Faunistical notes on aquatic Heteroptera V

by

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Some aquatic and semiaquatic Heteroptera from the state of Washington with descriptions of three larvae of Corixidae

During 1968 the author obtained from Dr. L. RUSSELL (University of Oregon) several samples of unidentified water-bugs from Washington. As these collections contained several species not yet recorded from the state, and moreover records for it are scattered through the literature in various revisions, it was thought useful to publish the present paper.

Reference specimens of the materials studied have been deposited in the collection of the Zoological Museum at Utrecht and in the collection of the author. The specimens actually used in the descriptions of larvae of Corixidae are in the Museum mentioned. All specimens have been collected by Dr. RUSSELL unless otherwise stated.

The more important publications used in identification are DRAKE & HARRIS 1934, HUNGERFORD 1933, 1948 and USINGER 1963. The papers by LANSBURY 1955, 1960 and SCUDDER 1965 give data on the Corixidae and Notonectidae of the adjacent part of Canada. The new state records are to the best knowledge of the author who had, however, no access to the entire literature dealing with aquatic Heteroptera of N. America. Especially various smaller lists may have been overlooked.

Thanks are due to Dr. RUSSELL for collecting and sending these interesting samples.

Gelastocoris oculatus oculatus (F.), King Co., Lake Sammanish, St. Pk., 2.V.1968, 2 ♂, 2 ♀; Whatcom Co., Lynden, 21.IV.1968, 1 ♀.

Ranatra fusca Palisot Beauvois, new state record, Whatcom Co., Lynden, 16.V.1964, 3 ♂, 1 ♀.

Notonecta kirbyi Hungf., King Co., Issaquah, 21.VII.1968, 2 ♂, 18 ♀; Whatcom Co., Lynden, 10.V.1964, 1 ♀, Lynden, pond, max. 0.5 m deep, some emergent *Juncus*, 13.VII.1968, 5 ♂, 7 ♀; Seattle, acid pool with peat bottom, 1.VII.1968, 7 ♂, 6 ♀.

Notonecta undulata Say, King Co., Bellevue, Larsen Lake, acid bog lake, 25.VI.1968, 1 ♂, 1 ♀; Snohomish Co., Chase Lake, 9.VII.1968, 2 ♂; Thurston Co., Tenino, pond, 23.VII.1968, 1 ♀, many nymphs; Whatcom Co., Acme, swamp and roadside ditch with dense sedges, 0.3—0.5 m deep, 12.VII.1968, 1 ♀, Lynden, pond with *Juncus*, 13.VII.1968, 12 ♂, 16 ♀; Seattle, acid pool, 1.VII.1968, 1 ♂, 1 ♀; Thorp, VII.1968, 1 ♂ (lgt. R. LAMBERT).

Notonecta unifasciata andersoni Hungf., Potholes near Othello, VII.1968, 1 ♀ (lgt. R. LAMBERT). Although not explicitly recorded from Washington, the sub-

species is considered to range "from British Columbia through the Western United States to Mexico" (SCUDDER 1965).

Notonecta spinosa Hungf., new state record, Thorp, 10.V.1964, 1 ♀. Although not recorded from Washington, its occurrence there was to be expected as it is known to occur a.o. in British Columbia, Oregon and Montana (HUNGERFORD 1933, SCUDDER 1965).

Corisella decolor (Uhler), new state record, Grant Co., The Potholes, slightly alkaline desert lake, 11.V.1968, 1 ♀. Common in California and Oregon, rare in British Columbia (HUNGERFORD 1948, LANSBURY 1960).

Corisella inscripta (Uhler), Grant Co., Moses Lake, large desert lake, slight alkalinity, 9.V.1964, 2 ♂, 2 ♀ ((lgt. D. MILNE), Soap Lake, large desert lake, ca. 6 % solubles, pH ca. 9, 9.V.1964, 5 ♀ (lgt. D. MILNE); Snohomish Co., Chase Lake, 9.VII.1968, 6 ♂, 4 ♀; Seattle, acid pool, 1.VII.1968, 2 ♂, 3 ♀.

Callicorixa audeni Hungf., King Co., Bellevue, Larsen Lake, 25.VI.1968, 1 ♀.

Callicorixa alaskensis Hungf., Seattle, acid pool, 1.VII.1968, 2 ♀.

Callicorixa vulnerata (Uhler), Snohomish Co., Chase Lake, 9.VII.1968, 10 ♂, 12 ♀, 1 lv; Whatcom Co., Acme, swamp and roadside ditch, 12.VII.1968, 8 ♂, 16 ♀, 17 lv, Lynden, Nooksack River, 13.VII.1968, 1 ♂, 1 ♀; Seattle, Lake Washington, black ooze bottom, 16.VII.1968, 8 ♂, 2 lv; Thorp, 10.V.1968, 1 ♂.

