Species of the genus *Phytocoris* Fall. from Kazakhstan and Middle Asia (Heteroptera: Miridae)

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Three new species are described (*Ph. sauricus* from East Kazakhstan, *Ph. parvidens* from Kazakhstan, and *Ph. kirgizorum* from Kirgizia). A redescription of *Ph. hissariensis* Lnv., notes on 3 other species, and a key to 28 species of the genus known from Kazakhstan and Middle Asia are given.

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28 species of *Phytocoris* from Kazakhstan and Middle Asia (Turkmenistan, Uzbekistan, Tajikistan and Kirgizia) are represented in the collections of the Zoological Institute, St.Petersburg and Institute of Zoology and Parasitology, Dushanbe. Data on 22 of them were published in our earlier papers (Muminov, 1989a, 1989b, 1989c, 1990, 1995). This paper includes descriptions of 3 new species, redescription of the poorly known *Ph. hissariensis* Lnv. and a key to species from Kazakhstan and Middle Asia. *Ph. zimganus* Wagner, 1975 (Uzbekistan) known to the author from the original description only is not included in the key.

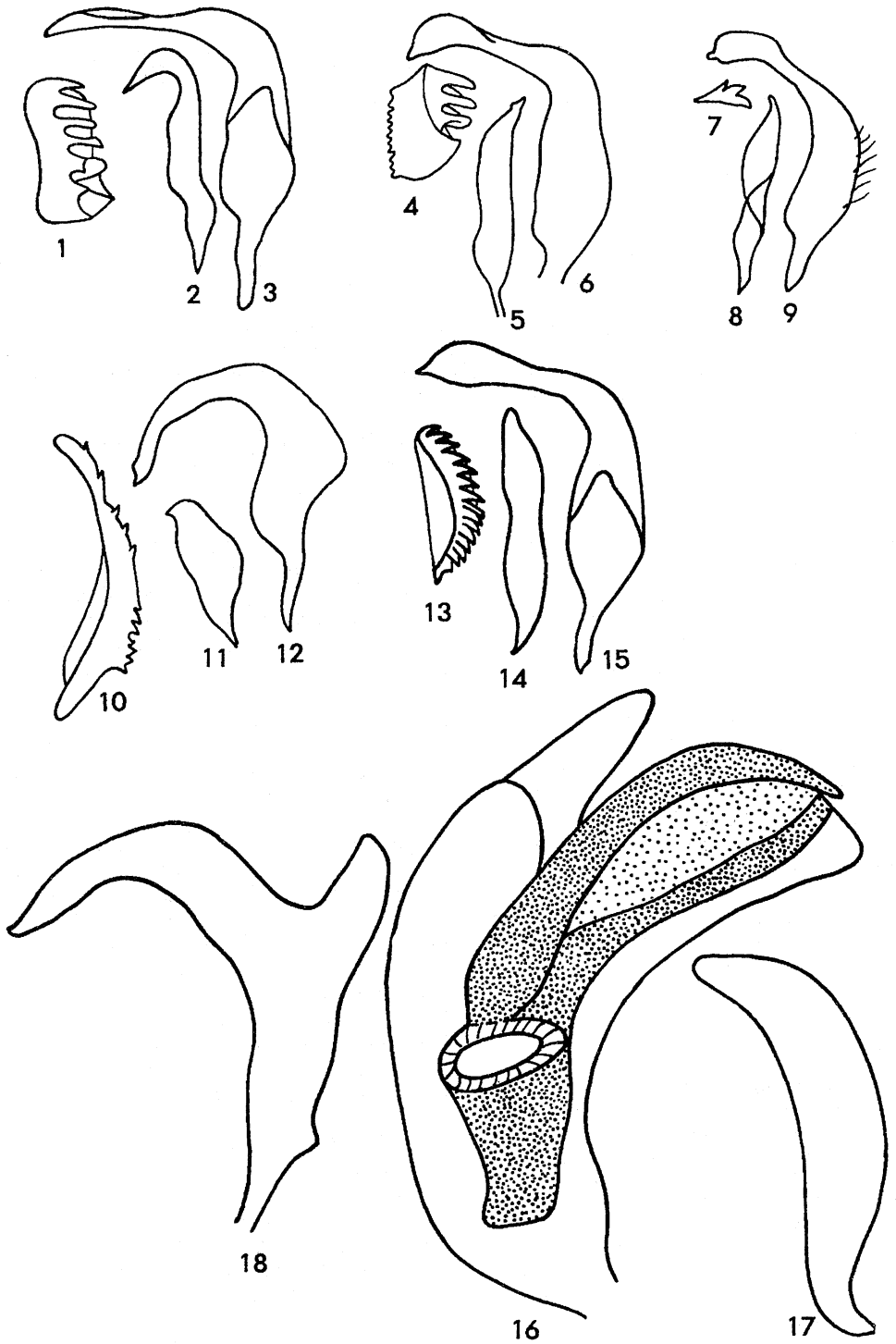
Holotypes of all new species are kept in the Zoological Institute, St.Petersburg. All measurements are in mm.

Phytocoris sauricus sp. n.
(Figs 1-3)

Holotype. ♂, **Kazakhstan**, *East Kazakhstan Prov.*, Saur Mts, confluence of rivers Akkolka and Bolaba, 25.VIII.1946 (Kryzhanovskij).

