

Source of Type Material of *Toxorhynchites*
(Diptera: Culicidae)¹

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ABSTRACT All available data about the source of the original type material of all nominal species of *Toxorhynchites* are given, including collection data, location of primary types and notes on larval breeding sites.

INTRODUCTION

The Bishop Museum project on the "Biosystematics of *Toxorhynchites*" will depend heavily on cooperation from entomologists throughout the world in obtaining adequate reared material of all nominal species of *Toxorhynchites*. We would especially appreciate studying topotypic material. For this reason, this paper has been prepared to provide all available data about the source of the original type material of all nominal species of *Toxorhynchites*. These species are also listed by the country in which they were originally collected.

In general, this project is patterned after Belkin's project, "Mosquitoes of Middle America," except the scope is limited to one taxon and is a worldwide rather than a regional study (Belkin et al. 1965). A literature file dealing with all published information on *Toxorhynchites* species is being prepared. We would appreciate receiving reprints of all published articles and reports dealing with any aspect of biology, distribution, systematics or biological control implications.

The list of species contains all nominal species, valid or currently considered as synonyms, arranged in alphabetical order. Format, except for arrangement of nominal species, is as explained in Belkin, Schick & Heinemann (1965). The species (for subspecies) and senior synonyms (for junior synonymies) are shown in [brackets] following the citation for the original description. In some cases, the status of a name currently listed as a junior synonym in Stone, Knight & Starcke (1959), Stone (1961, 1962, 1967, 1970) is indicated as being questionable [?], probably not synonymous [prob. not] or uncertain identity [identity uncertain].

Under TYPE, all the available data pertaining to the type material are given as derived from the original description and other published sources. Type specimens, except those located at the National Museum of Natural History (USNM), were not examined in the preparation of this paper and therefore in

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many instances the kind of type specimen(s) (holotype or syntypes) could not be determined; possibly some lectotype selections were missed. The number in parentheses following the sex or stage of the type(s) indicates the collection or rearing number. In the statement of the type locality [brackets] are used to enclose corrections and (parentheses) for major political divisions, such as provinces or states. Dates of the type collection and collectors are given whenever they could be determined. At the end of the type data, enclosed in parentheses, is an indication of the type depository, abbreviated as in the catalog, together with references to lectotype selections or other published statements regarding the types.

Under BIONOMICS, all the available data about the original collection are given directly, first for the immature stages and then for the adults. Data enclosed in [brackets] are supplied from other sources when none were given for the original collection. Such data should be used only as a general guide for locating the probable breeding sites.

Abbreviations of genera and subgenera follow Reinert (1975). The publications by Belkin and his colleagues on the source of the mosquitoes originally described from Middle America were invaluable for information on type localities of species of the subgenera *Ankylorhynchus* and *Lynchiella*. I also gratefully acknowledge Alan Stone's detailed notes on the types of *Toxorhynchites* species deposited in the British Museum (Natural History). I also wish to acknowledge the helpful comments of Dr. John N. Belkin and Dr. Graham B. White who reviewed the manuscript. Dr. Belkin provided the comments on the synonymies in the subgenera *Ankylorhynchus* and *Lynchiella*. Dr. White provided information on types deposited in the British Museum.

The list of localities is organized by zoogeographical region and then alphabetically by country under each region. For practical reasons, all of Indonesia except Irian Jaya (West New Guinea) is considered part of the Oriental Region.

Ideally, we would like to obtain associated immature stages and both sexes of every nominal species on this list. Large series of individual rearings (20 or more) are desirable as well as progeny rearings from females. We will attempt to obtain permission to import living *Toxorhynchites* larvae as it may be easier for cooperators to send us living 4th-instar larvae, rather than attempting to rear them in the field.

LIST OF SPECIES

Genus *Toxorhynchites* Theobald
Subgenus *Ankylorhynchus* Lutz

1. *catharinensis* (Lima, Guitton & Ferreira, 1962: 230-32; *Ankylorhynchus*). TYPE: Holotype ♀ (5553) with slide (4869) of associated pupal skin, Brusque (Santa Catarina) Brazil, R. Rachou (IOC). BIONOMICS: [Larvae in bromeliads].
2. *hexacis* (Martini, 1931b: 217-18; *Megarrhinus*). TYPE: Holotype ♀ from Yungas de Coroico [Nor Yungas] (La Paz), Bolivia (SMT; Belkin, 1971a: 31).

3. *neglectus* (Lutz in Bourroul, 1904: 14; *Ankylorhynchus*) [? = *trichopygus*].
TYPE: Holotype ♀, near São Paulo (São Paulo) Brazil (NE). BIONOMICS: Bred from larva in bromeliad.
4. *purpureus* (Theobald, 1901: 230; *Megarhinus*). TYPE: Lectotype ♀, Amazon, 1861, H. W. Bates; type locality restricted to Manaus (Amazonas, Brazil) (Belkin, Schick & Heinemann, 1971: 7) (BM; designation by Belkin, 1968: 34). BIONOMICS: [Larvae in bromeliads].
5. *trichopygus* (Wiedemann, 1828: 4-5 *Culex*). TYPE: Syntypes, 3 ♂♂, Brazil, locality not specified, Freireiss; type locality restricted to Salvador (Bahia) Brazil (Belkin, Schick & Heinemann, 1971: 7) (SNG; see Belkin, 1968: 34). BIONOMICS: [Larvae in bromeliads].

