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BLATTODEA OF KOLHAPUR DISTRICT WITH THE FIRST RECORD OF *SUPELLA* (*SUPELLA*) *LONGIPALPA* (BLATTODEA: BLATTELLIDAE) FOR THE STATE OF MAHARASHTRA, INDIA

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ABSTRACT

The present work expands knowledge of 6 species of Blattodea under 5 genera belonging to 3 families, viz., Blattellidae, Blattidae and Blaberidae, represented by 3, 2 and 1 species, respectively, in the Kolhapur District, Maharashtra, India. These 6 species are *Blatella humbertiana* (Saussure, 1863), *Blatella germanica* (Linnaeus, 1767), *Pycnoscelus surinamensis* (Linnaeus, 1758), *Periplaneta americana* (Linnaeus, 1758), *Neostylopyga rhombifolia* (Stål, 1813) and *Supella* (*Supella*) *longipalpa* (Fabricius). *Supella* (*Supella*) *longipalpa* was recorded for the first time and is a new addition to the fauna of Maharashtra state. Information on localities and dates of collection of all 6 species are provided.

Key Words: Blattellidae, Blattidae, Blaberidae, distribution, taxonomic characters, Maharashtra, India

RESUMEN

En el presente trabajo se expande el conocimiento de 6 especies de Blattodea que pertenecen a 5 géneros y 3 familias, viz, Blattellidae, Blattidae y Blaberidae, representadas por 3, 2 y 1 especies, respectivamente, en el distrito de Kolhapur, Maharashtra. Estas 6 especies son *Blatella humbertiana* (Saussure, 1863), *Blatella germanica* (Linnaeus, 1767), *Pycnoscelus surinamensis* (Linnaeus, 1758), *Periplaneta americana* (Linnaeus, 1758), *Neostylopyga rhombifolia* (Stål, 1813) y *Supella* (*Supella*) *longipalpa* (Fabricius). Se registró *Supella* (*Supella*) *longipalpa* por primera vez y pasa a ser una nueva adición a la fauna de Maharashtra. Se provee información sobre las localidades y fechas de colección de todas las 6 especies.

Palabras Clave: Blattellidae, Blattidae y Blaberidae, distribución, caracteres taxonómicos

Blattodea is one of the oldest insect orders with a fossil history extending to more than 300 million yr. They are small to medium sized, and the majority of them are nocturnal, but the species found on trees and bushes are diurnal. They are medically important, because they mechanically transmit food-, garbage- or water-borne pathogens. They have diverse habits, i.e., some are semiaquatic e.g., *Blatta orientalis* L. (Blattidae) and *Neostylopyga rhombifolia* (Stål, 1813) (Blattidae) (Shelford 1909), some are found among fallen leaves, on the surface of the soil, under stones, under bark, in thick grass among low vegetation, in debris and inside buildings; some species are cave dwellers and a few are myrmecophilus. Their morphology is very distinctive with a strongly depressed body, bilaterally symmetrical and dorso-ventrally flattened.

Notable taxonomic works on Blattodea from India are the following: Kirby (1904), Shelford (1906), Hanitsch (1915), Bruijning (1948), Rehn (1951), Princis (1966, 1971), Mukherjee (1989), and Roth (1996). In addition, Mandal (2007) reported 14 species under 13 genera and 5 families

from Andhra Pradesh. Mandal (1995) reported 26 species under 20 genera and 5 families from Meghalaya. From Sikkim Mandal (2003) reported a total 17 species under 13 genera and 5 families. Mandal et al. (2000) reported the occurrence of 10 species under 8 genera from Tribura. Mukherjee (1993) enumerated 23 species under 16 genera of 10 families from West Bengal. Under the fauna of Tamil Nadu, Prabakaran (2009) reported 47 species under 32 genera and 5 families. Jadhav & Sharma (2012) reported 12 species under 10 genera and 4 families from Maharashtra.

There are 4,000 known species worldwide belonging to the 6 above-mentioned families (Roth 1999, 2003) under 445 genera. Out of these, a total 156 species and 57 genera in 5 families are reported from India (Mandal 1995, 2000). According to the fauna of Maharashtra (2012) there are 12 species belonging to 10 genera occur in Maharashtra. However, Neseemann et al. (2010) recorded 2 species *Rhienoda natrrix* and *Rhienoda rugosa* from Maharashtra, which are not included in the fauna of Maharashtra (Jadhav & Sharma

2012). During the present study the species, *Supella* (*Supella*) *longipalpa*, was recorded for the first time from Maharashtra. The total tally of Blattodea species in Maharashtra has increased to 15 species belonging to 12 genera.