Paratypes. **Kazakhstan**, *Semipalatinsk Prov.*: 1 ♂, 10 km N of Irinovka, env. of Urdzharskiy [= Urdzhar], 19.VIII.1930 (Lukjanovitsh); 1 ♀, Staro-Pyatigorskoe, 2000 m, 23.VI.1962 (Kerzhner).

Description. Males macropterous. Body wide, elongate; dorsal side dirty white with pale brown spots (general coloration looking grey), covered with dense silvery white and black adpressed hairs. Head with pale adpressed and brown long erect hairs (similar brown hairs also on fore margin of pronotum), pale. Frons with few short, oblique, brown touches converging anteriorly and diverging to middle; hind half without touches. Base of clypeus with a short longitudinal brown stripe; its middle with a brown transverse spot. Frontier between lorae and genae with longitudinal brown stripes; inner margin of antennal fossae bordered with a brown line. Vertex with four brown spots. Antennal segment 1 elongate, cylindrical, black-brown, dorsally with large, ventrally with few small white spots, its outer side with a narrow white longitudinal stripe. Segments 2-4 dirty yellow, base of segment 2 whitish. Rostrum extending slightly beyond hind coxae. Pronotum smooth, without tubercles, with tufts of black hairs on hind margin, pale, with suffused brownish lateral margins and a brown, becoming paler in front, brown stripe near hind margin; hind margin narrowly white. Scutellum pale in basal corners and at very apex, brown in the middle. Hemelytra nearly uniformly covered with pale brown spots. Apex of clavus, middle of inner margin of cuneus and apical corners of corium with brown spots bearing tufts of black hairs. Membrane pale, with small pale brown spots. Fore and middle femora brown, with pale spots; in addition, fore femora dorsally and ventrally and middle femora dorsally with a longitudinal pale stripe nearly reaching their apices. Bases of middle and hind femora widely pale. Hind femora brown, with white spots of unequal sizes. All tibiae pale, with yellowish bristles and short adpressed pale hairs; fore and middle tibiae



Figs 1-18. *Phytocoris*, male genitalia. **1-3**, *Ph. sauricus* sp. n.; **4-6**, *Ph. triodontus* Kerzh.; **7-9**, *Ph. parvidens* sp. n.; **10-12**, *Ph. sunti* Putshk.; **13-15**, *Ph. kirgizorum* sp. n.; **16-18**, *Ph. moestus* Reut. 1, 4, 7, 10, 13, vesical comb; 2, 5, 8, 11, 14, 17, right paramere; 3, 6, 9, 12, 15, 18, left paramere; 16, vesica.

with 3 wide brown rings and narrowly darkened base; hind femora in basal third with two almost fused brown rings, near the middle with traces of a narrow third ring. Tarsi brown, segment 2 (in hind tarsi also base of segment 3) pale. Ventral side of body pale, with brown longitudinal spots and red dots. Genital segment without processes. Parameres as in Figs 2, 3. Vesical comb (Fig. 1) wide, with few large teeth.

The above description is made from the holotype; the coloration of the paratype male probably changed during killing, its pronotum and hemelytra are reddish brown and spotty pattern less distinct.

Female. Brachypterous. Coloration as in male; dark stripes at frons more distinct, dark rings on middle tibiae absent, on hind tibiae weak. Hemelytra not covering the last segment of abdomen; corium and clavus fused, with dark spots concentrated on hind margin of corium and apex of cuneus. Rudiment of membrane small, triangular, with one very narrow cell.

Measurements. Body length ♂ 6.8-7.4, ♀ 4.6; head width ♂ 1.70, ♀ 1.60; vertex width ♂ 0.50, ♀ 0.47; length of antennal segments (1-4) ♂ 1.30, 2.70, 2.00 (segment 4 missing), ♀ 1.25, 2.40, 1.30, 1.15; pronotum width ♂ 0.80, ♀ 0.75; pronotum length ♂ 1.00, ♀ 0.70.

Comparison. The new species is closest to *Ph. arbusticola* Mum., but differs in the more developed dark pattern on antennal segment 1 and less developed dark spots on frons and clypeus, long brown erect hairs on head (in *Ph. arbusticola*, erect hairs shorter and pale), structure of left paramere and vesical comb.

Phytocoris triodontus Kerzhner, 1962
(Figs 4-6)

Phytocoris triodontus Kerzhner, 1962, Trudy zool. Inst. Akad. Nauk SSSR, 30: 143.

Distribution. Kazakhstan (Dzhungarsk Alatau Mts: Topolevka and mountains near railway station Koktuma).

Host plant. Artemisia.

Phytocoris parvidens sp. n.
(Figs 7-9)

