

**Lectotype Designations for African Bees of the Genus *Ceratina*  
Described by T. D. A. Cockerell  
(Hymenoptera: Apoidea)**

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T. D. A. Cockerell proposed 106 new species group names for bees of the genus *Ceratina* in Africa and the Seychelles Islands. Except for 1 name, specimens from his type series exist in the British Museum (Natural History) (BMNH), American Museum of Natural History (AMNH), or Musée Royal de l'Afrique Centrale (MRAC). Usually one specimen from each series bears his hand written label with the species group name, "Ckll" (usually underlined), and "TYPE." Such specimens have been accorded Holotype status by the museums in which they are deposited. When both sexes were represented, he often stated the sex of the type. His descriptions include the location(s), date(s), and collector(s) for the specimen(s) he examined and sometimes one location out of several is stated to be the type locality. Unless more than one specimen is stated, the reader would assume that only one specimen was represented in the collection. Comparison of his text with specimens in museums supports this assumption. Despite this information about his intentions, he definitely identified the Holotype specimen with a clear statement in only 3 of his descriptions.

We were not able to locate the male specimen on which *Ceratina roseoviridis* (Cockerell, 1937a:31) is based. A female from Kampala is mentioned by Cockerell and is in BMNH, but the description is clearly based on the male.

Following the provisions of Article 73(a)(ii) of the International Code of Zoological Nomenclature (1985), we have inferred that the following species group names were based on a single specimen or that Cockerell's intended Holotype can be identified by the description. Each putative Holotype specimen matches the description and bears the appropriate collection and identification labels. We made these decisions under the following circumstances:

1) The Holotype is explicitly identified *or* only one sex is described, one collection is listed, and no statement is made that more than one specimen was examined.

The following are 36 names proposed in 1937a and the Holotypes are in BMNH (type numbers in parenthesis): *alberti* (17B-241), *albinasis* (17B-239), *braunsiana* *delta* (17B-248), *breviplicata* (17B-293), *citrinifrons* (17B-272), *concinnulla* (17B-294), *cupreotincta* (17B-266), *decipiens* (17B-276), *electron* (17B-251), *elisabethae* (17B-283), *levisulcata* (17B-292), *leucostoma* (17B-290), *leucostoma* *rufigastra* (17B-291), *liberica* (17B-286), *lucifera* *sidifera* (17B-269), *mediolucens* (17B-278), *moerenhouti* *somereni* (17B-257), *natalensis* (17B-277), *nasalis* *arida* (17B-1254), *nilotica* *miranda* (17B-302), *ogilviei* (17B-264), *ordinaria* (17B-263), *pacis* (17B-295), *pallidipes* (17B-267), *pembana* (17B-306), *perpolita* (17B-304),

*perpolita rowlandi* (17B-305), *pondoensis* (17B-307), *punctifera* (17B-289), *rugosifrons* (17A-2812), *speculigera* (17B-273), *speculina* (17B-318), *subulatella* (17B-315), *tenkeana* (17B-265), *turneri* (17B-1193), *xanthorhina* (17B-245).

The following are 23 other names proposed in various publications and the types are in various museums: *albopicta* (1937a:3, MRAC), *atopura* (1937a:5, MRAC), *chrysorhina* (1939:42, BMNH 17B-261), *dallatorreana allosticta* (1931:351, BMNH 17B-198), *diloloensis* (1932a:276, BMNH 17B-250), *durbanensis* (1934:1, AMNH), *fimbriatula* (1920:248, BMNH 17B-297), *geigeriae* (1908:35, BMNH 17B-252), *holomelas* (1937b:548, BMNH 17B-298), *langi* (1934:2, AMNH), *mimula* (1920:247, BMNH 17B-284), *nitidella* (1937c:10, AMNH), *nodosiventris* (1912:35, BMNH 17B-227), *politifrons* (1937a:29, MRAC), *ruficauda* (1932b:12, AMNH), *rugosissima* (1932a:275, BMNH 17B-280), *samburuensis* (1910:219, BMNH 17B-317), *speculifrons* (1920:247, BMNH 17B-221), *spilota* (1932a:274, BMNH 17B-311), *tabescens* (1912:36, BMNH 17B-228), *tridentura* (1939:43, BMNH 17B-296), *viridifrons* (1934:3, BMNH 17B-321), *viridis kivuensis* (1932a:273, BMNH 17B-320).

