

***Neurothemis ramburii ramburii* (BRAUER) ¹⁾**

Polyneura ramburii BRAUER, 1866, Abh. Zool.-Bot. Ges. Wien, 16 : 568-569. — ♂ Celebes.

Neurothemis palliata & var. *ramburi* RIS, 1911, Cat. Coll. Selys, Lib. 13 : 550, 554-557 (*pars*: Malaya, Sumatra, Nias, Java).

Neurothemis palliata RIS, 1915, Tijdschr. Ent. 58 : 19 (♀ Simalur); RIS, 1919, Cat. Coll. Selys, Lib. 16² : 1166-1167 (*pars*: ♀ Simalur).

Neurothemis palliata palliata LIEFTINCK, 1934, Treubia, 14 : 415 (W., M. & E. Java); LIEFTINCK, 1935, Misc. Zool. Sum. 92-93 : 15-16 (P. Wé, N., N. E. & S. Sumatra).

Neurothemis ramburi ramburi LIEFTINCK, 1942, Treubia, 18 : 483-484 (notes synon. & distrib.); LIEFTINCK, 1953, Idea, 9 : 55 (Panaitan); LIEFTINCK, 1953, Verh. Naturf. Ges. Basel, 64 : 129, 213 (Bali).

Range. — Malaya.

P. Wé; Simalur; Nias; Sumatra (universal).

Panaitan; Java (universal); Bali.

Borneo (Sarawak and Sangkulirang, E. B.).

Habitat. — Haunts the grassy borders of lakes and marshes, from sea-level up to about 800 m. Very local, but plentiful where found and frequently keeping company with *fluctuans* or *terminata*, or with both.

***Neurothemis ramburii oceanis* LIEFTINCK**

Neurothemis ramburi oceanis LIEFTINCK, 1948, Treubia, 19 : 285, 297-298. — ♂ ♀ Engano.

Range. — Engano.

***Neurothemis terminata terminata* RIS ²⁾**

Neurothemis terminata RIS, 1911, Cat. Coll. Selys, Lib. 13 : 552, 569-572, fig. 328-329 (♂ ♀ wings, Lombok), fig. 334-335 (♂ ♀ genit., Lombok) — Malaya, Java (*terr. typ.*), Borneo, Banguay.

Neurothemis terminata LAIDLAW, 1920, Proc. Zool. Soc. London : 323 (Borneo); HINCKS, 1930, Sarawak Mus. Journ. 4 : 55 (Sarawak); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 225 (note); SCHMIDT, 1934, Arch. Hydrob. Suppl. 13 :

¹⁾ The distributional centre of this species lies in Celebes and the Moluccas, whence it has spread in all directions, forming only few poorly defined races. It has a wide and scattered distribution throughout Malaysia, its range overlapping that of *fluctuans* as well as *terminata*. Although hybridization with either of these species is very likely to occur in places, all three species may be found together in one locality and can usually be kept apart fairly easily.

²⁾ Populations from various localities in Borneo have a denser venation and the opaque colour of the wings more extensive, approaching *obscura* in certain respects. The Mentawai island populations are of doubtful identity. In Java the heterochromatic colour form of the ♀ is the dominant one.

382-383 (Java), pl. 17, fig. 7 (♂ wings); LAIDLAW, 1934, J. Fed. Mal. States Mus. 17 : 551 (Kinabalu); LIEFTINCK, 1935, Misc. Zool. Sum. 92-93 : 16 (S. Sumatra). *Neurothemis terminata forma* LAIDLAW, 1926, J. Mal. Br. R. Asiatic Soc. 4 : 225 (Siberut, Sipora, N. & E. Pagai, descr.); LAIDLAW, 1931, Bull. Raffles Mus. 5 : 91-92 (♂♀ Mangalum I., N. Borneo, notes); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 240 (♂♀ N. Borneo, notes); LIEFTINCK, 1948, Treubia, 19 : 298 footnote (Mentawai Is.).

Neurothemis terminata terminata LIEFTINCK, 1934, Treubia, 14 : 416 (Krakatau, P. Deli, Java, Bawean, ? Kangean); LIEFTINCK, 1936, Revue Suisse Zool. 43 : 143 (Bali); DAMMERMAN, 1948, Verh. Kon. Ned. Akad. Wet. (2) 44 : 488 (Krakatau & Verlaten I.); LIEFTINCK, 1953, Idea, 9 : 55 (Panaitan); LIEFTINCK, 1953, Verh. Naturf. Ges. Basel, 64 : 129, 213 (Bali).

Range. — Malaya.

Siberut, Sipora, North & South Pagai (Mentawai Is., subspec. ?); Sumatra (south); Krakatau & Verlaten I.

Panaitan; P. Deli (off SW-coast); Java; Bawean; Kangean (subspec. ?); Bali.

Borneo (coastal, subspec. ?); Mangalum I. (subspec. ?); Banguay.

Habitat. — Found in similar situations to *fluctuans* and, though equally common locally as that species, largely replacing it in Java, where it is extremely abundant from the coast up to 1500 m.

Neurothemis terminata obscura FRASER

Neurothemis obscura FRASER, 1926, Treubia 8 : 472. — ♂ Karimondjawa Is. (Java Sea).

Neurothemis terminata obscura LIEFTINCK, 1934, Treubia, 14 : 416-417 (Karimondjawa & Sebesi; bionomics); DAMMERMAN, 1948, Verh. Kon. Ned. Akad. Wet. (2) 44 : 488 (Sebesi).

Range. — Sebesi (Strait Sunda).

Karimondjawa Is. (Java Sea).

Neurothemis tullia feralis (BURMEISTER) ¹⁾

Libellula equestris var. *feralis* BURMEISTER, 1839, Handb. Ent. 2 : 855. — ♂ *hab. ign.*

Neurothemis tullia feralis RIS, 1911, Cat. Coll. Selys, Lib. 13 : 551, 563 (Malaya, Sumatra, Java); RIS, 1912, Tijdschr. Ent. 55 : 165 (♂ N. Java); LIEFTINCK, 1934, Treubia, 14 : 417 (Krakatau, Java); FRASER, 1936, Fauna Brit. India, Odon. 3 : 363 (Siam); DAMMERMAN, 1948, Verh. Kon. Ned. Akad. Wet. (2) : 44 : 488 (Krakatau).

¹⁾ The geographical distribution of the two races of *tullia* is puzzling, and a re-examination of populations from Siam and the Malay Peninsula is urgently required to establish their identity and the limits of their range. *N. t. feralis* is known also from Celebes.

Range. — Siam; Malaya.

Sumatra (?) ¹⁾; Krakatau.

Java (universal); coral islets in Djakarta Bay.

Habitat. — Swamps and marshes in open country. In Java chiefly confined to the flat coastal areas of the north and central south, but occasionally found inland at higher levels. Very local, though occurring in immense numbers in suitable places.

Neurothemis tullia tullia (DRURY)

Libellula tullia DRURY, 1773, Ill. exot. Ins. 2 : 85, tab. 46, fig. 3. — ♂ Bombay (India).

Neurothemis tullia tullia RIS, 1911, Cat. Coll. Selys, Lib. 13 : 551, 561-562 (Penang, Malaya; distrib.: India to Malaya); FRASER, 1936, Fauna Brit. India, Odon. 3 : 362 (Siam); FRASER, 1942, Proc. R. Ent. Soc. London (B) 11 : 104 (Malaya).

Neurothemis tullia LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 225 (Penins. Siam & Malaya); LAIDLAW, 1934, ibid. 17 : 554 (Kedah).

Range. — Siam; Penang; Malaya.

Habitat. — Breeds gregariously in swampy grasslands and ponds with a dense aquatic vegetation, especially in open sunny spots in the plains. Once a specimen was taken at light in Kedah (Malaya), at an elevation of 1100 m, probably a straggler.

