

**New Palaearctic *Atractomorpha* Sauss. and *Pyrgomorpha* Serv. species
(Orthoptera, Acrididae)**

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ACRIDIDAE — PYRGOMORPHINAE

***Atractomorpha* Sauss.**

Atractomorpha Saussure, Ann. Soc. Ent. France, (4) i. p. 474 (1861); Stål, Recens. Orth., i. p. 10 (1873); Bolivar, An. Soc. Espan., xiii. p. 23, 63, 495 (1884); Bolivar, Gen. Ins. Orth., Acrid. Pyrg., p. 39 (1909); Jacobson & Bianchi. Prem. i. Lozhn. Ross. Imp., pp. 171, 198, 289 (1902); Kirby, Trans. ent. Soc. Lond., p. 57 (1902).

Identification key to Palaearctic species

- 1 (6) Projecting section of metathoracic sternite wide (between articulation of middle pair of legs) (fig. 1:A).
- 2 (3) Preocellar section (tip) of vertex at least one and a half times longer than wide. Anterior rim of lateral lobes of pronotum straight, lower third of posterior rim arcuately excised, otherwise straight (fig. 1:D) (Manchuria).
..... *heteroptera* B.-Bienko
- 3 (2) Preocellar section (tip) of vertex at most 1,2 to 1,3 longer than wide. Anterior rim of lateral lobes of pronotum slightly or strongly concave, lower third of posterior rim either whole or excised below, but never straight beyond.
- 4 (5) Posterior and lower margins of lateral lobes of pronotum subtending an angle of 45—50°; median section of posterior rim straight (fig. 1:B). Hind wings hardly shorter than tegmina; when at repose, considerably protruding beyond knees of posterior legs (= *aurivilli* Bol.) (East and North China, South and East Africa).
..... *sinensis* Bol.
- 5 (4) Posterior and lower margins of lateral lobes of pronotum subtending an angle of 85—90°; median section of posterior rim not straight (fig. 1: E). Hind wings considerably shorter than tegmina: when at repose extending to tip of posterior legs (Japan) *nipponica*, nov. sp.
- 6 (1) Projecting section of metathoracic sternite narrow (between articulation of middle pair of legs) (fig. 1:C).
- 7 (8) Tip of vertex narrow, conspicuously and strongly tapering anteriorad, at least 1.5—1.7 times longer than wide (fig. 1: F). Base of antenna at a greater distance from ocellus than width of first joint (= *badeli* Bol.) (North China, Ruk. Island, Korea, Formosa, Japan)..... *lata* Motsh.