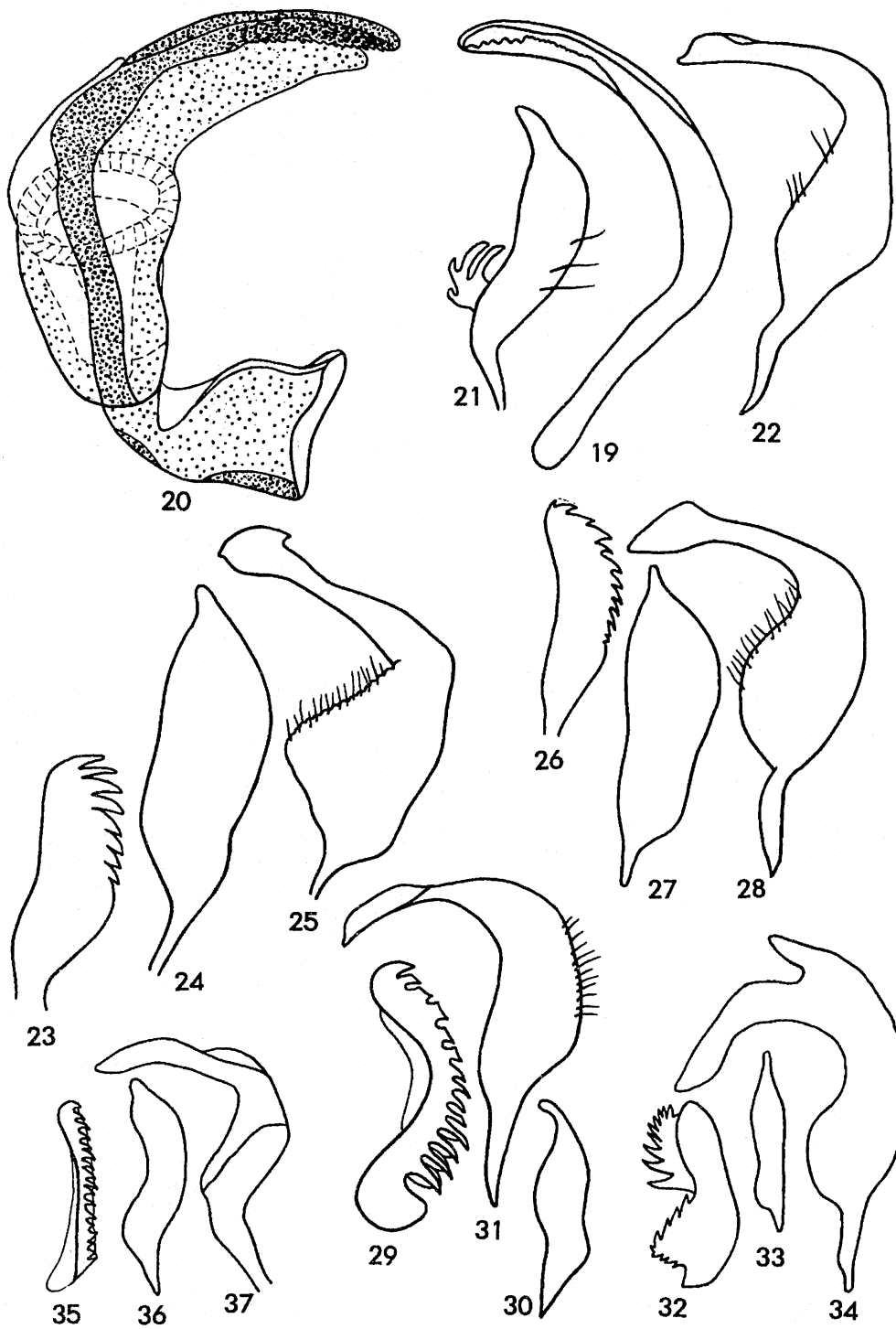
Holotype. ♂, **Kazakhstan**, *Dzhezkazgan Prov.*, 40 km S of railway station Zhana-Arka [= settlement Atasu], 22.VI.1960 (Kerzhner).

Paratypes. **Kazakhstan**: *Ural'sk Prov.*: 2 ♂, 1 ♀, Inder Lake, 31.V.1932 (Lukjanovitsh); *Turgai Prov.*: 1 ♀, Kokshetau Hills near Tersakkan River, 7.VI.1975 (Rudolf); *Kzyl-Orda Prov.*: 1 ♀, Priaral'sk Karakumy Sands, locality Murgunchi, 26.VI.1931 (Luppova); *Dzhezkazgan Prov.*: about 140 ♂ and ♀, same locality as in holotype, 22.VI-6.VII.1960 (Emeljanov, Kerzhner); 30 specimens, Kutansor N of Kense, 30.V.1962 (Kerzhner); 3 ♂, 2 ♀, Samen'kum Sands near tomb of Sengirbay, 26, 29.VI.1962 (Kerzhner); 2 ♂, village Betpakdala, 11.VI.1959 (Asanova); 1 ♂, 1 ♀, 12 km W of railway siding No. 59, 4.VI.1962 (Emeljanov); *Alma-Ata Prov.*: 4 ♀, Ili River from mouth of Kaskelen to Bakanas, 7, 10.VI.1939 (Shnitnikov); *East Kazakhstan Prov.*: 6 ♂, 1 ♀, Zaisan Lake SW of Topolevy Cape, 5.VI.1927 (Dobrzhansky & Kerkis).

Description. Males macropterous, somewhat elongate; females brachypterous, ovate, widened posteriorly. Coloration whitish grey, with few brown spots, general coloration looking dirty whitish. Dorsal side of body covered with silvery yellow and brown hairs; head with sparse pale hairs.

