Odonata from Kibale National Park, Uganda.

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Abstract

Records for 47 species collected from October 1995 to February 1996 in Kibale National Park and its surroundings in Western Uganda are presented. Notes on habitat, behaviour and taxonomy are added for a selection of species.

Introduction

From October 1995 to February 1996 a small collection of dragonflies was assembled in Western Uganda, principally around the Makarere University Biological Field Station (MUBFS) in Kibale National Park near Fort Portal. The station borders both primary and secondary moist evergreen forest. This lies at an average altitude of 1500 m and can thus be classified as a transition towards montane forest. Other sites visited were at a somewhat lower altitude. The mean maximum temperature at Kanyawara is 23.3º C, the mean annual rainfall 167 cm (Chapman et al. 1997).

Identifications were made with the help of the numerous publications by Elliot C. Pinhey. A total of 90 specimens could be attributed to 42 species. Five additional species were identified from photographs or descriptions. Cynthia E. Longfield (1936, 1953, 1959) described four species, *Chlorocypha tenuis*, *Chlorocnemis pauli*, *Enallagma pseudelongatum* and *Pseudagrion kibalense*, and one subspecies, *Atoconeura biordinata pseudeudoxia*, based (partially) on material from Kibale Forest. All of them were also recorded in the present study. See Dijkstra & Dingemanse (1999) for a more general impression of the forest and its dragonfly fauna. The material is in the collection of the senior author.

Localities

Kibale NP

Kn – MUBFS at Kanyawara and the adjacent rain forest (0º 35’ N 30º 20’ E). The area lies 15 km south-west of Fort Portal. 9 October 1995 - 27 January 1996.

Du – Dura River where the south-eastern road out of Fort Portal crosses it (0º 25’ N 30º 20’ E). The river was very much swollen during our visit. It is surrounded by very lush jungle. 3 November 1995.

Ng – Field station at Ngogo in the middle of the park (0º 30’ N 30º 25’ E). 12 km south-east of Kanyawara. 3 February 1996.

Surroundings Kibale NP

Mp – Mpanga River south-east of Kibale NP (0º 15’ N 30º 30’ E). A fairly broad lowland river, flanked by acacias, in savannah. 15 December 1995.

Sa – Lake Saka (0º 40’ N 30º 15’ E). A very open crater lake north of Fort Portal. It is surrounded by agricultural land and has shores with dense reeds and rushes (2 December 1995).

Kt, Mb & Nk – Lakes Katanda, Mbajo and Nkuruba (0º 25’ N 30º 15’ E). All are crater lakes west of Kibale NP. They are generally deep and are surrounded with steep, forest-covered slopes. Nk: 30 October 1995, Kt & Mb: 21 January 1996.

Other parts of Western Uganda

Ky – Kyambura (Chambura) Gorge near Fig Tree Camp in Queen Elisabeth NP (0º 10’ S 30º 05’ E). This is a deep, lushly forested gorge through savannah. 2 - 6 January 1996.

Se – Savannah on the eastern edge of Semliki NP (0º 50’ N 30º 05’ E). On the road from Fort Portal to Bundibugyo. 12 February 1996.

Records

Calopterygidae

Phaon iridipennis (Burmeister, 1839) Mp, Se.

Umma saphirina Förster, 1916 Kn: 2 males, 1 female. Common on forest streams. Territorial males are aggressive towards *Chlorocypha trifaria* males. Young individuals and females were seen on sunny patches throughout the forest. Tandems were also seen far from water.

Chlorocyphidae

Chlorocypha curta (Hagen in Selys 1853) Se.

Chlorocypha tenuis Longfield, 1936 Kn: 1 male. Occurs in the same habitat as the next species, but less common.

Chlorocypha trifaria (Karsch, 1899) Kn: 2 males, 2 females. Common on gravel-bottomed forest streams.

Platycypha lacustris (Förster, 1914) Du: 1 male, 1 female. Competing males wave their coloured legs at each other in an upward flight.