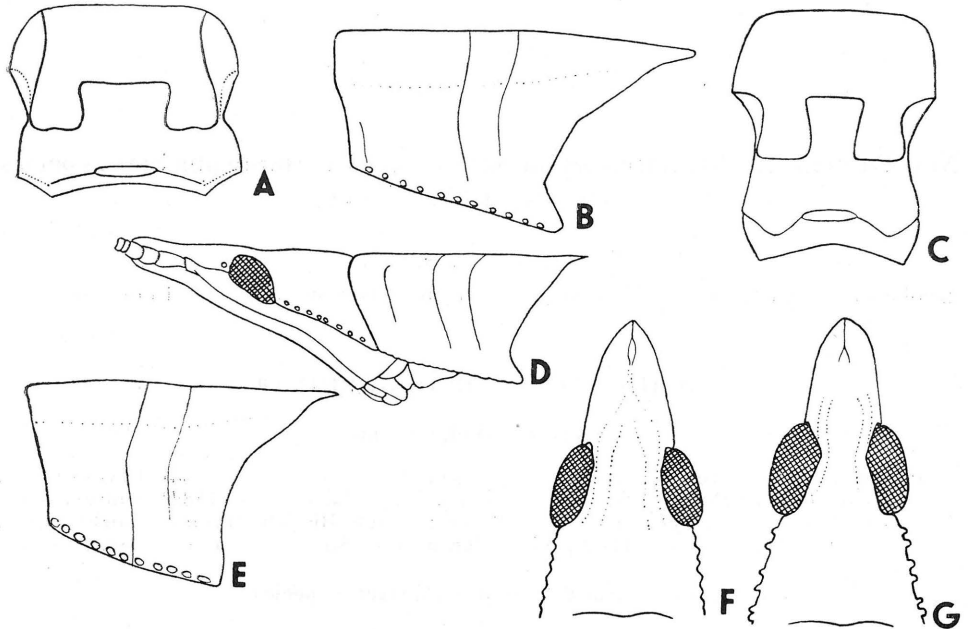


Fig. 1. A: thoracic breast-plate of *Atractomorpha sinensis* Bol., B: lateral pronotal lobes, laterally, of same. — C: thoracic breast-plate of *A. lata* Motsh. — D: head and pronotum, laterally, of *A. heteroptera* B.-Bienko. — E: lateral pronotal lobe, laterally of *A. nipponica*, nov. sp. — F: head, from above, of *A. lata* Motsh., and G: *A. crenulata* Fabr.

- 8 (7) Tip of vertex short, only slightly tapering anteriorly, at most 1.2—1.3 longer than wide (fig. 1:G). Antennae articulated nearer to ocelli than width of first joint.
- 9 (10) Tegmina short: extending beyond knees of hind legs by only a fourth of their length; hind wings not shorter than tegmina (East Afghanistan) *externa* B.-Bienko
- 10 (9) Tegmina long: extending over knees of hind legs by a third of their length; hind wings shorter than tegmina.
- 11 (12) Antennae only slightly longer than length of pronotum; their bases removed further from ocellus than half width of first joint (North, East, and Central China, Formosa) *ambigua* Bol.
- 12 (11) Antennae considerably longer than length of pronotum; their bases nearer to ocellus than half width of first joint (China, India, Ceylon, Siam, Malay Peninsula, Java, Africa) *crenulata* Fabr.

***Atractomorpha nipponica*, n. sp.**

(fig. 2: A—G)

Head, when viewed from above, triangular, pointed, ocelli oval, situated almost in central section of vertex. Preocellar section of vertex (tip) 1,2 to 1,3 times longer than wide, strongly projecting, undivided above, a slight constriction visible in central section. A paired hollow each in front of articulation of antennae, laterally and frontally. In lateral median line of head, a strongly projecting row of protuberances between eyes and lateral lobe of pronotum, continuing on lower margin of pronotum. Some few (1—1 on vertex) or more (facially) irregularly scattered protuberances, in shape and size similar to former ones.

Antennae articulated between (and about centrally of) eyes and termination of tip of head; 12-segmented. Joint 1 long, about as long as combined lengths of joints 4 and 5. Two transverse grooves on surface of joint 3, but all three, somewhat disjointed, portions are counted as one. Last joint long, longer than combined lengths of joints 9—11.

Surface of pronotum finely uneven, slightly and transversally rugulose; divided by two transverse grooves into pro-, meso-, and metazones. Prozone, when viewed from above almost as long as metazone. Mesozone considerably