Male. Head pale, with indistinct transverse touches, sometimes entirely pale. Clypeus and cheeks without dark spots. Antennal segment 1 pale brown, with white spots, with bristles as long as segment width; segments 2-4 yellowish, base of segment 2 narrowly white. Rostrum extending slightly beyond hind coxae. Pronotum pale, near hind margin with interrupted brown stripe not reaching lateral margins; hind margin pale; lateral margins in fore half with 1 or 2 dark brown lines. Scutellum pale, with 2 approximate longitudinal stripes sometimes not reaching its apex; in darker specimens, with separate or partly fused brown spots lateral to stripes. Hemelytra with unfused small brown spots which are denser in inner and hind part of corium. Inner part of clavus and triangular spot near hind margin of corium usually without brown spots. Cuneus with sparse, indistinct, brown spots, mostly in inner half; its apex brown. Membrane pale with small brown spots; veins yellowish. Femora pale brown with white spots. Tibiae with brown rings as in *Ph. quadridens*, but the rings very pale, usually not closed, and in hind tibiae absent. All tibiae with pale brown bristles and very short, adpressed pale hairs. 1st and 3rd segments of fore and middle tarsi and apical half of 3rd segment of hind tarsi brown. Ventral side of body pale, with reddish spots and touches. Genital segment at fore margin of the opening with a small rounded projection to the left and hardly visible tubercle to the right. Vesical comb (Fig. 7) very small, with 3 unequal teeth of which the basal one the largest, wide, almost cut at apex.

Female. Coloration as in male, but brown stripe along hind margin of pronotum al-



Figs 19-37. *Phytocoris*, male genitalia. **19-22**, *Ph. hissariensis* Lnv.; **23-25**, *Ph. insignis* Reut.; **26-28**, *Ph. varipes* Boh.; **29-31**, *Ph. tener* Kir.; **32-34**, *Ph. muminovi* Jos.; **35-37**, *Ph. issykensis* Popp. 19, 23, 26, 29, 32, 35, vesical comb; 20, vesica; 21, 24, 27, 30, 33, 36, right paramere; 22, 25, 28, 31, 34, 37, left paramere.

most absent, cuneus without dark spots, except narrowly brown apex. Clavus and corium fused. Membrane as a narrow pale stripe, almost triangular or rounded at outer margin. Hemelytra not covering two last tergites. Rostrum extending far beyond hind coxae.

Measurements. Body length ♂ 5.0-6.0, ♀ 3.0-4.1; head width ♂ and ♀ 0.8-0.9; vertex width 0.37-0.42; length of antennal segments (1-4) ♂ 0.95, 1.62, 1.30, 0.75, ♀ 0.77, 1.50, 1.05, 0.70; pronotum width at fore margin ♂ 0.82, ♀ 0.75; at hind margin ♂ 1.17-1.20, ♀ 1.00-1.10; pronotum length ♂ 0.62-0.75, ♀ 0.50-0.55.

Comparison. The species belongs to the *triodontus* group. It differs from all species of this group in the very small vesical comb, and from all species but *Ph. tauricus* Kerzh. in the small size and pale coloration.

Host plants. In the Dzhezkazgan Prov., the species was collected from *Artemisia* (*Seriphidium*) *pauciflora*, *A.* (*S.*) *lercheana*, *A.* (*S.*) *terrae-albae*, some specimens were collected from other plants.

Phytocoris sunti Putshkov, 1976
(Figs 10-12)

Phytocoris sunti Putshkov, 1976, Vestnik Zool., 1976(3): 52.

Distribution. Turkmenistan (Kopetdag Mts east of Kara-Kala and Firyuza).

Host plant. Artemisia turanica.

Phytocoris kirgizorum sp. n.
(Figs 13-15)

Holotype. ♂, **Kirgizia**, Issyk-Kul' Lake, Ak-Ulen, 3.VII.1953 (Panfilov).

Paratype. ♂, **Kirgizia**, Issyk-Kul' Lake, Kutemaldy [= Rybachiy], 3.VIII.1910 (Kiritshenko).

Description. Males macropterous, elongate, whitish, with well-developed brown pattern. Dorsal side with short white and black hairs, collar of pronotum with several erect hairs, head with pale hairs only. Apex of clavus, hind corners of corium and fore third of inner margin of cuneus with tufts of black hairs at dark spots. Antennal segment 1 pale, with sparse pale brown spots and pale brown apex, its ventral and lateral sides nearly entirely pale or lateral margins with brown stripe at base; segments 2-4 dirty yellow. Rostrum hardly surpassing hind coxae. Pronotum brown, pale medially, except hind third; hind margin narrowly white; sides pale, with a longitudinal brown stripe in fore half. Scutellum pale, with a wide brown stripe sometimes divided into two stripes; laterally on each side with an oblique brown stripe not reaching base. Hemelytra dirty white, with dark brown pattern resembling irregular, suffused, oblique stripes. Clavus with a white vein bordered with brown at both sides. Corium with brown spots which are partly fused and occupy not the whole its surface; nearly the entire base of corium, a large indistinct triangular spot near its middle narrowed mediad and interrupted by a dark vein, and especially a rhombic spot near its hind inner corner paler. Cuneus with confluent brown spots denser at apex. Membrane pale brownish, with dark spots. Ventral side of body pale, with brown spots and red dots. Fore femora ventrally with black spots at apex, dorsally with two interrupted black lines not reaching its base. Middle femora apically with sparse brown spots. Hind femora with small white spots, pale at base. Tibiae pale, with yellowish bristles and short pale hairs; fore and middle tibiae with widely darkened apex and two narrow dark rings, middle ones with traces of 3 narrow dark rings, hind tibiae with two dark rings near base and one at middle. Tarsi pale; 1st and 3rd segments of fore and middle tarsi and apex of 3rd segment of hind tarsi pale brownish. Parameres and vesical comb as in Figs 13-15.

Measurements. Body length 6.7; head width 1.0; vertex width 0.40; length of antennal segments (1-4) 1.17, 2.62, 1.75, 1.00; pronotum width at fore margin 0.75; at hind margin 1.50; pronotum length 0.80 mm.

