

**A new genus of the tribe Dyschiriini with five new species from New Caledonia  
(Coleoptera: Carabidae: Scaritinae)**

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**Taxonomy, descriptions, new genus, new species, Coleoptera, Carabidae, Scaritinae, Dyschiriini, New Caledonia**

**Abstract.** *Caledyschirius* gen. nov., the first known genus of the tribe Dyschiriini from New Caledonia, is established and its five new species: *C. monteithi* sp. nov., *C. bicolor* sp. nov., *C. rufithorax* sp. nov., *C. baehri* sp. nov. and *C. burwelli* sp. nov. are described and illustrated including their aedeagi. The new genus is compared to the related genera of the tribe Dyschiriini and its species are keyed.

INTRODUCTION

According to the latest revision of the tribe Dyschiriini published by Fedorenko (1996) and carabids catalogue compiled by Lorenz (2005), the tribus is distributed world-wide except some limited areas. The genus *Setodyschirius* Fedorenko, 1996, to date a single known representative of the tribe Dyschiriini from the Australian region, is endemic to Australia; seven hitherto known species were described by McLeay (1865, 1866), Putzeys (1868), Blackburn (1890, 1891) and Sloane (1896, 1923). Recently Geoff Monteith of the Queensland Museum, Brisbane, has sent me a series of Dyschiriini, collected by himself and next collectors in New Caledonia. These 57 specimens belong to the five species of a new, peculiar genus described below.

MATERIAL AND METHODS

The specimens were dry-mounted and studied, including measurements and examination of the microsculpture, at a magnification of 56x. All specimens of each new species were measured. Standard measurements follow Fedorenko (1996). Length of body is given with 0.05 mm accuracy; other measurements including ratios and means are down to two decimal places. Label locality data of all specimens are quoted verbatim. Male genitalia (aedeagi) were embedded in Canada balsam (male holotypes) or fixed with water-soluble glue.

The following abbreviations are used to indicate the depository of specimens:

MNHN Muséum National d'Histoire Naturelle, Paris, France;

PBPC Petr Bulirsch collection, Praha, Czech Republic;

QMBA Queensland Museum, Brisbane, Australia,

BMNH The Natural History Museum, London, UK

OSAC Oregon State Anthropol Collection, Oregon State University, Corvallis, U.S.A.

EMEC Essig Museum of Entomology, University of California, Berkeley, U.S.A.

Other abbreviations:

ASP: apical setiferous puncture(s); BSP: basal (prescutellar) setiferous puncture(s); DSP: dorsal setiferous puncture(s); PASP: preapical setiferous puncture(s); PHSP: posthumeral setiferous puncture(s); HT: holotype(s); PT: paratype(s); / (a forward slash): indicates the end of a line on locality labels; //: indicates the end of a label and the beginning of the next one

## RESULTS

### *Caledyschirius* gen. nov.

**Type species:** *Caledyschirius monteithi* sp. nov.

**Description.** Genus of tribe Dyschiriini. Habitus as in Figs 1-5. Small sized, length 1.80-2.70 mm.

Head. Labrum slightly emarginated, 5-setose, even setae slightly shorter. Mandibles relatively long, regularly curved, with small premolar tooth. Anterior margin of clypeus with distinctly protruding lateral lobes, between them straight. Clypeofrontal area with unusual structure: either with more or less distinct Y-forming carina, crossed in eye midlength by obtuse to shortly Y-shaped second carina, behind both carinae broadly and deeply depressed or with transverse furrow and with blunt Y-shaped carina behind furrow; facial furrows deep and very broad, parallel in anterior part, more or less distinctly interrupted by posterior carina, than strongly turned out around posterior margin of eyes. Surface smooth, with neither microsculpture nor punctures near posterior margin of eyes. Eyes small, slightly reduced, more or less flattened, slightly to twice longer than genae. Antennae short, outer antennomeres submoniliform to moniliform. Two supraorbital and one clypeal setiferous punctures. Median part of head distinctly depressed, neck very broad, vaulted; anterior part of head flattened laterally, posterior part strongly vaulted. Mentum slightly excavated anteriorly.