Subgenus *Lynchiella* Lahille

6. *aldrichanus* (Bonne-Wepster & Bonne, 1920: 179-80; *Megarhinus*) [? = *bambusicola*]. TYPE: Lectotype ♀ (4571) with associated larval skin on slide (L12), Dam (Suriname) Surinam, Jan. 1919, BBW (ITH; designated by Belkin, 1968: 32). BIONOMICS: Larvae in terrestrial bromeliads.
7. *ambiguus* (Dyar & Knab, 1906: 246; *Megarhinus*) [new name for *ferox* Wiedemann, 1828 (in part), not Humboldt, 1819] [identity uncertain]. TYPE: Holotype ♂, Brazil, locality not specified, coll. Winthem; type locality restricted to Salvador (Bahia) Brazil, (Belkin, Schick & Heinemann, 1971: 8) (LU; originally in Winthem Collection in Hamburg, possibly now in NMW; see Belkin, 1968: 32). BIONOMICS: [Larvae probably in treeholes, bamboo or bromeliads].
8. *arborealis* (Shannon & Del Ponte, 1928: 89; *Megarhinus tucumanus* var.) [prob. not = *guadeloupensis*]. TYPE: ♀, Lules (Tucumán) Argentina, Shannon & Del Ponte, 22 Mar. 1927 [NE, according to O. H. Casal in Belkin, Schick & Heinemann, 1968: 11]. BIONOMICS: Larvae in a treehole.
9. *bambusicola* (Lutz & Neiva, 1913: 136-38; *Megarhinus*). TYPE: Syntypes ♂♂ and ♀♀, Petropolis (Rio de Janeiro) Brazil, elev. 800-900 m, J. G. Foetterle et al. (IOC). BIONOMICS: Larvae in bamboo internodes (taquaracu [Guadia sp]).
10. *cavalerii* Garcia & Casal, 1967: 436-41. TYPE: Holotype ♀ with associated larval and pupal skins (c94), Puerto Iguazú about 50 m from the Hostería Ruffino (Igu 15) (Misiones) Argentina, 25 June 1965, Casal, Hepper & García (INM). BIONOMICS: Larvae in a bromeliad 1 m above the ground.
11. *chrysocephalus* (Theobald, 1907: 136-37; *Megarhinus*) [= *solstitialis*]. TYPE: Holotype ♂, São Paulo (São Paulo) Brazil, 17 Aug. 1903, A. Lutz (BM). BIONOMICS: [Larvae in bromeliads, principally "*Aechmea tinctoria*"]
12. *fluminensis* (Peryassu, 1908: 128; *Megarhinus*) [identity uncertain] TYPE: Described from unspecified number of ♂♂, ♀♀, and larvae, Rio de Janeiro (Rio de Janeiro) Brazil, (possibly IOC, ♂ (tube 535) with genitalia slide (1128), Rua Conde de Bonfim, Rio de Janeiro, 16 Apr. 1907, C. Chagas leg, Belkin, Schick & Heinemann, 1971: 8). BIONOMICS: Larvae in bromeliads.
13. *grandiosus* (Williston, 1900: 224; *Megarrhina*). TYPE: Holotype ♀, near Omilteme (cattle ranch about 15-18 miles WNW of Chilpancingo, Belkin, Schick & Heinemann, 1965: 39) (Guerrero) Mexico, elev. 8000 ft., July, date not specified, H. H. Smith (BM). BIONOMICS: [Larvae probably in treeholes].
14. *guadeloupensis* (Dyar & Knab, 1906: 254-55, 57; *Megarhinus*). TYPE: Holotype ♀ (79.1), La Soufrière, Guadeloupe, elev. 3000 ft., 30 July 1905, A. Busck (USNM, 9956; see Stone & Knight, 1957: 199). BIONOMICS: Larvae in epiphytic bromeliad high up in tree.

