

**IMMATURE STAGES OF SPILOSTETHUS PANDURUS MILITARIS FABRICUS
(HETEROPTERA: LYGAEIDAE: LYGAEINAE)**

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Abstract. Immature stages from egg to fifth instar nymph of *Spilostethus pandurus militaris* are described. Dorsal views of all nymphal stages are illustrated. *Fagonia cretica* L. is recorded as the host plant of the species.

Information about the immature stages of Lygaeidae of West Pakistan is available for only few species and that too is very incomplete and often misleading.^{1,3} Bhattacharjee's study on *Lygaeas pandurus* Scopoli needs further consideration as he was unable to identify this species correctly. From his descriptions and figures it appears that he was actually dealing with two or possibly three different taxa. As such his host plant data and other details are to be used with extreme care. Also his explanation of the mechanism of copulation is somewhat misleading, however, in view of the excellent study by Bonhag and Wick² it is not necessary to comment on this aspect here. The present effort is aimed at describing the immature stages of *S. pandurus militaris* in the hope that it would stimulate Pakistani students of Heteroptera to pay some attention to this aspect of lygaeid research. It is only then that we might be able, at some future date, to study the immature stages of Pakistani lygaeids on a comparative basis.

S. pandurus militaris is widely distributed,⁴ but has never been reported from West Pakistan previously. This species is quite common in Sind. Its population, adult as well as nymphal, is at its peak during the months of February–March. We have collected hundreds of specimens, adults as well as immatures, along the Karachi–Thatta road under *Fagonia cretica* L. We have occasionally picked up adults, rarely nymphs, under *Solonum surattense* B. and other bushy shrubs around Karachi. We were able to maintain colonies of this species on *F. cretica* seeds for up to 30 days. Each colony was kept in a pair of petri plates, supplied with a tube of water, whose mouth was plugged with cotton. Mating and egg laying was frequently observed in these colonies. Under these conditions incubation period was 10 ± 1 days. The duration of first instar was recorded to be 4–5 days. Whereas no effort was made to work out the duration of individual instars from second onwards the time taken by second instar nymphs to become adults was about 3–3½ weeks.

Immature Stages

The measurements of various nymphal instars are given in Table 1. Various immature stages are described from specimens freshly killed in alcohol. All figures are drawn with the help of a squad eye piece.

Egg. Creamy white, turning yellow and then pink as development of embryo approaches completion; form elongate, anterior end broadly rounded, posterior relatively narrow; 8–9 micropyles in a circular ring on anterior end; length 1.2 mm, width 0.6 mm (Fig. 1a).

First Instar Nymph. Head, eyes antennae, legs, most of thoracic terga and sterna, last two abdominal segments and labium brown, lateral sides yellowish, abdominal terga and sterna pink, area around abdominal scent gland openings lighter, openings brown, sometimes metanotum also yellow in posterior half (Fig. 1b).

Form somewhat oval; head very large as compared to thorax, epicranial suture distinct, antenna long, longer than half length of the body, labium very long, reaching to fourth abdominal sternum; pronotum longer than meso and metanota combined, wing

TABLE 1. MEASUREMENTS OF VARIOUS BODY PARTS
OF VARIOUS STADIA OF *Spilostethus pandurus*
militaris (mm).

	Nymphal instars				
	1st	2nd	3rd	4th	5th
Head length	0.43	0.5	0.56	0.93	1.0
Head width	0.56	0.75	0.93	1.06	1.56
Interocular distance	0.43	0.56	0.68	0.75	1.12
Antennal segments length					
I	0.12	0.18	0.18	0.25	0.37
II	0.25	0.37	0.43	0.68	1.06
III	0.28	0.31	0.37	0.56	0.68
IV	0.43	0.45	0.62	0.87	0.93
Labial segments length					
I	0.18	0.43	0.43	0.62	0.87
II	0.25	0.25	0.37	0.5	0.56
III	0.25	0.31	0.43	0.56	0.75
IV	0.25	0.37	0.37	0.43	0.43
Pronotum length	0.25	0.31	0.37	0.56	1.0
Pronotum width	0.68	0.87	1.12	1.37	2.0
Wing pads length	—	—	0.31	0.68	2.06
Total length	1.56	2.56	3.12	4.56	6.56

