punctate throughout. Intervals rather convex. Sutural stria missing. 1st–3rd striae free at base, 4th outturned to meet subhumeral carina by a transverse basal keel. Base of 1st and 2nd striae with well developed basal tubercle. 8th stria carinate at apex. Surface of intervals glossy, without microreticulation, with extremely fine, scattered punctures, visible only at strong magnification. 3rd stria with four setae. C. 25 marginal setae present, fairly interrupted in middle. Winged.

Lower surface: Proepisterna finely microreticulate. Intercoxal part of prosternum rather attenuate. Excavation of mesothorax strongly punctate. Metepisternum very elongate, c. 4× as long as wide, metasternum more than twice as long as metacoxa. Abdominal sternites microreticulate. Apical setae of terminal abdominal segment widely separated.

Legs: Anterior coxa wide, lower surface posteriorly slightly convex. Anterior tibia fairly wide, 4-dentate. Dorsal sulcus indistinct near apex. Meso- and metatibiae medium-sized, spur of mesotibia elongate, below posterior third. Tarsi medium-sized, 1st segment slightly shorter than 2nd and 3rd segments together.

♂ genitalia: Unknown.

♀ genitalia: Style very elongate, curved, bristles close to base, arrangement see fig. 20.

Distribution: Known only from type locality in central southwestern Australia.

Natural history: Unknown, presumably a halophile species.

Derivation of name: From the bituberculate frons.

## Relationships

Rather singular within *heterogena*-group by virtue of its elongate, cylindrical shape, especially of pronotum, the tuberculate frons, and the wide clypeus with median part little divided from wings.

## *Clivina atridorsis* SLOANE

SLOANE, 1905 a: 718; CSIKI 1927: 497; MOORE 1987: 66.



Species thus far known from two localities only in Queensland. I cannot see a difference between specimens from central eastern Queensland and from Arnhem Land or Western Australia.

Records: Northern Territory, 13 km S. of Jabiru, 5. 11. 1984, M. BAEHR (CBM), at light on shore of a billabong; NT, Mainoro, 1. 1958, H. DEMARZ (FMT); N. T., East Alligator River, 10. 1965, DEMARZ (FMT); Western Australia, Ord River nr. Ivanhoe, 11. – 13. 11. 1984, M. BAEHR (CBM), at light and in sand near the edge of a large, water-bearing river.

*Clivina rufoniger* sp. n.

(Figs 8, 21, 24)

Types: Holotype: ♂, Northern Territory, 1 km W. of Humpty Doo, 1. – 5. 11. 1984, M. BAEHR (ANIC). – Paratype: ♂, Western Australia, Fitzroy Crossing, 18. – 20. 11. 1984, M. BAEHR (CBM).

Diagnosis

With technical characters of *heterogena*-group. Recognized by bicolorous elytral pattern, deep black forebody, large, protruding eyes, feebly divided clypeus with concave anterior border, rather parallel pronotum, and 3-dentate protibia.

Description

Measurements: Length: 5.9–6.65 mm. Pronotum: Length: 1.5–1.7 mm, width: 1.5–1.68 mm, ratio length/width: 1–1.02. Elytra: Length: 3.2–3.6 mm, width: 1.67–1.86 mm, ratio length/width: 1.92–1.94.

Colour: Head, pronotum and inner four intervals very close to apex deep black. Lateral part of elytra including outer part of 4th interval near base, labrum, mandibles apart from blackish tip, antennae and anterior pair of legs red. Also anterior and lateral borders of head reddish. Palpi, intermediate and posterior legs yellowish. Lower surface reddish-piceous.