15. *guianensis* (Bonne-Wepster & Bonne, 1920: 180; *Megarhinus guadeloupen-sis* ssp.) [prob. not = *guadeloupen-sis*]. TYPE: Lectotype ♂ (4567) with slide (BB272, L16) of associated (?) larval and pupal skins and slide (L16) of genitalia, Kwakoepron (Saramacca) Surinam, July 1918, BBW (ITH; designated by Belkin, 1968: 33). BIONOMICS: [Larvae probably in bromeliads (Belkin, Schick & Heinemann, 1965: 62)].
16. *haemorrhoidalis* (Fabricius, 1787: 364: *Culex*). TYPE: Syntypes, ♂♂ from "Cajennae [Cayenne, French Guiana] Dom v. Rohr."; represented only by the label from Kiel collection, now in ZMC [NE, Belkin, 1968: 33]. BIONOMICS: [Larvae probably in bromeliads].
17. *haitiensis* (Dyar & Knab, 1906: 253-54; *Megarhinus*) [= *portoricensis*]. TYPE: Holotype ♀ (134.1), San Francisco Mts [Mines], Dominican Republic, Sept. 1905, A. Busck (USNM, 9955; see Stone & Knight, 1957: 199; Belkin & Heinemann, 1973: 218). BIONOMICS: Type from larva in "hollow tree," others of type series from "hollow palm trunk" (123.1), hollow immortelle tree (139.1), hollow tree (144.1, 144.2), Belkin, Schick & Heinemann, 1965: 17.
18. *herrickii* (Theobald, 1906: 241; *Megarhinus*) [= *septentrionalis*]. TYPE: ♂, [probably Agricultural College], (Oktibbeha Co.) Mississippi, U.S.A., 26 Sept. 1906, Glenn Herrick (USNM, Belkin, 1968: 33). BIONOMICS: Larvae in cavity of iron post supporting water tank.
19. *horei* (Gordon & Evans, 1922: 330-35; *Megarhinus*) [prob. not = *guadeloupen-sis*]. TYPE: Lectotype ♂ (463) with genitalia on 2 slides, Macapa, near Manaus (Amazonas) Brazil, 21 Dec. 1921, R. M. Gordon (BM; designated by Belkin, 1968: 33). BIONOMICS: Larvae in axils of "bananeira brava" [*Heliconia* sp.].
20. *hypoptes* (Knab, 1907: 50-51; *Megarhinus*). TYPE: Holotype ♂ (16), Bluefields, Nicaragua, W. F. Thornton (USNM, 10146). BIONOMICS: [Larvae probably in treeholes].
21. *iris* (Knab, 1913: 35-36; *Megarhinus*) [? = *mariae*]. TYPE: Holotype ♀ (33.1), Trinidad, F. W. Urich (USNM, 15603). BIONOMICS: Larva in an epiphytic bromeliad.
22. *longipes* (Theobald, 1901a: 241-42; *Megarhinus*) [? = *grandiosus*]. TYPE: Holotype ♀ (56/143) from unspecified locality in Mexico, bearing Theobald's type label [BM]. BIONOMICS: [Larvae probably in treeholes (Belkin, Schick & Heinemann, 1965: 34)].
23. *lynchi* (Dyar & Knab, 1906: 244; *Megarhinus*) [? = *haemorrhoidalis separatus*]. TYPE: Lectotype ♂, only specimen in collection with Lynch's label, "Megarrhyna haemorrhoidalis Fabr.," also with Del Ponte's label, "Megarrhynus lynchi tipo, D. P. X-49," according to original description collected in Formosa, Argentina, by E. L. Holmberg (BA, designated by O. H. Casal in Belkin, Schick & Heinemann, 1968: 11). BIONOMICS: [As for 33; *Tx.* (*Lyn.*) *haemorrhoidalis separatus*; larvae probably in leaf axils of bromeliads].
24. *mara* (Anduze, 1942: 43-46; *Megarhinus*) [? = *solstitialis*]. TYPE: Holotype ♂, La Rivera, Rio Escalante (Zulia) Venezuela (IHC). BIONOMICS: [Larvae probably in bromeliads].
25. *mariae* (Bourroul, 1904: 3; *Megarhinus*). TYPE: Female(s), larva(e), Ilha de Itaparica (Bahia) Brazil, (NE). BIONOMICS: Larvae in bromeliads.
26. *moctezuma* (Dyar & Knab, 1906: 251-52; *Megarhinus*). TYPE: Holotype ♂ (3380), pathway to Las Loras, Río Aranjuez, near Puntarenas (Puntarenas) Costa Rica, 13 Sept. 1905, F. Knab (USNM, 9953; see Stone & Knight, 1957: 199). BIONOMICS: Larvae in coconut husks, [probably also in treeholes and artificial containers]. Adults resting on low herbage in a wooded area.

27. *moengoensis* (Bonne-Wepster & Bonne, 1923: 7-9; *Megarhinus* [identity uncertain]). TYPE: Lectotype ♂ (4569) with associated (?) larval skin on slide (L6) and genitalia on slide (L5), Moengo (Marowijne) Surinam, date not specified, BBW (ITH, designated by Belkin, 1968: 33). BIONOMICS: Larvae in leaf axils of *Heliconia* and *Phenakospermum*.
28. *portoricensis* (Roeder, 1885: 337-38; *Megarrhina*). TYPE: Holotype ♂, Puerto Rico, no other data (?NE, Belkin, 1968: 53). BIONOMICS: [Larvae in treeholes].
29. *posticatus* (Lutz & Neiva, 1913: 139-40; *Megarhinus*) [identity uncertain]. TYPE: Syntypes 2 ♀♀ (549, 550) and possibly 1 ♂ (540), Petropolis (Rio de Janeiro) (IOC). BIONOMICS: Larvae in bromeliads.
30. *pusillus* (Lima, 1931: 313-14; *Megarhinus*). TYPE: Syntypes, 1 ♂ (541), 1 ♀ (526) with slides of associated larval skins (1102, 1121) and pupal skins (1116, 1135), Alto da Boa Vista, Tijuca, Rio de Janeiro (Rio de Janeiro) Brazil, Apr. 1930, C. A. Campos Seabra (IOC). BIONOMICS: Larvae in bamboo internodes.
31. *rizzoi* (Palma & Galvao, 1969: 3-13; *Lynchiella*). TYPE: Holotype ♀, Goianapolis, Goias, Brazil (IOC). BIONOMICS: Larvae in Bromeliaceae.
32. *rutilus* (Coquillett, 189a: 44; *Megarhinus*). TYPE: Lectotype ♂, Georgia (Brevard Co.) Florida, U.S.A., (USNM, 903; designated by Stone & Knight, 1957: 199). BIONOMICS: [Larvae in treeholes, less often in artificial containers and arboreal bromeliads (*Tillandsia utriculata*)].
33. *separatus* (Lynch Arribalzaga, 1891: 133; *Megarhina*) [? = ssp. of *haemorrhoidalis*]. TYPE: Lectotype ♂ with Lynch label "*Megarhina separata* n. sp." and Del Ponte label "*Megarhinus haemorrhoidalis* Fabr., D. P., X-49," according to original description collected in Formosa, Argentina, by E. L. Holmberg (BA, designated by O. H. Casal in Belkin, Schick & Heinemann, 1968: 11). BIONOMICS: [Larvae probably in leaf axils of bromeliads].
34. *septentrionalis* (Dyar & Knab, 1906d: 249-51; *Megarhinus*) [= ssp. of *rutilus*]. TYPE: Holotype ♂, Woodstock (Shenandoah Co.) Virginia, U.S.A., 24 Aug. 1904, F. C. Pratt (USNM, 9952). BIONOMICS: [Larvae in treeholes and artificial containers].
35. *solstitialis* (Lutz in Bourroul, 1904: 10; *Megarhinus*). TYPE: Lectotype ♀, Sao Paulo (Sao Paulo) Brazil, 7 Oct. 1903, (BM; designated by Belkin, Schick & Heinemann, 1971:8). BIONOMICS: Larvae in bromeliads, principally "*Aechmea tinctoria*."
36. *superbus* (Dyar & Knab, 1906: 255-58; *Megarhinus*) [? ssp. of *haemorrhoidalis*]. TYPE: Holotype ♂ (16-9) with genitalia slide, Sangre Grande (St. Andrew) Trinidad, F. W. Urich (USNM, 9957; see Stone & Knight, 1957:200). BIONOMICS: [Larvae in epiphytic bromeliads].
37. *theobaldi* (Dyar & Knab, 1906: 246; *Megarhinus*). TYPE: Lectotype ♂, Bogota (Cundinamarca) Columbia (0; designated by Belkin, 1968: 34).
38. *trinidadensis* (Dyar & Knab, 1906: 252-53; *Megarhinus*). TYPE: Holotype ♀ (B 3.2), Sangre Grande (St. Andrew) or San Juan (St. George) Trinidad, date not specified, F. W. Urich (USNM, 9954; see Stone & Knight, 1957:200). BIONOMICS: Larvae in treeholes.
39. *tucumanus* (Brèthes, 1926: 318; *Megarhinus*) [= *guadeloupensis*]. TYPE: Lectotype ♂ (1 of 6 with type labels) Tucumán, Argentina, 10-VII-926, E. G. Cabarrou/elevé chez moi/*Megarhinus tucumanus* Brèthes (BA; designated by O. H. Casal in Belkin, Schick & Heinemann, 1968: 10). BIONOMICS: [Larvae in leaf axils of bromeliads (Belkin, Schick & Heinemann, 1968: 10)].
40. *violaceus* (Wiedemann, 1820: 7, *Culex*). TYPE: Lectotype ♂, Bahia [Salvador (Bahia)] Brazil, (NMW, designated by Belkin, 1968: 34). BIONOMICS: [Larvae in bromeliads].

