

## *Hedychridium* of the Afrotropical Region (Hymenoptera: Chrysididae)

by

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The chrysidid genus *Hedychridium* Abeille is discussed for the Afrotropical Region. *Acrotoma* Mocsáry is given as a new junior synonym of *Hedychridium*, and 18 new species are described: *africanum*, *bicolor*, *bidens*, *biquetrum*, *chadense*, *congoense*, *cupreidorsum*, *desertorum*, *eardeleyi*, *erythema*, *fulgidum*, *gessi*, *jebbanum*, *kilifense*, *lomholdti*, *namibianum*, *robustum* and *senegalense*.

### INTRODUCTION

*Hedychridium* Abeille is the second largest chrysidid genus, containing more than 200 species, 27 of which have been described from continental Africa south of the Sahara; an additional 18 are described below.

Members of this genus are characterized by having a single, submedial, perpendicular tooth on all tarsal claws. In addition, the forewing medial vein is arched or straight, the stigma is more than twice as long as broad and tapering apically, and Rs is more than half as long as the stigma; the scapal basin is punctate, often with appressed silvery setae, and fine cross-ridging medially, never smooth and polished, and the apical abdominal segment may be entire or less commonly dentate or notched.

In Africa one group of species, with 2 small submedial teeth on the abdominal apex, has been placed in the genus *Acrotoma* Mocsáry. According to Edney (1940) this genus comprises: *arnoldi* Edney, *braunsi* Mocsáry, *discrepans* Edney and *dybowskiyi* (Buysson). Examination of these species indicates that they are typical *Hedychridium*, only differing from other members of the genus by the presence of 2 apicomedial abdominal teeth. Several other *Hedychridium* also have the abdominal apex dentate, although somewhat differently, with 6 teeth in *sexdentatum* Buysson and 4 in *zavattari* Zimmermann. The species placed in *Acrotoma* actually form the *dybowskiyi* species-group of *Hedychridium*.

Specimens were borrowed from the following collections: DAVIS – Bohart Museum of Entomology, University of California, Davis, USA (R. O. Schuster); DURBAN – Durban Museum, South Africa (C. D. Quickelberge); GRAHAMSTOWN – Albany Museum, Grahamstown, South Africa (F. W. Gess); LEIDEN – Rijksmuseum van Natuurlijke Historie, Leiden, Netherlands (K. van Achterberg); LOS ANGELES – Los Angeles County Museum, Los Angeles, California, USA (R. R. Snelling); LUND –

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Zoologiska Institutionen, Zoologiska Museet, Lund, Sweden (R. Danielsson); PRETORIA-1 – Transvaal Museum, Pretoria, South Africa (R. Toms); PRETORIA-2 – National Collection of South Africa, Pretoria (C. D. Eardley); TERVUREN – Musee Royal de l'Afrique Centrale, Tervuren, Belgium (J. E. Decelle); WASHINGTON – U.S. National Museum, Washington, D.C. (K. V. Krombein, A. S. Menke).

A variety of structural features and terms are used below which require further explanation; MOD = midocellus diameter, F = flagellomere, PD = puncture diameter, S = gastral sternum, T = gastral tergum. The mesopleuron may be simple or angulate and carinate. Where it is carinate, the mesopleuron projects anterolaterally. The lower edges are formed by the omaulus, which extends posteriorly from the epicnemium, and the scrobal carina, which extends along the dorsal edge of the scrobal sulcus from the scrobe anteriorly until it meets the oblique mesopleural carina submedially. The verticallus originates at this juncture and ends near the midcoxa.

#### Genus *Hedychridium* Abeille

**Hedychridium** Abeille, 1878: 3. Type-species: *Hedychrum minutum* Lepeletier, 1806: 122 (= *Chrysis ardens* Coquebert 1801: 59). Designated by Ashmead, 1902.

**Acrotoma** Mocsáry, 1902: 536. Type-species: *Hedychrum dybowski* Buysson, 1898: 520. Monobasic. **Syn. nov.**

#### *Hedychridium africanum* spec. nov.

Holotype male. Body length 5.5 mm. Brow with large, nearly contiguous punctures grading very gradually into scapal basin; basin punctures coarse with sparse appressed silvery setae, medial zone of fine cross-ridging occupying about one-fifth of basin; subantennal distance 1.7 MOD; malar space 0.8 MOD; F-I length 1.8 × breadth; F-II length 1.3 × breadth; F-V length 1.1 × breadth; thoracic dorsum with fine contiguous punctures; mesopleuron angulate but without carinae, posterior face punctate and rugose; forefemur with anteroventral carina; propodeal angle broad and triangular; forewing medial vein obtusely curved; tergal punctation contiguous and medium-sized; T-III swollen before apical rim, rim not transparent; S-III with long, even, apical fringe. Head, thorax and terga dark blue; flagellum black; tegulae, femora, tibiae and sterna blue; tarsi pale red; wings stained brown.