Description of larva (measurements in mm, $\bar{x}$ = mean value, s = standard deviation, LA = median length measured from anterior border of mesonotum to apex of abdomen).

LA $\bar{x} = 4.8$ $s = 0.22$ $n = 11$.

Colour yellowish to light brownish, abdomen with quite distinct light spots (Fig. 1), abdominal scent glands reddish.

Mesonotum with long hairs which reach the hind border only medianly. Metanotum bare except some hairs laterally on hind margin. Median length of mesonotum equal to or longer than the length of metanotum. Abdomen with scattered appressed rather indistinct blackish hairs and a pair of long erect whitish hairs (which are liable to break-off) medianly on tergite 6. Distance between the openings of the middle scent glands twice their diameter. Metasternal xiphus about as long as, to somewhat shorter than the greatest width at base. Claws of middle leg about as long as the tarsus.

Hind legs, femur dorsally (Fig. 3) with 2 or 3, ventrally (Fig. 2) with 20 — *24* — 28; tibia dorsally with 4 or 5, laterally with 13 — *14* — 16 spines.

The description is based on 11 specimens from Acme, 12.VII.1968.

Cenocorixa andersoni Hungf., Snohomish Co., Snohomish, 16.V.1964, 1 ♂ (D. MILNE); Seattle, acid pool, 1.VII.1968, 2 ♂, 4 ♀.

Hesperocorixa atopodonta (Hungf), Snohomish Co., Chase Lake, 9.VII.1968, 2 lv; Whatcom Co., Acme, swamp and roadside ditch, 12.VII.1968, 2 ♂ (teneral), 18 lv, Lynden, 16.V.1964, 1 ♂, Lynden, pond with *Juncus*, 13.VII.1968, 1 ♂, 1 ♀; Seattle, 3.V.1964, 1 ♂, Seattle, University of Washington campus, 9.IV. 1961, 1 ♂, same, 28.IV.1964, 1 ♂.

Description of larva.

LA $\bar{x} = 5.9$ $s = 0.37$ $n = 11$.