Pronotum. Smooth, shiny, strongly convex laterally, disc with or without several fine punctures; not to rather slightly attenuated anteriorly, outline strongly and regularly rounded. Anterior angles narrowly; posterior ones broadly rounded. Front transverse impression missing; median line superficial, anteriorly vanishing; reflexed lateral margin and lateral channel missing. Proepisterna shiny, neither reticulated nor punctured.

Elytra. Very short ovate, very strongly convex laterally, smooth, shiny; base strongly sloping; humeri very broadly rounded, not protruded, without humeral teeth; outline strongly convex; suture not to very slightly depressed basally. Base without basal border, with low-lying pair of small tubercles and isolated, distinct BSP. Striae, except very short apical stria, completely disappeared. Lateral channel very broad around PHSP, broad laterally, abruptly constricted apically behind posterior PASP. Elytra without standard DSP but either with numerous setae, arranged in mostly irregular rows or each elytron with 5-12 setae, placed in very fine foveae, mostly in virtual intervals 3, 5. Three PHSP, three PASP and two ASP. Posterior wings rudimentary.

Legs. Not specific, characteristic to tribe. Protibia with apical spine moderately long,

distinctly curved backwards, slightly outwards, longer than slightly curved apical spur; distal marginal tooth moderately large, sharp; proximal one much smaller, relatively sharp.

Metathorax. Very short, median coxae approached to posterior ones; posterior coxae broadly separated.

Aedeagus. Shape in Figs 1a,b, 2a,b and 5a,b. Similar type as in *Setodyschirius* (Fedorenko, 1996: Figs 128, 267). Apical lamella small, broadly rounded; aedeagus ventrally almost symmetric or with blunt bulge on left side; flagellum as in Fig. 2a, long, spiral, with about 2-3 coils. Parameres unisetose.

**Differential diagnosis.** *Caledyschirius* gen. nov. can be distinguished from all genera of Dyschiriini by combination of characters such as sculpture of head, often punctured upper surface of pronotum, completely missing pronotal lateral channel and reflexed lateral margin, very short ovate elytra with strongly rounded humeri and with totally disappeared striae and finally distinctly separated posterior coxae; this combination is unique within the tribe. *Caledyschirius* gen. nov. differs from the most similar Australian genus *Setodyschirius* by head with less concave mentum, with eyes smaller, slightly reduced and with genae markedly developed; by pronotum with upper surface mostly punctured, without rests of lateral channel and by elytra very short (ratio length / width around 1.3 in *Caledyschirius* gen. nov. and 1.6-2.0 in *Setodyschirius*) and very strongly convex laterally, with humeri indistinct and with striae completely disappeared; from the Oriental-Afrotropical genus *Cribrodyschirius* Bruneau de Miré, 1952 and central African *Neodyschirius* Kult, 1954, the only genera with similar structure of head, by head with slightly reduced eyes and distinctly developed genae; by pronotum without rests of lateral channel and without punctures on proepisterna (the latter distinctly punctate in *Cribrodyschirius*); by posterior coxae distinctly separated and by elytra very short, with striae totally disappeared and finally from the remaining genera of the tribe mainly by structure of clypeofrontal area, by pronotum with often punctured upper surface, with completely missing pronotal lateral channel and reflexed lateral margin and by elytra very short, laterally strongly vaulted, with striae completely disappeared.

**Distribution and collecting circumstances.** The new genus is endemic to New Caledonia. All specimens were sampled either by pyrethrum fogging of trees and logs or by sifting of litter in rests of indigenous forest at medium to high altitudes.

**Name derivation.** The generic name is composed of abbreviation of New Caledonia, place of findings, and *Dyschirius* Bonelli, 1810, the typical genus of the tribe. Gender masculine.