Genus *BRACHYTHEMIS* BRAUER

Brachythemis BRAUER, 1868, Abh. Zool.-bot. Ges. Wien, 18 : 367, 736.

(Genotype: *Libellula contaminata* FABRICIUS, ? sex, India or.)

Brachythemis contaminata (FABRICIUS)

Libellula contaminata FABRICIUS, 1793, Entom. syst. 2 : 382. — ? sex, India or.

Crocothemis servilia(?) NEEDHAM, 1904, Proc. U.S. Nat. Mus. 27 : 702 (larva, W. Java), pl. 41, fig. 3 (photogr., larva).

Brachythemis contaminata RIS, 1911, Cat. Coll. Selys, Lib. 13 : 582, 587-588, fig. 341 (♀ wings, Ceylon); RIS, 1927, Zool. Meded. 10 : 42 (Sumatra); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 224 (Penins. Siam & Malaya); SCHMIDT, 1934, Arch. Hydrob. Suppl. 13 : 383 (Sumatra, Java); LIEFTINCK, 1934, Treubia, 14 : 414 (Java, bionomics); LIEFTINCK, 1935, Misc. Zool. Sum. 92-93 : 16 (Sumatra); FRASER, 1942, Proc. R. Ent. Soc. London (B) 11 : 103 (Malaya).

Range. — Siam; Malaya & Singapore I.

Sumatra.

Java.

¹⁾ Reported from "Sumatra" by BRAUER and SELYS, but not recovered since that time.

Habitat. — Along the borders of lakes, ponds and sluggish streams, from sea-level up to 1500 m, but chiefly in low country. Breeds also in polluted waters, such as canals and irrigation ditches near human settlements and is only rarely seen away from water. On the wing till long after sunset.

Curiously enough, this species has not yet been found in Borneo.

Genus RHODOTHEMIS RIS

Rhodothemis RIS, 1909, Cat. Coll. Selys, Lib. 9 : 29; RIS, 1911, *ibid.* 13 : 591-592.
(Genotype: *Libellula rufa* RAMBUR, ♂ Java)

Rhodothemis rufa (RAMBUR)

Libellula rufa RAMBUR, 1842, Hist. nat. Ins. Névropt.: 71. — ♀ *pygmaea ign.*, ♂ Java.
Rhodothemis rufa RIS, 1909, Cat. Coll. Selys, Lib. 9 : 29; RIS, 1911, *ibid.* 13 : 592-593 (Penang, Malaya, Java, Borneo), fig. 350 (♂ wings, Celebes); LAIDLAW, 1920, Proc. Zool. Soc. London : 323 (Borneo); RIS, 1927, Zool. Meded. 10 : 43 (C. Sumatra); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 226 (Singapore); LIEFTINCK, 1933, Revue Suisse Zool. 40 : 430 (Java, note); LIEFTINCK, 1934, Treubia, 14 : 418 (Java, bionomics); SCHMIDT, 1934, Arch. Hydrob. Suppl. 13 : 383 (♂ C. Sumatra); LIEFTINCK, 1935, Misc. Zool. Sum. 92-93 : 16 (N. Sumatra); FRASER, 1942, Proc. R. Ent. Soc. London (B) 11 : 103 (Malaya); LIEFTINCK, 1948, Treubia, 19 : 285, 298 (♂ Engano); LIEFTINCK, 1953, Idea, 9 : 55 (Panaitan).

- Range. — Penang; Malaya & Singapore I.
P. Wé; Engano; Sumatra; Billiton.
Panaitan; Java.
Borneo.

Habitat. — Widely spread, chiefly in low country but occurring also in the hills, up to 600 m. Breeds alike in weedy ponds and marshes, and in lakes with a rich aquatic vegetation. Females often far from water.

Subfamily TRITHEMISTINAE

Genus PSEUDOTHEMIS KIRBY

Pseudothemis KIRBY, 1889, Trans. Zool. Soc. London, 12 : 258, 270.
(Genotype: *Libellula zonata* BURMEISTER, ♂ China)

Pseudothemis jorina FÖRSTER

Pseudothemis jorina FÖRSTER, 1904, Insekten-Börse, 21 : 357-358. — ♂ Jor (Perak, Malaya).
Pseudothemis jorina RIS, 1912, Cat. Coll. Selys, Lib. 14 : 742 (note, not seen); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 226 (♂♀ Selangor, descr.).

Range. — Malaya.

Habitat. — Known only from the type locality and from Kuala Lumpur. Evidently a scarce insect.

Genus PSEUDAGRIONOPTERA RIS

Pseudagrionoptera RIS, 1909, Cat. Coll. Selys, Lib. 9 : 32; RIS, 1912, *ibid.* 14 : 747-748.
(Genotype: *Pseudagrionoptera diotima* RIS, ♂ ♀ Borneo)

Pseudagrionoptera diotima RIS

Pseudagrionoptera diotima RIS, 1912, Cat. Coll. Selys, Lib. 14 : 748-749, fig. 425-426 (♂ wings & genit., S. Borneo) — ♂ ♀ S. & N. W. Borneo.

Pseudagrionoptera diotima LAIDLAW, 1920, Proc. Zool. Soc. London : 323 (♀ Sarawak); LIEFTINCK, 1953, *Treubia*, 22 : 236 (♂ Sarawak).

Range. — Borneo.

Habitat. — A rare woodland species, breeding in swift running brooks in low country. Settles on foliage of shrubs overhanging the water.

Genus TRITHEMIS BRAUER

Trithemis BRAUER, 1868, Abh. Zool.-bot. Ges. Wien, 18 : 176-177.

(Genotype: *Libellula aurora* BURMEISTER, ♂ Manila)

Trithemis aurora (BURMEISTER)

Libellula aurora BURMEISTER, 1839, Handb. Ent. 2 : 859. — ♂ Manila (Philippine Is.)

Trithemis aurora RIS, 1912, Cat. Coll. Selys, Lib. 14 : 760, 775-778 (Penang, Malaya, Sumatra, Java, Borneo), fig. 442 (♂ genit., Assam); LAIDLAW, 1915, Proc. Zool. Soc. London : 26 (N. Borneo); LAIDLAW, 1920, *ibid.* : 323 (Borneo); RIS, 1927, Zool. Meded. 10 : 43 (Sumatra); LIEFTINCK, 1929, Misc. Zool. Sum. 34 : 3 (Sumatra); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 226 (Malaya); SCHMIDT, 1934, Arch. Hydrob. Suppl. 13 : 383 (Sumatra, Java, Bali); LIEFTINCK, 1934, *Treubia*, 14 : 418-419 (Java, bionomics); LAIDLAW, 1934, J. Fed. Mal. States Mus. 17 : 551 (Kinabalu); LIEFTINCK, 1935, Misc. Zool. Sum. 92-93 : 16 (Sumatra); FRASER, 1942, Proc. R. Ent. Soc. London (B) 11 : 103 (Malaya); LIEFTINCK, 1953, *Verh. Naturf. Ges. Basel*, 64 : 129, 215 (Bali).

Range. — Penang; Malaya.

P. Wé; Sumatra.

Java; Bali.

Borneo.

Habitat. — Widely distributed and found along the borders of large ponds and lakes, more rarely also over sluggish streams. Occurs from near sea-level to rather high altitudes, in Java quite frequently on mountain lakes between 800 m and 1700 m. In the plains only rarely keeping company with *festiva*.