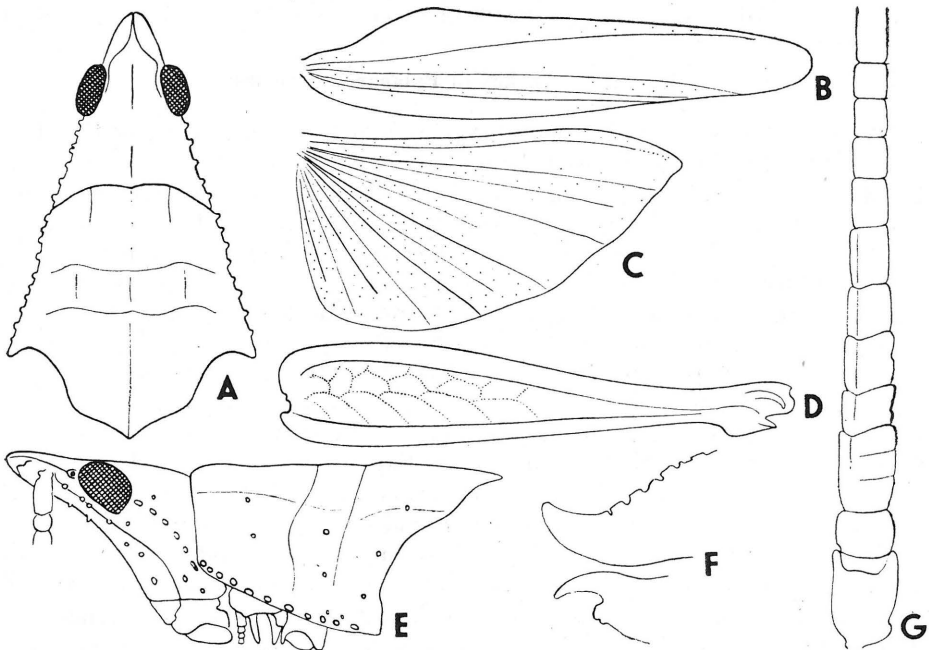


Fig. 2. *Atractomorpha nipponica*, nov. sp. A: head and pronotum, from above, B: tegmen, C: hind wing, D: hind femur, E: head and pronotum, laterally, F: terminal spines of female abdomen, and G: antennae, laterally.

narrower, about one-third of metazone. Median and lateral ridges of pronotum only slightly visible; anterior (cephalad) rim of lateral lobes (laterally deflected portion of pronotum) slightly concave, lower rim weakly convex (ornamented by a row of 11—13 protuberances, continuing on mesothorax), posterior-inferior corner rounded, lower and posterior margins subtending an angle of about 85—90°; posterior margin excised.

Tegmina long; when at repose extending, by one-fifth of their lengths, over tip (knee) of hind femur, laid along abdomen. Hind wing slightly projecting beyond end of abdomen, but shorter than tegmen. Costal field of latter characteristically and strongly broadening; long, narrow. Radial veins of hind wing pink.

Length of body: 24 mm, tegmen: 21, hind femur: 13, hind tibia: 12, antenna: 6 mm.

Holotype female: Shikoku, Japan; deposited in the Natural History Museum, Budapest. The specimen was found in the course of identification of some unexamined, palaearctic material in the Orthoptera Collection. Presumably, the specimen originates from the collectings of Xántus, in the years 1901—1910.

Pygomorpha Serv.

Pygomorpha Serville, Ins. Orth., p. 583 (1839); Fischer, Orth. Eur., p. 303 (1853); Fieber, Lotos, iii. p. 97 (1853); Stål, Recens. Orth., i. p. 10 (1873); Bolivar, Bol. Soc. Esp. Hist. Nat., iv. p. 451 (1904); Brunner, Prodr. Eur. Orth., pp. 85, 185 (1882).

Identification key of Palaearctic species

- 1 (12) Tegmina shortened, when at repose failing to reach posterior tip of hind femur laid alongside abdomen.
- 2 (3) Anterior section (prozone) of lateral lobe (laterally deflected portion) of pronotum almost twice as wide as posterior section (metazone) of same portion. An Asiatic species (= *brevipennis* Bol.) (Azerbaijan, Armenia, Gruzia, Asia Minor, Iran, Syria) *guentheri* Burr.
- 3 (2) Anterior section of lateral lobe of pronotum never more, and often even less, than one and a half times wider than posterior zone. African species.
- 4 (5) Femur of posterior leg thick, three times longer than wide (fig. 5:B) (Morocco, Atlas Range) *montigena* Charp.
- 5 (4) Femur of hind leg narrow, four times longer than wide (Fig. 5: A).
- 6 (7) Tip (knee) of hind femur terminating in sharp point below (fig. 5:C) (Morocco) *acutegeniculata* Bol.
- 7 (6) Tip of hind femur terminating in rounded portion below (fig. 5:D).
- 8 (9) Pronotum strongly lengthened, prozone one and a half times longer than wide (Morocco) *procera* Bol.
- 9 (8) Pronotum less elongate, prozone as long as wide or but slightly longer.
- 10 (11) Lateral and median ridges of pronotum well visible, disconnection discernible only on lateral margins among weakly protruding ribs; posterior margin of lateral lobes, when viewed laterally, strongly excised (fig. 3:A) (Morocco) *maruxina maruxina* Bol.