***Caledyschirius monteithi* sp. nov.**

(Figs 1, 1a,b)

**Type material.** Holotype (♂): 'New Caledonia 8639 / 21°45'S x 166°09'E/ Ningua Res camp, 1100 m / 12-13 Nov 2001. C Burwell / G Monteith. Pyr. trees, logs', (MNHN). Paratypes: (11 spec.) with the same data as HT, (QMBA, PBPC); (2 spec.): 'New Caledonia.

9919/ 21°45'S x 166°00'E / Mt Do summit, 1000 m/ 21 Nov 2000. GB Monteith / Pyrethrum, trunks & logs', (QMBA, PBPC, BMNH, OSAC, EMEC); (1 spec.): 'New Caledonia / Ningua Res. camp/ 12-13 Nov 2001 / G. B. Monteith // QM Berlesate 1039/ 21°45'S x 166°09'E/ Rainforest, 1100 m / sieved litter', (QMBA); (2 spec.): 'New Caledonia 8897 / 21°45'S x 166°09'E. R-For / Ningua Res. Camp, 1100 m/ 29 Jan 2002. G Monteith./ Pyrethrum, tree trunks', (QMBA); (1 spec.): 'New Caledonia 8645/ 21°45'S x 166°09'E. 1300 m / Ningua Res. nr summit / 13 Nov 2001. pyreth. trees & / logs. C. Burwell, G. Monteith', (QMBA).

**Description.** Habitus as in Fig. 1. Length 2.30-2.70 mm (HT 2.40 mm, mean 2.53 mm, n=15). Upper surface: head fuliginous with paler anterior part; pronotum dark fuliginous; elytra slightly paler, fuliginous with very slight bronze lustre; mouth-parts, antennae and legs rusty brown.

Head. Clypeofrontal area with distinct Y-forming carina, in eyes midlength crossed by broadly V-forming carina; facial furrows distinctly interrupted by posterior carina. Eyes very small, rather strongly flattened, slightly longer than genae. Antennae short, outer antennomeres moniliform.

Pronotum. Outline moderately convex, moderately distinctly attenuated anteriorly; disc with several fine punctures; 1.03-1.08 (HT 1.04, mean 1.06) times as long as wide, 1.51-1.60 (HT 1.56, mean 1.56) times as broad as head.

Elytra. 1.26-1.36 (HT 1.30, mean 1.31) times as long as wide, 1.32-1.38 (HT 1.32, mean 1.35) times as wide as pronotum; broadest in anterior third; suture not depressed at base. Apical stria short and shallow. Whole upper surface with several (about 100) setae, arranged in dense, mostly irregular rows; setae in basal part of inner intervals much sparser than latero-apically.

Aedeagus. As in Figs 1a,b. Outline ventrally with blunt bulge on left side, apical lamella ventrally rather narrowly rounded.