In the present study, 6 species in all are reported representing 5 genera under 3 families and 4 subfamilies, which are distributed in Kolhapur District, Maharashtra (Plate 1). The Blattellidae is the dominant family in the study area and is represented by 3 species, while the Blattelidae and Blaberidae are represented by 2 and 1 species, respectively. The species reported in this region are briefly described. The information on taxonomy of these species is scanty; hence the species reported from this region are described with photographs.

SYSTEMATIC ACCOUNT

Family: Blattellidae

Subfamily: Blattellinae

1. *Blattella germanica* (Linnaeus, 1767)

2. *Blatella humbertiana* (Saussure, 1863)

Subfamily: Pseudophyllodromiinae

3. *Supella* (*Supella*) *longipalpa* (Fabricius)

Family: Blaberidae

Subfamily: Epilamprinae

4. *Pycnoscelus surinamensis* (Linnaeus, 1758)

Family: Blattidae

Subfamily: Blattinae

5. *Periplaneta americana* (Linnaeus, 1758)

6. *Neostylopyga rhombifolia* (Stål, 1813)

Blattella germanica (Linnaeus, 1767) (Plate 2, 1 and Plate 3, 1a-1b)

Material Examined

One specimen, Radhanagri Wildlife Sancturay, 18-X-2012, Coll. S. M. Gaikwad; 1 ex., Chandgad, 10-XI-2012, Coll. S. M. Gaikwad; 1 ex., Chandoli National Park, 13-I-2013, Coll. Y. J. Koli; 2 ex., Panahala, 19-II-2013, Coll. S. M. Gaikwad.

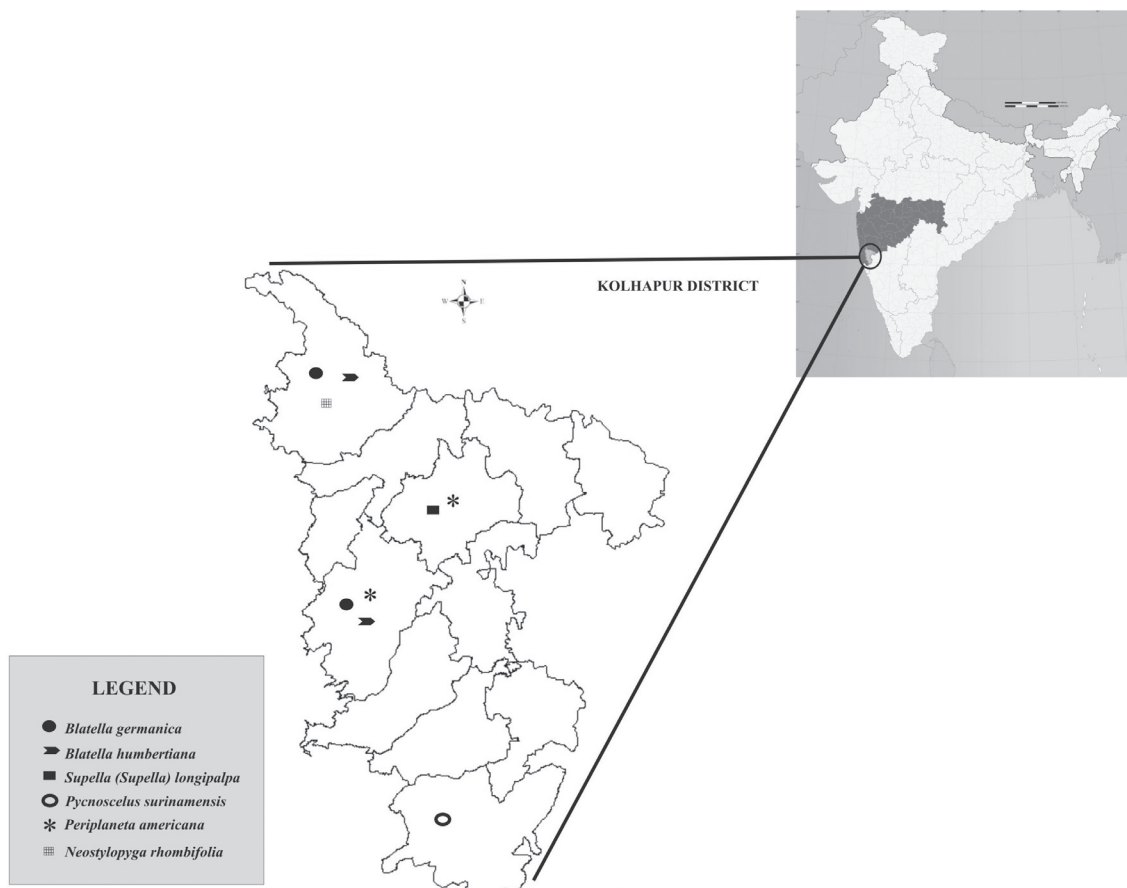


Plate 1. Map showing the distribution of six Blattodea species in Kolhapur District, Maharashtra State, India.



