

Discovery of *Anopheles tessellatus* in Ryukyu Islands\*

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*Anopheles (Cellia) tessellatus* is a common and zoophilic mosquito in the Oriental region, but it has been unknown from Ryukyu Islands. As we have found this mosquito in Okinawa-main-land and Iriomote-jima, Ryukyu Is. a brief account should be given below about this species.

*Anopheles (Cellia) tessellatus* Theobald

*Anopheles tessellatus* Theobald 1901, Mon. Cul. 1 : 175 (Type-locality : Taiping, Perak, Malaya); Koizumi 1925, Zool. Mag. (Japan) 37 : 347; Christophers 1933, Fauna Brit. India, Dipt. 4 : 182; Colless 1948, Proc. Linn. Soc. N. S. W. 73 : 98.

*Anopheles formosae* Hatori 1901, Kampo, No. 5534 : 275 (Type-locality : Taihoku, Formosa).

*Anopheles deceptor* Dönitz 1902, Zeit. Hyg. 41 : 60 (Type-locality : Sumatora).

*Myzomyia thorntonii* Ludlow 1904, Canad. Ent. 36 : 69, (Type-locality : Mindanao, Philippines).

*Anopheles kinoshitai* Koidzumi 1917, Zool. Mag. (Japan) 29 : 133 (Type-locality : Taihoku, Formosa).

*Anopheles taiwanensis* Koidzumi 1917, Zool. Mag. (Japan) 29 : 135 (Type-locality : Ako Pref., Formosa).

*Myzomyia tessellatus* (Theobald) : Yamada 1925,

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*Anopheles (Myzomyia) tessellatus* Theobald: Edwards 1932, Genera Insect. Dipt. Culicidae Fascicule 194 : 50.

Collection record : - 1 ♀ on 11 IX 1964 and 1 ♀ on 24 IX 1964 collected at Otomi, Iriomote-jima, Ryukyu Is. by T. Kishimoto by light traps ; 2♀♀ at Sonae, Iriomote-jima, Ryukyu Is. on 15 VII 1968 by I. Miyagi by a light trap ; 1 ♀ on 11 IX 1968 and 1 ♀ on 4 XII 1968 at Haneji, Okinawa-main-land, Ryukyu Is. by T. Kishimoto by light traps ; 2 ♀♀ on 18 XI 1968 and 12 ♀♀ on 24 XI 1968 at Ishikawa, Okinawa-main-land, Ryukyu Is. by S. Iha by dry ice traps.

Distribution : - In Ryukyu Is., Okinawa-main-land and Iriomote-jima. This species has also been reported from Formosa, China (South), Thailand, Hainan, Malaya, Borneo, Burma, Celebes, Ceylon, India, Java, Indo-china, Moluccas, New Guinea, Philippine Is.

Systematics : - The specimens collected in Ryukyu Islands agree well with description of *tessellatus* of Christophers (1933) and with Formosan specimens kindly sent by Mr. C. J. Lien. This mosquito is characterized by the following aspects. Terminology used for description conforms to that of Belkin (1962), except that of ornamentation of wing which conforms to that of Christophers (1933).

Female Palpus : Segment 2 with a narrow apical pale band and with some pale scales dorsally near base ; segment 3 with a broad apical pale band extending the apical half of the segment and with some pale scales dorso-basally ; segment 4 with apical broad pale band extending the apical 2/3 of the segment ; segment 5 with a pale band extending the apical half of the segment. Proboscis : Apical half with pale scales entirely except for a narrow subapical dark ring. Wing : Vein C

with seven pale spots, the apical, preapical, subcostal and sector pale spots large, the basal three small. Legs : Femora, tibiae and tarsal segments 1 of all legs dark, speckled with pale scales ; tibiae with a few apical pale scales ; fore-tarsi with segment 1 pale ringed at apex and segments 2-4 pale ringed at both ends ; mid- and hind-tarsi with segments 1-4 pale ringed at apex.

Judging from the literatures (Yamada 1925, Christophers 1933 and Belkin 1962), *tessellatus* is much like *Anopheles punctulatus* Dönitz occurring in New Guinea and Solomon Is., but is immediately distinguishable from the latter by the color of proboscis and by the scutum without broad recumbent scales except on anterior promontary and near wing root.

So far as we are aware, six anopheline mosquito species (including one subspecies), *Anopheles (Anopheles) aitkenii bengalensis* Puri, *An. (An.) ohamai* Ohama, *An. (An.) saperoi* Bohart, *An. (An.) sinensis* Wied., *An. (Cellia) minimus* Theobald, and *An. (G.) tessellatus* Theobald, have been recorded from Ryukyu Is. (including Amami Is.). They may be distinguishable from each other by the following key : -

♀♀

1. Wing without pale spot ; palpus without pale band (recorded from Amami Is.)...  
..... *aitkenii bengalensis*
- Wing with pale spots ; palpus with or without pale band..... 2
2. Femora, tibiae and 1st tarsal segments of all legs speckled ; apical half of proboscis pale scaled (Okinawa-main-land ; Iriomote-jima)..... *tessellatus*
- Legs not speckled ; proboscis uniformly brown to black..... 3
3. Smaller species ; wing with four distinct pale spots and a very small basal pale interruption on vein C ; all legs uniformly dark

- (Miyako-jima ; Ishigaki-jima ; Iriomote-jima).....*minus*
- Larger species ; wing with two or three pale spots on vein C ; 1st and 2nd tarsal segments with apical pale bands or joint bands ..... 4
4. Palpus with four narrow pale rings ; wing usually with a pale fringe spot opposite vein 5 (throughout Ryukyu Is.).....*sinensis*
- Palpus dark uniformly, without pale ring ; wing usually without pale fringe spot opposite vein 5..... 5
5. Tibiae and tarsi with narrow apical pale bands ; wing with a pale subcostal spot which is as long as the preapical pale spot (Ishigaki-jima ; Iriomote-jima) .....*ohamai*\*
- Tarsi with narrow apical and basal pale bands, indistinct on last two joints of fore- and mid-legs ; wing with a very small subcostal pale spot and with a distinct

preapical pale spot (Okinawa-main-land ; Ishigaki-jima) ..... *saperoi*

Biology : - *tessellatus* appears to be widely distributed throughout Ryukyu Islands, but not common. We have not encountered the larva and pupa of the species in the Islands.

In Formosa, *tessellatus* is a common and zoophilic mosquito. The larva commonly breeds in rice fields and streams.

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\*No specimen of the species has been examined by us.

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## 琉球列島に於て新に発見した*Anopheles tessellatus*について

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### 摘 要

著者等は沖縄本島と西表島から琉球列島に於ては未記録のハマダラカ雌をドライアイストラップ及びライトトラップで採集し、文献及び台湾産のものと比較検討の結果、*Anopheles (Cellia) tessellatus* Theobald, 1901と同定した。

本種雌の形態的特長としては、触鬚に4個の白色帯を有し、吻は暗褐色で先端½は淡黄色を呈する。翅の前縁脈には4個の明白な白斑と3個の小さい基部白斑を有する。肢の腿節、脛節及び第1跗節には多数の黄白斑点を有する等があげられる。本種は恐らく琉球列島に広く分布するが個体数は非常に少ない様に思われる。幼虫、蛹は採集出来なかった。