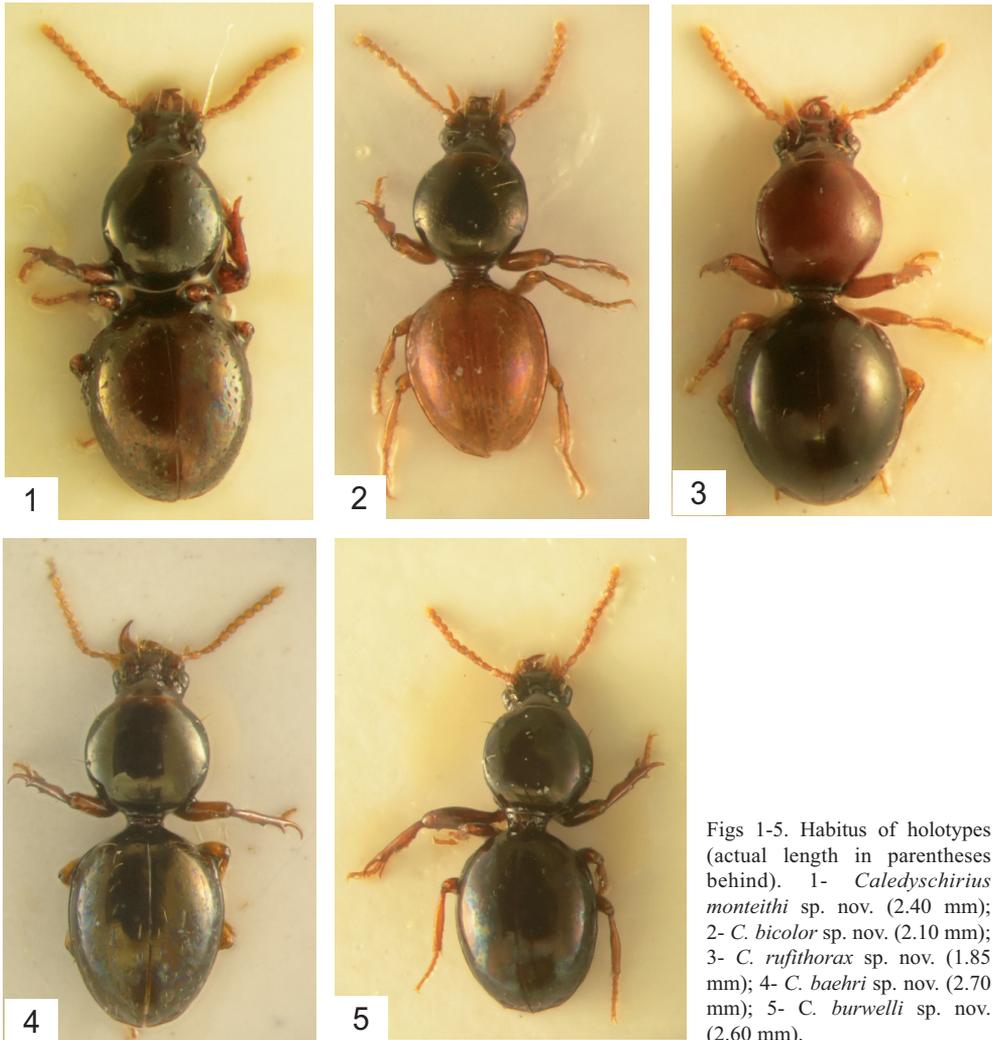
**Differential diagnosis.** *C. monteithi* sp. nov. can be distinguished from the remaining newly described species by characters mentioned in the key below as well as in differential diagnosis by each below described species.

**Name derivation.** Named in honor of Geoff Monteith (QMBA, Brisbane, Queensland, Australia), collector of several specimens of this new genus.

***Caledyschirius bicolor* sp. nov.**

(Figs 2, 2a,b)

**Type material.** Holotype (♂): 'New Caledonia 11666 / 20°58'S x 165°17'E. 500 m / Pic d'Amoa, N slopes./ 3 Oct 2004. G. Monteith./ pyrethrum, trees & logs.', (MNHN). Paratypes: (4 spec.): with the same data as HT, (QMBA, PBPC); (1 spec.): 'New Caledonia 11665 / 21°11'S x 165°16'E / Aoupinie, summit. 1000 m / 20 Oct 2004. G. Monteith./ pyrethrum, trees & logs.', (QMBA); (8 spec.): 'New Caledonia 8906/ 20°58'S x 165°17'E. 500 m / Pic d'Amoa, N slopes / 31 Jan 2002. G Monteith./ Pyrethrum, trees & logs.', (QMBA, PBPC); (4 spec.): 'New Caledonia 11433 / 20°58'S x 165°17'E. 500 m / Pic d'Amoa, N slopes./ 26



Figs 1-5. Habitus of holotypes (actual length in parentheses behind). 1- *Caledyschirius monteithi* sp. nov. (2.40 mm); 2- *C. bicolor* sp. nov. (2.10 mm); 3- *C. rufithorax* sp. nov. (1.85 mm); 4- *C. baehri* sp. nov. (2.70 mm); 5- *C. burwelli* sp. nov. (2.60 mm).

Nov 2003. G. Monteith./ Pyr., trees & logs. rainfor.', (QMBA, PBPC).