Trithemis festiva (RAMBUR)

Libellula festiva RAMBUR, 1842, Hist. nat. Ins. Névropt.: 92-93. — ♂ Bombay (India)
Trithemis festiva RIS, 1912, Cat. Coll. Selys, Lib. 14 : 761-762 (Penang, Sumatra, Java, Borneo), 796-799, fig. 456-457 (♂ wings, Lombok; ♂ genit., Java); LAIDLAW, 1915, Proc. Zool. Soc. London : 26 (N. Borneo); LAIDLAW, 1920, ibid. : 324 (Borneo); RIS, 1927, Zool. Meded. 10 : 43 (Sumatra); LIEFTINCK, 1929, Misc. Zool. Sum. 34 : 3 (Sumatra); LIEFTINCK, 1931, ibid. 59 : 5 (Nias); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 227 (Singapore); SCHMIDT, 1934, Arch. Hydrob. Suppl. 13 : 384 (Sumatra, Java, Bali); LIEFTINCK, 1934, Treubia, 14 : 419 (Java, bionomics); LIEFTINCK, 1935, Misc. Zool. Sum. 92-93 : 16 (Sumatra); FRASER, 1942, Proc. R. Ent. Soc. London (B) 11 : 103 (Malaya); ? LIEFTINCK, 1948, Treubia, 19 : 299 (♂ Engano, subsp.?); LIEFTINCK, 1953, Verh. Naturf. Ges. Basel, 64 : 129, 215 (Bali).

Range. — Penang; Malaya & Singapore I.

Nias; Engano (subspec.?); Sumatra.

Java; Bali.

Borneo.

Habitat. — Streams and rivers, especially those with a swift current and flowing through exposed country. A common species, even in cultivated areas, occurring from the coast up to 1500 m. Males rest on boulders and gravel bars in mid-stream, often in considerable numbers; females are only occasionally seen, often far from their breeding-place.

Trithemis pallidinervis (KIRBY)

Sympetrum pallidinervis KIRBY, 1889, Trans. Zool. Soc. London, 12 : 327-328, tab. 55, fig. 4 (neurulation). — ♂ India.

Trithemis pallidinervis RIS, 1912, Cat. Coll. Selys, Lib. 14 : 761, 789-791 (not regional), fig. 451 (♂ genit., Ceylon); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 226-227 (♀ Penins. Siam; ♂♀ Malaya).

Range. — Siam; Malaya & Singapore I.

Bangka; Billiton.

Habitat. — Migrant from the north. Widely and sparingly distributed, and within the limits of Malaya evidently a straggler. Occurs in marshy areas of the plains, the imago being usually found perched on the top of a tall reed, often quite some distance away from its watery habitat.¹⁾

¹⁾ See also FRASER, 1936, Fauna Brit. India, Odon. 3 : 390-391. I found this species quite common on several occasions around Singapore.

Subfamily ONYCHOTHEMISTINAE

Genus ONYCHOTHEMIS BRAUER

Onychothemis BRAUER, 1868, Abh. Zool.-bot. Ges. Wien, 18 : 170, 365, 732-733.

(Genotype: *Onychothemis abnormis* BRAUER, ♂ ♀ Luzon)

***Onychothemis abnormis* BRAUER**

Onychothemis abnormis BRAUER, 1868, Abh. Zool.-bot. Ges. Wien, 18 : 170-172. — ♂ ♀ Luzon (Philippine Is.).

Onychothemis abnormis KARSCH, 1891, Entom. Nachr. 17 : 46 (N. E. Sumatra); RIS, 1912, Cat. Coll. Selys, Lib. 14 : 832-833 (♂ ♀ Philippines; ♂ ♀ Java; Sumatra specimens not seen!); LIEFTINCK, 1934, Treubia, 14 : 419-420 (♂ ♀ S. W. Java).

Range. — Sumatra (northeast).

Java.

Remarks. — Little is known of this very rare species. Reported from Deli by KARSCH and collected by FRUHSTORFER somewhere in southwest Java, but since then not reported from anywhere else, except from the Philippines.

***Onychothemis coccinea* LIEFTINCK**

Onychothemis coccinea LIEFTINCK, 1953, Treubia, 22 : 264-266. — ♂ Malaya; ♂ ♀ Borneo (*terr. typ.*)

Onychothemis culminicola celebensis LAIDLAW, 1920, Proc. Zool. Soc. London : 324 (♂ Tatau, ? Sarawak, Borneo).

Range. — Malaya (Kelantan).

Borneo (northwest, south and southeast).

Habitat. — All known specimens of this species were probably collected in the lowlands. In southern Borneo moderately common over tiny slow-flowing brooks in the peat-bog areas around Sampit.

***Onychothemis culminicola* FÖRSTER**

Onychothemis culminicola FÖRSTER, 1904, Insekten-Börse, 21 : 356-357. — ♂ Jor (Perak, Malaya)

Onychothemis abnormis RIS, 1911, Ann. Soc. ent. Belg. 55 : 254 (♂ W. Borneo).

Onychothemis culminicola culminicola RIS, 1912, Cat. Coll. Selys, Lib. 14 : 833, 835-836 (Malaya, Sumatra, Java, Borneo); LIEFTINCK, 1934, Treubia, 14 : 420 (W. & E. Java, bionomics); SCHMIDT, 1934, Arch. Hydrob. Suppl. 13 : 384 (♂ S. Sumatra); LIEFTINCK, 1935, Misc. Zool. Sum. 92-93 : 16 (♂ ♀ N. E. & ♂ S. Sumatra).

Onychothemis culminicola LIEFTINCK, 1929, Misc. Zool. Sum. 34 : 4 (♂ N. E. Sumatra); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 228 (♂ Pahang);

LIEFTINCK, 1950, Treubia, 20 : 664-665 (phenology); LIEFTINCK, 1953, *ibid.* 22 : 265-266 (Malaya, Sumatra, Java & Borneo, notes); LIEFTINCK, 1953, Verh. Naturf. Ges. Basel, 64 : 129, 216 (♂ Bali).

Range. — Siam; Malaya.

Sumatra.

Java; Bali.

Borneo.

Habitat. — Woodland streams and rivers, especially those with a slow current, but only rarely found in cultivated areas. A strong flying and wary insect. Occurs from near sea-level up to about 900 m. Oviposition was observed over ripples as well as over shallow pools under the river bank, but the larva has remained unknown.

Onychothemis testacea testacea LAIDLAW

Onychothemis testacea LAIDLAW, 1902, Proc. Zool. Soc. London, 1 : 75, pl. 5, fig. 2 (♂ insect), tfig. 12 (♂ post. leg). — ♂ Kuala Aring (Malaya).

Onychothemis tonkinensis testacea RIS, 1912, Cat. Coll. Selys, Lib. 14 : 832, 833-834 (♂ Malaya).

Onychothemis testacea LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 228 (♀ Pahang, notes).

Range. — Malaya.

Habitat. — Known only from Kuala Aring (Kelantan) and Kuala Tahan (Pahang), and like *abnormis* evidently a scarce species.

Genus ZYGONYX HAGEN

Zygonyx HAGEN, 1867, Abh. Zool.-bot. Ges. Wien, 17 : 62.
(Genotype: *Zygonyx ida* SELYS, ♂ Java)¹

Zygonyx ida SELYS

Zygonyx ida SELYS, 1869, Ann. Soc. ent. Belg. 12 : 96. — ♂ Java.

Zygonyx ida RIS, 1912, Cat. Coll. Selys, Lib. 14 : 816, 819-820 (Malaya, Sumatra, Java), fig. 472 (♂ wings, Java), fig. 477 (♂ genit., Java); RIS, 1927, Zool. Meded. 10 : 43 (♂♀ C. Sumatra); LIEFTINCK, 1929, Misc. Zool. Sum. 34 : 3-4 (N. E. Sumatra, notes); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 227-228 (♂♀ Malaya), 240 (♂ N. Borneo); SCHMIDT, 1934, Arch. Hydrob. Suppl. 13 : 384 (♂ S. Sumatra); LIEFTINCK, 1953, Treubia, 22 : 266-267 (comp. note); LIEFTINCK, 1953, Verh. Naturf. Ges. Basel, 64 : 129, 217 (♂ Bali).