Female unknown.

**MATERIAL EXAMINED.** Holotype male – SOUTH AFRICA: Natal Prov., Fannies Island Camp, St. Lucia, 28,10 S 32,25 E, 14–16 January 1981, G. L. Prinsloo (PRETORIA-2). Paratype male – same data as holotype, collected by I. M. Millar (DAVIS).

**Discussion.** *H. africanum* resembles *obscuratum* (Mocsáry), based on the gently curved forewing medial vein, lateral propodeal angle which is broadly triangular, tegula and S-II blue and body blue to greenish blue. It differs from *obscuratum* in having S-III blue, malar space longer than 0.5 MOD, and the inner surface of the hind tibia blackish.

#### *Hedychridium bicolor* spec. nov., Figs 1, 9.

Holotype male. Body length 5 mm. Face (Fig. 1); vertex with unusually long erect brown setae, 2 MOD or longer; brow punctures large and contiguous; scapal basin short with fine dense punctures and appressed silver pubescence, medial zone of

cross-ridging covering one-third of basin area; subantennal distance 1,5 MOD; malar space 0,7 MOD; F-I 2,6 × as long as broad; F-II length 1,4 × breadth; F-V length equal to breadth; thoracic dorsum with moderate contiguous punctures; mesopleuron rounded without carinae, posterior surface partly smooth and impunctate; fore femur unmodified; propodeal angle broadly triangular (Fig. 9); forewing medial vein obtusely curved; terga with contiguous moderate punctures; T-III swollen before apical rim, rim not transparent; S-III with long, even apical fringe. Face green, becoming bluish in middle of basin, rest of head coppery with green tints; flagellum black; thorax dorsally coppery with green tints, laterally green, venter purple, propodeum green; tegula blue; T-I green; T-II blue; T-III purple; S-II dark purple; S-III brown; wings stained brown; femora and tibiae blue; tarsi black.

Female same as male.

**MATERIAL EXAMINED.** Holotype male – SOUTH AFRICA: Van Rhynsdorp, July/August 1927, G. v. Son (PRETORIA-1). Paratypes – 1 male and 2 females, same data as type (PRETORIA-1, DAVIS); 1 male and 1 female, same data as holotype except 1 August 1927, H. Brauns (PRETORIA-1).

**Discussion.** The most distinctive feature of *bicolor* is the coloration of the body, with the head and thorax coppery green dorsally and the abdomen greenish blue anteriorly, becoming purple posteriorly. No other species of African *Hedychridium* has this colour pattern. The copper and blue coloration, primarily brown abdominal sternum, triangular propodeal angle and long F-I suggests a relationship with *cupreidorsum*.

***Hedychridium bidens* spec. nov., Figs 2, 7, 8, 11.**

Holotype male. Body length 5 mm. Face (Fig. 2); brow sharp and abrupt, with transverse frontal carina and large contiguous punctures dorsally; scapal basin with dense tiny punctures, covered with appressed silvery setae, with narrow, impunctate medial zone of fine cross-ridging; subantennal distance 1,5 MOD; malar space 0,7 MOD; F-I length 1,8 × breadth; F-II length 1,3 × breadth; F-V length 1,1 × breadth; thoracic dorsum with large deep contiguous punctures; mesopleuron sharply angulate, with omaulus, scrobal carina, verticaulus and scrobal sulcus, posterior surface punctate and rugose; forefemur broad, outer surface flattened with medial and ventral carinae (Fig. 7); metanotum acutely angled in profile, lateral projection tiny; propodeal angle broad and digitate, with obtuse posterior angle (Fig. 10); forewing medial vein obtusely curved; tergal punctures large and contiguous or nearly so; T-I with polished, impunctate stripe across top of declivity; T-II with short medial ridge; T-III swollen before rim; S-III with distinct, long, erect curly setae on apical half (Fig. 8). Head, thorax and T-I-II bluish green; T-III blue; flagellum brown; tegula and sterna green; wings lightly stained brown; femora and tibiae green; tarsi red.

Female unknown.

**MATERIAL EXAMINED.** Holotype male – SENEGAL: 3 km. n. Tanaff, 7 March 1977 (LUND).

**Discussion.** *H. bidens* belongs to the distinctive group of African species which have the propodeal angle subtended by a posterior lobe or tooth (Fig. 10). This group includes *congoense*, *kilifense*, *laterale* Edney and *latifrons* Edney. Additional diagnostic

features of *bidens* are S-II-III blue, fore femur dorsolaterally and ventrally carinate (Fig. 7), F-I length less than twice breadth, male S-III with distinct long, curly setae apically (Fig. 8), and tegula with blue spot.