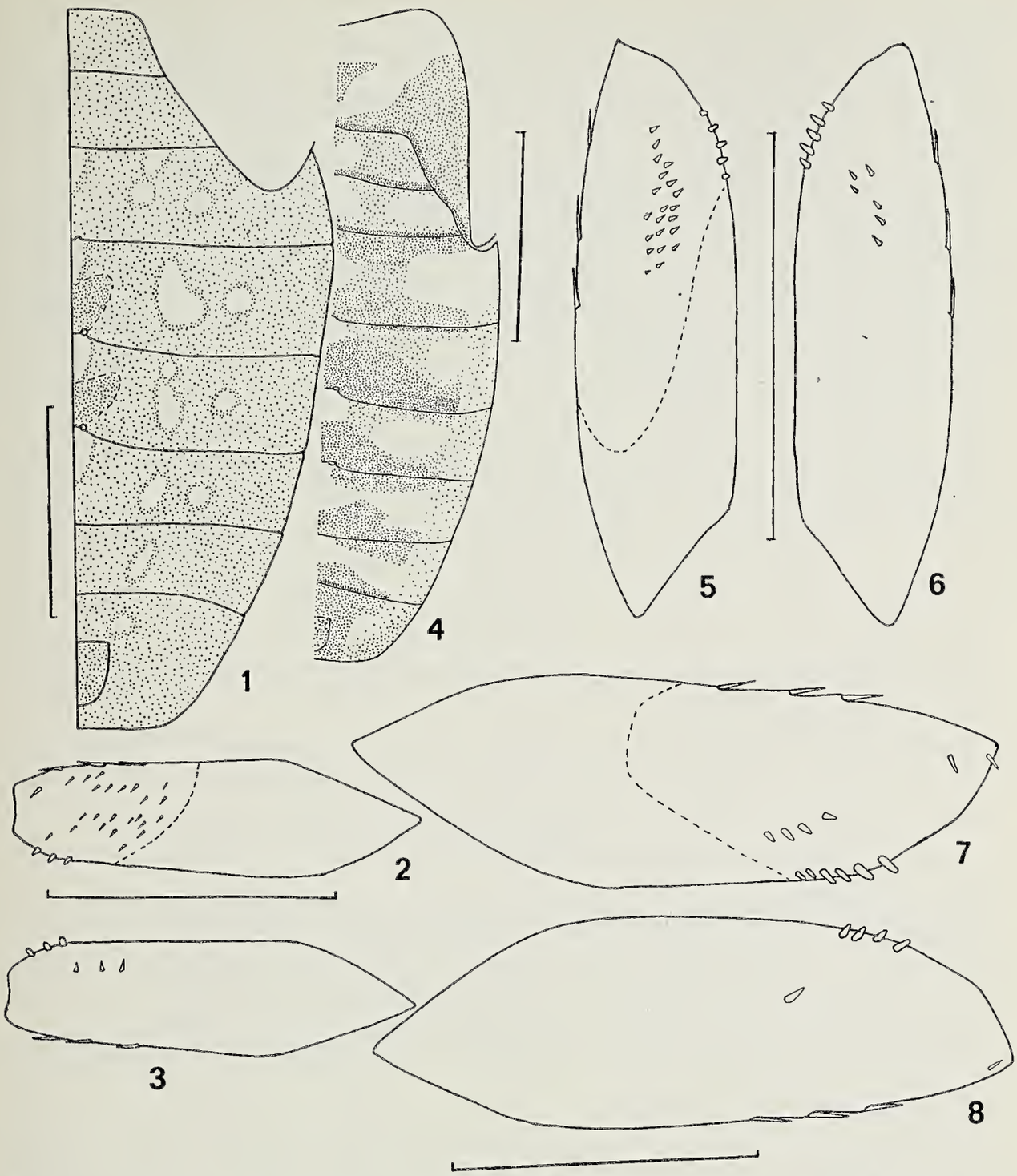

Fig. 1—3. *Callicorixa vulnerata*, V-instar larva from Acme. 1, right half of abdomen; 2, hind femur ventrally; 3, hind femur dorsally. Fig. 4—6. *Hesperocorixa atopodonta*, V-instar larva from Acme. 4, right half of abdomen; 5, hind femur dorsally; 6, hind femur ventrally. Fig. 7—8. *Hesperocorixa laevignata*, V-instar larva from Seattle. 7, hind femur ventrally; 8, hind femur dorsally. Scale for all figures: 1 mm.

Mesonotum with long hairs which cover the hind margin, metanotum without hair-covering. Median length of mesonotum slightly longer than the median length of metanotum (about 9 : 8). Dorsal abdominal pattern (Fig. 4) distinct in specimens studied (it reminds the pattern of the European *H. sahlbergi* Fieb. of which light-coloured nymphs with a rather indistinct pattern may occur, Cobben & Moller Pillot 1960, fig. 16, 17). Distance between the openings of the middle scent-gland twice to thrice their diameter. Metasternal xiphus only little longer

than wide, lateral margins not concave. Claws of middle leg slightly shorter than the tarsus (about 0.10 and 0.11 mm respectively).

Hind legs, femur dorsally (Fig. 5) with 17 — *22* — 26, ventrally (Fig. 6) with 5 — *6* — 8; tibia dorsally with 5 or 6 (8 in one specimen), laterally with 16 — *17* — 19 spines.

The description is based on 11 specimens from Acme, 12.VII.1968.

Hesperocorixa laevignata (Uhler), Grant Co., Moses Lake, 17.V.1964, 4 ♂, 2 ♀ (D. Milne); Snohomish Co., Chase Lake, 9.VII.1968, 2 ♂, 4 ♀, 10 lv; Whatcom Co., Lynden, pond with *Juncus*, 13.VII.1968, 4 ♀; Seattle, 3.V.1964, 2 ♂, 3 ♀, same, acid pool, 1.VII.1968, 15 ♂, 7 ♀, 15 lv, same, Univ. Washt. Arboretum, pond, 15.VII.1968, 1 ♂, 1 ♀.

Description of larva.

LA $\bar{x} = 6.7$ $s = 0.35$ $n = 11$

Mesonotum with long hairs covering the entire hindmargin, metanotum without long hairs. Median length of mesonotum slightly longer than median length of metanotum (about 10 : 9). Dorsal abdominal pattern of the same type as *H. atopodonta* but dark and light areas showing much less contrast. Distance between the openings of the middle scent-gland twice to thrice their diameter. Metasternal xiphus nearly twice as long as wide, lateral margins nearly straight to slightly concave. Claws of middle leg equal to or slightly shorter than the tarsus (1.3 and 1.3—1.4 mm respectively).

Hindlegs, femur dorsally (Fig. 8) with 1 (2 in one specimen), ventrally (Fig. 7) with 4 — *5* — 7; tibia dorsally with 5, laterally with 16 — *17* — 19 spines.

