

**RHIPIDOLESTES FROM GUANGDONG AND HONG KONG,
WITH A DESCRIPTION OF *R. JANETAE* SPEC. NOV.
(ZYGOPTERA: MEGAPODAGRIONIDAE)**

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R. janetae sp. n. is described from Hong Kong (holotype ♂: Sunset Peak, Hong Kong, 26-VI-1996). The ♀ of *R. truncatidens* Schmidt, from N Guangdong, is described for the first time.

INTRODUCTION

According to BRIDGES (1994) there are nine species of *Rhipidolestes* known, extending from Burma, through southern China and Taiwan to the Ryukyus and Shikoku of Japan. ASAHINA (1994c) recently described *R. asatoi*, from the Koshiki-jima islands east of Kyushu, Japan, bringing the total of known *Rhipidolestes* to ten species. *R. aculeatus kyushuensis* is described together with a form in ASAHINA (1993c) and a number of forms of *R. aculeatus* Ris are described in ASAHINA (1993b). Two forms of *R. okinawanus* are described in ASAHINA (1994a). ASAHINA, (1993a) comments that in general the continental forms of *Rhipidolestes* are large sized when compared with the Taiwanese and Japanese forms. A small sized species has been discovered in Hong Kong which is described here. The *Rhipidolestes* species and their distributions are listed in Table 1.

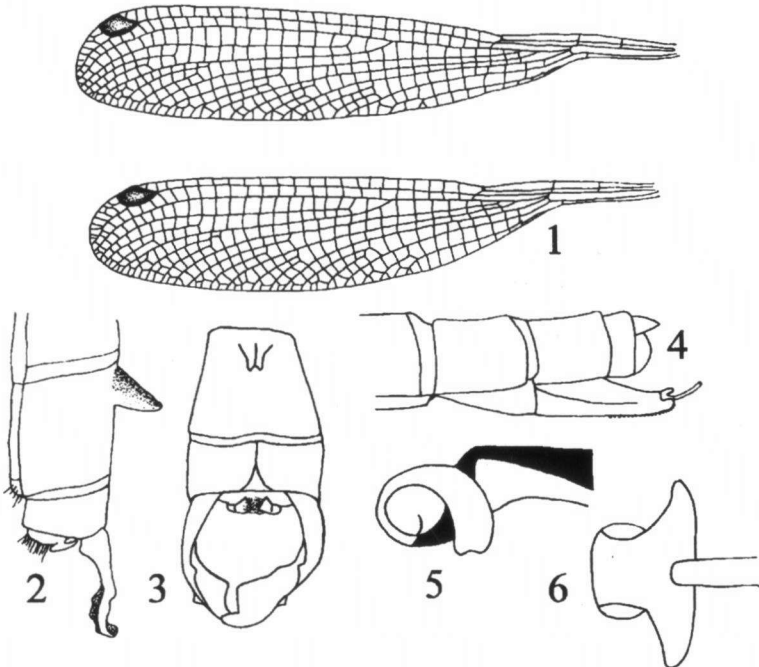
RHIPIDOLESTES JANETAE SP. NOV.

Figures 1-6

Material. – Holotype: ♂, Sunset Peak, Lantau, 26-V-1996; allotype: ♀, do., 25-V-1996. Additional material: 6 ♀, Sunset Peak, Lantau, 25-V-1996; 4 ♂, 4 ♀, do., 26-V-1996; 1 ♂, 3 ♀, do., 3-VI-1996. Holotype and allotype to be deposited in the BMNH.

E t y m o l o g y. – I am pleased to name this damselfly in honour of wife J a n e t.