***Hedychridium biquetrum* spec. nov., Fig. 11.**

Holotype female. Body length 4 mm. Brow distinct, with large, contiguous punctures; scapal basin with small punctures, about 1 PD apart, with appressed silvery setae, medial zone of cross-ridging occupying one-third of basin; subantennal distance 1,3 MOD; malar space 0,3 MOD; F-I length 2,2 × breadth; F-II 1,2 × as long as broad; F-V length 0,8 × breadth; thoracic dorsum with moderate, contiguous punctures; mesopleuron angulate, without carinae, posterior surface cross-ridged; forefemur with ventral carina; propodeal angle apically bilobate and deeply emarginate posteriorly (Fig. 11); forewing medial vein obtusely curved; tergal punctures moderate and contiguous; T-III slightly thickened before rim, rim not transparent. Head, thorax, tegula, terga, femora and tibiae blue; S-II blue; S-III with medial blue spot; flagellum black; tarsi red; wings stained brown.

Male unknown.

MATERIAL EXAMINED. Holotype female – SOUTH AFRICA: Transvaal, Ellisras, 22 November 1978, D. J. Brothers and C. F. I. Guillardmod (PRETORIA-2).

Discussion. A number of African *Hedychridium* have the propodeal angle apically truncate and deeply emarginate posteriorly: *biquetrum*, *coloratum* Edney, *facialis* (Mocsáry), *gessi*, *namibianum*, *ultimum* Edney, *uncinatum* Edney and *vulgare* Edney. *H. biquetrum* can be distinguished from these species by the blue abdominal sterna and tegula, F-I about twice as long as broad, malar space short, hindtibia inner surface black and concave, and T-III narrowed and somewhat rolled under posteriorly.

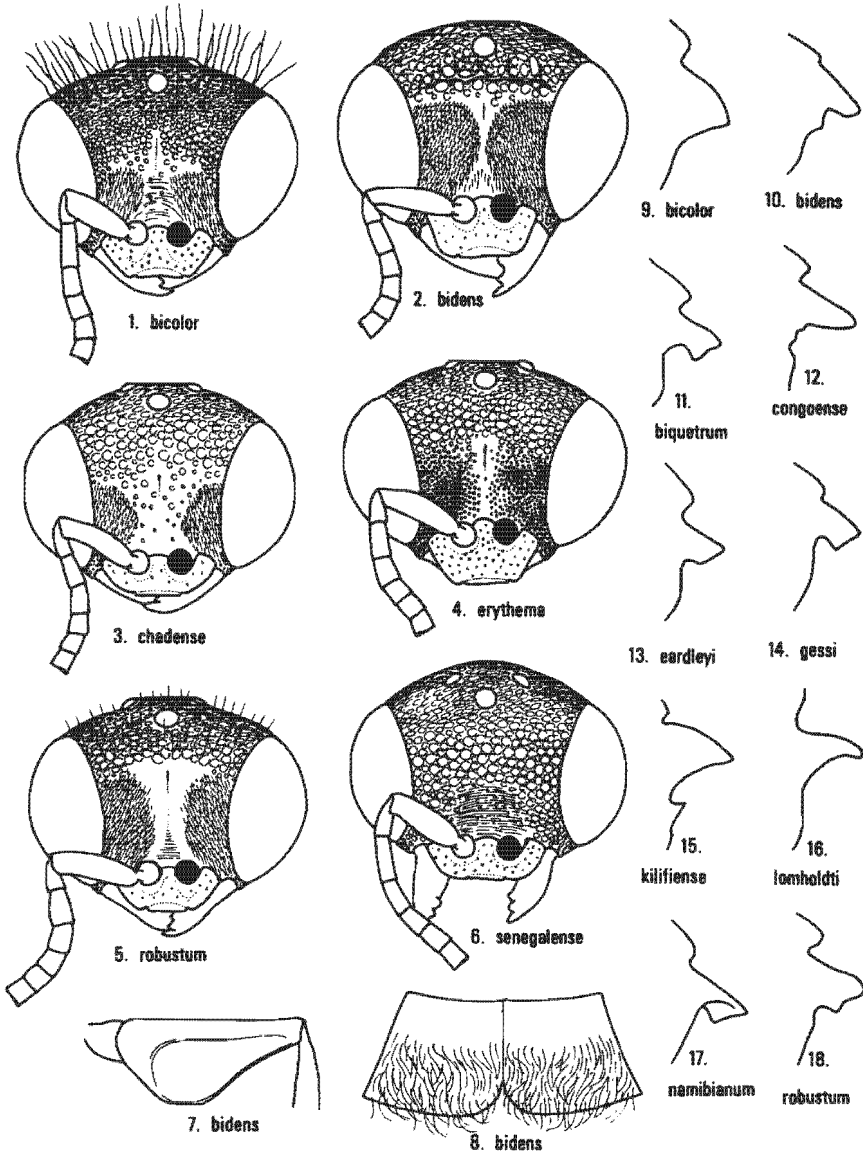
***Hedychridium chadense* spec. nov., Fig. 3.**