Head: Wide, not much narrower than apex of pronotum. Median part of clypeus not well divided from wings. Angles of median part, as well as wings, gently rounded, angles slightly surpassing wings. Wings feebly divided from supraantennal plates. Median part of clypeus conspicuously concave. Anterior border with a deep, transverse depression behind margin, thus strongly bordered. Clypeus evenly convex, not separated from likewise convex frons. Both smooth, very glossy, and only with scattered, extremely fine punctures (under 65× lens). Frontal furrows slightly sinuate, distinct. Supraorbital ridge low, convex, elongate, medially bordered by a narrow, though deep, linear furrow. Occiput not impressed, laterally with some rather fine punctures. Supraantennal plates far surpassing wings of clypeus, laterally bordered, straight, dorsal surface evenly convex. Eyes large, protruding, far projecting over supraantennal plates, anteriorly and dorsally free, posteriorly little enclosed. Labrum square, 7-setose. Mandibles short and wide. Palpi rather stout. Antennae medium-sized, not attaining posterior angles of prothorax, median segments c. as wide as long.

Pronotum: Square, rather depressed, exactly as wide as long. Anterior angles rounded off, not produced, apex even slightly surpassing angles, median part distinctly concave. Sides rather straight, slightly narrowed to apex, with a feeble sinuosity in anterior third. Posterior angles marked by an obtuse knob. Basal border strongly oblique, rather straight, basal part short, base narrow. Lateral channel moderately wide, incurved at anterior angles, not perceptibly widened at anterior seta. Posterior seta not far removed from border, only by less than diameter of pore. Surface either with fine isodiametric microreticulation, or glossy, microreticulate only near base. Surface with several irregularly transverse wrinkles and with fine, scattered punctures.

Elytra: Rather wide, depressed, slightly widened to apex. Shoulders rounded, apical declivity rather shallow. All striae distinct, though not attaining apex, 7th shortly interrupted apically. Striae deep, punctate throughout. Scutellar stria moderately elongate. 1st–3rd striae free at base, 4th outturned

and meeting 5th by a short carina. 1st at base with a basal tubercle. Subhumeral carina strong, 8th stria carinate near apex. Intervals convex with more or less well developed isodiametric microsculpture and some transverse striae. 3rd stria with four setae. C. 30 marginal setae present, not interrupted in middle. Winged.

Lower surface: Proepisternum with isodiametric microreticulation and dense transverse wrinkles. Prosternum with intercoxal part attenuate. Cavities of mesothorax punctate. Metepisternum very elongate, more than  $3\times$  as long as wide, metasternum c.  $1.5\times$  as long as metacoxa. Abdominal sternites with isodiametric microsculpture. Apical setae of terminal abdominal sternite widely separated.

Legs: Profemur large, but ventrally barely convex. Protibia narrow, elongate, 3-dentate, with a small tubercle above the small, triangular 3rd tooth. Paronychium in ♂ stout, incrassate. Dorsal sulcus almost wanting. Meso- and metatibia elongate, spur of mesotibia elongate, situated in posterior third. Tarsi elongate, 1st segment of intermediate tarsus as long as, of posterior tarsus longer than 2nd and 3rd segments together.

♂ genitalia: Aedeagus large, curved. Apex elongate with distinct ventral hook. Inner sac strongly sclerotized. Both parameres short with very short apex, left very wide.

♀ genitalia: Unknown.

Variation: Some differences present in degree of microreticulation on pronotum and elytra.

Distribution: Known only from the type localities in northernmost Northern Territory and north-western Australia.

Natural history: Holotype collected on black, muddy soil of a pool in a dry creek-bed, paratype in barber trap, exposed on sand banks in the still water-bearing bed of Fitzroy River.

Derivation of name: From black and red pattern of elytra.

## Relationships

Certainly next related to *C. atridorsis* SLOANE which occurs in the same area. *C. rufoniger* is distinguished from this rather similar species inter alia by those more important characters: Slightly larger size; black instead of reddish-piceous head and prothorax; more contrasting pattern and colour of elytra; shorter, less convex pronotum with less convex sides, and of more parallel, less conical shape; larger and considerably more protruding eyes; better separated and more decidedly concave median part of clypeus. Certainly, both species are a connecting link between the *heterogena*- and the *australasiae*-group sensu SLOANE (1896), and at the first glance, they look rather like members of the latter group.