2) One sex is described, one locality is stated or indicated to be the type locality (if other localities are also listed), and no statement is made that more than one specimen was examined from the type locality.

The following are 9 names proposed in 1937a and the Holotypes are in BMNH: *braunsiana gamma* (17B-249), *cabalica* (17B-254), *excavata* (17B-270), *littoralis* (17B-274), *lobulifera* (17B-287), *lobulifera subvirens* (male, 17B-288), *perobscura* (17B-285), *ruwenzorica* (17B-259), *viridis goetzeni* (17B-319).

3) Both sexes are described, one sex is stated to be the type, one locality is stated to be the type locality or only one locality is listed, and no statement is made that more than one specimen of the type's sex was examined from the type locality. The following are 8 names proposed in 1937a and the Holotypes are in BMNH: *albonota* (17B-242), *lucifera* (17B-1255), *microsoma* (17B-275), *nativitatis* (17B-279), *nilotica* (17B-300), *politula* (17A-2813), *politula griseipennis* (17B-262), *ruficornis* (17B-309).

The following are 3 other names proposed: *liliputana* (1932a:278, BMNH 17B-255), *penicillifera* (1932a:274, BMNH 17B-303), *subulata* (1932a:277, BMNH 17B-314).

The descriptions for the remaining 25 names are each based on several specimens with no definite information to identify the Holotype. In these instances, Lectotypes must be designated from the extant type series as was previously done for *C. aloes* Cockerell (1932a:272, BMNH) and some species group names proposed by other authors for *Ceratina* (Daly, 1973). To preserve Cockerell's original concept for each species group name, we have chosen the specimens labelled as types by him whenever possible. Winglength was measured from the base of the costal vein (not including the costal sclerite and tegula) to the maximum curvature of the wing tip. Commas have been added to the collection data for clarity.

Unless otherwise indicated the labels are rectangular and on white paper. Lectotypes in BMNH each have a round top label with purple margin and "Lectotype" printed. Beneath is a second label with "B. M. TYPE, HYM." printed and with the type number handwritten. The type number is listed below in parenthesis. Some specimens also bear a label printed "T. D. A. Cockerell, Exp. to Africa, 1931. Pres. by Imp. Inst. Ent. B. M. 1932-291" which refers to the British

Museum accessions register. These are indicated below by the abbreviation "TDAC."

Lectotypes are designated for the following:

1. *aliceae* 1937a:4. Lectotype female here designated; wing length, 3.3 mm. Labels: 1) written "Ceratina aliceae Ckll. TYPE"; 2) printed "S. Africa, Durban, The Bluff, x-1931," and written "Miss A. Mackie"; 3) TDAC. (BMNH 17B-243).
2. *alpha* 1937a:6. Lectotype male here designated; wing length, 5.2 mm. Labels: 1) written "Ceratina braunsiana v. alpha Ckll TYPE"; 2) printed "S. Africa: Yokeskei R., Johannesburg, 31.iii.1932, J. Ogilvie"; 3) TDAC. (BMNH 17B-246).
3. *beta* 1937a:6. Lectotype male here designated; wing length, 4.6 mm. Labels: 1) written "Ceratina braunsiana v. beta Ckll TYPE"; 2) printed "Natal: National Park, 3-15.iii.1932, J. Ogilvie"; 3) TDAC. (BMNH 17B-247).
4. *bilobata* 1937a:5. Lectotype male here designated; wing length, 4.8 mm. Labels: 1) printed "S. W. Africa, Aus, Jan 1930"; 2) printed "R. E. Turner, Brit. Mus. 1930-117"; 3) written "Ceratina bilobata Ckll TYPE." (BMNH 17B-1194).
5. *bukavana* 1932a:276. Lectotype male here designated; wing length, 5.0 mm. Labels: 1) printed and written "S. of Bukavu, 28. viii. 1931, Miss A. Mackie"; 2) printed "Belgian Congo"; 3) written "Ceratina bukavana Ckll male (symbol)"; 4) printed "Pres. by Imp. Inst. Ent. B. M. 1935-492." (BMNH 17B-282).  
No specimen from the type series with Cockerell's type label was found.
6. *carinifera* 1937a:8. Lectotype female here designated; wing length, 5.2 mm. Labels: 1) written "Ceratina carinifera Ckll TYPE"; 2) written "Tanganyika T., Dar-es-Salaam, 9.vi.1932, J. Ogilvie"; 3) TDAC. (BMNH 17B-258).
7. *cephalica* 1931:350. Lectotype female here designated; wing length, ca. 6.6 mm. Labels: 1) written "Ifiran, Morocco, 27 Aug, A. Mackie"; 2) printed "Brit. Mus. 1933-567"; 3) written "Ceratina callosa cephalica Ckll TYPE." (BMNH 17B-199).
8. *citriphila* 1935:1. Lectotype female here designated; wing length, 4.9 mm. Labels (1-4 in P. Timberlake's handwriting): 1) "at orange bloom"; 2) "Martini's Concession"; 3) "Eritraea," "Mar 23, 30"; 4) "H. Compere Coll."; 5) Cockerell's handwriting "Ceratina citriphila Ckll TYPE"; 6) different handwriting "ac. 33583." (AMNH).
9. *crassula* 1937a:9. Lectotype female here designated; wing length, 4.5 mm. Labels: 1) printed "Kimilolo Riv., Elisabethville, Katanga B Cgo, 11.45S 27.40E, 6.xi.1920"; 2) printed "Mith. Bequaert Coll."; 3) written "Ceratina crassula Ckll Cotype." (BMNH 17B-271).  
The specimen bearing Cockerell's type label had lost all other original labels. We therefore chose another female from the type series.
10. *dolichorhina* 1937b:545. Lectotype female here designated; wing length, 5.2 mm. Labels: 1) written "Ceratina dolichorhina Ckll TYPE"; 2) printed "S. W. Africa: Usakos, 16.i.1934, J. Ogilvie, B. M. 1934-142." (BMNH 17B-260).
11. *duponti* 1912:35. Lectotype female here designated; wing length, 3.0 mm. Labels: 1) written "Ceratina fryeri duponti Ckll TYPE"; 2) printed "Aldabra I., Seychelle Is., P. R. DuPont, 1907-72." (BMNH 17B-225).
12. *fryeri* 1912:34. Lectotype female here designated; wing length, 3.6 mm. Labels: 1) printed on mounting block "Aldabra, '08-9, J. C. F. Fryer"; 2) written

“*Ceratina fryeri* Ckll TYPE”; 3) printed “Seychelles Expd., Pres. by Committee of the Percy Sladen Trust Fund, 1911–43.” (BMNH 17B–226).

13. *insuta* 1937a:13. Lectotype female here designated; wing length, 4.6 mm. Labels: 1) written “*Ceratina insuta* female (symbol) Ckll TYPE”; 2) printed “DuRiver, Camp No 3, Liberia”; 3) TDAC. (BMNH 17B–253).
14. *macrospila* 1937a:18. Lectotype male here designated; wing length, ca. 4.4 mm. Labels: 1) written “*Ceratina macrospila* Ckll TYPE”; 2) printed “Okahandja, 17–23.ii.1928”; 3) printed “S. W. Africa, R. E. Turner, Brit. Mus. 1928–144.” (BMNH 17B–256).

Cockerell gives the collection date of his type series as Jan. 1–12, 1928 and lists two males and one female. Turner collected other bees such as *C. rhinura* at Okahandja on Jan. 1–12, 1928, but no *C. macrospila* have been found among them. In BMNH are 4 specimens of *C. macrospila* collected by Turner on Feb. 17–23, 1928. One male is labeled TYPE by Cockerell, a second male is labeled COTYPE, and one of two females is labeled COTYPE with the second female not so labeled. Cockerell described a male with an abdomen. The abdomens of both males are now missing. We assume an error was made in the published date and that the Lectotype was later damaged.