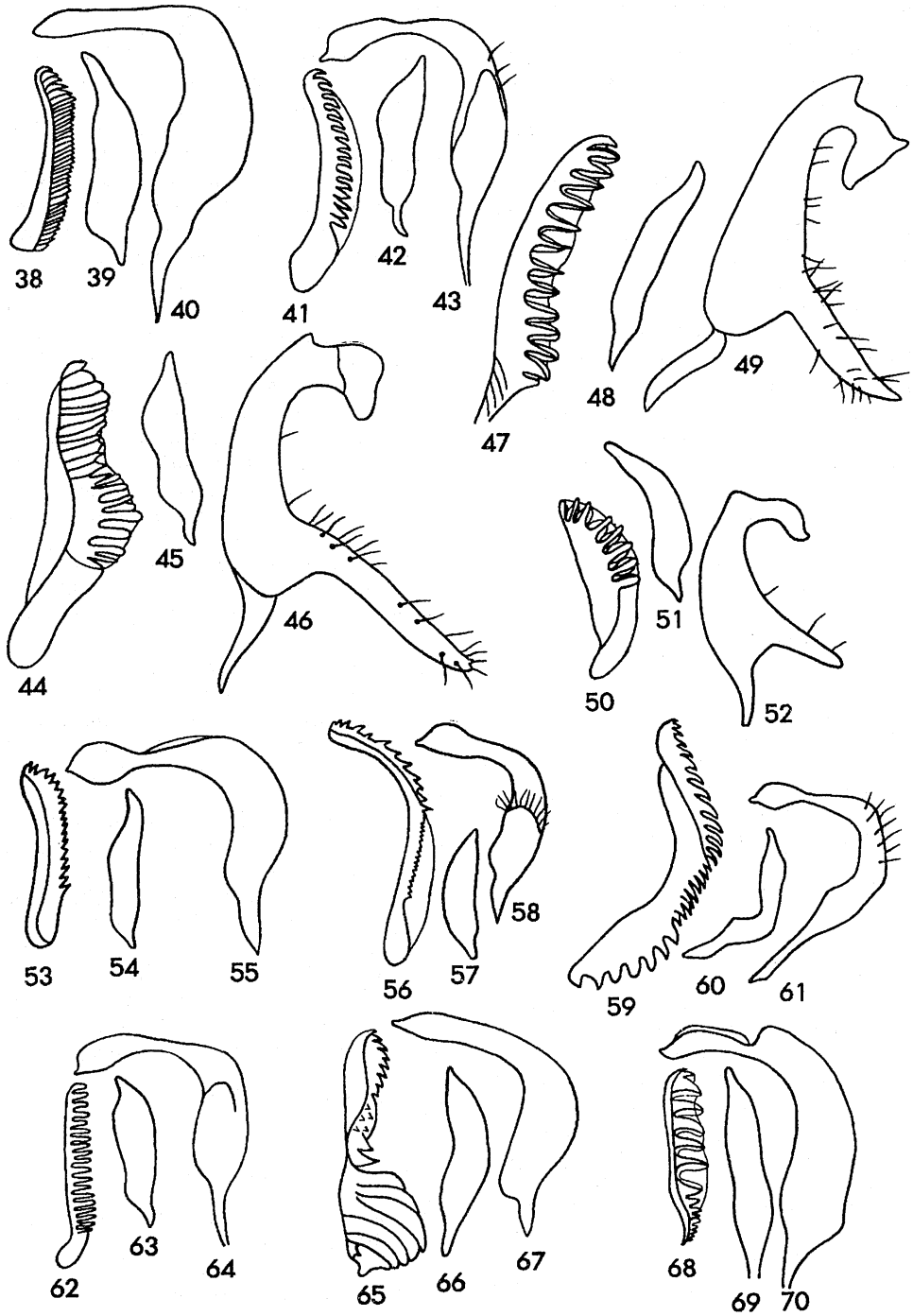
Comparison. The new species is related to *Ph. kiritshenkoi* Popp., but the latter is paler and smaller, with a wide white stripe along inner margin of corium, with paler scutellum and different structure of the male genitalia.

Phytocoris moestus Reuter, 1903
(Figs 16-18)