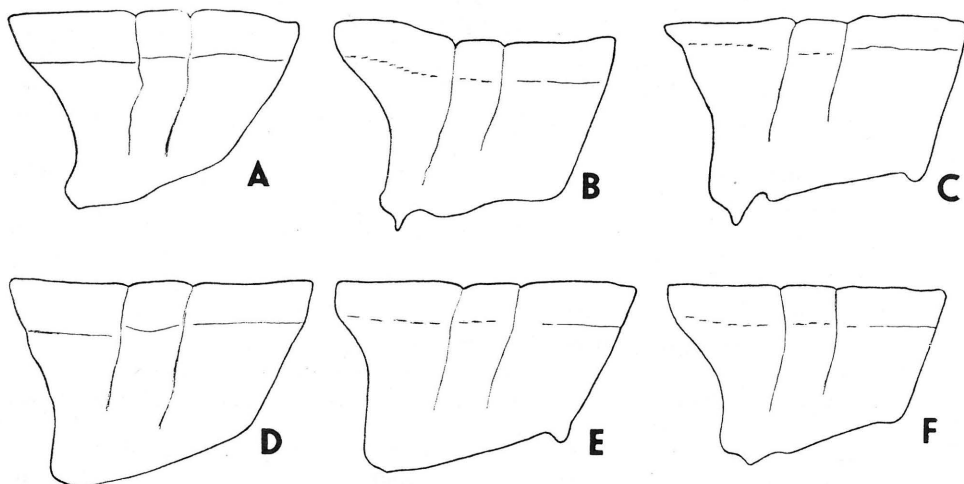


Fig. 3. A: lateral pronotal lobe, laterally, of *Pyrgomorpha maruxina maruxina* Bol., B: of *P. cognata* Krauss, C: of *P. pyrga*, sp. nov., D: of *P. conica conica* Ol., E: of *P. conica mongolica* Sjöstedt, and F: of *P. conica deserti* B.-Bienko.

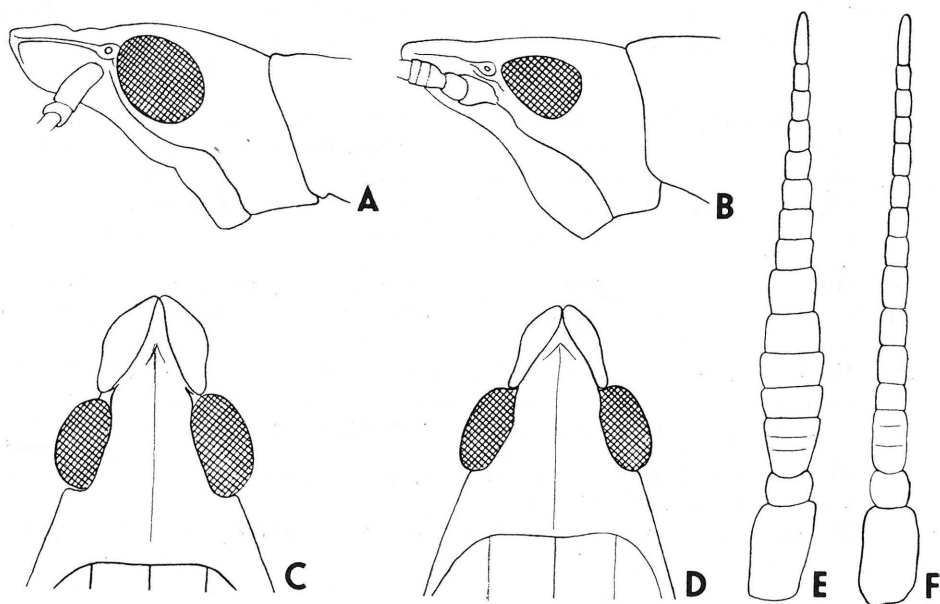


Fig. 4. A: Head, laterally, of *Pyrgomorpha kazahstanica*, sp. nov., and B: *P. conica conica* Ol. — C: head, from above, of *P. conica conica* Ol., and D: *P. conica deserti* B.-Bienko. — E: antenna, of *P. conica deserti* B.-Bienko, and F: *P. cyprica*, nov. sp.

