

***NEOPANORPA BYERSI* (MECOPTERA: PANORPIDAE),
A NEW SPECIES FROM THAILAND**

By Donald W. Webb¹ and Norman D. Penny²

Abstract: A new species of *Neopanorpa* from Thailand is described and its relationship to other species in southern Asia is discussed.

Recent publications on the Mecoptera of Indo-China (Byers 1965), Borneo and Tioman Island (Byers 1966), India (Rust & Byers 1976), and Indonesia (Chau & Byers 1975), have significantly updated our knowledge of the characters and distribution of the Mecoptera in southern Asia. On a collecting trip to northern Thailand the junior author collected numerous specimens of *Neopanorpa* which showed very distinctive characteristics in the male hypovalves and the female genital plate. These characters are so distinctive that a new species is here being described.

Neopanorpa byersi Webb & Penny, new species

FIG. 1-10

Description based on 16 males and 9 females, pinned.

Head. Eyes pale brown, separated by width of rostrum, bare, facets of equal size. Ocelli large, pale yellow to hyaline. Vertex and frons dark reddish brown, glossy. Antennal scape pale yellow, wider at base; pedicel pale reddish brown, glossy, with narrow dark brown annulus; flagellum dark reddish brown to black with 42 flagellomeres. Rostrum pale reddish brown, glossy, apex yellowish. *Thorax.* Pronotum dark brown to black, with narrow pale yellow patch laterally along posterior margin. Mesothorax dark brown to black with 2 large caudolateral patches. Scutellum dark brown to black. Dorsum covered with numerous short, fine setae. Pleural area pale yellow with numerous short, fine setae. Coxae and femora pale yellowish brown. Tibiae pale brown; tarsi pale brown grading to dark brown on segments 3-5. Empodium pulvilliform, large, black. Tarsal claws serrate with 5 reddish brown teeth. Wing membranes (FIG. 1) pale brown; markings pale smoky brown. Apical band broad, complete. Pterostigmal band complete, generally forked posteriorly although apical branch of fork occasionally disjunct. Marginal spot extending from R₁ to 1st basal cell. Basal band broken into anterior and posterior spot. Basal spot absent. Scattered fine black setae on membrane in area of pterostigma and apex of wing.

Abdomen of ♂. Segments 2-6 dark reddish brown, apical 1/2 of segment 6 and segments 7-9 pale reddish brown. Segments covered with short, whitish brown setae. Posterior process of 3rd tergum (FIG. 2, 3) narrow, extending 3/4 length of 4th tergum, apex rounded, sides parallel. Median process of 4th tergum directed anteriorly, broad, rounded apically, raised moderately above tergum. Hypovalves (FIG. 5, 6) broadly fused over basal 1/2 of their length; apical 1/2 consisting of median, dark brown finger-like projection (FIG. 5, 7) directed internally towards aedeagus, heavily sclerotized, with sinuate lateral lobe, moderately sclerotized, overlain with a thin, bulbous membrane dorsally, covered with fine setae; hypovalves ending before apex of basistyle. Tergum 9 (FIG. 4) broad basally, tapering apically with apical margin slightly emarginate, apex bilobed in lateral view (FIG. 6). Dististyle falcate (FIG. 5), apical 1/2 smooth, glossy, with dense short black setae laterally on basal 1/2; basal lobe of dististyle truncate medially, covered ventrally with short, fine setae. Ventral valves (VV) of aedeagus (FIG. 8) narrow, tapered apically, basal 1/3 projecting ventrally; lateral process (LP) projecting ventrally with posterior dorsal lobe; aedeagal (endophallic) apodemes (AA) elongate, narrow, longer than apical body of aedeagus.