Plate 2. Habitus (dorsal view) of each of 6 Blattodea species in Kolhapur District, Maharashtra State: 1. *Blatella germanica*, 2. *Blatella humbertiana*, 3. *Supella (supella) longipalpa*, 4. *Pycnoscelus surinamensis*, 5. *Periplaneta americana*, and 6. *Neostylopyga rhombifolia*

Diagnosis

Small in size. Head with vertex exposed. Pronotum transverse, gradually rounded laterally. Tegmen relatively elongated, the subcosta is shorter than anal field, discoidal vein forked before median point. 2 to 7 abdominal tergites with latero caudal portion produced as lobes 7 and 8 tergites slightly visible. Supra anal plate semi circular or subtriangular, with lateral margin moderately convergent, weakly convex at the posterior region. Subgenital plate with posterior margin forming a large broad rounded lobe.

Remarks

This species is described with the help of reference collection deposited at Zoological Survey of India, Kolkata and recent publications of Prabhakaran (2010) and Jadhav & Sharma (2012).

Blatella humbertiana (Saussure, 1863) (Plate 2, 2 & Plate 3, 2a-2c)

Material Examined:

One specimen, Radhanagri Wildlife Sanctuary, 18-X-2012, Coll. S. M. Gaikwad; 1 ex Chandoli National Park, 23-XII-2012, Coll. Y. J. Koli.

Diagnosis

General color brownish, head yellow, frontal yellowish brown. Abdomen yellowish brown, each segment with a rectangular dark-brown spot on each side, which are connected by narrow stripe of similar color. Size small. Head with vertex exposed. Anteroventral margin of front femur with long spine on basal half and followed by much shorter spine, tarsal claws symmetrical, arolia small, supra-anal plate more or less triangular and extends beyond the subgenital plate later, symmetrical and with apex slightly convex.

Remarks

This species is widely distributed in the world.

Supella (Supella) longipalpa (Fabricius) (Plate 2, 3 & Plate 3, 3a-3c).

Material examined: 2 ex. Samrat Nagar, Kolhapur city, 20-IV-2013 and 3-V-2013, Coll. Y. J. Koli.

Diagnosis

Pronotum blackish brown with broad yellowish lateral margin, tegmina yellow with a large