Protoneuridae

Chlorocnemis marshalli superba Schmidt, 1951 Kn: 2 males, 2 females. Fairly common on clear forest streams, either with sand or gravel. Oviposits in tandem.

Chlorocnemis pauli Longfield, 1936 Kn: 1 male. Seen twice in dense, wet vegetation, once near a stagnant pool, the other time near a gravel-bottomed stream.

Coenagrionidae

Agriocnemis gratiosa Gerstäcker, 1891 Sa: 1 female.

Ceriagrion glabrum (Burmeister, 1839) Kn: 2 males.

Enallagma pseudelongatum Longfield, 1936 Kn: 2 males, 1 female. Fairly common at small, sheltered standing waters in the forest. Oviposition in tandem on the underside of floating fallen leaves.

Enallagma longfieldae Fraser, 1947 Ky: 1 female. Pinhey (1984) treats this as a subspecies of *Enallagma vaginale.*

Enallagma nigridorsum Selys, 1876 Kt: 1 male.

Enallagma subfurcatum Selys, 1876 Kn: 1 male, 1 female.

Pseudagrion hageni tropicanum Pinhey, 1966 Kn: 1 female. Females seen ovipositing in somewhat muddy stream.

Pseudagrion kersteni (Gerstäcker, 1869) Kn: 1 female.

Pseudagrion kibalense Longfield, 1959 Kn: 2 males. Fairly common on forest streams.

Pseudagrion massaicum Sjöstedt, 1909 Nk: 2 males, 1 female.

Pseudagrion spernatum Selys, 1881 Mp: 1 male.

Aeshnidae

Aeshna ellioti ellioti Kirby, 1896 Kn: 1 male, 1 female. Commonly seen hunting along roads through the forest.

Anax imperator mauricianus Rambur, 1842 Kn, Sa, Kt, Mb, Nk.

Gynacantha bullata Karsch, 1891 Kn: 1 male.

Gynacantha vesiculata Karsch, 1891 Kn: 1 male

Gomphidae

Ictinogomphus ferox (Rambur, 1842) Sa: 1 male, 1 exuviae, Nk: 1 exuviae.

Notogomphus butoloensis Fraser, 1952 Du: 1 male, 1 female, 1 exuviae, Ky: 1 female. Was found emerging from torrential water of the river, which was swollen by heavy rains. This species was mentioned by Dijkstra & Dingemanse (1999) as *N. leroyi*, but based on information supplied by Consiglio (1978) and Pinhey (1969) it is clear that *N. butoloensis* was concerned.

Macromiidae

Phyllomacromia picta (Hagen in Selys, 1871) Kn: 1 male.

Libellulidae

Atoconeura biordinata pseudeudoxia Longfield, 1953 Kn: 1 male, Ng: 1 female. Males seen over streams. The collected male fits the description of Longfield's subspecies perfectly. Longfield (1953) did not describe the female, but it could be expected to be similar to that of *Atoconeura eudoxia* (Kirby, 1909). The collected female is relatively large (hind wing 37 mm) and has the facial markings typical of *A. b. pseudeudoxia*. The paraprocts are densely haired and the cerci are long, similar to *A. b. biordinata* Karsch, 1899 but unlike *A. eudoxia*. It is therefore assumed that the specimen is a female of *A. b. pseudeudoxia*.

Brachythemis leucosticta (Burmeister, 1839) Sa, Mb, Nk, Ky: 1 male.

Crocothemis sanguinolenta (Burmeister, 1839) Kn: 1 male, Ky: 2 males

Hemistigma albipuncta (Rambur, 1842) Kn: 1 male, 3 females, Ky: 1 male. At Kanyawara the species did not appear before the second half of January, suggesting it might be seasonal.

Micromacromia camerunica Karsch, 1889 Kn: 1 male, 1 female. Fairly common on clear forest streams. A female was seen throwing itself into the water.

Nesciothemis farinosa (Förster, 1898) Mp: 1 female, Nk: 4 males, 1 female.