• *Zygonyx ida ida* LIEFTINCK, 1934, Treubia, 14 : 420 (Java, bionomics); LIEFTINCK, 1935, Misc. Zool. Sum. 92-93 : 16 (N. E., central & S. Sumatra).

¹ See COWLEY, 1934, Entomologist, 67 : 253. Moreover, in SELYS's revision (C. R. Soc. Ent. Belg. 1891, 35 : ccxxvii-ccxxviii), preference of description was given to *ida*, and not to *iris*, as stated incorrectly by FRASER (J. Bombay Nat. Hist. Soc. 31, 1926 : 762).

Range. — Malaya.¹⁾
 Sumatra.
 Java; Bali.
 Borneo (subspec.?).

Habitat. — Moderately common over swift rocky streams and small rivers in densely forested areas. Chiefly submontane but occurs from near sea-level up to about 900 m, rarely higher. After emergence teneral individuals assemble in flocks, soaring high above ravines in the forest, often in great numbers. Adults return to the stream-bed and males may be observed hawking over rapids or hovering below a waterfall, much in the way of Corduliidae, for which they are easily mistaken. Copulation over the water. The larva clings to rocks and boulders at transformation.

[*Zygonyx iris iris* SELYS

Zygonyx iris SELYS, 1869, Ann. Soc. ent. Belg. 12 : 97. — ♂ "Malaisie", recte Bengal (India)²⁾.

Zygonyx iris RIS, 1912, Cat. Coll. Selys, Lib. 14 : 816, 820-823 (*pars*), fig. 478 (♂ genit., Bengal).

Range. — Extra-limital.]

Zygonyx iris malayana (LAIDLAW)

Zygonidia malayana LAIDLAW, 1902, Proc. Zool. Soc. London, 1 : 73-75, fig. 11 (♂ femur). — ♂ Kuala Aring (Malaya).

Zygonyx iris RIS, 1912, Cat. Coll. Selys, Lib. 14 : 820-821 (*pars*).

Zygonyx iris malayana LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 227 (Penins. Siam & Malaya, notes); LIEFTINCK, 1953, Treubia, 22 : 267-268 (comp. notes).

Zygonyx malayana FRASER, 1942, Proc. R. Ent. Soc. London (B) 11 : 103 (Malaya).

Range. — Siam; Malaya.

Habitat. — Occurs in similar surroundings to *ida*. I have seen males from Tandong (Tenasserim), caught at about 1300 m above the sea.

Zygonyx iris errans LIEFTINCK

Zygonyx iris errans LIEFTINCK, 1953, Treubia, 22 : 266-268. — ♂♀ W. & N. W. Borneo.

Zygonyx iris LAIDLAW, 1911, Sarawak Mus. Journ. 1 : 193 (♂♀ Sarawak); RIS, 1912, Cat. Coll. Selys, Lib. 14 : 821, 822-823 (♂♀ Sarawak, descr.); LAIDLAW,

¹⁾ The geographical variation within the Malaysian area has not yet been worked out satisfactorily.

²⁾ According to FRASER (J. Bombay Nat. Hist. Soc. 31, 1926 : 763) the type probably came from Assam.

1915, Proc. Zool. Soc. London : 26 (♂ N. Borneo, no descr.); LAIDLAW, 1920, ibid. : 324 (♂ N. Borneo; ♀ Sarawak, no descr.); FRASER, 1926, J. Bombay Nat. Hist. Soc. 31 : 763 (Borneo, note).

Range. — Borneo.

Habitat. — Over rapid streams in hill forest.

Subfamily ZYXOMMATINAE

Genus ZYXOMMA RAMBUR

Zyxomma RAMBUR, 1842, Hist. nat. Ins. Névropt. : 26, 30.
(Genotype: *Zyxomma petiolatum* RAMBUR, ♂ Bombay)

Zyxomma obtusum ALBARDA

Zyxomma obtusum ALBARDA, 1881, in VETH, Midden Sum. Exped., Neur. : 1, pl. 1, fig. 1-2 (♂ ♀ ins., coloured, & ♂ ♀ struct.) — ♂ ♀ C. Sumatra.
Zyxomma obtusum RIS, 1913, Cat. Coll. Selys, Lib. 15 : 902, 908-909 (not regional), fig. 528 (♂ wings, Lombok); RIS, 1915, Tijdschr. Ent. 58 : 19-20 (Simalur); RIS, 1919, Cat. Coll. Selys, Lib. 16² : 1220 (Simalur); RIS, 1927, Zool. Meded. 10 : 44 (♂ ♀ C. Sumatra); LIEFTINCK, 1929, Misc. Zool. Sum. 34 : 4 (N.E. Sumatra); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 240 (N. Borneo); LIEFTINCK, 1934, Treubia, 14 : 421-422 (Java, bionomics); LIEFTINCK, 1935, Misc. Zool. Sum. 92-93 : 16 (N. E. & S. Sumatra); LIEFTINCK, 1936, Revue Suisse Zool. 43 : 145-146 (Bali); LIEFTINCK, 1948, Treubia, 19 : 285, 299, 301 (♂ ♀ Engano).

Range. — Simalur; Engano; Sumatra.

Java; Bali.

Borneo.

Habitat. — Widely distributed throughout Malaysia and eastwards beyond these boundaries, from the coast up to about 850 m. Crepuscular. Adult male pruinescent chalky-white; flies over open water only during a short period at dawn and in the late afternoon till dusk (between 5.30 and 6.15 a.m. and between 5.15 and 6.15 p.m., according to the season). Females often attracted to light. Breeds in lakes, ponds, forest-pools and sluggish streams, but also in artificial water-containing receptacles, such as tanks, reservoirs and cisterns, often near or amidst human habitations.

Zyxomma petiolatum RAMBUR

Zyxomma petiolatum RAMBUR, 1842, Hist. nat. Ins. Névropt. : 30, tab. 2, fig. 4d (insect). — ♂ Bombay (India).

Zyxomma petiolatum RIS, 1913, Cat. Coll. Selys, Lib. 15 : 901, 903-905 (Malaya, Java, Borneo), fig. 523 (♂ wings, Borneo); RIS, 1927, Zool. Meded. 10 : 43

(C. Sumatra); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 228 (Malaya), 240 (N. Borneo); LIEFTINCK, 1934, Treubia, 14 : 422-423 (Java, bionomics); LIEFTINCK, 1935, Misc. Zool. Sum. 92-93 : 16 (N. Sumatra); LIEFTINCK, 1953, Idea, 9 : 55 (Panaitan).

Range. — Siam; Malaya & Singapore I.
Sumatra; Bangka; Billiton.
Panaitan; Java.
Borneo (south).

Habitat. — A widely distributed insect, from sea-level up to 700 m. Habits similar to *obtusum*, but appearing on the wing towards sunset and flying over stagnant waters till long after dusk. Breeds in shallow leaf-bottomed ponds and forest-pools, also in cultivated areas.

Genus THOLYMIS HAGEN

Tholymis HAGEN, 1867, Stett. ent. Ztg. 28 : 221.

(Genotype: *Libellula tillarga* FABRICIUS, ? sex "India or.")

Tholymis tillarga (FABRICIUS)

Libellula tillarga FABRICIUS, 1798, Suppl. Ent. syst.: 285. — ? sex "India or."