**Description.** Habitus as in Fig. 2. Length 1.95-2.50 mm (HT 2.10 mm, mean 2.19 mm; n=18). Upper surface: distinctly bicoloured; posterior part of head and pronotum dark fuliginous with very slight bronze lustre, anterior part of head dark brown, elytra, antennae, mouth-parts and legs rusty brown.

Head. Clypeofrontal area with short and blunt to rather sharp Y-forming carina, in eyes midlength its longitudinal part crossed by blunt V-forming carina; facial furrows slightly interrupted by posterior carina. Eyes small, moderately strongly flattened, twice longer than

genae. Antennae short, outer antennomeres moniliform.

Pronotum. Outline strongly convex, very slightly attenuated anteriorly; disc with several moderately impressed punctures; 0.97-1.01 (HT 0.99, mean 0.98) times as long as wide 1.53-1.65 (HT 1.53, mean 1.60) times as broad as head.

Elytra. 1.24-1.34 (HT 1.26, mean 1.27) times as long as wide, 1.21-1.28 (HT 1.26, mean 1.24) times as wide as pronotum; broadest in anterior third; suture not depressed at base. Apical stria short, broad and moderately deep. Each elytron with three setae in virtual interval 3 and two in virtual interval 5.

Aedeagus. As in Figs 2a,b. Outline ventrally with blunt bulge on left side, apical lamella ventrally rather broadly rounded.

**Differential diagnosis.** *C. bicolor* sp. nov. can be distinguished from the preceding species by body distinctly bicoloured, with light elytra and by sparser dorsal elytral setae (each elytron with five setae in *C. bicolor* sp. nov. and about 50 in *C. monteithi* sp. nov.).

**Name derivation.** After unique colour of upper surface.

***Caledyschirius rufithorax* sp. nov.**

(Fig. 3)

**Type material.** Holotype (♀): 'New Caledonia/ R. Bleue, Pourina / track. 18 Nov 2001/ G. B. Monteith // QM Berlesate 1049 / 22°04'S x 166°38'E / Rainforest, 900 m / Sieved litter', (MNHN).

**Description.** Habitus as in Fig. 3. Length 1.85 mm. Upper surface: distinctly bicoloured; head and pronotum rusty red, elytra almost black, with lighter elytral margin and epipleura; mouth-parts, antennae and legs rusty yellow-brown.

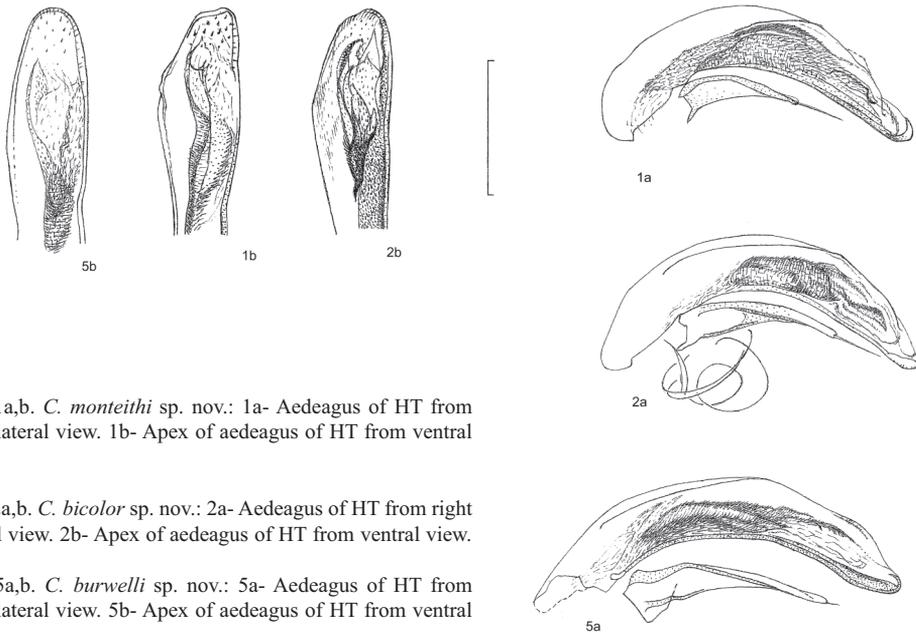
Head. Clypeofrontal area with two furrows: anterior transverse, posterior oblique, interrupted by short and blunt carina; facial furrows deep and moderately broad. Eyes small, slightly flattened, almost twice as long as genae. Antennae short, outer antennomeres moniliform.