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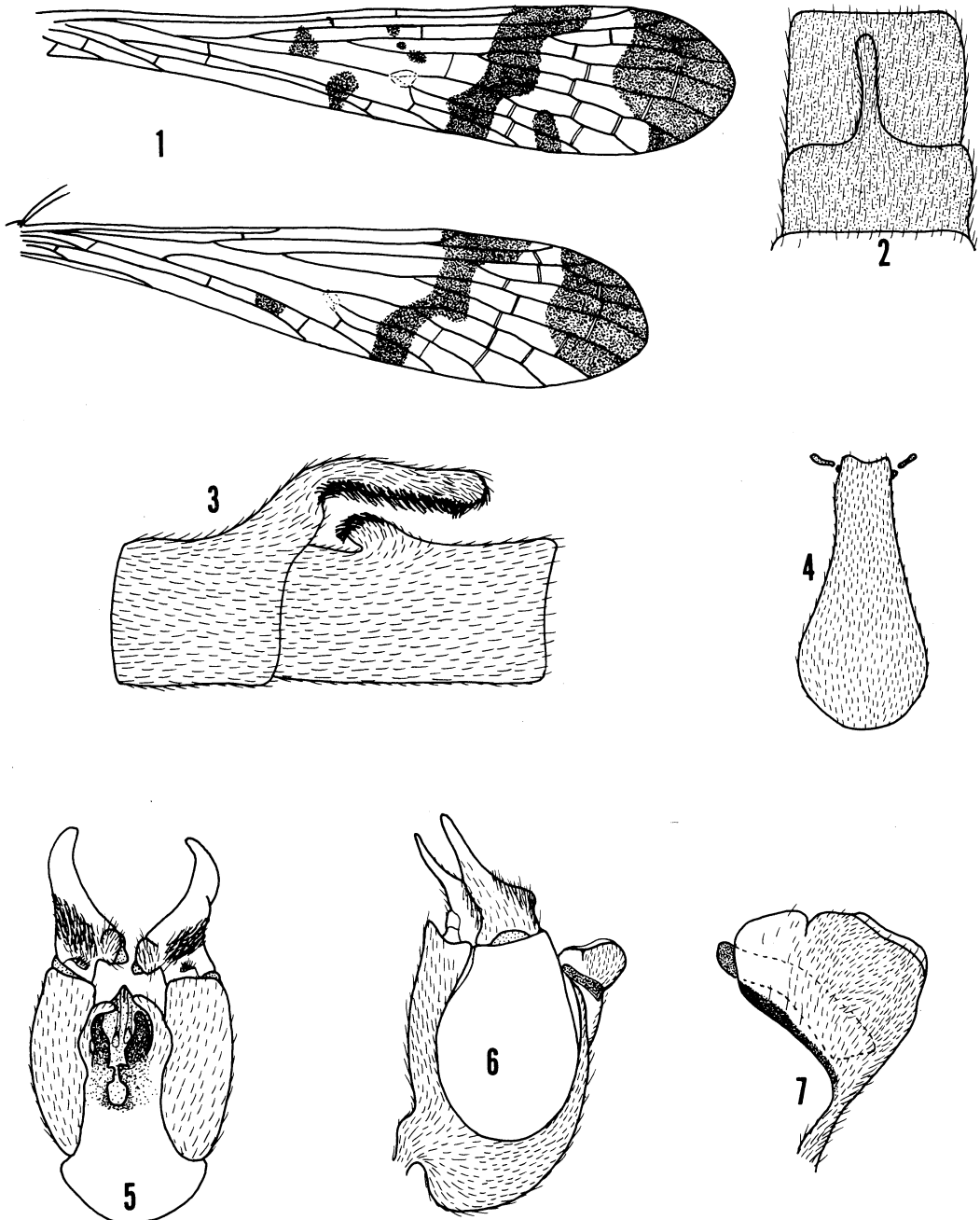


FIG. 1-7. *Neopanorpa byersi*: 1, fore and hind wings; 2, posterior process of 3rd tergum, dorsal view; 3, posterior process of tergum 3 and median process of tergum 4, lateral view; 4, tergum 9, dorsal view; 5, terminalia, dorsal view; 6, terminalia, lateral view; 7, apex of hypovalves, lateral view.