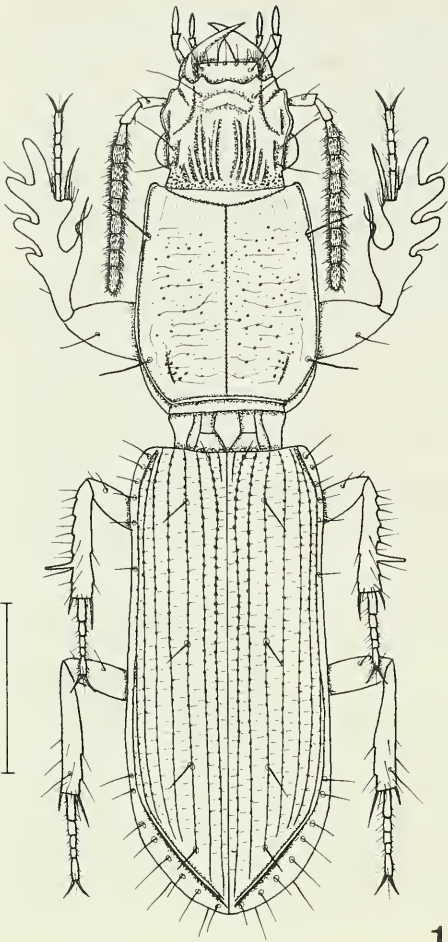
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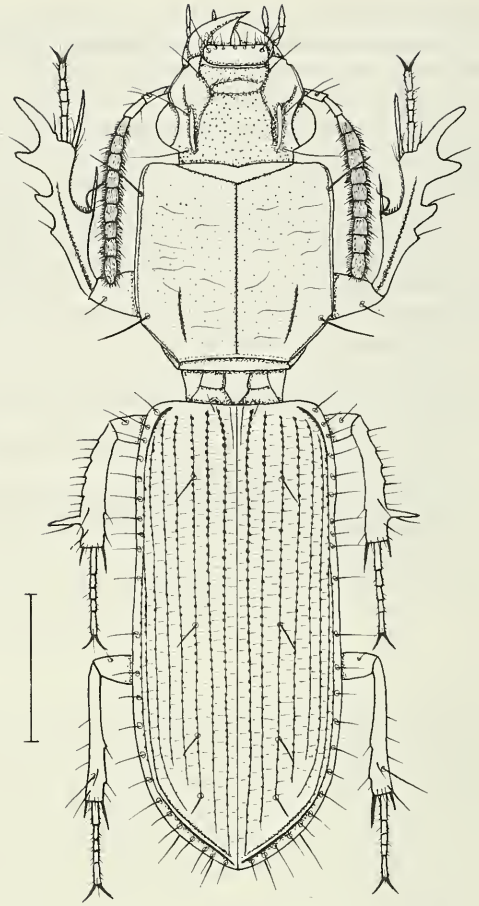
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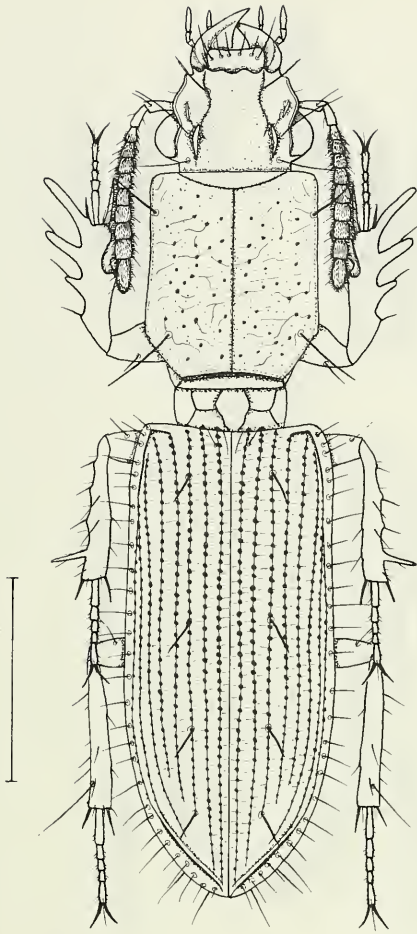
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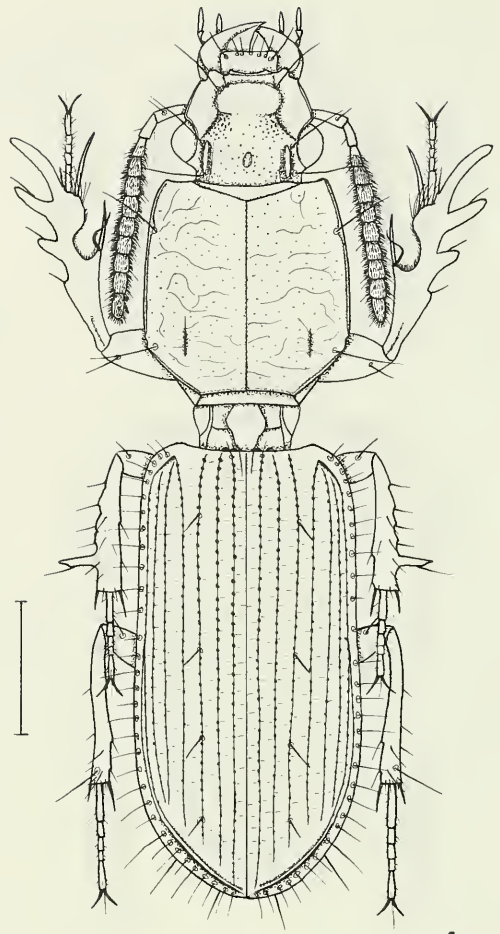
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Fig. 1. *Clivina coryzoides*, sp. n. ♂ holotype. Scale: 2 mm.

