

Appendix - I

1997 L.
1997/2000

APPENDIX - I

LIST OF PUBLICATIONS :

A. Accepted in Journal:

1. Sathe, T.V. and Tingare, B.P. 2008. On a new species of the genus *Anopheles* Meigen (Diptera : Culicidae) from India. *J. of Env. Ecoplan.*, Vol. 15 No. III.

B. Published in Journal :

1. Tingare B.P. and T. V. Sathe, 2007. On a new species of the genus *Anopheles* Meigen (Diptera : Culicidae) from India. *J. of Env. Ecoplan.*, Vol. 14 No. (1-2) : 61-64.

C. Presented in Conference/ Symposia/ Workshops:

1. Mahendra Jagtap, B.R. Chavan, T.V., K.P. Shinde, B.P. Tingare and D.S. Dakhure 2005. "Role of intensified mass surveillance campaign in malaria problematic area of Sangli district". *7th International Symposium on vectors & vector Borne Diseases*, February 18-20, 2005, Patiala (Punjab), India.
2. Mahendra Jagtap, B.R. Chavan, T.V. Sathe, K.P. Shinde, B.P. Tingare, Subba Rao and D.S. Dakhure, 2005 "Studies on PF Resistance to chloroquine in Etapalli Block Dist : Gadchiroli" *7th International Symposium on*

vectors & vector Borne Diseases, February 18-20, 2005, Patiala (Punjab), India.

3. B. P. Tingare and T. V. Sathe 2006. "Biodiversity of mosquitoes from Solapur city, India". *National Workshop on Biological Control of insect pests*, 1st and 2nd March, 2006, Shivaji University, Kolhapur.
4. B. P. Tingare & T. V. Sathe, 2007. "On a new species of the genus *Anopheles* Meigen (Diptera : Culicidae) from India". National Workshop on Recent Trends in Biotechnology on 28-29 March, 2007, Lal Bahadur Shashtri Science College, Satara.

ON A NEW SPECIES OF THE GENUS *ANOPHELES* MEIGEN (DIPTERA : CULICIDAE) FROM INDIA

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ABSTRACT

A new species *Anopheles sangliensis* sp. nov. (Diptera : Culicidae) have been described for the first time from India. The female is 4.24 mm long, 1.6 mm broad; antenna 1.10 mm long; forewing 3.40 mm long; 0.64 mm broad; hindgut 6.38 mm long, brownish, thorax 1.54 long; 1.16 mm broad; brownish; palpal bands alternately arranged in palpi. Flagellar formula . 1 L/W = 2.5, 13 L/W = 4, L1/13 = 0.83, W1/13 = 1.33

Keywords: Mosquito, *Anopheles sangliensis* sp. nov., Description

INTRODUCTION

The genus *Anopheles* have been erected by Meigen in 1818. The genus *Anopheles* is sub-divided into six subgenera viz. *Anopheles* Meigen, *Cellia* Theobald, *Kerteszia* Theobald, *Lophopodomyia* Antunnes, *Nyssorhynchus* Blanchard and *Stethomyia* Theobald. The present species comes under the sub-genus *Cellia*.

From sub-genus *Cellia* 197 species have been reported from the world and 34 species from India (Nagpal and Sharma, 1995). In past, Indian mosquitoes have been studied by Christophers (1933), Barraud (1934), Foote and Cook (1959), Rao (1984), Nagpal and Sharma (1995), Sathe and Girhe (2001,2002).

MATERIALS AND METHODS

The species considered in this paper were collected from Sangli city of Maharashtra, India. The specimen were pinned in specimen tube. The dried specimen were kept in sterilized specimen tube by pinning inverted to wooden cork. Morphological study has been carried out with monocular microscope.

Comparative measurements of body parts of specimen were made with ocular micrometer and calculated with the help of graduated mechanical stage. All measurements were made in millimeter. The mosquito species were identified consulting Barraud (1934), Rao (1984), Nagpal and Sharma (1995) and Sathe and Girhe (2002) etc.

RESULTS AND DISCUSSION

Anopheles (Cellia) sangliensis sp. nov.

Female: 4.24 mm long; 1.16 mm broad; antenna 1.10 mm long; forewing 3.40 mm long, 0.64 mm broad; hindleg 6.38 mm long, brownish; thorax 1.54 mm long, 1.16 mm broad, brownish.

Head: 0.40 mm long, 0.54 mm broad, globular, brownish; small, rod like scale on vertex; eyes black, interocular space 0.20 mm; tempus semicircular; clypeus 0.20 mm long, brownish; proboscis 1.80 mm long, straight, brownish, covered with small scales; labium 1.66 mm long, cylindrical, scaly; labellum 0.14 mm long, brownish; maxillary palp five segmented, 1.90 mm long, yellowish brown, as long as proboscis, slender; mandibles and maxillae well developed and toothed.