- — Bolivar mentions a subspecies, too, accompanied also by a note, but it cannot be inserted in the Key (Morocco).....
 *maruxina ifniensis* Bol.
- 11 (10) Lateral and median ridges of pronotum indistinct, like a series of points, densely interrupted (Morocco) *candidina* Bol.
- 12 (1) Tegmina well developed, protruding, when at repose, beyond tip of hind femur laid alongside abdomen.
- 13 (14) Femur of hind leg thrice longer than wide (Morocco)..... *lepineyi* Charp.
- 14 (13) Femur of hind leg at least four times longer than wide.
- 15 (18) An acute-angled, tooth-shaped, well discernible process on anterior corner of postero-inferior truncate corner of lateral pronotal lobe.
- 16 (17) Anterior section of lateral lobe of pronotum twice as wide as posterior section (fig. 3:B) (North Africa) *cognata* Kraus
- 17 (16) Anterior section of lateral lobe of pronotum only one and a half times as wide as posterior section (fig. 3:C) (Cyprus) *pyrga*, n. sp.
- 18 (15) No acute-angled, tooth-shaped process on anterior corner of postero-inferior truncate corner of lateral pronotal lobe; instead, a minute, obtuse-angled protuberance on rounded, anterior portion of corner.
- 19 (20) Antennae 17-jointed, or even more. On forehead, ribs between antennae and eyes as well as bases of antennae high; former, when viewed from above, strongly curved, arching below eyes (fig. 4:A) (Kazakhstan)
 *kazakhstanica*, n. sp.
- 20 (19) Antennae 13—16-jointed. On forehead, ribs between antennae and eyes as well as antennal bases low; former, when viewed laterally, only weakly arcuate, extending at most to anterior margin of eyes (fig. 4:B).
- 21 (22) Hind wing, when at repose, shorter than abdomen (Morocco)
 *agarena* Bol.
- 22 (21) Hind wing, when at repose, as long as, or but slightly shorter than, abdomen.
- 23 (26) Projecting section of metathoracic sternite between articulation of second pair of legs wide (fig. 5:E).
- 24 (25) Hind wing, when at repose, nearly or just as long as tegmen (Algiers)
 *vosseleri* Uv.
- 25 (24) Hind wing, when at repose, shorter than tegmen (Morocco) *miniata* Bol.
- 26 (23) Projecting section of metathoracic sternite between articulation of second pair of legs narrow (fig. 5:F).
- 27 (28) Median and lateral vidges of pronotum weak, hardly discernible (Algiers)
 *laevigata* Wern.
- 28 (27) Median and lateral ridges of pronotum strongly protruding from level of plate, all well visible.
- 29 (30) Head compressed; vertex shorter than length of eyes (fig. 8:A, D). Antennal joints even, like a string of beads (fig. 4:F) (Cyprus) *cyprica*, n. sp.