Fig. 2. *Clivina intersecta*, sp. n. ♂ holotype. Scale: 2 mm.



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Fig. 3. *Clivina depressicollis*, sp. n. ♀ holotype. Scale: 2 mm.

Fig. 4. *Clivina tumidifrons*, sp. n. ♂ holotype. Scale: 2 mm.

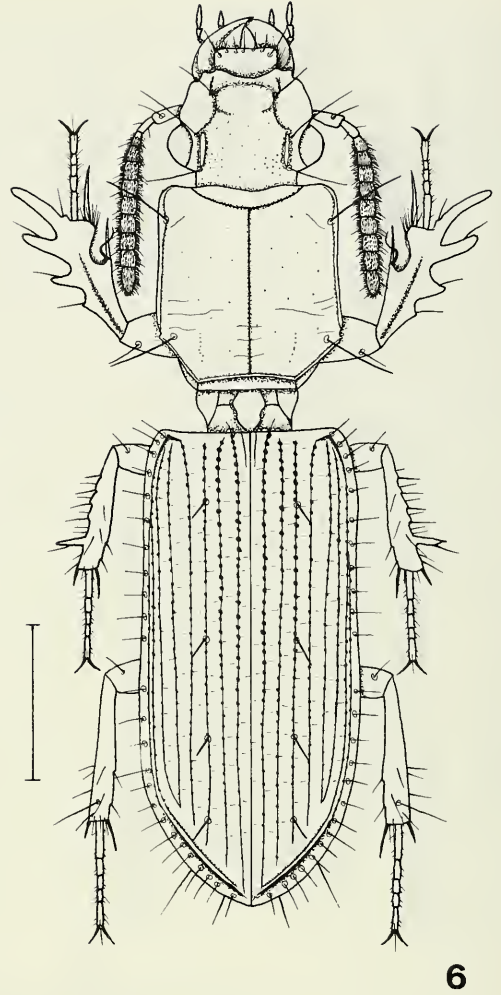