Holotype female. Body length 4 mm. Face (Fig. 3); brow bulging, with large, nearly contiguous punctures; scapal basin short, with relatively small patches of dense small punctures and silver pubescence occupying two-thirds of basin, medial area smooth and impunctate; subantennal distance 1 MOD; malar space 0,2 MOD; F-I length 1,6 × breadth; F-II 1,4 × as long as broad; F-V as long as broad; thoracic dorsum punctures large and nearly contiguous; mesopleuron angulate, without carinae, posterior surface partly polished and impunctate; forefemur unmodified; propodeal angle acute, triangular; forewing medial vein obtusely curved; tergal punctation moderate, nearly contiguous; S-III slightly swollen before apical rim, rim broad and transparent. Dorsum red, with blue tinted silver sheen, including femora and tibiae, T-II non metallic red medially; thoracic venter with green sheen; sterna and tarsi red; tegula silver-green tinted; wings stained light brown.

Male unknown.

MATERIAL EXAMINED. Holotype female – CHAD: N'Gouri, Kanem Dist., April 1958, P. Renaud (TERVUREN).

Discussion. No other African *Hedychridium* resembles *chadense*. It is most closely related to *margaritaceum* (Semenov and Nikolskaya), from the southern USSR. These 2 species can be immediately recognized by the distinctive coloration. In addition, the legs



Figs. 1-6. Front view of face. Fig. 7. Lateral view of forefemur. Fig. 8. Male sternum III. Figs. 9-18. Posterodorsal view of propodeal lateral angle.

and antennae are entirely pale red, forewing Rs stub is about half as long as the medial vein, malar space 0,5 MOD or shorter and subantennal distance 1 MOD or shorter. *H. chadense* can be distinguished from *margaritaceum* by the concolorous head, thorax and abdomen, head in dorsal view longer than the pronotum, and scapal basin medially with the same sized punctures as the brow.

***Hedychridium congoense* spec. nov., Fig. 12.**

Holotype female. Body length 5,5 mm. Brow distinct, with large contiguous punctures; scapal basin with dense small punctures and sparse pale setae occupying two-thirds of basin, medially cross-ridged; subantennal distance 1,1 MOD; malar space 0,3 MOD; F-I length twice breadth; F-II length 1,8 × breadth; F-V length 1,2 × breadth; thoracic dorsum with moderate, deep, contiguous punctures; mesopleuron angulate, with omaulus, scrobal carina and sulcus and verticaulus, posterior surface cross-ridged; forefemur broad, with ventral carina; propodeal angle slender and somewhat digitate, with obtuse posterior angle (Fig. 12); forewing medial vein strongly angled submedially; tergal punctation deep and contiguous; T-II strongly convex; T-III swollen before transparent apical rim. Head and T-I-II bluish green; thorax bluish green becoming blue dorsomedially; T-III, femora and tibiae blue; sterna green; flagellum black; tarsi brown; wings stained brown.

Male unknown.

MATERIAL EXAMINED. Holotype female – ZAIRE: Katanga, Kasompi, Jadotville Terr., October 1956, Marlier, Laurent and Leleup (TERVUREN).

Discussion. This species belongs to the group with the propodeal angle subtended by a posterior tooth or angle, as discussed under *bidens*. However, *congoense* can be distinguished from other members of this species group by the arched forewing medial vein, ventrally carinate fore femur, green tegula and abdominal sterna, and F-I length twice breadth.

***Hedychridium cupreidorsum* spec. nov.**

Holotype female. Body length 5,5 mm. Brow bulging, punctures moderate and contiguous, grading gradually into basin; scapal basin with tiny punctures and sparse setae occupying two-thirds of basin, medial area cross-ridged; subantennal distance 1,3 MOD; malar space 0,9 MOD; F-I length 1,8 × breadth; F-II length 1,4 × breadth; F-V as long as broad; thoracic dorsum with moderate contiguous punctures; mesopleuron angulate, with distinct carinae, posterior surface partly polished and impunctate; forefemur unmodified; propodeal angle narrow and triangular; forewing medial vein obtusely curved; tergal punctation medium, nearly contiguous; T-III swollen before apical rim, rim not transparent. Face bluish purple; vertex coppery red; gena purple; scutum, scutellum, posterior half of pronotum, and terga coppery red; flagellum black; tegula brown; S-II brown with medial blue spot; S-III brown; femora and tibiae bluish purple; wings stained brown.

Male unknown.