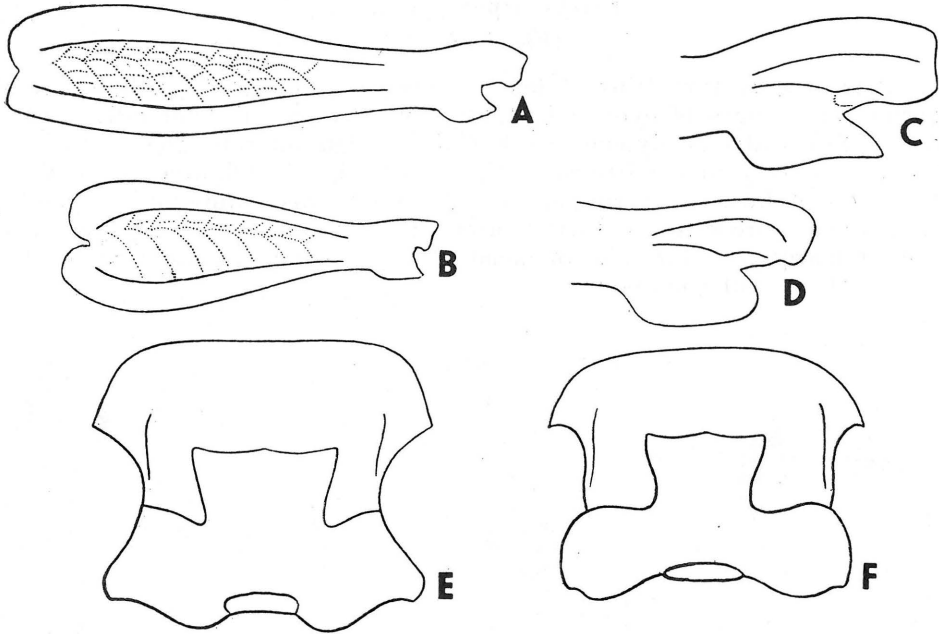


Fig. 5. A: femur of hind leg of *Pyrgomorpha procera* Bol., and B: *P. montigena* Charp. — C: tip of hind femur of *P. acutigeniculata* Bol., and D: *P. procera* Bol. — E: thoracic breast-plate of *P. vosseleri* Uv., and F: *P. conica conica* Ol.

- 30 (29) Head elongated; vertex longer or at least as long as length of eyes (fig. 8:B, C). Antennae discernibly tapering, from wide base toward median portion (fig. 4:E)..... *conica* Ol.
- a (d) Median vidge of pronotum sharp, conspicuously and highly projecting from surface of pronotum; lateral ridges well visible also in metazone.
- b (c) Antennae short, wide, 13-jointed (weakly divided 3. joint counted as one). No obtuse-angled protuberance on postero-inferior corner of lateral lobe of pronotum (fig. 3:D). Vertex conspicuously constricted immediately in front of anterior margin of eyes, (fig. 4: C) (South Europe, North Africa) *conica conica* Ol.
- c (b) Antennae long, 15—16-jointed. A frequently occurring obtuse-angled protuberance on postero-inferior corner of lateral lobe of pronotum (fig. 3:F). No constriction at anterior margin of eyes on vertex (fig. 4: D) (Azerbaijan, Armenia, Central Asia, Samarkand, Kazakhstan, Iran, North Afghanistan) *conica deserti* B.-Bienko
- d (a) Median ridge of pronotum blunt, hardly protruding from surface of pronotum; lateral ridges indistinct in metazone. A conspicuous, obtuse-angled protuberance on anterior corner of postero-inferior corner of lateral pronotal lobe; its inferio-anterior corner excised (fig. 3:E) (Kazakhstan, Mongolia)..... *conica mongolica* Sjöstedt

Pygomorpha pyrga, n. sp.

(Fig. 6: A—G)

Preocellar section (tip) of head projecting; when viewed from above shorter than length of eyes and slightly longer than wide; laterally, vertex convex, forehead strongly concave. Facial ribs high, interantennal pair of ribs decurrent, closely adjacent to each other: below tip of head, diverging in front of central ocellus; other rib-pair, originating between antennae and eyes, emitted below preocellar ocelli, and, arching below eyes, extending along their anterior margin to lower rim of facial plate. Eyes large, convex, somewhat pointed above, flattened below.