41. *wiedemanni* (Dyar & Knab, 1906: 246; *Megarhinus*) [new name for *ferox* Wiedemann, 1828 (in part), not Humboldt, 1819] [= *theobaldi*]. TYPE: Syntypes ♂♂, Brazil; type locality restricted to Salvador (Bahia) Brazil (Belkin, Schick & Heinemann, 1971: 8) (SNG and NMW, Belkin, 1968: 33). BIONOMICS: Larvae probably in treeholes or bamboo.

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42. *acaudatus* (Leicester, 1908: 49-51; *Teromyia*). TYPE: Syntypes ♂, ♀, Singapore (BM). BIONOMICS: Larvae in pitcher plants.

43. *aeneus* (Evans, 1926: 102; *Megarhinus*). TYPE: Holotype ♀, Hill Station, Freetown, Sierra Leone (BM). BIONOMICS: [Larvae probably bred in treeholes].

44. *albipes* (Edwards, 1922: 287-88; *Megarhinus*). TYPE: Holotype ♂, Simla [East Punjab] India, Aug. 1915, (BM). BIONOMICS: Reared from larvae in hollow tree.

45. *albitarsis* (Brug, 1939: 91-92; *Megarhinus inornatus* var.) [= ssp. of *inornatus*]. TYPE: Holotype ♂, Kalawara, Celebes (BM). BIONOMICS: Larvae found in leaf axils of *Colocasia*.

46. *amboinensis* (Doleschall, 1857: 381-82; *Culex*). TYPE: ♂, Amboina Island, Moluccas, Indonesia (NMW). BIONOMICS: [Larvae found in bamboo].

47. *argenteotarsis* Ludlow, 1906: 367-68 [= *amboinensis*]. TYPE: Lectotype ♀, Margosatubig, [Zamboanga], Mindanao, Philippines, June and July 1906, Type C.S.L. (USNM, designated by Stone & Knight, 1957: 199).

48. *ater* (Daniels, 1908: 265-66; *Teromyia*). TYPE: ♂, ♀, East Coast of Pahang, Malaya (NE). BIONOMICS: Larvae found in pitcher plants (*Nepenthes raffiesiana*).

49. *aurifluus* (Edwards, 1921: 631-32; *Megarhinus*). TYPE: Cotype ♂♂, ♀, Toa Tsui Kutsa, May 1914; Kankau, 1912; Toyenmongai, Taiwan, H. Sauter (DEI). BIONOMICS: [Larvae breed in treeholes and bamboo stumps].

50. *auripes* (Edwards, 1935: 579-80; *Megarhinus*). TYPE: Holotype ♀, Mt. Dulit, Sarawak, Borneo, 4000 ft., 19 October 1932, B. M. Hobby (BM).

51. *barbipes* Edwards, 1913: 47. TYPE: Holotype ♂, Mpanga Forest, Toro District, Uganda, 23 November 1911, 4800 ft., S. A. Neave (BM). BIONOMICS: [Larvae bred in treeholes, artificial containers and rock pools].

52. *bickleyi* Thurman, 1959: 14-15. TYPE: Holotype ♂, Doi Sutep (near temple), Chiangmai Province, Cheingmai, Thailand, 7 February 1953, D. C. Thurman, Jr. (USNM, 64218).

53. *brevipalpis* Theobald, 1901: 245-46. TYPE: ♀, [Durban], Natal (BM). BIONOMICS: [Larvae usually breed in treeholes].