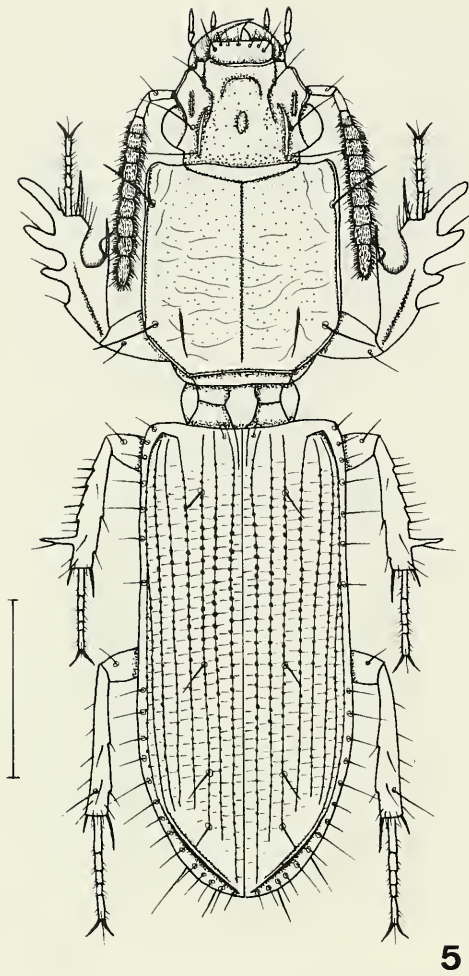
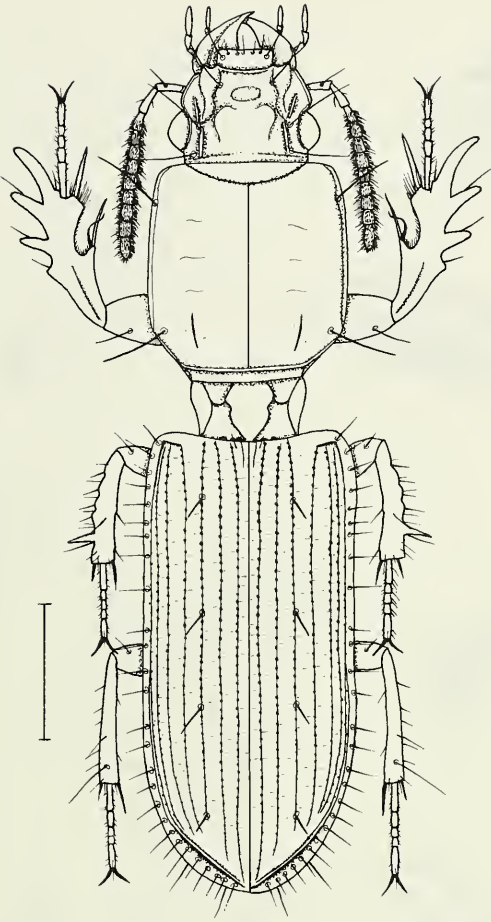


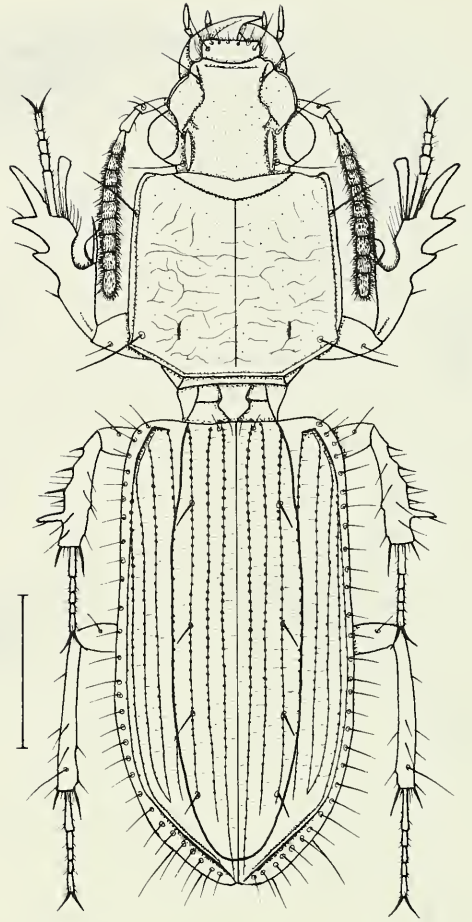
Fig. 5. *Clivina gerstmeieri*, sp. n. ♂ holotype. Scale: 2 mm.

Fig. 6. *Clivina perthensis*, sp. n. ♂ holotype. Scale: 2 mm.