Tholymis tillarga RIS, 1913, Cat. Coll. Selys, Lib. 15 : 912, 913-915 (Penang, Malaya, Sumatra, Java, Borneo), fig. 531-532 (♂ wings, Lombok; ♀ genit., Lombok); RIS, 1919, ibid. 16² : 1220 (Simalur); RIS, 1927, Zool. Meded. 10 : 44 (Sumatra); LAIDLAW, 1931, Bull. Raffles Mus. 5 : 92 (Mangalum I.); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 228 (Malaya), 241 (N. Borneo); SCHMIDT, 1934, Arch. Hydrob. Suppl. 13 : 384 (N. Sumatra); LIEFTINCK, 1934, Treubia, 14 : 423-424 (Sebesi, Java, Karimondjawa; bionomics); LIEFTINCK, 1935, Misc. Zool. Sum. 92-93 : 16 (Sumatra); LIEFTINCK, 1936, Revue Suisse Zool. 43 : 146 (Bali); LIEFTINCK, 1948, Treubia, 19 : 285, 301 (Engano).

Range. — Siam; Penang; Malaya & Singapore I.
Simalur; Engano; Sumatra; Durian (Riouw Arch.);
Billiton; Sebesi.
Panaitan; Java; Karimondjawa; Kangean; Bali.
Borneo; Mangalum I.

Habitat. — A very common species with crepuscular habits, appearing on the wing in the late afternoon and flying long after dark. Breeds in all stagnant and slow flowing waters. A salt tolerant and migratory insect. Highest recorded altitude 1500 m.

Genus **PANTALA** HAGEN

Pantala HAGEN, 1861, Smiths. Inst. Misc. Coll. 4 : 141.
(Genotype: *Libellula flavescens* FABRICIUS, ? sex India)

***Pantala flavescens* (FABRICIUS)**

Libellula flavescens FABRICIUS, 1798, Suppl. Ent. syst.: 285. — ? sex India.

Pantala flavescens RIS, 1913, Cat. Coll. Selys, Lib. 15, 917-920 (Penang, Malaya, Sumatra, Java, Borneo), fig. 533 (♂ wings, Lombok); RIS, 1919, ibid. 162 : 1221 (Simalur, Java); CAMPION, 1925, J. Fed. Mal. States Mus. 8 : 165 (Sumatra); LAIDLAW, 1926, J. Mal. Br. R. Asiatic Soc. 4 : 225 (Sipora); RIS, 1927, Zool. Meded. 10 : 44 (Sumatra); LIEFTINCK, 1929, Misc. Zool. Sum. 34 : 4 (Sumatra); HINCKS, 1930, Sarawak Mus. Journ. 4 : 55 (Sarawak); LIEFTINCK, 1931, Misc. Zool. Sum. 59 : 5 (Nias, sec. SELYS); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 228 (Malaya), 241 (N. Borneo); LIEFTINCK, 1934, Treubia, 14 : 424-425 (Krakatau, Java, coral isles, Karimondjawa); SCHMIDT, 1934, Arch. Hydrob. Suppl. 13 : 384 (Java); LIEFTINCK, 1935, Misc. Zool. Sum. 92-93 : 16 (Sumatra); LIEFTINCK, 1936, Revue Suisse Zool. 43 : 146 (Bali); LIEFTINCK, 1948, Treubia, 19 : 285, 301 (Engano); DAMMERMAN, 1948, Verh. Kon. Ned. Akad. Wet. (2) 44 : 488 (larva, Krakatau); LIEFTINCK, 1953, Verh. Naturf. Ges. Basel, 64 : 129, 218 (Bali).

Range. — Siam; Penang; Malay & Singapore I.

Simalur; Nias; Sipora (Mentawai Is.); Engano; Sumatra;
Durian (Riouw Arch.); Bangka; Billiton; Krakatau &
Verlaten I.

Java; coral islets in Djakarta Bay, Karimondjawa; Bali.
Borneo.

Habitat. — Cosmopolitan, with strong migratory tendencies. Found in any environment up to about 2800 m, and absent only from areas completely untouched by human agency. Breeds in all stagnant and slowly running waters.

Genus **TRAMEA** HAGEN¹⁾

Tramea HAGEN, 1861, Smithson. Inst. Misc. Coll. 4 : 114.
(Genotype: *Libellula carolina* LINNAEUS, Amér. sept.)
Trapezostigma HAGEN, 1849, Stett. ent. Ztg. 10 : 174.
(Genotype: *Libellula carolina* LINNAEUS, Amér. sept.)

***Tramea euryale* SELYS**

Tramea euryale SELYS, 1878, Mitt. Zool. Mus. Dresden, 3 : 293, 298-299. — ♂ ♀
Manado (N. Celebes, terr. typ.); Java.
? *Tramea transmarina* BRAUER, 1867, Abh. Zool.-bot. Ges. Wien, 17 : 21-22 (♀ Fiji Is.).

¹⁾ Despite COWLEY's argument (Entomologist, 1935, 68 : 283-284) in favour of *Trapezostigma*, I have accepted HAGEN's own proposal to use the name *Tramea*.

- Tramea euryale* ? NEEDHAM, 1904, Proc. U.S. Nat. Mus. 27 : 712 (larva, W. Java), pl. 40, fig. 24 (photogr., larva).
- Tramea limbata* forma RIS, 1912, Tijdschr. Ent. 55 : 165-166 (♂ N. Java, descr.); RIS, 1915, ibid. 58 : 20 (♀ Simalur).
- Tramea limbata* forma d_2 RIS, 1913, Cat. Coll. Selys, Lib. 161 : 972 (*pars*), 980, 983 (Java only); RIS, 1927, Zool. Meded. 10 : 45 (♂ C. Sumatra, forma d_2); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 230 (♂ Patani, forma d_2).
- Tramea limbata euryale* LIEFTINCK, 1934, Treubia, 14 : 426-427 (Krakatau, coral islets, Java, Karimondjawa; bionomics); LIEFTINCK, 1935, Misc. Zool. Sum. 92-93 : 17 (Sumatra); DAMMERMAN, 1948, Verh. Kon. Ned. Akad. Wet. (2) 44 : 489 (Verlaten I., Krakatau group); LIEFTINCK, 1948, Treubia, 19 : 285, 301 (Engano).
- Tramea euryale* LIEFTINCK, 1942, Treubia, 18 : 521, 524 (key, as *limbata* s. ampl.), 538-539 (notes distrib., *loc. diff.*); LIEFTINCK, 1953, ibid. 22 : 268-269 (Borneo, notes & key ♀).

Range. — Malaya.

Simalur; Engano; Sumatra; Bangka; Billiton; Krakatau & Verlaten I.

Panaitan; Java; coral islets in Djakarta bay; Karimondjawa; Kangean.

Borneo.

Habitat. — A common and widespread species throughout Malaysia, occurring everywhere in the lowlands, especially in open sunny country, also in cultivated areas. Wanders far from its breeding places on emergence and frequently ascends to altitudes of over 2000 m, soaring high above mountain plateaux and jungle clearings. A migratory and salt tolerant species almost to the same extent as *Pantala*, but never congregating in such huge swarms as that insect. Breeds in all stagnant waters.

Tramea phaeoneura LIEFTINCK

- Tramea phaeoneura* LIEFTINCK, 1953, Treubia, 22 : 268-269 (incl. key ♀) — ♂ ♀ Borneo.
- Tramea limbata* forma d_1 RIS, 1913, Cat. Coll. Selys, Lib. 161 : 984 (♂ ♀ N. & W. Borneo), fig. 569 (♀ apex abd., N. Borneo).
- Tramea limbata* HINCKS, 1930, Sarawak Mus. Journ. 4 : 56 (Sarawak); LAIDLAW, 1931, Bull. Raffles Mus. 5 : 92 (♀ Mangalum I.).
- Tramea euryale* LIEFTINCK, 1942, Treubia 18 : 538-539 (note).

Range. — Borneo; Mangalum I.

Habitat. — Occurs in similar situations to *euryale* and keeps company with (or even outnumbers) that species, locally. Probably restricted to the Bornean province.