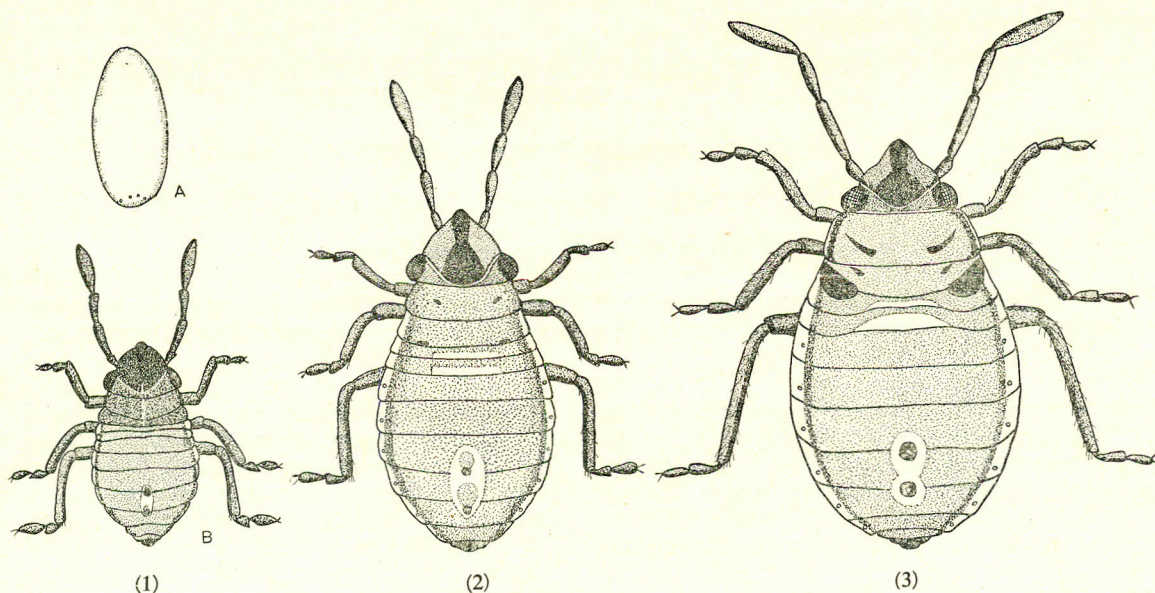


Fig. 1 (A) Egg lateral view, *Spilostethus pandurus militaris*. Fig. 1 (B) First instar nymph, dorsal view, *Spilostethus pandurus militaris*. Fig. 2. Second instar nymph, dorsal view, *Spilostethus pandurus militaris*. Fig. 3. Third instar nymph, dorsal view, *Spilostethus pandurus militaris*.