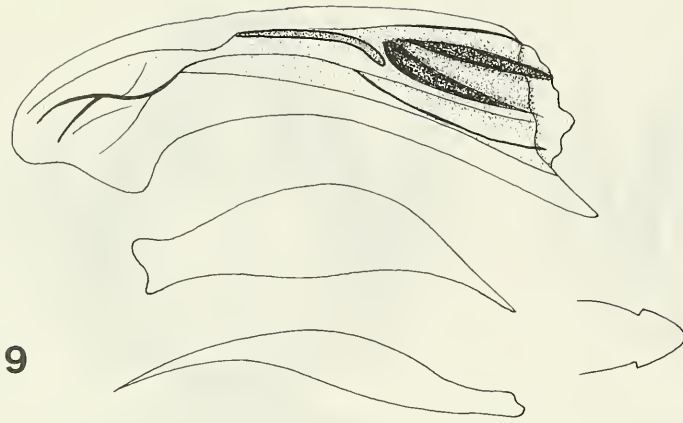
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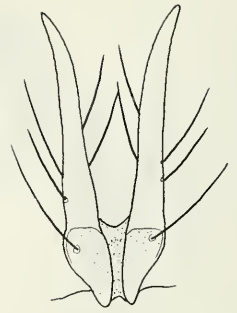
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Fig. 7. *Clivina inaequalifrons*, sp. n. ♀ holotype. Scale: 2 mm.

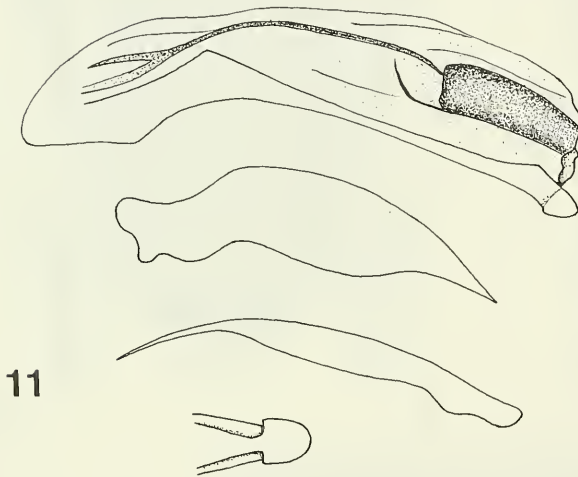
Fig. 8. *Clivina rufoniger*, sp. n. ♂ holotype. Scale: 2 mm.



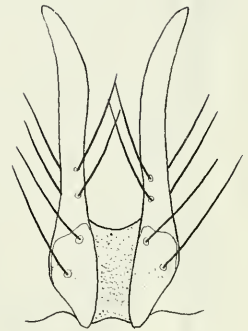
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Figs 9, 10. *Clivina coryzoides*, sp. n. 9. ♂ aedeagus and parameres; 10. ♀ styli.

Figs 11, 12. *Clivina intersecta*, sp. n. 11. ♂ aedeagus and parameres; 12. ♀ styli.