Tramea virginia (RAMBUR)

Libellula virginia RAMBUR, 1842, Hist. nat. Ins. Névropt.: 33-34. — ♂ Amér. sept.
(error: *patria ign.*)

Tramea virginia RIS, 1913, Cat. Coll. Selys, Lib. 16¹: 972, 978-979 (not regional);
fig. 566 (♂ genit., Macao), fig. 567 (♀ wings, Formosa); HINCKS, 1930, Sarawak
Mus. Journ. 4: 56 (♂ ♀ Sarawak); FRASER, 1936, Fauna Brit. India, Odon.
3: 435-436 (Siam); LIEFTINCK, 1942, Treubia, 18: 522-523 (♂ Billiton, descr.).

Range. — Siam.
Billiton.
Borneo.

Habitat. — Evidently a migrant from the north, straggling incidentally from the mainland into the archipelago. Only very few Malaysian specimens have come to our knowledge so far.

Genus HYDROBASILEUS KIRBY

- *Hydrobasileus* KIRBY, 1889, Trans. Zool. Soc. London, 12: 258, 266.
(Genotype: *Hydrobasileus vittatus* KIRBY, ♂ N. Celebes)

Hydrobasileus croceus (BRAUER)

Tramea crocea BRAUER, 1867, Abh. Zool.-bot. Ges. Wien, 17: 813-814. — ♂ Luzon
(Philippine Is.)

Hydrobasileus croceus RIS, 1913, Cat. Coll. Selys, Lib. 16¹: 966, 969-970 (Penang,
Malaya, Sumatra, Java, Borneo), fig. 562 (♂ wings, Borneo); LIEFTINCK, 1934,
Treubia, 14: 425-426 (W. & M. Java, bionomics); LIEFTINCK, 1935, Misc. Zool.
Sum. 92-93: 17 (P. Wé, im. & larva; S. Sumatra).

Range. — Siam; Penang; Malaya & Singapore I.
P. Wé; Sumatra; Bangka; Billiton.
Java.
Borneo.

Habitat. — A lowland species, widely distributed and usually common where found. Breeds in marshes, weedy ponds and lakes in open country, also in semi-cultivated areas. On emergence adults may be observed in great numbers soaring high above forest glades, often far away from water. Larva green, semitransparent, pelagic among aquatic vegetation.

1) There is some evidence of a fourth species of *Tramea*, probably *eurybia* SELYS, occurring within the limits of the Malaysian fauna. This was observed by the author on November 25, 1930, in the Karimondjawa islands (Java Sea), but the only specimen seen could not be captured.

Genus **CAMACINIA** KIRBY*Camacinia* KIRBY, 1889, Trans. Zool. Soc. London, 12 : 260, 266(Genotype: *Neurothemis gigantea* BRAUER, ♂ ♀ Ambon)**Camacinia gigantea** (BRAUER)*Neurothemis gigantea* BRAUER, 1867, Abh. Zool.-bot. Ges. Wien, 17 : 7, 8-9. — ♂ ♀ Ambon (Moluccas).*Camacinia gigantea* RIS, 1913, Cat. Coll. Selys, Lib. 15 : 925-927 (Malaya, Sumatra, Java, Borneo), fig. 535 (♂ wings, Palawan), fig. 536 (♂ genit., Sumatra), fig. 537 (♀ wings, Palawan); RIS, 1927, Zool. Meded. 10 : 44 (♂ ♀ C. Sumatra, ♀ colour-forms descr.); LAIDLAW, 1931, Bull. Raffles Mus. 5 : 92 (♂ ♀ Mangalum I.); LIEFTINCK, 1934, Treubia, 14 : 427-429 (Java, Karimondjawa, Kangean, bionomics); LIEFTINCK, 1936, Revue Suisse Zool. 43 : 146 (Karimondjawa); LIEFTINCK, 1948, Treubia, 19 : 286, 301 (Engano); LIEFTINCK, 1953, Idea, 9 : 55 (Panaitan).

Range. — Siam; Malaya.

Engano; Sumatra; Billiton.

Panaitan; Java; islets in Djakarta bay; Karimondjawa; Kangean.

Borneo; Mangalum; Banguay.

Habitat. — Chiefly a littoral species, breeding in mangrove swamps, shady lagoons and ponds. Occasionally attracted to light, but rarely found inland. Larva yellow-brown, semitransparent, pelagic or benthic among weeds and trash.

Camacinia harterti KARSCH*Camacinia harterti* KARSCH, 1890, Berl. ent. Zeitschr. 33 : 359-361. — ♂ ♀ Central Sumatra.*Camacinia harterti* RIS, 1913, Cat. Coll. Selys, Lib. 15 : 925, 928-929 (Malaya, Sumatra, Borneo), fig. 538-539 (♂ wings, N. Borneo; ♀ wings, Malaya).

Range. — Malaya.

Sumatra.

Borneo.

Habitat. — Hill forest and submontane areas, from 250 m up to 600 m. Reported by KARSCH from a height of 8000 feet, somewhere in northeast Sumatra. Little is on record concerning the habits and life-history of this exceedingly rare insect. ¹⁾

¹⁾ The following interesting observation on the egg-laying habits of *C. harterti* was made by Mr. R. STRAATMAN in Deli, northeast Sumatra. On April 9, 1950, his attention was drawn to a large dragonfly that flew persistently around a gigantic tree in a clearing of the forest near Balimbingan (600 m alt.). The insect was evidently attracted by a deep hole existing in one of the exposed massive roots at the base of the tree, about 40 cm above the ground, as it was seen swooping repeatedly into the

Genus **RHYOTHEMIS** HAGEN

Rhyothemis HAGEN, 1867, Stett. ent. Ztg. 28 : 232.
(Genotype: *Libellula phyllis* SULZER, ? sex "Indien")

***Rhyothemis aterrima* SELYS**

Rhyothemis aterrima SELYS, 1891, Ann. Mus. civ. Genova, 30 : 445 (footnote). — ♂♀
W. Borneo.

Rhyothemis aterrima RIS, 1913, Cat. Coll. Selys, Lib. 15 : 932, 953 (Sumatra,
Borneo); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 229 (♀ Selangor).

Range. — Malaya.
Sumatra.
Borneo.

Habitat. — Shady, slow flowing streams and marshes in densely
forested areas of the plains. Rare.

***Rhyothemis obsolescens* KIRBY**¹⁾

Rhyothemis obsolescens KIRBY, 1889, Trans. Zool. Soc. London, 12 : 321. — ♂♀
Borneo.

Rhyothemis obsolescens RIS, 1913, Cat. Coll. Selys, Lib. 15 : 933, 958-959 (Malaya,
Singapore, W. Sumatra, Borneo), pl. 7 (♂♀ coloured, second row: ♂ Borneo,
♀ W. Borneo, ♀ Borneo, ♀ Singapore, all as *vidua* SELYS); LAIDLAW, 1926, J.
Mal. Br. R. Asiatic Soc. 4 : 225 (♂♀ Siberut); RIS, 1927, Zool. Meded. 10 : 44
(♀ Central Sumatra); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 229
(Malaya); LAIDLAW, 1932, Bull. Raffles Mus. 7 : 101 (♂ S. Natuna); LAIDLAW,
1934, J. Fed. Mal. States Mus. 17 : 554 (Kedah); LIEFTINCK, 1935, Misc. Zool.
Sum. 92-93 : 17 (N. E. Sumatra); FRASER, 1942, Proc. R. Ent. Soc. London (B)
11 : 104 (♀ Perak).

Range. — Siam; Malaya & Singapore I.
Nias; Siberut (Mentawai Is.); Sumatra; Bangka; Billiton.
South Natuna; Borneo.

Habitat. — Marshy spots and weedy ponds in low country. Once
caught as high as 1100 m in Kedah (Malaya), evidently blown there
by the wind.²⁾

cavity, passed through the hollow trunk, and after a few moments re-appeared on the opposite side where the stem opened out into the air by means of a wide aperture. On approaching the tree cautiously, the observer actually watched the female enter the cavity to oviposit in a small body of water which had assembled on the bottom of the hole, releasing her eggs into the muddy black water by rapid strokes of her abdomen. Though no larvae of *harterti* were found, the adult dragonfly could fortunately be captured and identified.