MATERIAL EXAMINED. Holotype female – SOUTH AFRICA: Cape Prov., Pakhuis Pass, 7 October 1975, R. M. Bohart (DAVIS).

Discussion. As in *bicolor* the unusual colour of *cupreidorsum* is diagnostic. The dorsum of the head, prothorax (except anterolaterally), scutum, scutellum and terga are bright coppery red, the rest of the head and thorax is dark purple. In addition, the tegula and sterna are dark brown, except for a blue spot on S-II. Other diagnostic features are F-I less than twice as long as broad, malar space more than 0,5 MOD, propodeal tooth slender and digitate, and apical margin of T-III curved ventrally.

***Hedychridium desertorum* spec. nov.**

Holotype male. Body length 6 mm. Brow bulging, with large contiguous punctures; scapal basin with dense small punctures and dense, appressed silvery setae occupying somewhat less than two-thirds of basin, medial area with fine, close cross-ridging; subantennal distance 0,9 MOD; malar space 0,4 MOD; F-I length 1,6 × breadth; F-II length 1,4 × breadth; F-V length 1,1 × breadth; thoracic dorsum with large, shallow, contiguous punctures; mesopleuron angulate with scrobal and omalulus, posterior surface partly smooth and impunctate; fore femur unmodified; propodeal angle slender and triangular; forewing medial vein forming a right angle; tergal punctures small and 0,2–0,8 PD apart; T-III swollen before broad, transparent, apical rim; S-III with apical fringe. Face green; head otherwise coppery green; flagellum black; thorax dorsally coppery with green tints, ventrally green; tegula brown; wings unstained; terga coppery with green tints; sterna, femora and tibiae green; tarsi red.

Female same as male.

MATERIAL EXAMINED. Holotype male – NAMIBIA: Namib/Naukluft Park, Kuiseb River near Gobabeb, 23,34 S 15,03 E, 18 February–20 March 1983 (PRETORIA-2). Paratype female – Gobabeb, 29 January 1978, O. Lomholdt (COPENHAGEN).

Discussion. *H. desertorum* most closely resembles *jebbanum*. Both have a triangular propodeal angle, brown abdominal sterna, clearly defined scapal basin with dense small punctures, and F-I less than twice as long as broad. It can be distinguished from *jebbanum* by the coppery dorsum, brown tegula and narrower propodeal angle.

***Hedychridium eardleyi* spec. nov., Fig. 13.**

Holotype male. Body length 4,5 mm. Brow indistinct, punctures large and contiguous; scapal basin with small contiguous punctures and silvery appressed setae, and narrow, finely cross-ridged medial stripe; subantennal distance 1,6 MOD; malar space 1 MOD; F-I length 1,9 × breadth; F-II length 1,3 × breadth; F-V as long as broad; thoracic dorsum with large, deep, contiguous punctures; mesopleuron angulate, without carinae, posterior surface densely microridged or rugose; fore femur unmodified; propodeal angle broadly triangular (Fig. 13); forewing medial vein obtusely curved; tergal punctures moderate and contiguous; T-III swollen before nontransparent apical rim; S-III with long apical fringe. Head, thorax, tegula, femora, tibiae and S-I-II greenish blue; S-III brown; flagellum black, tarsi pale red; wings tinted brown.

Female same as male except greener.

MATERIAL EXAMINED. Holotype male – SOUTH AFRICA: Transvaal, Mogol Nature Res., Ellisras Dist., 27–29 February 1984, C. D. Eardley (PRETORIA-2).

Paratype female – same data as type, except 19–23 November 1979, G. L. Prinsloo (DAVIS).

Discussion. Although closely resembling *obscuratum*, and to a lesser extent *erythema*, *eardeleyi* can be distinguished by the pale red tarsi, densely micro-ridged posterior face of the mesopleuron, long apical fringe on the male S-III, and S-II entirely green. This species is named for Mr. C. D. Eardley, National Collection of Insects, Pretoria.

***Hedychridium erythema* spec. nov., Fig. 4**

Holotype female. Body length 4 mm. Face (Fig. 4); brow indistinct, punctures large and contiguous, grading gradually into basin; scapal basin with moderate, contiguous punctures, without silver setae, and with narrow, finely rugose, impunctate medial area; subantennal distance 1,7 MOD; malar space 0,7 MOD; F-I length 1,6 × breadth; F-II length 1,2 × breadth; F-V as long as broad; thoracic dorsum with large, shallow, contiguous punctures; mesopleuron rounded, without carinae, posterior surface partly smooth and impunctate; fore femur unmodified; propodeal angle broad and triangular; forewing medial vein obtusely curved; tergal punctures small, shallow and contiguous; T-I basal declivity with coarse vertical ridges; T-III swollen before apical rim, rim not transparent. Head coppery pink with green tints, except scapal basin green; flagellum black; thorax coppery pink with green tints dorsally, venter and propodeum green; tegula, femora and tibiae green; terga coppery with green tints; S-II green; S-III brown; wings tinted brown. Body with long erect pale setae.