Pronotum. Outline moderately convex, not attenuated anteriorly; disc with sparse, fine punctures; 1.05 times as long as wide; 1.50 times as broad as head.

Elytra. 1.24 times as long as wide, 1.34 times as wide as pronotum; broadest distinctly before middle; suture slightly depressed at base. Apical stria broad and moderately deep. Each elytron with three setae in virtual interval 3 and two in virtual interval 5.

**Differential diagnosis.** *C. rufithorax* sp. nov. can be distinguished from the most similar preceding species by smaller body (1.85 mm in *C. rufithorax* sp. nov. and 1.95-2.50 mm in *C. bicolor* sp. nov.), contrary bicoloured (rusty red pronotum and almost black elytra in *C. rufithorax* sp. nov. and fuliginous pronotum and rusty brown elytra in *C. bicolor* sp. nov.).

**Name derivation.** Named after unique colour of pronotum.



Figs 1a,b. *C. monteithi* sp. nov.: 1a- Aedeagus of HT from right lateral view. 1b- Apex of aedeagus of HT from ventral view.

Figs 2a,b. *C. bicolor* sp. nov.: 2a- Aedeagus of HT from right lateral view. 2b- Apex of aedeagus of HT from ventral view.

Figs 5a,b. *C. burwelli* sp. nov.: 5a- Aedeagus of HT from right lateral view. 5b- Apex of aedeagus of HT from ventral view.

### *Caledyschirius baehri* sp. nov.

(Fig. 4)

**Type material.** Holotype (♀): 'New Caledonia 11163/ 21°22'S x 165°20'E. 1400 m/ Me Maoya, nr summit./ 12 Nov 2002. Burwell &/ Monteith. pyreth, trees & logs', (MNHN).

**Description.** Habitus as in Fig. 4. Length 2.70 mm. Upper surface: head fuliginous with paler anterior part; pronotum and elytra dark fuliginous; mouth-parts, antennae and legs rusty brown.

**Head.** Clypeofrontal area with distinct Y-forming carina, in eyes midlength crossed by broadly V-forming carina; facial furrows distinctly interrupted by posterior carina. Eyes small, slightly flattened, distinctly longer than genae. Antennae moderately short, outer antennomeres submoniliform.

**Pronotum.** Outline strongly convex, slightly attenuated anteriorly; disc without punctures 0.97 times as long as wide; 1.68 times as broad as head.

**Elytra.** 1.35 times as long as wide, 1.23 times as wide as pronotum; broadest distinctly before middle; suture very slightly depressed at base. Apical stria broad and moderately deep. Each elytron with about 40 setae, placed more or less regularly in odd virtual intervals.

**Differential diagnosis.** *C. baehri* sp. nov. can be easily distinguished from all above described species by pronotum without punctures and moreover from the latter two species

by much larger, unicoloured body.

**Name derivation.** Named in honor of my friend Martin Baehr (Munich, Germany), world-known specialist in Australian Carabidae.

***Caledyschirius burwelli* sp. nov.**

(Figs 5, 5a,b)