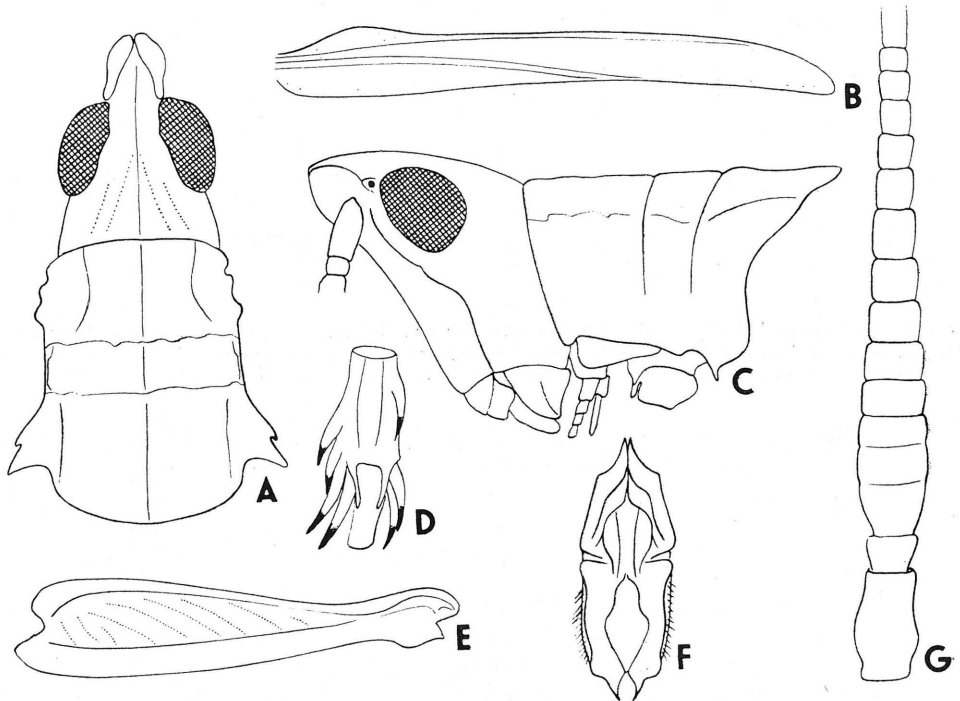


Fig. 6. *Pygomorpha pyrga*, nov. sp. A: head and pronotum, from above, B: tegmen, C: head and pronotum, laterally, D: tip of hind tibia, E: hind femur, F: abdominal end, posteriorly, and G: antennae.

Antennae originating below upper ocellus, near it and also near the eye; 16-jointed. First joint somewhat longer than wide, longer than combined lengths of joints 4-5; two transverse grooves on surface of joint 3 (hence tripartite, but still counted as a single joint), almost as long as joints 4-6 combined.

Surface of pronotum uneven, rough, median ridge twice interrupted, well discernible; lateral ridges whole and traceable only in prozone. Prozone and

metazone of equal length when viewed from above; mesozone about one-third of pro- or metazone. Viewed laterally, anterior margin of lateral lobe (deflected section of pronotum) straight; its antero-inferior corner rounded, slightly reclinate. Posterior corner of inferior rim truncate, with a toothshaped projecting process on its anterior portion. Posterior rim of lateral lobe first straight then reclinate. Prozone and metazone, when viewed laterally, not equally wide former twice as wide as latter one.

Tegmina projecting, when at repose, far beyond end of abdomen and tip of hind femur laid alongside abdomen. Hind wings slightly longer than tegmina. Tegmen long, narrow, of a slightly curved blade shape. Hind wing colourless.

Length of body: 22 mm; tegmen: 20; hind femur: 11; hind tibia: 10; antennae: 5,5 mm.

Holotype female: Cyprus, Larnaka, May 1901, legit Glaszner. Deposited in the Zoological Department of the Hungarian Natural History Museum.

Pyrgomorpha kazahstanica, n. sp.

(Fig. 7: A—G)

Preocellar section (tip) of head when viewed from above, bearing conspicuous, projecting ribs, Median rib, extending anteriorad from frontal rim of pronotum, dissolves into facial plate, approximately in medial section, between