In male, palpi club shaped; proboscis straight line of body, with long blade like stylet; palpifer and palpus brownish; nape brownish, semicircular; antenna 1.10 mm long, 15 segmented, brownish, pilose; pedicel 0.08 mm long; 0.10 mm broad, brownish; flagellum 1.02 mm long, 13 segmented.

Flagellar formula:

$$1 L/W = 2.5; 13 L/W = 4; L 1/13 = 0.83; L 1/13 = 0.83; W 1/13 = 1.33.$$

Thorax: 1.54 mm long, 1.16 mm broad, brownish, undifferentiated, laterally compressed, thorax not covered with broad scales; scutum yellowish, shield shaped; scutellum half moon shaped, smooth; sternopleuron rectangular, brownish; pronotum without setae.

Forewing: 3.40 mm long, 0.64 mm broad, yellowish, spotted with dark scales; scales 0.06 mm long, present on veins and as fringe; costa yellowish, four dark spots on costa; subcosta straight, no cross veins; apical scales longer than others.

Halter: 0.18 mm long, 0.09 mm broad, broadly triangular, yellowish brown, smooth, expanded at tip.

Hindleg: 6.38 mm long, elongated, yellowish, slender, longer than body; coxa 0.24 mm long, yellowish; trochanter 0.14 mm long, yellowish; femur 1.80 mm long, cylindrical, yellowish, without white spot but with tuft of white and black scales; tibia longer than femur, tibia 2.20 mm long, five segmented, yellowish, covered with small scales; first pretarsus longer than others; tip of hindtarsus not white, tarsi of front leg with broad pale bands; femora and tibia specked. Claw simple, curved, yellowish, pulvillus and empodium densely hairy.

Other legs: Special marks : similar.

Abdomen: 2.30 mm long, 0.46 mm broad, brownish, densely hairy, brownish stripes on dorsal side; last abdominal segment narrow and shorter than others; anal cerci 0.12 mm long, 0.08 mm broad, hairy and brownish colour.

Brownish: Head, proboscis, antenna, thorax and abdomen.

Yellowish: Wing, legs.

Yellowish brown: Halter.

Back : Eyes.

Male: 4.20 mm long, small, palpi club shaped, proboscis straight line of body, antenna elongated, plumose, brushy; phytophagus.

Host: Unknown.

Holotype: Female, India, Maharashtra, Sangli city, Coll Tingare B. P. 01-X-2005. Head, antenna, leg, abdomen, mounted on slide; labelled as above.

Paratype: 8 males, 20 females; sex ratio (M:F) = 1:2.5, Coll. Tingare, B. P. from Sept., 2005 to Nov. 2005, Sangli city; 2 males, 6 females, 14-X-2005; 3 males, 10 females, Sangli city. 16-X-2005; 3 males, 4 females Sangli city 1-XI-2005. Same data as above.

This species runs close to *Anopheles (Cellia) stephensi* by having following characters.

- (1) Femora specked
- (2) Female palp with broad apices and preapices pale band
- (3) Tip of hind tarsi not white.

However, it differs from the above species by having following characters

- (1) Tibia not specked completely but with yellowish dark banded
- (2) Thorax without broad scales.
- (3) Terminal tip of palp is dark to blackish.
- (4) Flagellar formula 1 L/W = 2.5; 13 L/W = 4; L 1/13 = 0.83; W 1/13 = 1.33
- (5) Alternate black and white bands on palpi and alternate pattern on each palpi.

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EDITOR

Manuscript No. E/160/08/08 Name of Author(s) Sathe, T. V. & Tingare, B.P.
Title of paper On a new species of the genus

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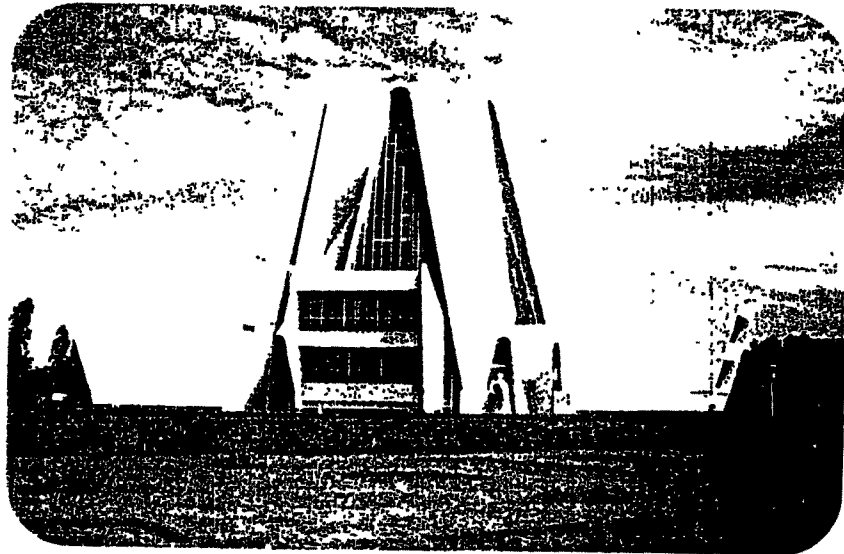