Male unknown.

MATERIAL EXAMINED. Holotype female – SOUTH AFRICA: Cape Prov., 7 mi. e. Garies, 9 September 1972, M. E. and B. J. Irwin (DAVIS). Paratype female – LESOTHO: Mamathes (Basutoland), 28 January 1945, A. J. Guillaumod (DURBAN).

Discussion. *H. erythema* most closely resembles *obscuratum*, *eardeleyi* and to a lesser extent *africanum*, based on the broadly triangular propodeal angle, green tegula, short F-I, long clypeus and long malar space. It can be distinguished by the bright coppery tints on the dorsum of the body, S-II only with a green medial spot, head with long erect pale setae, metapleuron + propodeum below the lateral angle highly polished and smooth, and the basal declivity of T-I with coarse vertical ridges.

***Hedychridium fulgidum* spec. nov.**

Holotype female. Body length 4,5 mm. Brow distinct with large nearly contiguous punctures; scapal basin with dense tiny punctures and scattered medium ones, and dense, appressed, silvery setae, medial third of basin finely cross-ridged; subantennal distance 0,8 MOD; malar space 0,5 MOD; F-I length 1,6 × breadth; F-II length 1,3 × breadth; F-V length 0,8 × breadth; thoracic dorsum with punctures 0,5–1,0 PD apart, highly polished between; mesopleuron rounded without carinae, posterior surface partly smooth and impunctate; forefemur unmodified; propodeal angle triangular; forewing medial vein obtusely curved; tergal punctures about 1 PD apart, shiny between; T-III not thickened before rim, rim narrow and transparent. Scapal basin blue; vertex coppery, rest of head and terga dark green, with bright green and copper tints; flagellum brown; thorax dark green, with bright green and copper tints dorsally; tegula green; tibiae and femora blue; tarsi brown; sterna blue; wings stained pale brown.

Male unknown.



MATERIAL EXAMINED. Holotype female – NAMIBIA: Namib/Naukluft Park, Kuiseb River near Gobabeb, 23,34 S 15,03 E, 18 February–20 March 1983 (PRETORIA-2).

Discussion. Diagnostic features of this species are the narrow triangular propodeal angle, blue abdominal sterna and tegula, short clypeus, large punctures in the scapal basin, posterior face of the mesopleuron and side of the propodeum smooth with dense fine microridges or rugae, and shallow well-separated punctures on the thoracic dorsum and terga. The body colour of *fulgidum* is distinctive and unusual among African *Hedychridium* species; the underlying colour is apparently black, with dark green and blue tints ventrally and bright copper and green tints dorsally.

***Hedychridium gessi* spec. nov.**, Fig. 14.

Holotype female. Body length 5 mm. Brow distinct with large contiguous punctures; scapal basin with small punctures, 0,5–1,0 PD apart, without dense appressed setae, medial third impunctate and finely cross-ridged; subantennal distance 1,8 MOD; malar space 0,3 MOD; F-I length 2,4 × breadth; F-II 1,5 × as long as broad; F-V length 1,1 × breadth; thoracic dorsum with large, deep, contiguous punctures; mesopleuron angulate, without carinae, posterior surface partly smooth and impunctate; fore femur broad and smooth, with scattered punctures and ventral carina; propodeal angle apically truncate and deeply notched posteriorly (Fig. 14); forewing medial vein obtusely curved; tergal punctation deep and contiguous; T-III thickened before transparent apical rim. Head bluish green, becoming green in scapal basin; flagellum black; thorax and terga bluish green; tegula and sterna brown; femora and tibiae blue; tarsi brown; wings stained brown.

Male unknown.

MATERIAL EXAMINED. Holotype female – SOUTH AFRICA: Cape Prov., Grahamstown, Hilton, 10 November 1976, F. W. Gess, 'in nesting area of *Jugurtia confusa* Richards' (GRAHAMSTOWN). Paratypes – 1 female, 19 November 1976, 1 female, 2–5 December 1979, F. W. and S. K. Gess; 1 female – 5 December 1980, D. W. Gess (GRAHAMSTOWN, DAVIS).

Discussion. This is another of the *Hedychridium* with a flag-like propodeal tooth, as discussed under *biquetrum*. It differs from these other species by the following combination of characteristics: F-I length more than twice breadth; abdominal sterna brown, except for small blue spot on S-I; hindtibia inner surface black and concave, and T-II medially darkened and with deep contiguous punctures. This species is named for Dr F. W. Gess, Albany Museum, Grahamstown.