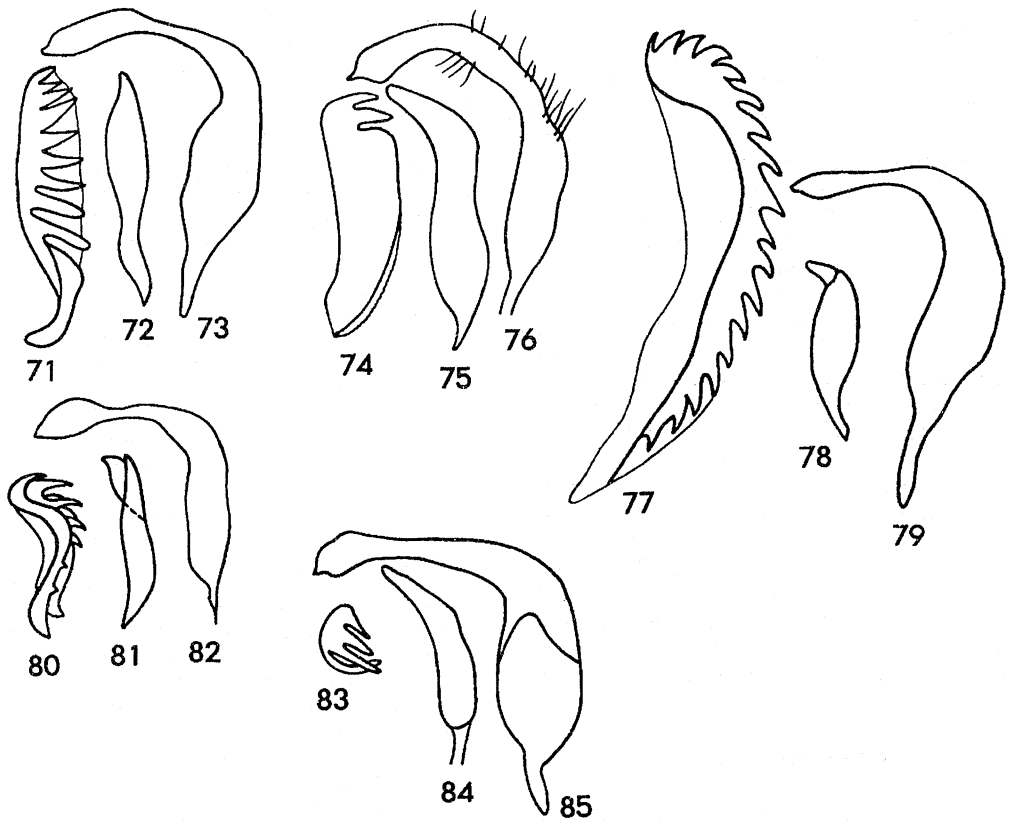
Phytocoris moestus Reuter, 1903, Öfv. Finsk. Vet.-Soc. Förh., 46(4): 2.

Phytocoris longicornis Reuter, 1903, Öfv. Finsk. Vet.-Soc. Förh., 46(4): 1.

The species was described from the Kopetdag Mts in Turkmenistan (Sulukli, Mergen-Ula). In the collection of the Zoological Institute, St.Petersburg, a male and a female of this species from the same region were identified by I.M. Kerzhner by a comparison with types, but to the time of my studies



Figs 38-70. *Phytocoris*, male genitalia. **38-40**, *Ph. turkestanicus* Popp.; **41-43**, *Ph. haloxyli* Putshk.; **44-46**, *Ph. damocles* Lnv.; **47-49**, *Ph. kyzylkumi* Mum.; **50-52**, *Ph. kazachstanicus* Mum.; **53-55**, *Ph. biannulicornis* Mum.; **56-58**, *Ph. arenarius* Mum.; **59-61**, *Ph. undulatus* Reut.; **62-64**, *Ph. zarudnyi* Reut.; **65-67**, *Ph. moira* Lnv.; **68-70**, *Ph. kiritschenkoi* Popp. 38, 41, 44, 47, 50, 53, 56, 59, 62, 65, 68, vesical comb; 39, 42, 45, 48, 51, 54, 57, 60, 63, 66, 69, right paramere; 40, 43, 46, 49, 52, 55, 58, 61, 64, 67, 70, left paramere.



Figs 71-85. *Phytocoris*, male genitalia. **71-73**, *Ph. transcaspicus* Stich.; **74-76**, *Ph. incanus* Fieb.; **77-79**, *Ph. suadela* Lnv.; **80-82**, *Ph. arbusticola* Mum.; **83-85**, *Ph. quadridens* Mum. 71, 74, 77, 80, 83, vesical comb; 72, 75, 78, 81, 84, right paramere; 73, 76, 79, 82, 85, left paramere.

only some fragments, including a part of the male genital segment, remained. Putshkov & Putshkov (1983) collected this species from *Lonicera nummulariifolia*.

Phytocoris hissariensis Linnavuori, 1963
(Figs 19-22)

The name of the species was used as a nomen nudum by Kiritshenko (1951, 1964) and formally established by Linnavuori (1963: 75) within the description of *Ph. ohataensis* in the following sentence: "In *P. hissariensis* Kir. the 1st antennal joint is much longer, the 2nd joint light-coloured, the pronotum narrower with lateral margins distinctly insinuated and in ♀ the elytra only as long as the abdomen". The male genitalia were figured by Muminov (1989b). A description is given below.

Description. Both sexes macropterous; general coloration dark brown to brownish black. Body more or less elongate, widened to the middle of hemelytra in female, covered with short, simple, black hairs and longer, sericeous, silvery hairs; pronotal collar with long, erect, black hairs. Head shining (except vertex), with pale hairs only. Lower part of head entirely or nearly entirely dark brown to black; frons with radiating dark pattern; vertex pale with reduced dark pattern; between base of clypeus and antennal socket at each side a white spot. Vertex about as wide as eye. Antennae very long; segment 1 longer than head and pronotum combined, black with a few pale spots, covered with short adpressed black hairs and bearing about 10 long black bristles at inner side; segments 2 and 3 pale brown with narrowly whitish base; segment 2 with 1-2 long black bristles at base; segment 4 pale

brown. Rostrum slightly surpassing middle coxae. Pronotum dirty greyish; its lateral margins black; hind margin narrowly white, with a black, medially interrupted black stripe before the white edge. Scutellum pale, with brownish pattern at both sides of the pale median line. Ventral side of thorax shining, black; acetabulae pale. Hemelytra much longer than abdomen in male, not surpassing or only slightly surpassing abdomen in female, brown to black with suffused pale spots, of which the largest are at base of cuneus and near the middle of outer margin of corium. Membrane greyish, with numerous confluent dark dots; area behind apex of cuneus pale; veins pale, but the vein between cells dark. Legs long; femora and tibiae with long black bristles. Coxae pale. Femora brown to black with numerous pale spots; fore and middle femora sometimes with predominant pale coloration; hind tibiae with oblique pale band before apex. Tibiae pale; fore and middle tibiae with 3 distinct, wide, black rings; hind tibiae with 3 dark rings, of which the apical one is less distinct and incomplete. Tarsi pale; segment 1 and apical half of segment 3 brownish. Parameres and vesical comb as in Figs 19-22.