**ABSTRACT
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**DEPARTMENT OF ZOOLOGY
PUNJABI UNIVERSITY, PATIALA-147 002
PUNJAB, INDIA**

DISEASES

31. ROLE OF INTENSIFIED MASS SURVEILLANCE CAMPAIGN IN MALARIA PROBLEMATIC AREA OF SANGLI DISTRICT

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¹*Entomology division, Zoology Dept. Shivaji University, Kolhapur Pin 416008 India.*

²*National Vector Borne Disease Control Programme, Div. Kolhapur Pin 416008 India.*

³*Health Services, (Malaria / Filaria), Alandi Road Pune.*

Sangli district is situated in western Maharashtra. The atmosphere is dry and Temperature varies from 14°C to 40°C and rainfall varies from 500cm to 850cm. In present work, lath and Kavathemahankal blocks were selected for case study because of high incidence of malaria. During the years 95 to 98 average malaria positives in Kavathemahankal were 575 (Min 143 in 1995 and Max. 1042 in 1998) and in lath 1305 (Min 105 in 1995 and Max. 3156 in 1998). Due to high incidence of malarial parasitic load in the community the present study was carried out through the intensified mass surveillance campaign. After treating the population the parasitic load was successfully suppressed. In Kavathemahankal malaria positives decreased to 143 in 1999 to 39 in 2000 and in lath block 623 in 1999 to 99 in 2000.

**108. STUDIES ON PF RESISTANCE TO CHLOROQUINE IN ETAPALLI BLOCK
DIST. GADCHIROLI.**

¹Mahendra Jagtap, ²B.R. Chavan, ¹T.V. Sathe, ¹K.P. Shinde,
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³R.D., Health and FW, Hydrabad.

⁴Health Services, (Malaria/Filaria), Alandi Road Pune.

The district Gadchiroli is situated at the East boarder of Maharashtra. From south it is attached to the Andhra and from East of Chattisgarh and Madhya Pradesh. 88.8% of land is covered by thick forest and 93.7% population is scattered in rural areas in which tribal population shares 38.6%. 50.8% population is from backward class and agriculture is the main occupation 94.6% land is under the cultivation of Paddy. Malaria incidence was high from the years 1996 to 2001 showing average positives 17346 per year and Pf prevalence was also high average 55% even after the treatment of chloroquine. Therefore, a systematic survey of Pf resistance to chloroquine have been conducted in this district. Out of 48 infected malaria cases 28 have been selected for resistant study. It was found that minimum 4.10% positive were noted in age group 0 to 4 and maximum 68.45% positives have been reported with age group 15 and above. As regard to sex group females were more susceptible to malaria incidence than men. Out of 28 examined cases for Pf resistance nobody has shown the resistancceagainst the chloroquine in this region indicating chloroquine has till great potential in curing the malaria cases.

“ ज्ञान, विज्ञान आणि सुसंस्कार यासाठी शिक्षण प्रसार’
-शिक्षण महर्षी डॉ. बापूजी साळुंखे.



**NATIONAL WORKSHOP ON
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ABSTRACTS

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National Workshop On Recent Trends In Biotechnology On 28-29, March, 2007.

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Key words : Mosquito, *Anopheles sangliensis* sp. nov., Description.

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ABSTRACTS

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BIODIVERSITY OF MOSQUITOES IN SOLAPUR CITY, MAHARASHTRA.

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**Madhuji College, Phaltan.

ABSTRACT

Mosquito Biodiversity of Mosquitoes (Culicidae : Diptera) have been studied in Solapur city of Maharashtra. Solapur is characterized by low rainfall, but there are several water bodies such as Kambar Lake, Siddheshwar Lake, Murgi Nala, Drainage of Vikas Nagar, Gurunanak Nagar, Aditya Nagar, and Panjarpola which provides good source of breeding Mosquitoes and to various diseases like malaria, dangue, yellow fever etc. Hence, mosquito biodiversity have been studied in the city which may play important role in diagnostic processes in epidemiology. Eleven species of mosquitoes belonging the general *Anopheles* (3), *Culex* (3) and *Aedes* (3) have been reported. In addition, two new species have also been reported from Solapur city during the study period, January 2004 to January 2006. In the present study emphasis is given on the morphological description of the species.

Keywords : Biodiversity, mosquitoes, morphology, Solapur city.