***Hedychridium jebbanum* spec. nov.**

Holotype female. Body length 6 mm. Brow distinct with large contiguous punctures; scapal basin with dense, small punctures and dense appressed silvery pubescence, medial third impunctate and finely cross-ridged; subantennal distance 1 MOD; malar space 0,4 MOD; F-I length 1,8 × breadth; remaining flagellomeres missing; thoracic dorsum with shallow, moderate, contiguous punctures; mesopleuron angulate, with omaulus, scrobal carina and verticaulus, posterior surface rugose; fore femur unmodified; propodeal angle acute, triangular; forewing medial vein obtusely curved; tergal punctation medium and 0,2–0,5 PD apart; T-II slightly swollen laterally

before transparent apical rim. Body bright yellowish green, including tegula and S-II-III; femora and tibiae green; tarsi red; wings faintly tinted brown.

Male unknown.

**MATERIAL EXAMINED.** Holotype female – NIGERIA: Jebba, 'Bacita environs', 20 November 1973, G. F. Mees (LEIDEN).

**Discussion.** This species can be distinguished by the green tegula and abdominal sterna, F-I less than twice as long as broad, bright green body, and broadly triangular propodeal angle. *H. jebbanum* most closely resembles *desertorum* as discussed under that species.

***Hedychridium kilifiense* spec. nov., Fig. 15.**

Holotype female. Body length 4 mm. Brow indistinct, with large discrete punctures, 0,1–0,5 PD apart; scapal basin with dense small punctures and dense silver appressed setae, medial third with scattered punctures and finely cross-ridged; subantennal distance 1,6 MOD; malar space 0,5 MOD; F-I length 1,6 × breadth; F-II length 1,4 × breadth; F-V length 0,8 × breadth; thoracic dorsum with deep, contiguous medium punctures; mesopleuron angulate, with omaulus and scrobal carina, posterior surface rugose; fore femur coarsely punctate with ventral carina; propodeal angle triangular, with sharp posterior tooth (Fig. 15); forewing medial vein obtusely curved; tergal punctures medium, deep and contiguous; T-III strongly swollen before transparent rim. Head, thorax and terga bluish green; flagellum red; tegula, femora and tibiae green; tarsi yellow; S-II with small medial green spot; S-III brown; wings stained pale brown, with pale veins.

Male unknown.

**MATERIAL EXAMINED.** Holotype female – KENYA: Kilifi Dist., Sokoke Forest, 29 January 1968, C. Hogue, J. Williams (LOS ANGELES).

**Discussion.** This is another species with the propodeal angle having a posterior angle or tooth. It can be distinguished by the red flagellum and tarsi, short F-I, abdominal sternum brown except green spot on II, and T-II with large, deep contiguous punctures dorsally.

***Hedychridium lomholdti* spec. nov., Fig. 16.**

Holotype male. Body length 4 mm. Brow indistinct with large punctures; scapal basin with dense small punctures and thick, appressed, silvery setae on lateral two-thirds, medial third impunctate and cross-ridged; subantennal distance 1,4 MOD; malar space 1,1 MOD; F-I length 1,3 × breadth; F-II length 1,2 × breadth; F-V as long as broad; thoracic dorsum punctures medium, shallow and nearly contiguous; mesopleuron rounded, without carinae, posterior surface partly smooth and impunctate; propodeal angle slender and digitate (Fig. 16); fore femur unmodified; forewing medial vein obtusely curved; tergal punctures small and shallow, 0–0,5 PD apart; T-III slightly swollen before opaque apical rim; S-III without apical fringe. Head, thorax, femora and tibiae coppery pink with green tints and long erect white setae; tarsi yellow; flagellum black; wings clear, with yellow veins; S-II with green medial spot; S-III brown; terga more strongly coppery pink than thorax.

Female, same as male except green spot on S-II smaller.

MATERIAL EXAMINED. Holotype male – NAMIBIA: Rooibank, Kuiseb Riverbed, 7 February 1978, O. Lomholdt (COPENHAGEN). Paratype female – same data as type (COPENHAGEN).

Discussion. One of the smaller species of *Hedychridium* in Africa, *lomholdti* can be distinguished by the very short F-I, long malar space, slender and digitate propodeal angle (Fig. 16), S-II with small green spot, and male S-III without an apical fringe. It does not closely resemble any other species in this region. This species is named for O. Lomholdt, Zoologisk Museum, Copenhagen, Denmark.