The description is based on 11 specimens from Seattle, acid pool, 1.VII.1968.

Sigara washingtonensis Hungf., Kittitas Co., Cle Elum, rocky pond from river flood, 11.V.1968, 1 ♂, 1 ♀.

Mesovelia mulsanti White, King Co., Bellevue, Larsen Lake, 25.VI.1968, 1 ♂; Whatcom Co., Lynden, pond with *Juncus*, 13.VII. 1968, 1 lv; Seattle, acid pool with peat bottom, *Mesovelia* between stems of *Typha*, 1.VII.1968, 4 ♂, 8 ♀.

Gerris notabilis Drake & Hottes, Whatcom Co., Lynden, pond with *Juncus*, 13.VII.1968, 1 ♂, Silver Lake, 26.IV.1964, 1 ♂; Seattle, Univ. Washt. Arboretum, pond, 15.VII.1968, 5 larvae.

The larvae are 5th instar and agree with the figure of the larva of *G. dissortis* Drake & Harris in Sprague 1967. Differences between the nymphs of these species are probably to be found in relative leg measurements. The ratio length of intermediate leg (without coxa): length of body was 1.46 — *1.49* — 1.54 in four of the specimens cited, in the fifth this ratio was 1.70.

Gerris remigis Say, King Co., Green River Gorge, pools by river, 23.VI.1968, 1 ♂, 1 ♀, Issaquah, 21.VII.1968, 3 ♂, 2 ♀, numerous larvae; Whatcom Co., Lynden, Nooksack River, Gerrids in slow warm creek flowing into river, 13.VII. 1968, 1 ♂, 5 V-instar larvae, Silver Lake, 26.IV.1964, 3 ♂, 1 ♀; Seattle, 3.V.1964, 1 ♂, all apterous.

The author was not able to recognise *G. nyctalis* Drake & Hottes in the present materials.

Gerris marginatus Say, Grant Co., Moses Lake, 19.IX.1964, 1 ♂ macropterous (D. Milne).

Gerris incurvatus Drake & Hottes, King Co., Bellevue, Larsen Lake, 25.VI.1968, 2 ♂ brachypterous, 1 ♂ macropterous; Snohomish Co., Chase Lake, 9.VII.1968, 2 ♂, 1 ♀ brach., 1 ♀ macr.; Whatcom Co., Lynden, pond with *Juncus*, 13.VII.1968, 1 ♂ macr.; Seattle, acid pond with peat bottom, 1.VII.1968, 1 ♂ brach., 2 ♀ macr.; Thorp, 10.V.1967, 1 ♀ macr., same, 12.V.1967, 1 ♀ macr.

Gerris incognitus Drake & Hottes, Snohomish Co., Arlington, 12.VII.1968, shallow pond, among *Typha* with much Cyanophyceae, 7 ♂, 4 ♀ apterous, 3 ♂, 2 ♀ macropterous, Chase Lake, 9.VII.1968, 3 ♂, 1 ♀ apt., 1 ♀ macr.; Thurston Co., Tenino, pond, 23.VI.1968, 3 ♂, 9 ♀ apt., 1 ♀ macr.; Whatcom Co, Lynden, Nooksack River, warm creek, 13.VII.1968, 6 ♂, 1 ♀ apt.; Seattle, Univ. Washt. campus, 9.IV.1964, 1 ♀ apt., 1 ♂, 1 ♀ macr., Seattle, Lake Washington, sheltered waters among *Typha*-stems, 3 ♂, 3 ♀, 1 lv; Thorp, 10.V.1964, 1 ♂ apt.

Gerris buenoi Kirkaldy, Grant Co., Moses Lake, 9.V.1964, 1 ♂, 1 ♀ macropterous (D. Milne); King Co., Bellevue, Larsen Lake, 25.VI.1968, 1 ♂ micropterous; Snohomish Co., Chase Lake, 9.VII.1968, 2 ♀ micr.; Whatcom Co., Lynden, pond with *Juncus*, 13.VII.1968, 1 ♂ micr.

Summary

Aquatic Heteroptera present in some samples from the State of Washington are recorded. New state records are: *Ranatra fusca*, *Notonecta spinosa* and *Coriselladecolor*. The larvae of *Callicorixa vulnerata*, *Hesperocorixa atopodonta* and *H. laevignata* are described.

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Dagvlinder op licht. Tweemaal, op 7 en 10.VIII.1970, trof ik in mijn vlinderval te Echterheide (gem. Echt) een exemplaar aan van *Lasiommata megera* L.

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