54. *christophi* (Portschinsky, 1884: 122-23; *Megarhina*). TYPE: ♀, Amur, USSR (LU).

55. *coeruleus* (Brug, 1934: 501-02; *Megarhinus*). TYPE: ♂, ♀, Batang Palupuh, [West Coast], Sumatra, Jacobson (BM). BIONOMICS: Larvae found in *Nepenthes*.

56. *conradti*, Grunberg, 1907: 405-06 [ssp. of *brevipalpis*]. TYPE: ♂, ♀, Johann-Atbrechtshohe, Cameroons, 15 February [Nigeria] and 15 April (ZM). BIONOMICS: [Larvae breed in treeholes].

57. *edwardsi* (Barraud, 1924: 999-1000; *Megarhinus*). TYPE: ♂, ♀, Kasauli, Krol Mountains near Solon, Western Himalayas [Punjab State, India], 7000 ft., August 1923, Barraud. (LU, syntypes in BM). BIONOMICS: Larvae found in treeholes.

58. *erythrurus* (Edwards, 1941: 30-31; *Megarhinus*). TYPE: Lectotype ♂, Ibadan, Western Provinces, Nigeria, 22 August 1922, H. W. Kumm, (BM, designated by Mattingly, 1956: 38). BIONOMICS: [Larvae breed in bamboo stumps].
59. *evansae* (Edwards, 1936: 53; *Megarhinus*). TYPE: ♂, ♀, Freetown, Sierra Leone, Evans (BM). BIONOMICS: Larvae found in treehole.
60. *formosensis* (Ogasawara, 1939: 242; *Megarhinus aurifluus* var.) [= *aurifluus*]. TYPE: ♂♂, Ikenohata (Shinchiku), Taiwan, 26 May 1938, S. Hirayama (LU). BIONOMICS: [Larvae in treeholes].
61. *funestus* (Leicester, 1908: 58-59; *Teromyia*). TYPE: Holotype ♂, 6 miles from Kuala Lumpur, [Selangor], Malaya (BM). BIONOMICS: Pupa taken in bamboo.
62. *gigantulus* (Dyar & Shannon, 1925: 67-68; *Megarhinus*). TYPE: Holotype ♂, Limay, Bataan Province, Luzon, Philippines, November 1924, R. C. McGregor (USNM, 23096).
63. *gilesii* (Theobald, 1901: 227-28; *Megarhinus*) [= *splendens*]. TYPE: Cotype ♂, ♀, Upper Burma, April, Watson, and Sikkum, Juru, Dudgeon [India], (BM).
64. *grata* (Banks, 1906: 780-82; *Worcesteria*) [= *amboinensis*]. TYPE: Lectotype ♂, Acc. No. 6071, Lot. Co-type, Govt. Lab. Coll. TYPE LOCALITY here restricted to Bago, Hacienda "Louisiana," Mailum, Negros Occidental, Negros Island, Philippines, June and July, 1906, C. S. Banks. The type locality is restricted to Negros Island based on information in Banks (1908: 231-38). (USNM, 10255, designated by Stone & Knight, 1957: 199). BIONOMICS: Larvae found in cut bamboo.
65. *gravelyi* (Edwards, 1921: 73; *Megarhinus*). TYPE: Holotype ♂, [West Bengal], India, May-June 1916, 2000 ft., F. H. Gravely (IM). BIONOMICS: (Larvae in treeholes and bamboo].
66. *immisericors* (Walker, 1859: 90; *Megarhina*) [= *amboinensis*]. TYPE: ♂, Makassar, Celebes (BM). BIONOMICS: [Larvae possibly in bamboo].
67. *inornatus* (Walker, 1865: 102-03; *Megarhina*). TYPE: Holotype ♂, New Guinea (BM). BIONOMICS: [Larvae are found in treeholes and coconut husks].
68. *javensis* Theobald, 1911: 233 [= *quasiferax*]. TYPE: ♀, Java (AM).
69. *kaimosi* (Van Someren, 1946: 184-85; *Megarhinus*). TYPE: Cotype ♂♂, ♀♀, Kaimosi Forest, North Kavirondo, Kenya (BM). BIONOMICS: Larvae in treeholes.
70. *kempii* (Edwards, 1921: 72; *Megarhinus*). TYPE: Holotype ♂, Talewadi, near Castle Rock, North Kanara, [Bombay], India, 3-10 October 1916, S. Kemp (IM). BIONOMICS: [Larvae in bamboo].
71. *klossii* (Edwards, 1921: 72; *Megarhinus*). TYPE: Holotype ♂, Kedah Peak (Gunong Jerai), [Kedah], Malaya, November-December 1915, 3200 ft., C. Boden Kloss (BM).
72. *leicesteri* Theobald, 1904: 36-37. TYPE: Syntypes ♂, ♀, Kuala Lumpur, [Selangor], Malaya (BM). BIONOMICS: Larvae in bamboo.
73. *lewaldi* (Ludlow, 1904: 233-34; *Megarhinus*) [= *amboinensis*]. TYPE: Holotype ♂, Salog, Guimaras Islands, [Iloilo], Philippines, 1 Apr., L. T. DeWald, (USNM, 27784). The specimen bearing the type label at the USNM is labeled Fort Mills, Corregidor. This discrepancy between the label data and published data will be investigated.
74. *lutescens* (Theobald, 1901: 233-35; *Megarhinus*). TYPE: Holotype ♂, Salisbury, Mashonaland, [Southern Rhodesia], June 1879, G. A. K. Marshall (BM). BIONOMICS: [Larvae possibly breed in tree holes].