***Hedychridium namibianum* spec. nov., Fig. 17.**

Holotype male. Body length 4,5 mm. Brow V-shaped with large, contiguous punctures; scapal basin with dense small punctures and appressed silver setae, occupying four-fifths of basin, and with narrow medial area of cross-ridging; subantennal distance 0,8 MOD; malar space 0,5 MOD; F-I length 1,8 × breadth; F-II length 1,4 × breadth; F-V 1,2 × as long as broad, thoracic dorsum with punctures medium and contiguous; mesopleuron angulate, without carinae, posterior surface punctate and rugose; fore femur with somewhat flattened outer surface and ventral carina; propodeal angle apically truncate and twisted, and deeply emarginate posteriorly (Fig. 17); forewing medial vein strongly angulate; tergal punctures medium-sized and contiguous; S-III without apical fringe of setae. Head yellowish green; flagellum black; thorax yellowish green with coppery tints dorsomedially; tegula, femora, tibiae and sterna green; tarsi red; wings clear and unstained.

Female unknown.

MATERIAL EXAMINED. Holotype male – NAMIBIA: Namib/Naukluft Park, Kuiseb River near Gobabeb, 23,34 S 15,03 E, 18 February–20 March 1983 (PRETORIA-2). Paratypes – 4 males, same data as type (PRETORIA-2, DAVIS).

Discussion. The most distinctive features of *namibianum* are the bright coppery green body, green tegula and abdominal sterna, arched medial vein, short F-I, and the oddly shaped propodeal angle (Fig. 17). This shape is unusual for *Hedychridium* and much more slender than that of related species.

***Hedychridium robustum* spec. nov., Figs 5, 18.**

Holotype male. Body length 6,5 mm. Face (Fig. 5); brow bulging and V-shaped, with large contiguous punctures; scapal basin with dense small punctures and appressed silver setae, medial third to fourth impunctate with very little cross-ridging; subantennal distance 1,1 MOD; malar space 0,3 MOD; F-I length 1,6 × breadth; F-II length 1,3 × breadth; F-V 0,9 × as long as broad; thoracic dorsum with medium, contiguous punctures; mesopleuron angulate with omaulus and scrobal carina, posterior surface partly smooth and impunctate; fore femur broad and coarsely punctate; propodeal angle truncate apically, shallowly emarginate posteriorly (Fig. 18); forewing medial vein strongly angulate; tergal punctures medium and contiguous; T-III swollen before transparent apical rim; S-III without apical fringe; volsella not divided into digitus and cusps. Head and thorax green with faint copper tints dorsomedially; flagellum black; tegula brown; terga, femora and tibiae green; S-II with large medial blue spot; S-III with faint blue spot; wings stained brown.

Female unknown.

MATERIAL EXAMINED. Holotype male – SOUTH AFRICA: Cape Prov., Wellington, Rooshoek, 19 December 1973, P. M. F. Verhoeff (LEIDEN).

Discussion. Although the propodeal angle of *robustum* is narrowed posteriorly its shape is different from that of *biquetrum*, *coloratum* Edney, *facialis* (Mocsáry), *gessi*, *namibianum*, *ultimum* Edney, *uncinatum* Edney and *vulgare* Edney (Fig. 18). The propodeal angle is posteriorly lobate in *robustum* rather than emarginate or notched. Other diagnostic features of this species are: forewing medial vein arched, tegula and S-III brown, F-I length less than twice breadth, and fore femur broad, ventrally carinate and with extensive long pale setae.

### *Hedychridium senegalense* spec. nov., Fig. 6.

Holotype male. Body length 2,5 mm. Face (Fig. 6); brow bulging with large contiguous punctures; scapal basin short and indistinct, with large, contiguous punctures and broad medial zone of coarse-cross-ridging; subantennal distance 1 MOD; malar space 1 MOD; F-I length 2,8 × breadth; F-II twice as long as broad; F-V length 1,3 × breadth; thoracic dorsum with medium, shallow, contiguous punctures; mesopleuron rounded without carinae, posterior surface cross-ridged; fore femur unmodified; propodeal angle rounded, subtriangular; forewing medial vein obtusely curved; tergal punctures small, shallow and contiguous; T-III rounded under before rim; S-II without apical fringe. Head, thorax, tegula, femora, tibiae, terga and sterna green, except scutum black between notauli and T-II with large apicomedial black spot; tarsi reddish brown; wings stained light brown; flagellum blackish.

Female unknown.

MATERIAL EXAMINED. Holotype male – SENEGAL: near N'Dierba, 8 October 1978, G. Hevel and J. Fortin (WASHINGTON). Paratype male – Ferlo Fete-Ole, 12 December 1976, G. Couturier (DAVIS).

Discussion. These are tiny *Hedychridium*, most closely related to the palaeartic species *monochroum* Buysson. They are characterized by having a bulging brow, short cross-ridged scapal basin, with punctures nearly as large as those on the brow, F-I longer than twice breadth, flagellum long and slender, and mesopleuron rounded. *H. senegalense* is the only member of this group recorded from the Afrotropical Region. It can be distinguished from other members of the *monochroum* group by having S-II-III and the tegula green, and T-II with a large black basomedial spot.

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