Measurements. Body length ♂ 7.9-9.0, ♀ 7.1-7.5; head width ♂ and ♀ 1.2; vertex width ♂ 0.4, ♀ 0.45; length of antennal segments (1-4) ♂ and ♀ 2.5-2.6, 3.8-4.0, 2.0, 1.7; pronotum width at fore margin ♂ 0.95-1.05, ♀ 0.90; at hind margin ♂ 1.95-2.0, ♀ 1.5-1.7; pronotum length ♂ 1.15-1.3, ♀ 0.97-1.05.

Key to species from Kazakhstan and Middle Asia

1(4). Upper side with predominance of black colour or uniformly dark brown. Tibiae with black bristles. 1st antennal segment not shorter than head and pronotum combined. Both sexes macropterous.

2(3). 1st antennal segment about 1.3 times as long as head and pronotum combined, with black bristles. Vesical comb (Figs 19-20) with minute teeth. Right paramere (Fig. 21) near base at inner side with a process ending in 4 teeth. Tajikistan (mountains). At trees and shrubs . . . . . **Ph. hissariensis** Lnv. (Figs 19-22)

3(2). 1st antennal segment as long as head and pronotum combined, with pale bristles. Vesica (Fig. 16) with a long sickle-like sclerotized process not toothed at margin. Right paramere (Fig. 17) without process near its base. Turkmenistan (Kopetdag Mts). At trees and shrubs . . . . . **Ph. moestus** Reut. (Figs 16-18)

4(1). Coloration different, if brown, then with spotted pattern. Tibiae and antennal segment 1 with pale brown, yellowish or white bristles. 1st antennal segment usually shorter than head and pronotum combined.

5(12). Coloration red-brown, red, or reddish yellow.

6(9). ♂: fore margin of the genital segment opening with a median process. ♀: wing membrane complete, with normal venation.

7(8). Process at fore margin of the genital segment opening bifid . . . . **Ph. insignis** Reut. (Figs 23-25)

8(7). Process at fore margin of the genital segment opening simple . . . **Ph. varipes** Boh. (Figs 26-28)

9(6). ♂: fore margin of the genital segment opening without process. ♀: wing membrane reduced, without veins or with traces of veins only.

10(11). ♂: 1st antennal segment longer than width of pronotum; genitalia as in Figs 29-31. ♀: rudimentary membrane extending beyond apex of cuneus, with traces of veins . . . . . **Ph. tener** Kir. (Figs 29-31)

11(10). ♂: 1st antennal segment shorter than width of pronotum; genitalia as in Figs 32-34. ♀: rudimentary membrane very small, not extending beyond apex of cuneus, without veins . . . . . **Ph. muminovi** Jos. (Figs 29-31)

12(5). Coloration not red or reddish.

13(16). Pale green, sometimes (*Ph. turkestanicus*) pale yellow without dark pattern.

14(15). 1st antennal segment with brown adpressed hairs and few erect bristles. Hemelytra with distinct black hairs in addition to pale ones. In ♀, hemelytra reaching apex of abdomen, with almost complete membrane . . . . . **Ph. issykensis** Popp. (Figs 35-37)

15(14). 1st antennal segment with pale adpressed hairs and numerous erect bristles. Hair cover of hemelytra very short, dark hairs indistinct. In ♀, hemelytra not covering apex of abdomen, with rudimentary membrane . . . . . **Ph. turkestanicus** Popp. (Figs 38-40)

16(13). Whitish with more or less developed brown spotted or dotted pattern (some specimens of *P. haloxyli* with a slight greenish hue).

17(18). Dorsal side of body strongly shining. Head and pronotum without dark pattern. 1st antennal segment thick, with black hairs, erect bristles not longer than hairs and usually indistinct. 2nd antennal segment with black adpressed hairs. Both sexes macropterous . . . . . **Ph. haloxyli** Putshk. (Figs 41-43)

18(17). Combination of characters different. Females brachypterous.

19(24). Genital segment of male at left side with a large finger-like process. Sensory lobe of left paramere with a long process.

20(21). Process of genital segment with large, nearly square, forming acute angle swelling at base. Vesical comb (Fig. 44) sharply widened in basal half . . . . . **Ph. damocles** Lnv. (Figs 44-46)

21(20). Process of genital segment not swollen at base. Vesical comb not sharply widened in basal half.

22(23). Left paramere (Fig. 49) with an angulate tubercle before apex of hypophysis. Vesical comb (Fig. 47) with greater number of teeth; teeth present also at its base. Hind femora with large pale

spots and reticulate dark pattern around them. Outer and lower sides of 1st antennal segment white with narrowly brownish base; its inner and upper sides with black or dark brown spots . . . . . **Ph. kyzylkumi** Mum. (Figs 47-49)

23(22). Left paramere (Fig. 52) smaller, with a rounded tubercle before apex of hypophysis. Vesical comb (Fig. 50) with fewer teeth; teeth absent from its base. Hind femora brown, with small pale spots. Outer side of 1st antennal segment white; lower side brown; inner and upper sides with pale brown spots . . . . . **Ph. kazachstanicus** Mum. (Figs 50-52)

24(19). Genital segment of male and left paramere without such processes.