1) See footnote on p. 167.

Rhyothermis phyllis phyllis (SULZER)

Libellula phyllis SULZER, 1776, Abgek. Gesch. Ins.: 169, tab. 24, fig. 2: — ? sex "Indien".

Rhyothermis phyllis phyllis RIS, 1913, Cat. Coll. Selys, Lib. 15 : 931, 938-940 (Penang, Malaya, Sumatra, Java, Borneo), fig. 540 (♂ wings, Penang), pl. 5 (♂♀ coloured insects & wings, Burma & Java); LIEFTINCK, 1929, Misc. Zool. Sum. 34 : 4 (Sumatra); HINCKS, 1930, Sarawak Mus. Journ. 4 : 56 (Sarawak); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 229 (Malaya), 240 (N. Borneo); SCHMIDT, 1934, Arch. Hydrob. Suppl. 13 : 385 (E. Java); LIEFTINCK, 1934, Treubia, 14 : 425 (Java; coral islets); LIEFTINCK, 1935, Misc. Zool. Sum. 92-93 : 17 (Sumatra); FRASER, 1942, Proc. R. Ent. Soc. London (B) 11 : 104 (Malaya); DAMMERMAN, 1948, Verh. Kon. Ned. Akad. Wet. (2) 44 : 488 (Krakatau).

Rhyothermis phyllis LAIDLAW, 1926, J. Mal. Br. R. Asiatic Soc. 4 : 225 (Siberut); RIS, 1927, Zool. Meded. 10 : 44 (Sumatra); LAIDLAW, 1932, Bull. Raffles Mus. 7 : 101 (S. Natuna).

Range. — Siam; Penang; Malaya & Singapore I.

P. Wé; Siberut (Mentawai Is.); Sumatra; Bangka; Billiton; Krakatau.

Java; coral islets in Djakarta bay; Kangean.

South Natuna; Borneo.

Habitat. — Widely distributed and common in low country, also in cultivated areas. Breeds in still water, marshes and ponds with a rich aquatic vegetation being preferred. Also found over fish-ponds and oligohaline habitats near the coast.

Rhyothermis plutonia SELYS

Rhyothermis fuliginosa race *plutonia* SELYS, 1883, Ann. Soc. ent. Belg. 27 : 89. — ♂♀ Bengal (India).

Rhyothermis plutonia RIS, 1913, Cat. Coll. Selys, Lib. 15 : 932, 956 (Malaya); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 229 (♀ Pahang); FRASER, 1942, Proc. R. Ent. Soc. London (B) 11 : 104 (♀ Perak).

Range. — Malaya.

Sumatra (northeast and extreme south).

Habitat. — Forest marshes in low country. A rare and very local species.

Rhyothemis pygmaea (BRAUER) ¹⁾

- Celithemis pygmaea* BRAUER, 1867, Abh. Zool.-bot. Ges. Wien, 17 : 288, 297. — ♂
New Guinea (? *err. pro* Celebes or Moluccas)
Rhyothemis fulgens KIRBY, 1889, Trans. Zool. Soc. London, 12 : 322 (♂ Sarawak);
SELYS, 1889 (as *fulgens* : *nobis*), Ann. Mus. civ. Genova, 27 : 450 (Singapore;
Bangka, *terr. typ.*; Sarawak); ? LAIDLAW, 1902, Proc. Zool. Soc. London, 1 : 65
(Malaya, Sumatra, Borneo).
Rhyothemis pygmaea RIS, 1913, Cat. Coll. Selys, Lib. 15 : 932, 955-956 (♀ Malaya,
♂ Singapore, ♂ ♀ Sarawak), pl. 7 (coloured, upper row: ♂ Celebes, ♀ Sarawak);
LIEFTINCK, 1929, Misc. Zool. Sum. 34 : 4 (♀ N. E. Sumatra); LIEFTINCK, 1931,
ibid. 59 : 5 (Malaya; Nias, error).

Range. — Malay Peninsula.

Sumatra; Bangka; Billiton.

Borneo.

Habitat. — Occurs in similar situations to *obsolescens* but is a much scarcer insect.

Rhyothemis regia (BRAUER) subspecies

- [*Celithemis regia* BRAUER, 1867, Abh. Zool.-bot. Ges. Wien, 17 : 24-25. — ♂ ♀ Ambon (Moluccas)].
Rhyothemis regia regia RIS, 1913, Cat. Coll. Selys, Lib. 15 : 932, 949 (*pars*),
950-951 (*pars*), pl. 6 (♂ ♀ coloured wings, *pars*: Palawan only?); RIS, 1915,
Tijdschr. Ent. 58 : 20 (Simalur); LIEFTINCK, 1948, Treubia, 19 : 285, 300, fig. 8
(map distrib.), 301-304 (♂ Engano), pl. 10, fig. 2 (♂ wings, Engano).
Rhyothemis regia subsp. LIEFTINCK, 1935, Misc. Zool. Sum. 92-93 : 17 (P. Wé,
N. Sumatra, notes); LIEFTINCK, 1948, Treubia, 19 : 301-304 (P. Wé, N. Sumatra),
pl. 10, fig. 1 (♂ ♀ wings, P. Wé).

Range. — From the northern extremity of Sumatra as far east as Samoa.

Within the Malaysian area only known from: — P. Wé (Sabang), off north Sumatra; Simalur; Engano (in races).

The geographical variation within this area has not yet been worked out satisfactorily.

Habitat. — Lakes, ponds and lagoons, near the sea coast.

¹⁾ For the synonymy of *obsolescens* and *pygmaea* I have followed RIS (1913). Since *pygmaea* has never again been found in New Guinea, the type might have come from Celebes or one of the Moluccan islands. A careful revision of both species is needed as there is some reason to believe that Malaysian examples of *pygmaea* (*fulgens* KIRBY) are not conspecific with genuine *pygmaea*. *R. fulgens* KIRBY has priority over *fulgens* SELYS (RIS, *loc. cit.* 1913 : 958).

Rhyothemis triangularis KIRBY

Rhyothemis triangularis KIRBY, 1889, Trans. Zool. Soc. London, 12 : 319-320. — ♂
Borneo.

Rhyothemis triangularis RIS, 1913, Cat. Coll. Selys, Lib. 15 : 933, 962-963 (Malaya,
Sumatra, Java, Borneo); RIS, 1927, Zool. Meded. 10 : 44 (♂♀ C. Sumatra);
LIEFTINCK, 1934, Treubia, 14 : 425 (Java, notes); LIEFTINCK, 1935, Misc. Zool.
Sum. 92-93 : 17 (E. Sumatra).

Range. — Malaya.
Sumatra; Bangka.
Java (southwest).
Borneo.

Habitat. — Weedy ponds and sluggish streams flowing through
forest-marshes up to 600 m in the hills. Widely distributed and
usually fairly common where found. In Java only known from
Udjung Genteng and probably almost extinct elsewhere on the
island.

Subfamily UROTHEMISTINAE ¹⁾

Genus UROTHEMIS BRAUER

Urothemis BRAUER, 1868, Abh. Zool.-bot. Ges. Wien, 18 : 175, 366, 737.
(Genotype: *Urothemis bisignata* BRAUER, ♀ Luzon)

Urothemis abbotti LAIDLAW

Urothemis abbotti LAIDLAW, 1927, Proc. U.S. Nat. Mus. 70 : 1-3, pl. 1 (♂ wings).
— ♂♀ Trang (Lower Siam).

Urothemis abbotti LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 230 (Singapore).

Range. — Siam; Malaya & Singapore I.