Notiothemis robertsi Fraser, 1944 Kn: 1 male. More common than the similar *Micromacromia camerunica* and sometimes found with it. Prefers slower, more muddy and, often, very small bodies of waters. Males make inspection flights, but are easily disturbed. Female oviposits unguarded, hovers while frequently dipping the tip of the abdomen into the water. According to Clausnitzer & Lempert (1998) the species normally oviposits epiphytically.

Orthetrum austeni (Kirby, 1900) Nk: 1 male, Kt.

Orthetrum caffrum (Burmeister, 1839) Kn: 1 male, 2 females.

Orthetrum julia Kirby 1900 Kn: 6 males, 4 females. Material from Uganda is extremely difficult to assign either to the nominate subspecies or to *falsum* Longfield, 1955. The country appears to lie in the transition between the two (Longfield 1955, Pinhey 1970). This was most common dragonfly in the forest. It oviposits in all water types, from clear streams to murky pools. Males are often seen guarding the ovipositing female.

Orthetrum trinacria (Selys, 1841) Ky: 1 male.

Palpopleura lucia (Drury, 1773) Kn: 1 male, 1 female.

Pantala flavescens (Fabricius, 1798) Kn: 1 male, 1 female.

Parazyxomma flavicans (Martin, 1908) Nk: 1 female.

Tramea basilaris (Beauvois, 1817) Kn: 1 male.

Trithemis annulata (Beauvois, 1807) Nk: 1mm, Sa.

Trithemis arteriosa (Burmeister, 1839) Mb: 1 male.

Trithemis kirbyi ardens Gerstäcker, 1891 Kn: 1 male.

Trithemis nuptialis Karsch, 1894 Mp: 1 male.

Urothemis assignata (Selys, 1872) Kt, Nk.

Zygonyx regisalberti (Schouteden, 1934) Ky. A large dragonfly with a conspicuous pale ring around the seventh abdominal segment had wing markings perfectly matching those illustrated by Fraser (1957) and Pinhey (1964). She flew at a height of four or five metres, in a small group of

dragonflies above the edge of the gorge. The dragonflies glided to and fro, remaining high. The accompanying individuals were similarly sized, had clear wings and some were seen to possess a similar abdominal ring. It is possible that these were conspecific males. Graves (1999) reports the species from Maramagambo Forest, also in Queen Elisabeth NP.

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Dear Mr. & Mrs. Chapman,

You may have heard from John and April that in the time that they were staying at MUBFS there were also two Dutchmen collecting dragonflies in the forest. I have a faint recollection that John said that you might also be interested in studying this group. Recently, I have finally drawn up a definite list of the species we identified. I thought you might be interested in the draft of a publication I am preparing about the subject. If you are still interested in doing some research on this group, I would also like to take this opportunity to offer help and suggestions.

Attached is a draft of an annotated list of the collected species, which I will probably submit to Notulae Odonatologicae. As you can see, some of our material was collected during trips with John and April to some of your study sites. I also wrote a more general impression of how we experienced Kibale's dragonfly fauna. This appeared in the newsletter of the World Dragonfly Association. I don't have that file here, but I can send you it later.

I am sure I don't need to expand on the merits of this fine group as an object of study. Little is known about the ecology of the African species, although it is obvious that they form suitable indicators of the conditions in their habitats. We were quite unprepared and had very little experience when we started studying Kibale's dragonflies. I am sure we missed species, in part because of seasonality, but also because we did not always know of the best places to look. For example, in Europe you would never look for dragonflies in non-sunny places, but in the tropics many species are entirely restricted to the shade. When at the Dura River we noted many larvae in your fish samples. Rearing these in an aquarium would be very rewarding, because many rheophilous species are exceedingly difficult to collect as adult.

Please let me know if you might like to take up the study of Kibale's Odonata or would like to help me continue my studies. I would be happy to identify any material you might collect.

Please let me know quickly if you have received this message. Otherwise I will assume that you are now in Uganda and give this letter to Freerk Molleman, who is coming to MUBFS soon.

Best wishes,

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