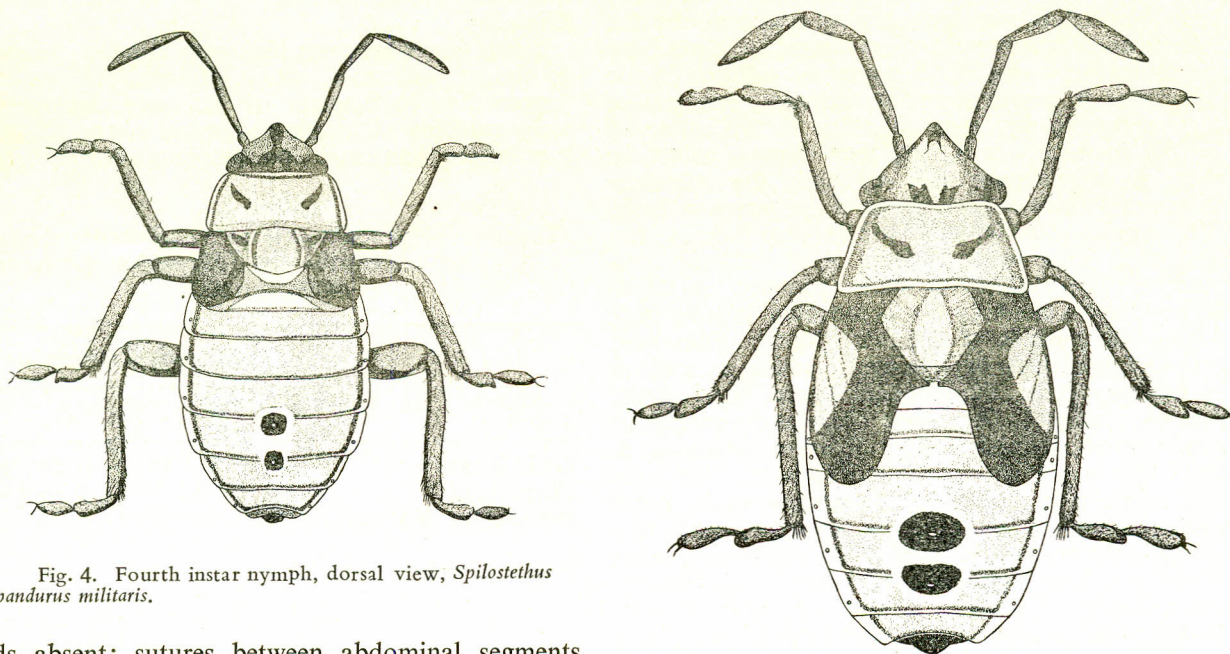


Fig. 4. Fourth instar nymph, dorsal view, *Spilostethus pandurus militaris*.

pads absent; sutures between abdominal segments indistinct, scent gland openings present between abdominal terga four and five, and five and six.

Second Instar Nymph. Head, antenna, eyes, labium, legs, last two abdominal segments and abdominal scent gland openings brown, lateral sides of thorax and abdomen, mesal portion of metanotum and first abdominal tergum and area around scent gland openings yellowish, rest of the body pink, thoracic and abdominal sterna mesally lighter (Fig. 2).

Form oval, head moderately convex and declivent epicranial suture distinct; pro- and mesonota almost equal in length, wing pads absent; third and fourth abdominal segments wider than rest, spiracles visible on abdominal terga two to seven; labium exceeding

Fig. 5. Fifth instar nymph, dorsal view, *Spilostethus pandurus, militaris*.

hind coxae extending up to third visible abdominal sternum.

Third Instar Nymph. Coloration like second instar, except head behind epicranial suture pink, calli and wing pads brown, yellow areas on lateral side of abdomen and around scent gland openings more pronounced (Fig. 3).

Body shape like second instar, wing pads small but distinct, not extending beyond anterior half of metanotum; last two abdominal segments shifted slightly

ventrally; labium exceeding hind coxae, extending on to third abdominal sternum.

Fourth Instar Nymph. Coloration and shape like fifth instar, wing pads just reaching base of abdomen, labium exceeding hind coxae (Fig. 4).

Fifth Instar Nymph. General coloration pink and yellow; tylus, eyes, some part of vertex, calli, wing pads except a lighter area near middle, area around scent gland orifice, last three abdominal segments, legs except coxae and labium dark brown, remainder of head and pronotum orange scutellum yellow with a median longitudinal orange area, connexival sclerotis of all abdominal segments yellow, area adjacent to connexivum pink, median part of abdominal terga yellow with scattered pink markings, lateral sides of abdominal sterna pink, rest of sterna yellow with anterior margin of each pink, coxae orange (Fig. 5).

Form elongate; head slightly declivent, wing pads large and extending to middle of third abdominal tergum, labium only slightly exceeding hind coxae.

References

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