75. *magnificus* (Leicester, 1908: 54-56; *Teromyia*). TYPE: Syntype ♂, ♀, Malaysia (NE, syntypes in BM). BIONOMICS: Larvae from uncut bamboo with insect borer holes.
76. *manicatus* (Edwards, 1921: 630; *Megarhinus*). TYPE: Holotype ♀, Toa Tsui Kutsu, Taiwan, May 1914, H. Sauter (DEI). BIONOMICS: [Larvae breed in treeholes and bamboo].
77. *manopi* Thurman, 1959: 16-17. TYPE: Holotype ♂ (643), Buker Road, Doi Sutep, Chiangmai Province, Chiangmai, Thailand, 26 March 1953, 1500 ft., D. C. Thurman, Jr. (USNM, 64217).
78. *marshallii* Theobald, 1903: 121-23 [= *brevipalpis*]. TYPE: Holotype ♂, Salisbury, Mashonaland, [Southern Rhodesia], April, 5000 ft., G. A. K. Marshall (BM). BIONOMICS: [Probably as 53. Larvae in treeholes].
79. *metallicus* Leicester in Theobald 1904: 37-39. TYPE: Syntypes ♂, ♀ Kuala Lumpur [Selangor], Malaysia (BM). BIONOMICS: [Larvae found in bamboo].
80. *minus* (Theobald, 1905: 237-39; *Megarhinus*). TYPE: Holotype ♂, Yatiyantota, Sri Lanka (Ceylon), March 1902, E. E. Green (BM). BIONOMICS: [Larvae probably in bamboo].
81. *nairobiensis* (Van Someren, 1946: 181-84; *Megarhinus*). TYPE: Holotype ♂, City Park, Nairobi, [Central], Kenya, C. R. Cunningham van Someren (BM). BIONOMICS: Larvae collected in treeholes.
82. *nepenthis* (Dyar & Shannon, 1924: 66-67; *Megarhinus*). TYPE: Holotype ♀, Los Banos, Laguna, Luzon, Philippines, 15 February 1915 (USNM, 28095). BIONOMICS: Larvae in *Nepenthes*.
83. *nigripes* (Edwards, 1935: 580-81; *Megarhinus*). TYPE: Holotype ♂, Mt. Dulit, Sarawak, Borneo, 19 October 1932, 4000 ft., moss forest, B. M. Hobby (BM). BIONOMICS: [Possibly breeds in *Nepenthes*].
84. *pauliani* (Doucet, 1951: 107; *Megarhinus*). TYPE: Holotype ♂, Vangaindrano, Madagascar (IRSM).
85. *pendleburyi* (Edwards, 1930: 305; *Megarhinus*). TYPE: Holotype ♀, Kenokok, Mt. Kinabalu, North Borneo, Borneo, 22 April 1929, 3300 ft., H. M. Pendlebury (BM).
86. *phytophagus* Theobald, 1910: 102-03. TYPE: Holotype ♀ (as *phytophygus*, emend. by Edwards, 1912: 3), 1 mile north of Obuasi, Ashanti, Gold Coast, 20 June 1907, Graham (BM). BIONOMICS [Larvae collected in large artificial container].
87. *quasiferax* (Leicester, 1908: 51-54; *Teromyia*). TYPE: Cotype ♂, ♀, Jugra, Malaya and Singapore (BM). BIONOMICS: [Larvae found in pitcher plants].
88. *raris* (Leicester, 1908: 56-58; *Teromyia*). TYPE: ♂, L, Ulu Klang, [Selangor], Malaya (NE). BIONOMICS: Larvae collected in bamboo.
89. *regius* (Tennent, 1859: 268; *Culex*) [= *splendens*]. TYPE: A, Kandy, [Central], Ceylon (NE). BIONOMICS: [Larvae probably breed in treeholes and bamboo, as *splendens*].
90. *ruwenzori* (Van Someren, 1948: 128-29; *Megarhinus*). TYPE: Holotype ♂, Bwamba Pass, Ruwenzori, [Toro District], Uganda, 8000-8500 ft., E. C. C. van Someren, (BM). BIONOMICS: Larvae taken from bored bamboo.
91. *schultzei* Enderlein, 1931: 123-24 [= *brevipalpis conradti*]. TYPE: Holotype ♀, Mongumba "am Ubangi-Fluss," (Oubangui River), French Equatorial Africa, 26 April 1930, A. Schultze (ZM).
92. *sikkimensis* (Giles, 1901: 604; *Megarhina*) [= *splendens*]. TYPE: Holotype ♀ [labeled as the type of *gilesii*, Stone 1955], Sikkim, India (BM).