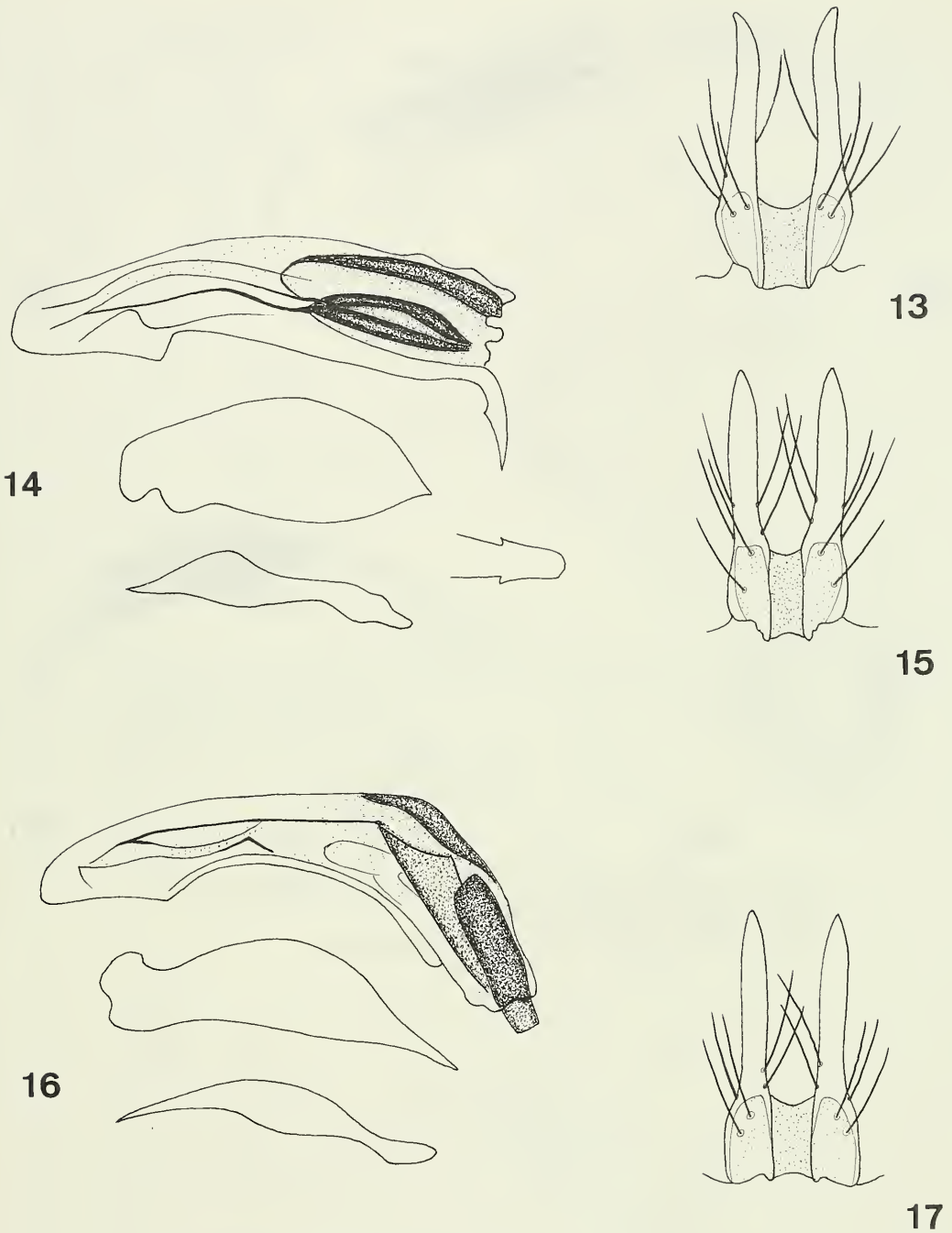
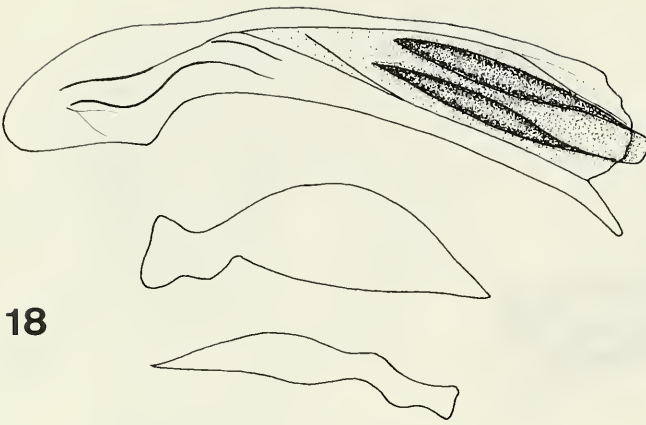


Fig. 13. *Clivina depressicollis*, sp. n. ♀ styli.

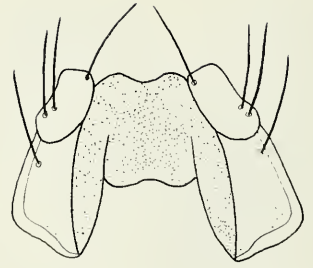
Figs 14, 15. *Clivina tumidifrons*, sp. n. 14. ♂ aedeagus and parameres; 15. ♀ styli.