25(30). In males, pronotum near hind margin with 4-6 tubercles bearing tufts of black, easily rubbed hairs.

26(27). 2nd antennal segment with 2 distinct, wide black rings occypying its subbasal and apical fourths. Middle third of male pronotum with a longitudinal white swelling. Tubercles near hind margin of pronotum round . . . . . **Ph. biannulicornis** Mum. (Figs 53-55)

27(26). 2nd antennal segment without black rings. Male pronotum without a longitudinal swelling. Tubercles near hind margin of pronotum transverse.

28(29). 1st antennal segment longer than width of head, dark brown or nearly black, with white spots at upper side only . . . . . **Ph. arenarius** Mum. (Figs 56-58)

29(28). 1st antennal segment shorter than width of head, pale brown with white spots at all sides, with a pale longitudinal stripe at outer side . . . . . **Ph. undulatus** Reut. (Figs 59-61)

30(25). Hind margin of pronotum without such tubercles or with scarcely distinct ones.

31(32). Hemelytra with dense, erect, mostly pale, but partly brownish hairs. Base of tibiae externally with very long white hairs . . . . . **Ph. zarudnyi** Reut. (Figs 62-64)

32(31). Hemelytra without erect hairs, or erect hairs short and black. Tibiae without long hairs.

33(34). Pronotum along narrowly pale lateral and hind margins with distinct brown lines; the line along hind margin interrupted in the middle and continued cephalad at both sides of a narrow median pale line at least to middle of pronotum. 1st antennal segment much longer than width of head, entirely pale or with small pale brown spots . . . . . **Ph. moira** Lnv. (Figs 65-67)

34(33). Coloration of pronotum different; if a brown line along hind margin present, then it is wavy, or as a wide suffused stripe, or not interrupted in the middle, or not continued cephalad; when pattern of pronotum as in *Ph. moira* (some males of *Ph. kiritschenkoi*), then 1st antennal segment shorter or slightly longer than width of head, with black spots.

35(38). Inner hind corner of corium with an oblique dark brown spot, outwards of the spot pale. 1st antennal segment with few spots and an entire or interrupted ring at apex black or dark brown, shorter or hardly longer than width of head.

36(37). Corium along inner margin with a wide pale brown or brown stripe deeply emarginate at middle; veins of clavus usually bordered with brown. Hind margin of pronotum with brown stripe narrowly interrupted at middle . . . . . **Ph. kiritschenkoi** Popp. (Figs 68-70)

37(36). Corium and clavus without such a pattern, with small brownish spots. Brown stripe along hind margin of pronotum usually interrupted several times or absent . . . . . **Ph. transcaspicus** Stich. (Figs 71-73)

38(35). Corium without such a spot. If 1st antennal segment with black or dark brown markings, then it is much longer than width of head.

39(40). 1st antennal segment pale greyish brown, with numerous, minute, not connecting pale spots at all sides, covered at all sides with numerous erect bristles . . . . . **Ph. incanus** Fieb. (Figs 74-76)

40(39). 1st antennal segment either with dark brown, nearly black pattern, or whitish with a few isolated dark spots, or without dark spots, or with few (4-5) erect bristles at inner side.

41(50). 1st antennal segment white, with contrasting, well-developed black or brown pattern.

42(43). Length of male about 5 mm . . . . . **Ph. suadela** Lnv. (Figs 77-79)

43(42). Length of male not less than 6 mm.

44(45). 1st antennal segment at lower side white, with a short longitudinal dark stripe . . . . . **Ph. arbusticola** Mum. (Figs 80-82)

45(44). 1st antennal segment at lower side entirely or nearly entirely dark brown to black.

46(47). 1st antennal segment of male more than half as long as 2nd. Hind tibiae without dark ring at middle or with a hardly distinct one . . . . . **Ph. sauricus** sp. n. (Figs 1-3)

47(46). 1st antennal segment of male half as long as 2nd. Hind tibiae with a narrow black ring at middle.

48(49). Vesical comb (Fig. 83) with 4 teeth. Antennae shorter (see original description) . . . . . **Ph. quadridens** Mum. (Figs 83-85)

49(48). Vesical comb (Fig. 4) with 3 teeth. Antennae longer . . . . . **Ph. triodontus** Kerzh. (Figs 4-6)

50(41). 1st antennal segment pale brown, with pale spots or entirely pale, or (*Ph. kirgizorum*) with a few dark spots.

51(52). Length of male not more than 6 mm. Upper side of body pale. 1st antennal segment not longer than width of head . . . . . **Ph. parvidens** sp. n. (Figs 7-9)

52(51). Length of male more than 6 mm. Either upper side of body with distinct dark pattern, or 1st antennal segment much longer than width of head.

53(54). 1st antennal segment much longer than width of head, pale brown with white dots in normally coloured specimens. Head, pronotum and scutellum with a longitudinal white stripe . . . . . **Ph. sunti** Putshk. (Figs 10-12)

54(53). 1st antennal segment as long as width of head, white with few brown spots. Head, pronotum and scutellum without distinct longitudinal white stripe . . . **Ph. kirgizorum** sp. n. (Figs 13-15)

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