MALE. – A small, predominantly black, non-pruinosed species with yellow face, legs and thoracic markings. Labium black. Labrum ochrous. Postclypeus, frons, antennae orange yellow. Top of head and vertex black. Prothorax black with a pair of broad orange yellow dorso-lateral stripes. Dorsum of thorax shining black with broad incomplete antehumeral stripes. These antehumeral stripes fall short of the wing bases by one quarter of the length of the synthorax. Ante-alar sinuses dark reddish black. Sides of thorax black with broad yellow metepisternal stripe indented black, above the spiracle, from the mesepimeron. The yellow metepisternal stripe is also invaded with black ventrally, below the spiracle. Ventral surface of thorax black with pale colourless central spot. Coxae black. Trochanters and basal two thirds of femora yellow. Distal third of femora, tibiae and tarsae reddish yellow. Wings hyaline. Pterostigma dark reddish black. Abdominal segments 1-6 dark blackish brown with the first few segments shiny. Segments 7-10 matt black. Inter-segmental membrane of segments 6-10 pale. Ninth segment with a large, stout, bifid tipped projection, angled posteriorly. The length of the projection is nearly half the depth of the segment. Caudal genitalia as illustrated in Figures 2 & 3. The



Figs 1-6. *Rhipidoletes janetae* sp. n., Hong Kong: (1) ♀, fore and hind wings; – (2) ♂, caudal appendages, lateral; – (3) ♂, caudal appendages, dorsal; – (4) ♀, caudal appendages, lateral; – (5) ♂, penile organ, lateral; – (6) ♂, penile organ, ventral.

penis forms a broad hood at the tip which is directed inwards and not further reflexed. Basal half of superior appendages not expanded with small dorsal projection at mid point. At three quarters of length a small lateral projection on outer face. Tip of superior appendage with finger-like projection. Inferior appendages extremely short with small upward pointing projections. Secondary genitalia illustrated in Figures 5 & 6.

Measurements (mm). – ♂ abdomen + anal appendages 36.5-40.0, hind wing 26.0-27.0.

FEMALE. – Very similar to male with shorter, stouter body and dull yellow markings. Labrum and base of mandibles pale brown. Top of frons yellow fading to brownish yellow at centre. Legs pale reddish brown. Fore and hind wing (Fig. 1) hyaline. Pterostigma pale white, thickly bordered dark brown. Abdominal segments 1-7 shiny dark brown at segment 1 fading to matt at segment 7. Segments 7-10 matt black, shorter and stouter than male without the ninth dorsal projection. Caudal appendages are illustrated in Figure 4. The ventral surface of the ovipositor is only slightly curved and extends beyond tip of abdomen. The styles are approximately the same length as the 10th abdominal segment.

Measurements (mm). – ♀ abdomen + anal appendages 34.0-35.0, hind wing 25.0-26.0.

RHIPIDOLESTES TRUNCATIDENS SCHMIDT, 1931

Figures 7-11

Rhipidolestes truncatidens: SCHMIDT, 1931: 181-183, figs 4-5, "4♂, Canton; 2 ♂, Tsha-jiusan, 6-V-1911"; – ASAHINA, 1978: 2-4, 12, fig. 1, 41, "Tschung Sen (2,300 m), Kuatun, Fujian, 1946, Klapperich leg.".

Material. – 1 ♀, Chebaling, Shixing County, north Guangdong, 24°40'14"N, 114°13'15"E, 11-V-1996; 5♂, do., 10-V-1996; 1 ♂, do., 11-V-1996. Female and male material to be deposited with the BMNH.

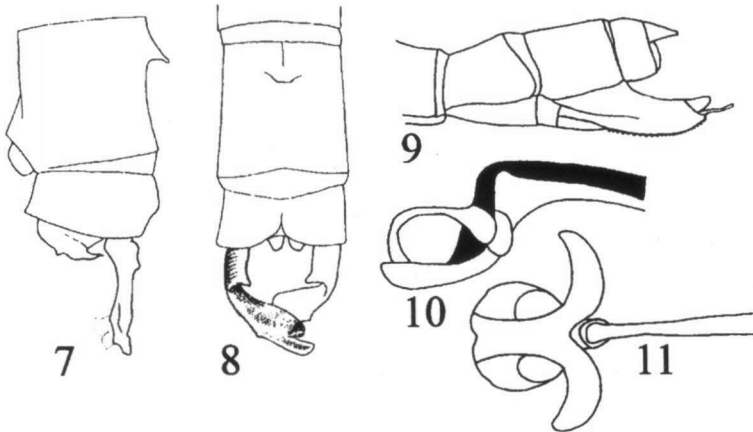
Dr Erich SCHMIDT (1931) provided a full description of the male, in German, but the female has not hitherto been described. A description of the male is given here to accompany the description of the female. A large *Rhipidolestes* with long body and male with black tipped elongate wings.