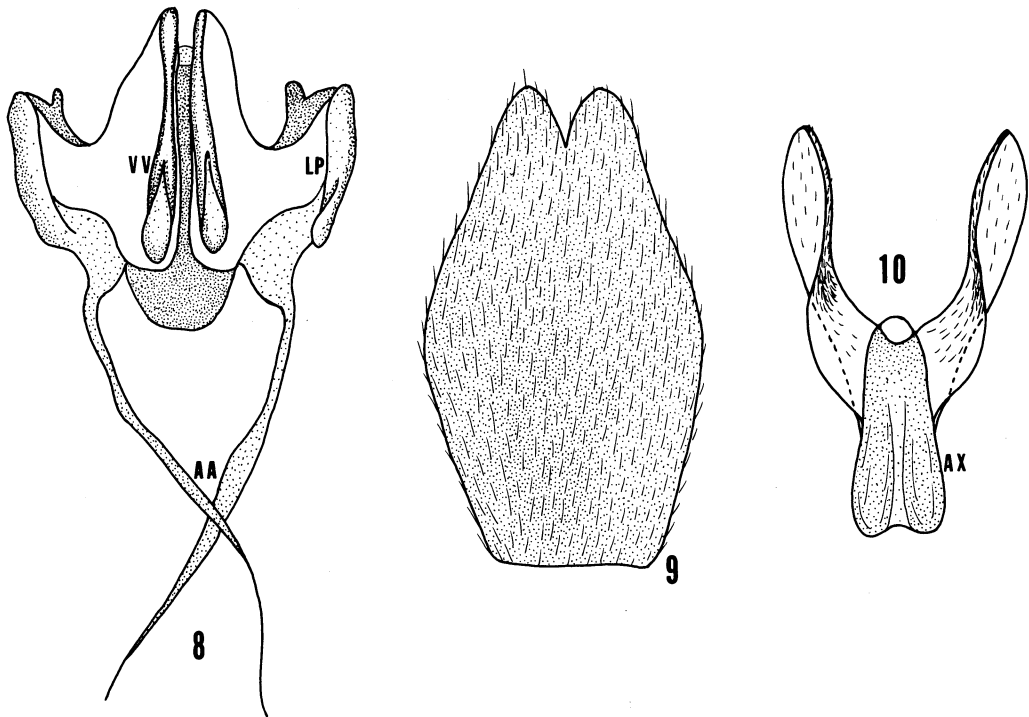


FIG. 8-10. *Neopanorpa byersi*: 8, aedeagus, dorsal view (VV=ventral valves, LP=lateral process, AA=aedeagal apodemes); 9, subgenital plate, ventral view; 10, genital plate (AX=axial portion).

Abdomen of ♀. Abdominal segments 2-6 dark brown to black, apical 1/2 of segment 6 and segments 7-8 pale yellow to bright reddish brown, segments 9-10 dark reddish brown. Cerci black. Subgenital plate of sternum 8 (FIG. 9) broad laterally, then tapering to narrow, clefted apex, setae evenly distributed. Genital plate (FIG. 10) with thick median axial portion (AX), broad basally with indistinct lobe, tapering to broad rounded apex. Arms of genital plate slightly longer than axial portion, divergent apically, covered with numerous fine spines.

Body length: ♂, about 8.6-11.1 mm (holotype 11.1 mm); ♀, about 7.8-8.5 mm (allotype 8.2 mm). Length of forewing: ♂, 8.3-10.4 mm (holotype 10.0 mm); ♀, 9.5-10.3 mm (allotype 9.8 mm).

Holotype ♂, THAILAND, Chiangmai Province, Doi Sutep Mt, 15.IV.1976, N. D. Penny. Allotype ♀, 15 ♂ and 8 ♀ paratypes, same data as holotype. Holotype, allotype, 11 ♂ and 4 ♀ paratypes in collection of the Illinois Natural History Survey; 1 ♂ and 1 ♀ in each of the following museums: Snow Entomological Museum, Lawrence, Kansas; United States National Museum, Washington, D. C.; Museum of Comparative Zoology, Cambridge, Massachusetts; Bishop Museum, Honolulu; and Department of Agriculture, Bangkok, Thailand.

The general shape of the male hypovalves, aedeagus and female genital plate show no close relationship to any of the southern Asian *Neopanorpa*. The wing pattern is similar to that of *N. angustipennis* (Westwood) and several other species in the Indo-China and Indian

area. The posterior process of tergum 3 in being narrow and elongate is similar to that of *N. dorsalis* Byers. The shape of the hypovalves shows an affinity to species from the Indian Subregion.

In Byers (1965) *Neopanorpa byersi* would come out in couplet 4 in the key to the males. In this couplet it would show a relationship to *N. dorsalis* Byers in the shape of the posterior process on tergum 3, but they can be easily separated by the distinctive appearance of the hypovalves in either species. In the key to the females *N. byersi* would come out in couplet 11, where it is easily separated from *N. thai* Byers and *N. annamensis* Byers by the distinctiveness of the axial portion of the genital plate.

This species was collected at the 3 km sign about 1 km above the Doi Sutep Temple on the road to the summer palace. At this time of year the base of the mountain is extremely dry, with leafless trees and occasional forest fires. However, at 3000 ft (915 m), where this species was collected, the habitat appeared to be more mesic. Vegetation included many broadleaf evergreens, some palms, and dense herbaceous ground cover. Associated insects included Diopsidae, Dolichopodidae, Tipulidae, and Ichneumonidae.

This is the same locality in which *Neopanorpa siamensis* Byers was collected approximately 1 month later, although this 2nd species was not seen in mid-April. The 2 species have almost identical wing patterns, but characters of the male aedeagus and female genital plate easily separate the 2 species.

LITERATURE CITED

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