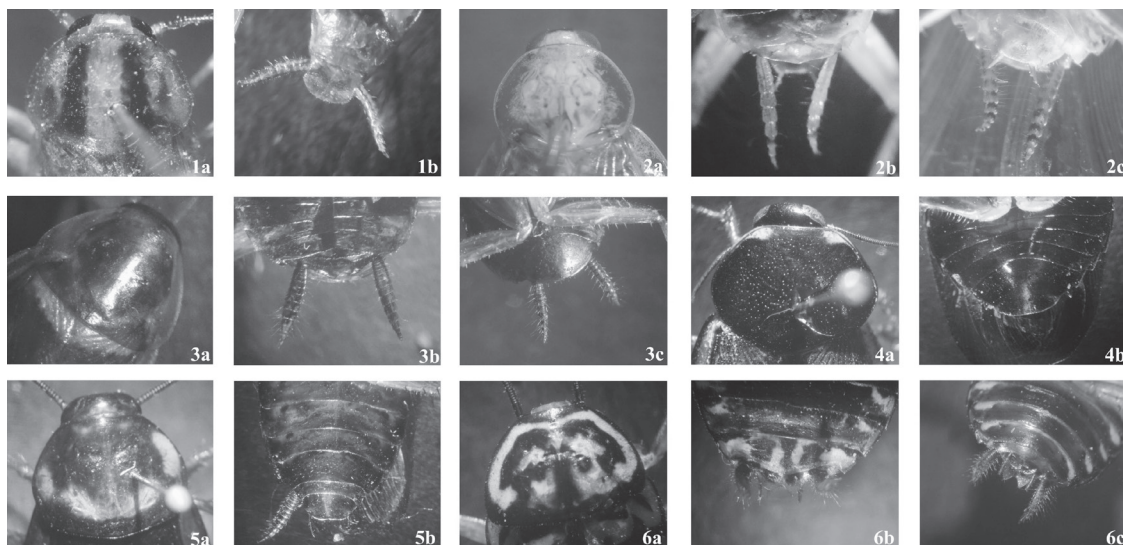


Plate 3. Taxonomic characters of the 6 species of Blattodea occurring in the Kolhapur District, Maharashtra State, India: Figs. 1a-1b, *Blatella germanica*, Fig. 1a, Pronotum (dorsal); Fig. 1b, supra-anal plate of female (dorsal); Figs. 2a-2c, *Blatella humbertiana*, Fig. 2a, Pronotum (dorsal); Fig. 2b, supra-anal plate of male (dorsal); Fig. 2c, supra-anal plate of male (ventral); Figs. 3a-3c, *Supella (supella) longipalpa*, Fig. 3a, Pronotum (dorsal); Fig. 3b, supra-anal plate of female (dorsal); Fig. 3c, supra-anal plate of female (ventral); Figs. 4a-4b, *Pycnoscelus surinamensis*, Fig. 4a, Pronotum (dorsal); Fig. 4b, supra-anal plate of male (ventral); Figs. 5a-5b, *Periplaneta americana*, Fig. 5a, Pronotum (dorsal); Fig. 5b, supra-anal plate of male (ventral); and Figs. 6a-6c, *Neostylopyga rhombifolia*, Fig. 6a, Pronotum (dorsal); Fig. 6b, supra-anal of male (dorsal); and Fig. 6c, supra-anal plate of female (ventral).

reddish brown basal spot and also a small oblique paler band. Wings brown with varied dark markings. General color light brown. Sexes are dissimilar. Near the apex of the anal field, a broad pale colored band crosses the tegmina. Due to the color pattern this taxon is commonly known as the brown banded cockroach. Its light body enables it to fly rapidly.

Remarks

Known distribution includes Karnataka, West Bengal and Tamil Nadu (Prabakaran, 2010). Here we report this species as the first record for Maharashtra state.

Pycnoscelus surinamensis (Linnaeus, 1758) (Plate 2, 4 & Plate 3, 4a- 4b).

Material Examined

One specimen, Patagon area., 1-XII-2012, Coll. S. M. Gaikwad.

Diagnosis

Shiny, black brown with buff lateral margin on the translucent tegmina. The anterior and lateral edges of the pronotum are also buff colored. Medium size, head with vertex exposed, ocelli

large, proximate to the eyes. Pronotum laterally rounded, posterior margin convex. Tegmina and wings extending scarcely upto the apex of the abdomen; subgenital plate unequally rounded at apex; antroventral margin of front femur with row of slender piliform spinules and terminating in one large spine.

Remarks

This species has known distributions in the Maharashtra, West Bengal, Tamil Nadu and Karnataka state. It is a fairly well distributed species throughout the Oriental region and also in Surinam (South America).

Periplaneta americana (Linnaeus, 1758) (Plate 2, 5 & Plate 3, 5a- 5b).

Material Examined

One specimen, 18-X-2012, Radhanagri Wildlife Sanctuay, Coll. S. M. Gaikwad; 1 ex., 16-XII-2012, Panahala, Coll. S. M. Gaikwad; 1 ex., 25-V-2013 Katiyani Mandir, Coll. Y. J. Koli.

Diagnosis

Reddish brown. Pronotum with a yellow narrow band at lateral margin and another broad

at posterior margin. Tegmina uniformly reddish brown. Size large. Head with vertex exposed, interocular distance narrower than the width of antennal socket. Ocelli small. Pronotum flattened, smooth, subelliptical, sides deflexed, wider behind the middle, and all angles broadly rounded. Femora and tibiae strongly spined, posterior metatarsus longer than the remaining joints. Supra-anal plate with a v-shaped excavation at the posterior margin. Subgenital plate symmetrical and divided at the posterior margin.

Remarks

This is cosmopolitan species and one of the most important domestic pests. *Periplaneta americana* thrives in tropical and subtropical climates all over the world.

Neostylopyga rhombifolia (Stål, 1813) (Plate 2, 6 & Plate 3, 6a-6c).

Material Examined

One specimen, 23-XII-2012, Chandoli National Park, Coll. Y. J. Koli.

Diagnosis

Size medium, vertex little exposed. Pronotum with anterior margin a little convex or entire, posterior margin straight, lateral margin rounded, and maximum width just at the posterior margin. Tegmina reduced. Wings absent. Postero-lateral tergite a little indented. Supra anal plate deeply notched medially. Subgenital plate compressed with obtuse apex. Style thin and slender.

Remarks

This species is known from andaman and Nicobar Islands, andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Meghalaya, Maharashtra, Orissa, Uttar Pradesh and West Bengal.

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