Figs 16, 17. *Clivina gerstmeieri*, sp. n. 16. ♂ aedeagus and parameres; 17. ♀ styli.

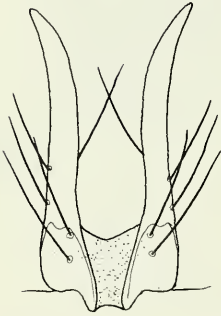




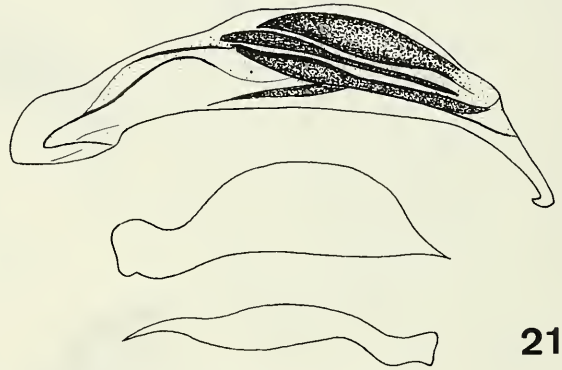
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Figs 18, 19. *Clivina perthensis*, sp. n. 18. ♂ aedeagus and parameres; 19. ♀ styli.

Fig. 20. *Clivina inaequalifrons*, sp. n. ♀ styli.

Fig. 21. *Clivina rufoniger*, sp. n. ♂ aedeagus and parameres.

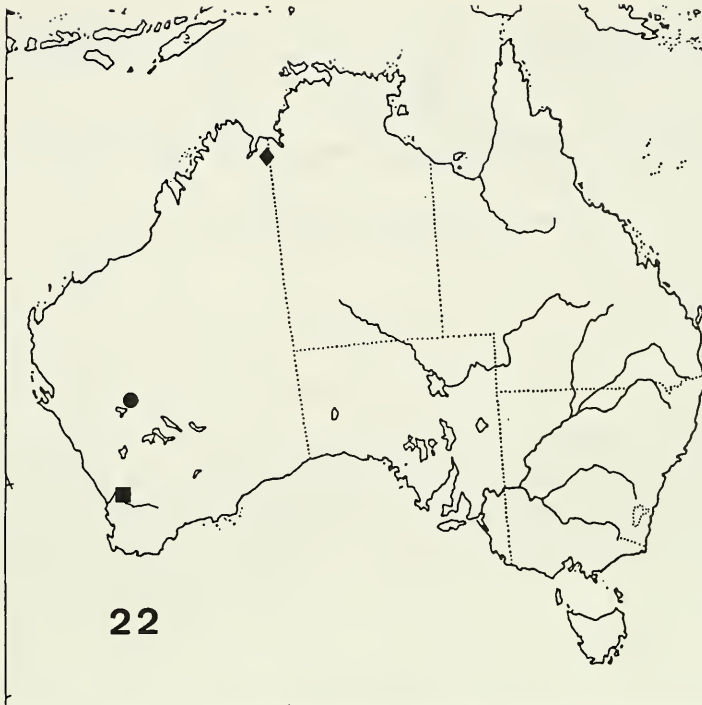


Fig. 22. Distribution of *Clivina coryzoides*, sp. n.: ●, *C. intersecta*, sp. n.: ■, and *C. depressicollis*, sp. n.: ◆.



Fig. 23. Distribution of *Clivina tumidifrons*, sp. n.: ●, *C. gerstmeieri*, sp. n.: ■, and *C. perthensis*, sp. n.: ◆.



Fig. 24. Distribution of *Clivina inaequalifrons*, sp. n.: ◆, and *C. rufoniger*, sp. n.: ●.



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Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Mitteilungen der Münchner Entomologischen Gesellschaft](#)

Jahr/Year: 1989

Band/Volume: [079](#)

Autor(en)/Author(s): Baehr Martin

Artikel/Article: [On new and rare Clivia Latr. from northern and western Australia 1. \(Col. Carabidae, Scaritinae\). 5-30](#)