MALE. – Labium shiny black. Labrum, clypeus and frons shiny black with metallic greenish blue reflections. Gena white. Upper surface of head matt black. Rear of head black. Prothorax matt black with broad yellow lateral stripe. Thorax shiny black with metallic greenish reflections and an antehumeral stripe which is continuous with the prothoracic stripe. The antehumeral stripe extends three quarters the length of the synthorax and is tapered towards the wing. Metepisternum marked with broad yellow stripe which covers the spiracle. The stripe does not extend onto the metakatepisternum is invaded black near the wing from metepimeron. Thorax,

below antehumeral stripe and coxae lightly pruinose pale bluish white. Metaposternum yellow. Coxae black. Legs dark brown with trochanters pale yellow. Ventral surface of thorax black with pale whitish rectangular spot. Fore wing longer than hind wing by 2-3 mm, tipped black. Black tip of fore wing smaller than hind wing commencing towards posterior end of the pterostigma. Black tip of hind wing commences near the anterior base of the pterostigma. In the live adult the pterostigma of the dorsal surface is whitish and the ventral surface is red. Pterostigma of preserved specimens is red on both surfaces. Segments 1-5 of abdomen shiny black. Segments 6-10 matt black with 8-10 pruinose pale bluish whitish. Dorsum of segment 9 with very small projection towards base. The projection of the Chebaling males is much smaller than illustrated by SCHMIDT (1931: 182, fig. 5). Schmidt's figures of the caudal appendages are reproduced here, Figures 7 & 8. Superior appendages black with elongate finger-like projection at tip. The penis, illustrated in Figures 10 & 11, is split at the tip to form two broad, flat, reflexed horns which are directed outwards.

Measurements (mm). - δ , abdomen + anal appendages 42.5-48.5, hind wing 34-38, fore wing 36-40.

FEMALE. - Similar to male but with a much shorter, stouter body, without pruinescence and black wing tips. Labium shiny black. Labrum and distal half of clypeus shiny black. Base of clypeus, gena, frons and anterior part of head, including base of antennae pale yellow. Top of head matt black. Prothorax and thorax as male but without any pruinescence. Antehumeral stripe slightly broader than male with truncate end below wing. Ventral surface of thorax black with large round pale yellow spot. Legs reddish brown with pale whitish brown trochanters. Wings hyaline. Pterostigma reddish with pale yellow centres. Abdomen stout and short.



Figs 7-11. *Rhipidolestes truncatidens* Schmidt, Guangdong: (7-8) δ , caudal appendages (from SCHMIDT, 1931); - (9) δ , caudal appendages, lateral; - (10) δ , penile organ, lateral; - (11) δ , penile organ, ventral.

Segments 1-7 shiny black, 8-10 matt black. Ovipositor extends well beyond tip of abdomen. Style as long as 10th abdominal segment. Caudal appendages illustrated in Figure 9.

Measurements (mm): ♀, abdomen + anal appendages 38, hind wing 31, fore wing 34.