93. *speciosus* (Skuse, 1889: 1722-24; *Megarrhina*). TYPE: ♂, Port Denison, Queensland, Australia (MM). BIONOMICS: [Larvae found in treeholes and artificial containers].
94. *splendens* (Wiedemann, 1819: 2; *Culex*). TYPE: ♂, Java (ZMC and NMW). BIONOMICS: [Larvae breed in treeholes, bamboo, and artificial containers].
95. *subulifer* (Doleschall, 1857: 382; *Culex*) [= *amboinensis*]. TYPE: ♀, Amboina I., Moluccas, Indonesia. BIONOMICS: [Larvae probably in bamboo].
96. *sumatranus* (Brug, 1939: 93; *Megarhinus*). TYPE: ♀, Benkoelen, Sumatra [Indonesia], (BM). BIONOMICS: Larva collected from pitcher plant.
97. *sunthorni* Thurman, 1959: 19-20. TYPE: Holotype ♂, East Slope, Doi Chom Cheng, Doi Sutep Range, Chiangmai Province, Thailand, 3000 ft., 4 April 1952, E. B. and D. C. Thurman, Jr. (USNM, 64219). BIONOMICS: Resting ♂ collected from tree trunk in a shady, humid jungle valley.
98. *tessmanni* Enderlein, 1931: 124 [= *brevipalpis conradti*]. TYPE: Holotype ♀, Alen Benito, Uam Region, [Rio Muni], 23 November 1906, G. Tessmann (ZM).
99. *towadensis* (Matsumura, 1916: 445; *Megarrhina*). TYPE: ♂, Towada, Honshu, Japan (LU).
100. *viridibasis* (Edwards, 1935: 133; *Megarhinus*, as *aeneus* var. *viridibasis*). TYPE: Holotype ♀, Kampala, (West Mengo District), Uganda, 6 October 1932, G. H. E. Hopkins. BIONOMICS: [Larvae in treeholes].
101. *yaeyamae* Bohart, 1956: 29-31 [ssp. of *yamadai*]. TYPE: Holotype ♂ with ♂ genitalia slide (51-11-23a) and associated larval and pupal skins (55-4-4b), east fork of Nakara R., Iriomote I., Ryukyus, 17 November 1951, R. M. Bohart (USNM). BIONOMICS: Larvae in treeholes (treehole #10).
102. *yamadai* (Ouchi, 1939: 223-25; *Megarhinus*). TYPE: Syntypes (?) 2 ♂♂, 1 ♂, Santaro-Toge, 1 ♂ "at a country from Yuman Villiage to Yamato Villiage, Amani-oshima, Mt. Yuwan, Kagoshima Prefecture [Kyushu], Japan, summer 1938, Y. Ouchi" (SCI). BIONOMICS: [Larvae probably in treeholes].

List of Localities

Australian Region

AUSTRALIA

Queensland, Port Denison: 93. *Tx. (Tox.) speciosus*

NEW GUINEA

Unspecified locality: 67. *Tx. (Tox.) inornatus*

Ethiopian Region

CENTRAL AFRICAN REPUBLIC

Mongoumba, Oubangui River: 91. *Tx. (Tox.) schultzei*

GHANA

Ashanti, Obuasi: 86. *Tx. (Tox.) phytophagus*

KENYA

Nairobi, City Park: 81. *Tx. (Tox.) nairobiensis*
North Kavirondo, Kaimosi Forest: 69. *Tx. (Tox.) kaimosi*

MADAGASCAR

Vangaindrano: 84. *Tx. (Tox.) pauliani*

NIGERIA

Johann-Albertshohe (North Cameroons): 56. *Tx. (Tox.) brevivalpis conradti*
Western Province, Ibadan: 58. *Tx. (Tox.) erythrurus.*

RIO MUNI

Uam Region, Alen Benito: 98. *Tx. (Tox.) tessmani*

SIERRA LEONE

Freetown: 59. *Tx. (Tox.) evansae*; Hill Station: 43. *Tx. (Tox.) aeneus*

SOUTH AFRICA

Natal, Durban: 53. *Tx. (Tox.) brevivalpis*

RHODESIA

Mashonaland, Salisbury: 74. *Tx. (Tox.) lutescens*; 78. *Tx. (Tox.) marshallii*

UGANDA

Toro District, Ruwenzori, Bwanba Pass: 90. *Tx. (Tox.) ruwenzori*;
Mpanga Forest: 51. *Tx. (Tox.) barbipes*
West Mengo District, Kampala: 100. *Tx. (Tox.) viridibasis*

Nearctic Region

UNITED STATES

Florida, Brevard Co., Georgiana: 32. *Tx. (Lyn.) rutilus*
Mississippi, Oktibbeha Co., Agricultural College: 18. *Tx. (Lyn.) herrickii*
Virginia, Shenandoah Co., Woodstock: 34. *Tx. (Lyn.) septentrionalis*

Neotropical Region

ARGENTINA

Formosa, locality not specified: 33. *Tx. (Lyn.) separatus*; 23. *Tx. (Lyn.) lynchi.*
Misiones, Puerto Iguazu: 10. *Tx. (Lyn.) cavalierii*
Tucuman, locality not specified: 39. *Tx. (Lyn.) tucumanus*; Lules: 8, *Tx. (Lyn.) arborealis*

BOLIVIA

La Paz, Yungas de Coroico: 2. *Tx. (Ank.) hexacis*

BRAZIL

Amazonas, Manaus: 4. *Tx. (Ank.) purpureus*; Macapa, near Manaus: 19. *Tx. (Lyn.) horei*
Bahia, Ilha de Itaparica: 25. *Tx. (Lyn.) mariae*; Salvador: 5. *Tx. (Ank.) trichopygus*; 41. *Tx. (Lyn.) ferox*; 41. *Tx. (Lyn.) wiedemanni*;
7. *Tx. (Lyn.) ambiguus*; 40. *Tx. (Lyn.) violaceus*

Goias (State), Goianapolis: 31. *Tx. (Lyn.) rizzoi*
 Rio de Janeiro (State), Rio de Janeiro and vicinity: 30. *Tx. (Lyn.) pusillus*;
 12. *Tx. (Lyn.) fluminensis*
 Rio de Janeiro (State), Petropolis: 9. *Tx. (Lyn.) bambusicola*; 29.
Tx. (Lyn.) posticatus
 Santa Catarina, Brusque: 1. *Tx. (Ank.) catharinensis*
 São Paulo, São Paulo: 3. *Tx. (Ank.) neglectus*; 35. *Tx. (Lyn.) solstitialis*; 11. *Tx. (Lyn.) chrysocephalus*

