

Tabanid flies (Diptera: Tabanidae) of the Mahale Mountains National Park, Tanzania, East Africa

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(June 2005)

Introduction

Tabanid flies are members of the dipterous insect and have important roles in medically and in veterinary for both humans and animals. For example, Loa Loa is one of the serious human nematodiasis in West Africa transmitted by deer flies (*Chrysops* spp.) and Surra is protozoan animal disease transmitted mechanically by horse flies (*Tabanus* spp.) in Africa (Eichler, 1980).

Therefore, to know the tabanid fly fauna is very important not only on the biological viewpoint but also on the medical and veterinary viewpoints.

The Mahale Mountains National Park, located in Kigoma District, Tanzania was established in 1985 with Japanese Government's assistance. Surveys on the wild chimpanzees have been carried out by Japanese scientists over 40 years at the park (Nishida, 1990). The faunal and floral surveys on both arthropods and mammals, and plants have also been conducted together with these anthropological surveys.

In the present paper, I report the tabanid flies captured in the survey held in 2004 as a part of the

faunal investigation, and listed the tabanid flies of the Mahale Mountains National Park based on the results of my previous surveys (Sasaki & Nishida, 1999) and the examination of the fly collection of the Graduate School of Asia and African Area Studies, Kyoto University (Sasaki, 2001).

Methods

Study area

The Mahale Mountains National Park (6°07'S, 29°44'E) is located in the largest promontory on the eastern shore of Lake Tanganyika and can be regarded as a "forest-island" in the midst of the Miombo woodland which extends over a vast area of western Tanzania and eastern Congo (Nishida, 1990). Wild chimpanzees (*Pan troglodytes schweinfurthii*) live in several unit-groups of up to 100 individuals in the park. Those chimpanzees can be act the blood source of those flies (Sasaki & Nishida, 1999).

Fly Collection

The NZI traps (Mihok, 2002) with octenol were used to capture the flies. The traps were set at

Table 1 Tabanid flies captured at the Mahale Mountains National Park

species	captured Number
<i>Tabanus gratus</i> Loew, 1858	1
<i>Tabanus insignis</i> Loew, 1858	2
<i>Tabanus taeniola</i> Palisot de Beauvois, 1806	1
<i>Tabanus thoracinus</i> Palisot de Beauvois, 1806	5
<i>Haematopota albihirta</i> Karsch, 1887	1
<i>Haematopota divisapex</i> Austen, 1908	1
<i>Haematopota edax</i> Austen, 1914	1
<i>Haematopota fasciatapex</i> Edward, 1916	153
<i>Haematopota lamborni</i> Oldroyd, 1952	41
total	206

two ecologically different points around our Kansyana camp in the park during the period from 1st to 18th November, 2004. Captured flies were collected every day from 2 to 3 p.m. They were killed with ethyl acetate and pinned with insect pins for dry specimen. The specimens were transported to Japan and identified to species according to the keys of Oldroyd (1952, 1954, 1957).

Results and Discussion

Tabanid flies were captured 206 individuals of 2

genera and 9 species. Of these, *Haematopota fasciatape*x was the most predominant species captured 153 individuals (Table 1). *Tabanus insignis*, *T. thoracinus* and *T. taeniola* were recorded in my previous works (Sasaki & Nishida, 1999; Sasaki, 2001) and the other species were recorded for the first time from the park. In the addition to these results, the tabanid flies of the Mahale Mountains National Park were listed 4 genera and 17 species (Table 2, 4; Plate 1, 2).

Regarding to the distribution patterns of each flies listed in this study, the flies belonging to

Table 2 List of tabanid flies of Mahale Mountains National Park

#*	species	reference**
1	<i>Chrysops longicornis</i> Macquart, 1838	1
2	<i>Ancala africana</i> Gray, 1832	2
3	<i>Tabanus biguttatus</i> Wiedemann, 1830	2
4	<i>Tabanus gratus</i> Loew, 1858	3
5	<i>Tabanus insignis</i> Loew, 1858	2, 3
6	<i>Tabanus taeniola</i> Palisot de Beauvois, 1806	1, 3
7	<i>Tabanus thoracinus</i> Palisot de Beauvois, 1806	1, 3
8	<i>Haematopota albihirta</i> Karsch, 1887	3
9	<i>Haematopota divisapex</i> Austen, 1908	3
10	<i>Haematopota edax</i> Austen, 1914	3
11	<i>Haematopota fasciatape</i> x Edward, 1916	3
12	<i>Haematopota hirta</i> Ricardo, 1906	2
13	<i>Haematopota insidiatrix</i> Austen, 1914	1
14	<i>Haematopota lamborni</i> Oldroyd, 1952	3
15	<i>Haematopota nigripennis</i> Austen, 1914	1
16	<i>Haematopota theobaldi</i> Carter, 1915	1
17	<i>Haematopota unicolor</i> Ricard, 1906	1

*: Numbers are same to those in Plates.