BIOLOGICAL NOTES

The type locality of *janetae* is located at an altitude of approximately 600 m on the N side of Sunset Peak, Lantau Island. This mountain attains a maximum height of 856 m. High densities of individuals were located in an area of dense, stunted forest at the head of a small stream. This site consists of a series of seepages, with a gravel substrate, located amongst large boulders festooned with ferns and orchids. Females were easily located in the vicinity of the site but males were relatively scarce. There are a number of mountains in Hong Kong and its territories exceeding 600 m. However, very few of these mountains have any areas of original forest and it is extremely unlikely that any further populations of *janetae* will be discovered in Hong Kong.

Males of *R. truncatidens* were abundant at five different locations inside and outside the 7545 hectare National Chebaling Nature Reserve area of north Guangdong. The highest peak in the area is 1255 m. *R. truncatidens* was found at altitudes below 500 m. All were found with outstretched wings, settled low to the ground on vegetation adjacent to small streams, seepages and boggy areas associated with small streams. Females were scarce and only one was located.

DISCUSSION

As noted by LIEFTINCK (1948) *Rhipidolestes truncatidens*, *R. apicatus* Navás, *R. rubriceps* Navás and *R. nectans* (Needham) are continental species with entirely dark faces. All other *Rhipidolestes* are extensively marked yellow or orange on the anterior part of the head. *R. truncatidens* is the largest member of the genus whereas *nectans* is of small size (♂ ab. 36 mm, h.w. 26 mm) similar in dimensions to *janetae*.

The closest continental congener of *janetae* is *R. juncundus*, known from the type locality at Kuatun (2300 m), Fujian and the plains around Foochow, Fujian (ASAHINA, 1978: 2, 3 & 12, figs. 1, 41). The body pattern, and colouration are similar, though *juncundus* is larger (♂, ab. 40.5 mm, h.w. 30 mm). *R. juncundus* has a small triangular spot located along dorsal margin of the thorax which is a feature absent in *janetae*. The small black spots at the wings tips of *juncundus* are also absent. The male caudal appendages of *janetae* are structurally distinct. All *Rhipidolestes*, except *janetae*, have an expanded basal portion of the superior appendages which terminates in a sharp pointed projection at the distal inner margin. In *janetae* the basal half of the superior appendage is not markedly expanded and the basal projection, which is located at the mid-point, is reduced to a

small upwardly directed tooth. The basal quarter of the superior appendages of *juncundus* is broad with a prominent inward directed projection.

The closest congener from Taiwan and Japan is *R. aculeatus* Ris which has a broadly expanded, basal superior appendage (cf. RIS, 1912: 59, fig. 6) with a sharp prominent projection located one third along the inner margin. The conical dorsal projection on the ninth segment of *aculeatus* and *juncundus* is not bifid at the

Table I
Species of *Rhipidolestes* and their distribution

Taxon	Author	Distribution
<i>aculeatus</i>	RIS, 1912	Taiwan, Japan (Ryukyus)
<i>aculeatus yakusimensis</i>	ASAHINA, 1951	Japan (Ryukyus, Kyushu)
<i>aculeatus kyushuensis</i>	ASAHINA, 1993c	Japan (Kyushu)
<i>apicatus</i>	NAVÁS, 1934	China (Zhejiang)
<i>asatoi</i>	ASAHINA, 1994c	Japan (Koshiki-jima, Kyushu)
<i>hiraoui</i>	YAMAMOTO, 1955	Japan (Shikoku)
<i>janetae</i>	this paper	Hong Kong
<i>juncundus</i>	LIEFTINCK, 1948	China (Fujian)
<i>malaisei</i>	LIEFTINCK, 1948	Burma
<i>nectans</i>	(NEEDHAM, 1928)	China (Zhejiang)
<i>okinawanus</i>	ASAHINA, 1951	Japan (Ryukyus)
<i>rubripes</i>	(NAVÁS, 1936)	China (Jiangxi)
<i>truncatidens</i>	SCHMIDT, 1931	China (Guangdong, Fujian)

tip as in *janetae*. The structure of the distal penis of *janetae* is closest to *hiraoui* Yamamoto (cf. ASAHINA, 1994b: 362, figs 3-6).

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