COLOMBIA

Cundinamarca, Bogota: 37. *Tx. (Lyn.) theobaldi*

COSTA RICA

Puntarenas, Aranjuez (Rio), near Puntarenas: 26. *Tx. (Lyn.) moctezuma*

DOMINICAN REPUBLIC

San Cristobal, San Francisco Mines: 17. *Tx. (Lyn.) haitiensis*

FRENCH GUIANA

Guyane, Cayenne: 16. *Tx. (Lyn.) haemorrhoidalis*

GUADELOUPE

Soufrière: 14. *Tx. (Lyn.) guadeloupensis*

MEXICO

Guerrero, Omilteme: 13. *Tx. (Lyn.) grandiosus*

Locality not specified (according to Belkin, Schick & Heinemann, 1965: 40, all species without specific localities were probably collected in the state of Vera Cruz, at or near either Vera Cruz or Coatzacoalcos): 22. *Tx. (Lyn.) longipes*

NICARAGUA

Bluefields: 20. *Tx. (Lyn.) hypoptes*

PUERTO RICO

Locality not specified: 28. *Tx. (Lyn.) portoricensis*

SURINAM

Marowijne, Moengo: 27. *Tx. (Lyn.) moengoensis*

Saramacca, Kwakoebron: 15. *Tx. (Lyn.) guianensis*

Suriname, Dam: 6. *Tx. (Lyn.) aldrichanus*

TRINIDAD

St. Andrew, Sangre Grande: 36. *Tx. (Lyn.) superbus*; 38. *Tx. (Lyn.) trinidadensis*

Locality not specified [the majority of the collections was probably made in the northern part of the island in the county of St. George (Belkin, Schick & Heinemann, 1965: 72)]: 21. *Tx. (Lyn.) iris*.

VENEZUELA

Zulia, La Rivera, Rio Escalante: 24. *Tx. (Lyn.) mara*

Oriental Region

BURMA

Upper Burma (locality not specified): 63. *Tx. (Tox.) gilesii*

INDIA

Mysore, North Canara District, Talewade: 70. *Tx. (Tox.) kempfi*

Punjab, Krol Mts. near Solon: 57. *Tx. (Tox.) edwardsi*; Simla:

44. *Tx. (Tox.) albipes*

Sikkim: 92. *Tx. (Tox.) sikkimensis*

West Bengal, Darjeeling District, Pashok: 65. *Tx. (Tox.) gravelyi*

INDONESIA

Djawa (Java): 68. *Tx. (Tox.) javaensis*; 94. *Tx. (Tox.) splendens*

Maluku (Moluccas), Ambon: 46. *Tx. (Tox.) amboinensis*; 95. *Tx. (Tox.) subulifer*

Sulawesi (Celebes), Kalawaranaputi (Kalawara): 67. *Tx. (Tox.) inornatus albitarsis*. Makasar (Makassar): 66. *Tx. (Tox.) immisericors*

Sumatera (Sumatra), Batang Palupul, on western coast of Sumatera: 55. *Tx. (Tox.) coeruleus*. Bengkulu (Benkoelen): 96. *Tx. (Tox.) sumatranus*.

MALAYSIA

Kedah, Kedah Peak (Gunong Jerai): 71. *Tx. (Tox.) klossi*

Malaysia, locality not specified: 75. *Tx. (Tox.) magnificus*

Pahang: 48. *Tx. (Tox.) ater*

Sabah (North Borneo), Mt. Kinabalu, Kenokok: 85. *Tx. (Tox.) pendleburyi*

Sarawak (North Borneo), Mt. Dulit: 50. *Tx. (Tox.) auripes*; 83. *Tx. (Tox.) nigripes*

Selangor, Kuala Lumpur: 61. *Tx. (Tox.) funestus*; 72. *Tx. (Tox.) leicesteri*; 79. *Tx. (Tox.) metallicus*; Ulu Klang: 88. *Tx. (Tox.) raris*

PHILIPPINES

Iloilo, Guimaras Island, Salog: 73. *Tx. (Tox.) lewaldi*

Luzon, Bataan Province, Limay: 62. *Tx. (Tox.) gigantulus*. Laguna Province, Los Banos: 82. *Tx. (Tox.) nepenthis*.

Mindanao, Zamboanga del Sur, Margosatubig: 47. *Tx. (Tox.) argenteotarsis*

Negros Island, Negros Occidental, Bago, Hacienda "Louisiana," Mailum: 64. *Tx. (Tox.) grata*

RYUKYUS (see Japan)

SINGAPORE

Singapore: 42. *Tx. (Tox.) acaudatus*; 87. *Tx. (Tox.) quasiferox*

SRI LANKA (Ceylon)

Kandy: 89. *Tx. (Tox.) regius*

Yatiantota: 80. *Tx. (Tox.) minimus*

TAIWAN

Ikenohata (Shinchiku): 60. *Tx. (Tox.) formosensis*

Tai Tsuikutsu: 49. *Tx. (Tox.) aurifluus*; 76. *Tx. (Tox.) manicatus*

Kankau: 49. *Tx. (Tox.) aurifluus*

Toyenmongai: 49. *Tx. (Tox.) aurifluus*

THAILAND

Chiengmai Province, Doi Sutep: 52. *Tx. (Tox.) bickleyi*; 77. *Tx. (Tox.) manopi*. Doi Sutep Range, Doi Chom Cheng, east slope: 97. *Tx. (Tox.) sunthorni*

Palaeartic Region

JAPAN

Honshu, Towada: 99. *Tx. (Tox.) towadensis*
 Kyushu, Kagoshima Prefecture, Mt. Yuwan, Santaro-Toge: 102. *Tx. (Tox.) yamadai*
 Ryuku Islands, Iriomote Island, Nakara River: 101. *Tx. (Tox.) yaeyamae*

RUSSIA (USSR)

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