**1: Sasaki and Nishida (1999); 2: Sasaki (2001); 3: this paper

Table 3 Known distribution of tabanid flies of Mahale Mountains National Park

species	type locality	distribution type
<i>Chrysops longicornis</i>	Senegal	Throughout ER
<i>Ancala africana</i>	Mozambique & Uganda	Throughout ER
<i>Tabanus biguttatus</i>	South Africa	Throughout ER
<i>Tabanus gratus</i>	South Africa	Throughout ER
<i>Tabanus insignis</i>	Nigeria	Throughout ER
<i>Tabanus taeniola</i>	Nigeria	Throughout ER
<i>Tabanus thoracinus</i>	Nigeria	Throughout ER
<i>Haematopota albihirta</i>	Tanzania	East & Central Africa
<i>Haematopota divisapex</i>	Congo	East & Central Africa
<i>Haematopota edax</i>	Uganda	East Africa
<i>Haematopota fasciatape</i> x	Malawi	East & South Africa
<i>Haematopota hirta</i>	Uganda	East & Central Africa
<i>Haematopota insidiatrix</i>	Malawi	East & Central Africa
<i>Haematopota lamborni</i>	Tanzania	East Africa
<i>Haematopota nigripennis</i>	Uganda	East & Central Africa
<i>Haematopota theobaldi</i>	South Africa	East & South Africa
<i>Haematopota unicolor</i>	Uganda	East Africa

Table 4 Body size of tabanid flies of Mahale Mountains National Park

species	body length(mm)	wing length(mm)
<i>Chrysops longicornis</i>	9	8
<i>Ancala africana</i>	18	16
<i>Tabanus biguttatus</i>	22	20
<i>Tabanus gratus</i>	12	10
<i>Tabanus insignis</i>	13	12
<i>Tabanus taeniola</i>	16	16
<i>Tabanus thoracinus</i>	14	13
<i>Haematopota albihirta</i>	12	11
<i>Haematopota divisapex</i>	8	7
<i>Haematopota edax</i>	10	10
<i>Haematopota fasciatape</i>	11	9
<i>Haematopota hirta</i>	10	9
<i>Haematopota insidiatrix</i>	9	9
<i>Haematopota lamborni</i>	10	9
<i>Haematopota nigripennis</i>	11	10
<i>Haematopota theobaldi</i>	9	7
<i>Haematopota unicolor</i>	18	16

Chrysops, *Ancala* and *Tabanus*, strong bodied deer and horse flies, were the species distributed throughout the Ethiopian Region, however, flies of *Haematopota*, weak bodied clegs, were mainly east and central African species (Table 3). Concerning the larval habitat of the flies, it can be very interesting pattern as the park is considered to be forest-island separated from central African forest.

The tabanid fly list presented in this paper is still incomplete, further investigation must be required to comprehend the whole fauna of tabanid flies and their role associated with wild chimpanzees in the Mahale Mountains National Park.

Summery

A survey targeting tabanid flies was carried out at the Mahale Mountains National Park, Tanzania, East Africa during 1st to 18th November, 2004. A total of 206 individuals of 2 genera and 9 species were captured. *Haematopota fasciatape* was the predominant species. In the addition to my previous work, 4 genera and 17 species of tabanid flies were listed from the park. The fly fauna was characteristic depending on the forest environment of the park.

Acknowledgements

I wish to express my sincere thanks to Dr. T.

Nishida, Professor emeritus of Kyoto University for giving me the opportunity to survey the tabanid flies of the Mahale Mountain National Park. I am also grateful to late Dr. J. Itani and Dr. J. Tanaka, Professors emeritus of Kyoto University for allowing me to examine the insect collection of the Graduate School of Asia and African Area Studies, Kyoto University. This work was supported in part by a Grand-in Aid No. 16255007 from the Ministry of Education, Science, Sports and Culture, Japan.

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要 約

2004年11月1日から18日までの期間、タンザニア西部のタンガニイカ湖に面したマハレ山塊国立公園で吸血性アブ類の捕獲調査を行い、*Haematopota fasciata*を最優占種とする2属9種合計206個体を得た。これらに著者がこれまでの調査によって明らかにした種を加え、ゴマフアブ属の種を中心とした4属17種の吸血性アブ類のリストを作成した。このリストから、マハレ山塊国立公園の吸血性アブ相は、豊かな森林環境に依存して形成されていることが示唆された。



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