15. *maculipes* 1937a:25. Lectotype male here designated; wing length, 6.1 mm. Labels: 1) written “*Ceratina nasalis maculipes* Ckll TYPE”; 2) printed “Belgian Congo, Katanga, tenke, 30.vii.–9.viii.1931, J. Ogilvie”; 3) TDAC. (BMNH 17B–301).

This name was published as *C. nilotica maculipes*. Note error in the species name on Cockerell’s handwritten label.

16. *matopina* 1937a:3. Lectotype female here designated; wing length 4.4 mm. Labels: 1) written “*Ceratina albonota matopina* Ckll. TYPE”; 2) TDAC; 3) printed, “S. Rhodesia, Matopo Hills, 17–30.iv.1932, Miss A. Mackie.” (BMNH 17B–244).
17. *musarum* 1934:3. Lectotype female here designated; wing length, 4.6 mm. Labels: 1) printed “Banana, Congo, 6°S., 12°20’E., ix 1915”; 2) printed “Lang & Chapin, Collectors”; 3) written “*Ceratina musarum* Ckll TYPE.” (AMNH).
18. *mutescens* 1937a:22. Lectotype female here designated; wing length, 4.9 mm. Labels: 1) written “*Ceratina mutescens* Ckll TYPE (female holotype)”; 2) printed “Pres. by Imp. Inst. Ent. B. M. 1936–30”; 3) written “Mombasa, Apr. 23, 1927.” (BMNH 17B–322).

Cockerell’s statement “both sexes, including a mating pair” is indefinite as to the number of specimens in the type series. The Lectotype is mounted on one pin with a male.

19. *pileifera* 1937a:28. Lectotype male here designated; wing length, 5.0 mm. Labels: 1) written “*Ceratina pileifera* male (symbol) Ckll TYPE”; 2) TDAC; 3) written “Portug. E. Africa, Beira, 4.vi.1932, Miss A. Mackie.” (BMNH 17B–313).
20. *rhinura* 1937a:30. Lectotype male here designated; wing length, 3.6 mm. Labels: 1) written “*Ceratina rhinura* Ckll TYPE”; 2) printed “Okahandja, 1–12.i.1928”; 3) printed “S. W. Africa, R. E. Turner, Brit, Mus. 1928–61.” (BMNH 17B–308).

21. *rhodura* 1937b:544. Lectotype female here designated; wing length, 3.4 mm. Labels: 1) written "Ceratina rhodura Ckll TYPE"; 2) printed "S. W. Africa, Cape Town, Beaufort West, 30.vi.1934, J. Ogilvie"; 3) printed "Brit. Mus. 1934-78." (BMNH 17B-268).
22. *scintilla* 1931:351. Lectotype female here designated; wing length, 2.1 mm. Labels: 1) written "Ceratina scintilla Ckll TYPE"; 2) written "Asni, Morocco, Aug 11 (Cockerell)." (BMNH 17B-200).
23. *subscintilla* 1937a:34. Lectotype female here designated; wing length, 2.4 mm. Labels: 1) written "Ceratina subscintilla Ckll TYPE"; 2) printed "S. Africa, R. E. Turner, Brit. Mus., 1925-44."; 3) printed "Cape Province, Ceres, Dec. 1924." (BMNH 17B-312).
24. *umtalica* 1937a:36. Lectotype male here designated; wing length, 4.6 mm. Labels: 1) written "Ceratina umtalica Ckll TYPE"; 2) printed "S. Rhodesia, Xmas Pass, Umtali, 20-21.v.1932, L. Ogilvie"; 3) TDAC. (BMNH 17B-281).
25. *viridior* 1937a:24. Lectotype male here designated; wing length 6.2 mm. Labels: 1) written "Ceratina nasalis viridior Ckll TYPE male (symbol)"; 2) printed "Pres by Imp. Inst. Ent. B. M. 1935-492"; 3) printed "Cape Province, Ceres, Mitchell's Pass, 9-17.ii.1932"; 4) written "J. Ogilvie." (BMNH 17B-299).

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