**Type material.** Holotype (♂): “New Caledonia 8768/ 20°34’S x 164°46’E / Mt Panie track, 1500 m / 9 Nov 2001. C. Burwell / Pyrethrum, trees & logs’, (MNHN). Paratypes: (7 spec.): with the same data as HT, (PBPC, QMBA, BMNH, OSAC, EMEC); (4 spec.): ‘New Caledonia 8769 / 24°34’S x 164°46’E / Mt Panie summit, 1600 m / 9 Nov 2001. C. Burwell / Pyrethrum, trees & logs’, (PBPC, QMBA, OSAC); (3 spec.): ‘New Caledonia 8764 / 24°34’S x 164°46’E / Mt Panie refuge, 1300 m / 8-9 Nov 2001. C. Burwell / Pyrethrum, trees & logs’, (QMBA, PBPC); (2 spec.): ‘New Caledonia / 24°34’S x 164°46’E / Mt Panie refuge, 1300 m / 16-18 Nov 2000. Bouchard / Burwell, Monteith. 9938’, (QMBA, PBPC); (1 spec.): ‘New Caledonia / 24°35’S x 164°46’E / Mt Panie summit, 1600 m / 18 Nov 2000. Bouchard / Burwell, Monteith. 9939’, (QMBA); (1 spec.): ‘New Caledonia / Mt Panie, 1300-1600 m / 15 May, 1984 / G. Monteith & D. Cook’, (QMBA).

**Description.** Habitus as in Fig. 5. Length 2.35-2.70 mm (HT 2.60 mm, mean 2.58 mm, n=14). Upper surface: head fuliginous with slightly paler anterior part; pronotum and elytra dark fuliginous to almost black; elytra with very slight bronze lustre; mouth-parts, antennae and legs rusty brown.

Head. Clypeofrontal area with two furrows: anterior transverse, posterior oblique, prolonged by distinct, moderately sharp carina; facial furrows deep and moderately broad. Eyes very small, moderately flattened, slightly longer than genae. Antennae short, outer antennomeres moniliform.

Pronotum. Outline convex, slightly attenuated anteriorly; 1.02-1.06 (HT 1.02, mean 1.04) times as long as wide; 1.56-1.64 (HT 1.61, mean 1.60) times as broad as head.

Elytra. 1.31-1.39 (HT 1.34, mean 1.35) times as long as wide 1.25-1.32 (HT 1.29, mean 1.29) times as wide as pronotum; broadest distinctly before middle; suture very slightly depressed at base. Apical stria broad and moderately deep. Each elytron with 4-7 setae in virtual interval 3 and 2-4 setae in virtual interval 5.

Aedeagus. As in Figs 5a,b. Outline ventrally almost symmetric, apical lamella ventrally regularly, very broadly rounded.

**Differential diagnosis.** *C. burwelli* sp. nov. can be distinguished from *C. baehri* sp. nov., the most similar species, by head with different structure of clypeofrontal area and especially by elytra with discal setae much sparser (each elytron with 4-7 setae in virtual interval 3 and 2-4 setae in interval 5 in *C. burwelli* sp. nov. and with about 40 setae in irregular rows mostly in odd virtual intervals in *C. baehri* sp. nov.) and it can be easily distinguished from the remaining above described species by impunctate pronotum.

**Name derivation.** Named in honour of Christopher Burwell (QMBA, Brisbane, Queensland,

Australia), collector of several specimens of the new genus.

#### KEY TO SPECIES OF THE GENUS *CALEDYSCHIRIUS* GEN. NOV.

- 1(6) Pronotal disc finely and sparsely punctured. Dark fuliginous or distinctly bicoloured species.  
2(3) Each elytron with about 50 setae; elytra and pronotum fuliginous. Length 2.30-2.70 mm. .... *C. monteithi* sp. nov.  
3(2) Each elytron with three setae in virtual interval 3 and two in virtual interval 5; upper surface bicolour.  
4(5) Elytra rusty brown, pronotum dark fuliginous. Length 1.95-2.50 mm. .... *C. bicolor* sp. nov.  
5(4) Elytra dark fuliginous, pronotum rusty red. Length 1.85 mm. .... *C. rufithorax* sp. nov.  
6(1) Pronotal disc smooth, without punctures. Dark fuliginous species.  
7(8) Each elytron with about 40 setae, mostly in virtual odd intervals. Length 2.70 mm. .... *C. baehri* sp. nov.  
8(7) Each elytron with 6-11 setae in virtual intervals 3 and 5. Length 2.35-2.70 mm..... *C. burwelli* sp. nov.

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