Remarks. — Found at many localities in the Malay States and fairly
common around Singapore.

¹⁾ I believe that FRASER [Proc. R. Ent. Soc. London, 1950 (B) 19 : 77] is justified
in keeping RIS's "*Urothemis*-Gruppe" apart from the *Zygommatinae* (Group X of
RIS, 1909), but I cannot accept his opinion that the genus *Macrodiplax*, along with
Urothemis, *Aethriamanta* and *Selysiotthemis*, should stand so far apart from the rest
of the family as to warrant their removal from the *Libellulidae*. FRASER erected a
separate family, the *Macrodiplactidae* (*sic*) to include this group of genera, but in
view of their strikingly libelluloid features and habits I would rather suggest to give
them subfamily rank instead. Since *Urothemis* was characterized by BRAUER earlier
than *Macrodiplax*, I propose the subfamily name *Urothemistinae* to include the group
of genera above referred to.

[*Urothemis signata signata* (RAMBUR)]

Libellula signata RAMBUR, 1842, Hist. nat. Ins. Névropt.: 117-118. — ♀ *patria ign.*
Urothemis signata signata RIS, 1913, Cat. Coll. Selys, Lib. 16¹: 1017, 1022, 1023-1024, fig. 587-588 (♂ ♀ genit., India).

• Range. — Extra-limital.]

• *Urothemis signata bisignata* BRAUER

Urothemis bisignata BRAUER, 1868, Abh. Zool.-bot. Ges. Wien, 18: 175-176 — ♀
 • Luzon (Philippine Is.).
Urothemis signata bisignata RIS, 1912, Tijdschr. Ent. 55: 166 (♀ Java, descr.);
 RIS, 1913, Cat. Coll. Selys, Lib. 16¹: 1023, 1025-1026 (*pars?* Java); LIEFTINCK,
 1934, Treubia, 14: 429-430 (W. & M. Java, bionomics); SCHMIDT, 1934, Arch.
 Hydrob. Suppl. 13: 385 (♂ E. Java).

Range. — Java; Thousand Is., and coral islets in Djakarta bay;
 Bawean.

Habitat. — Haunts the sunny borders of lakes, ponds and sluggish
 • streams, but is often found far away from its breeding places,
 especially immature examples. A wind-borne species, frequently
 observed along the coast and on small islands, but occurring also
 on lakes in the interior up to 600 m. Rests on projecting twigs and
 on the top of tall herbs.

Urothemis signata insignata (SELYS)

• *Libellula insignata* SELYS, 1872, Revue Zool. (2) 23: 178. — ♂ Borneo.
Urothemis signata insignata RIS, 1913, Cat. Coll. Selys, Lib. 16¹: 1023, 1024-1025 (*pars?* Malaya, Sumatra, Bangka, Borneo); FRASER, 1942, Proc. R. Ent. Soc. London (B) 11: 104 (♂ Wellesley, Malaya).

Range. — Malaya.

P. Wé; Sumatra; Bangka; Billiton.
 Borneo.

Genus AETHRIAMANTA KIRBY

Aethriamanta KIRBY, 1889, Trans. Zool. Soc. London, 12: 262, 283.
 (Genotype: *Libellula brevipennis* RAMBUR, ♂ *patria ign.*)

Aethriamanta aethra RIS

• *Aethriamanta aethra* RIS, 1912, Tijdschr. Ent. 55: 166-168. — ♂ N. Java.
Aethriamanta aethra RIS, 1913, Cat. Coll. Selys, Lib. 16¹: 1027, 1033-1034, fig. 599 (♂ wings, Java); LIEFTINCK, 1934, Treubia, 14: 430-431 (W. & M. Java, bionomics & larva); SCHMIDT, 1934, Arch. Hydrob. Suppl. 13: 385 (♂ E. Java), fig. 93 (♂ app. & genit.).

Range. — Siam; Malaya.

Sumatra.

Java; coral islets in Djakarta bay.

Habitat. — Widely but sparingly distributed in the lowlands, but avoiding cultivated areas. Breeds in lakes and sunny forest swamps with an abundant aquatic vegetation. A shy and very wary insect. Larva found among floating plots of *Pistia stratiotes*.

Aethriamanta brevipennis (RAMBUR)

Libellula brevipennis RAMBUR, 1842, Hist. nat. Ins. Névropt.: 114. — ♂ *patria ign.*
Aethriamanta brevipennis brevipennis RIS, 1913, Cat. Coll. Selys, Lib. 16¹: 1027, 1029-1030 (not regional), fig. 590 (♂ wings, Burma), fig. 594 (♂ genit., Burma); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16: 230 (♂♀ Patani, Malaya).
Aethriamanta brevipennis SCHMIDT, 1934, Arch. Hydrob. Suppl. 13: 385 (♂ Ranau Lake, S. Sumatra).

Range. — Malaya.

Sumatra (south).

Habitat. — Lakes. Apparently rare and very local. I have never observed this species in the field.

Aethriamanta gracilis (BRAUER)

Microthemis gracilis BRAUER, 1878, Sitzb. Akad. Wiss. Wien, 77: 195-196. — ♂ Borneo.
Aethriamanta gracilis RIS, 1913, Cat. Coll. Selys, Lib. 16¹: 1027, 1032-1033 (Malaya, Sumatra, Borneo), fig. 597 (♂ wings, Borneo), fig. 598 (♂ genit., Borneo); RIS, 1927, Zool. Meded. 10: 45 (♀ C. Sumatra); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16: 230 (Selangor).

Range. ¹⁾ — Malaya & Singapore I.

Sumatra; Billiton.

Borneo.

Habitat. — A lowland species, breeding in marshes and ponds. Once caught in numbers by the author along the grassy border of a pond in the Singapore Botanic Gardens, along with *Brachydiplax chalybea*, which it resembled fairly closely.

¹⁾ Previously only known from the Malaysian subregion. I have recently received two males from lake Mangajoang, on Batjan I. (northern Moluccas), which do not differ in any way from typical examples. It is thus evident that *gracilis* is a widely distributed insect. *Aethriamantae* are extremely wary and usually difficult to capture; consequently they are easily overlooked insects.

Genus **MACRODIPLAX** BRAUER*Macrodiplax* BRAUER, 1868, Abh. Zool.-bot. Ges. Wien, 18 : 366, 737,(Genotype; *Diplax cora* BRAUER, ♀ Ceram)**Macrodiplax cora** (BRAUER)*Diplax cora* BRAUER, 1867, Abh. Zool.-bot. Ges. Wien, 17 : 20-21. — ♀ Ceram Moluccas).

Macrodiplax cora RIS, 1913, Cat. Coll. Selys, Lib. 16¹ : 1036-1038 (Malaya, Java), fig. 600-601 (♂ wings & genit., Kei Is.); LAIDLAW, 1931, J. Fed. Mal. States Mus. 16 : 231 (Malaya, note on loc.); SCHMIDT, 1934, Arch. Hydrob. Suppl. 13 : 385 (E. Java); LIEFTINCK, 1934, Treubia, 14 : 429 (Krakatau, Java & coral islets; bionomics & larva); LIEFTINCK, 1935, Misc. Zool. Sum. 92-93 : 17 (♀ P. Wé, N. Sumatra); DAMMERMAN, 1948, Verh. Kon. Ned. Akad. Wet. (2) 44 : 489 (Verlaten I., Krakatau group); LIEFTINCK, 1953, Idea, 9 : 56 (Panaitan).

Range. — Malaya.

P. Wé; Sumatra; Bangka; Krakatau & Verlaten I.
Panaitan; Java; coral islets in Djakarta bay.

Habitat. — A littoral and wind-borne species, breeding chiefly in oligohaline waters and having great dispersal faculties. Widely distributed and only occasionally found inland. Larva semitransparent, pelagic among water weeds.