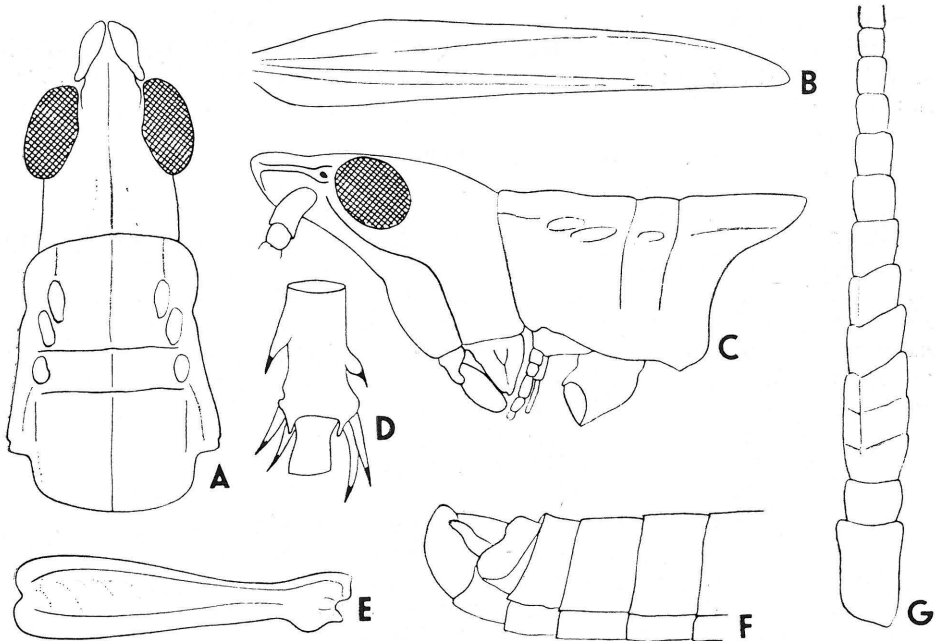


Fig. 7. *Pyrgomorpha kazahstanica*, nov. sp. A: head and pronotum, from above, B: tegmen, C: head and pronotum, laterally, D: tip of hind tibia, E: hind femur, F: abdominal end, laterally, and G: antennae.

eyes and tip of head. A lateral rib, extending also anteriorad from median portion of eyes, uniting with recurrent section of rib of lateral margin. Combined ribs of median portion shaped like an arrow. Also facial ribs slightly lamellar. Rib originating between antennae and eyes strongly arcuate to below eye, and subsequently to another curve, terminating in lower border of facial segment. Eyes large, nearly of a regular, elliptical, shape.

Antenne emitted below upper ocellus, in front of eye; 17-jointed.

Median ridge of pronotum easily discernible; lateral edges indistinct. When viewed from above, sites of lateral ridges of prozone occupied on both sides by a pair of hollows with black margins (I was unable to decide whether they represent actual structural elements or the traces of injuries suffered in earlier, larval stages). Beside and behind oval hollows, also further, similar ones discernible, with light bases and dark edges. Three pairs of hollows in identical sites. Anterior rim of lateral lobe of pronotum straight; its antero-inferior corner rounded; lower rim slightly sinuous, posterior corner truncate. In anterior portion of truncate section, an obtuse-angled process. Laterally, prozone one and a half times wider than metazone.

Tegmina long, extending considerably beyond end of abdomen and tip of hind femur. Hind wings slightly shorter than tegmina, but also projecting over end of abdomen and hind femur. Tegmen narrow, long; hind wing colorless.

Length of body: 17,5 mm; tegmen: 15; hind femur: 9; hind tibia: 8,5; antenna: 7,5 mm.

Holotype male: Alma Ata, Kazakhstan, USSR, July, 1955, legit N. Skopin. Deposited in the Zoological Department of the Hungarian Natural History Museum.

Pygomorpha cyprica, n. sp.

(Fig. 8: A, D)

Head, when viewed from above, largely of an equilateral triangle shape, short. Tip of head short, wider than long. Eyes rounded: situated in median section of visible (not covered by pronotum) facial section. Median ridge of pronotum continuing also in central section of head. Vertex constricted immediately in front of eyes, but closely compressed to anterior corner of eye, hence not or hardly discernible. Laterally, head strongly compressed, vertex convex, about one-fourth as long as other parts of head. Ribs between antennal bases and eyes wide, low; forehead slightly concave.

Antennae 15-jointed (weakly divided third joint counted as one); joints uniform, shaped like string of beads. First joints slightly triangular, subsequent ones cylindrical. Ultimate joint somewhat elongate.

Median ridge of pronotum, disregarding two transverse constrictions, undivided, uniform, well discernible. Lateral ridges sinuous in prozone, arched in mesozone, straight in metazone. Laterally, anterior rim of lateral lobe of pronotum somewhat convex, its antero-inferior corner broadly rounded. Inferior rim undulate, its posterior corner truncate, with an obtuse-angled process anteriorly. Posterior rim broadly excised.

Tegmina long; when at repose, projecting, over abdomen and tip of hind

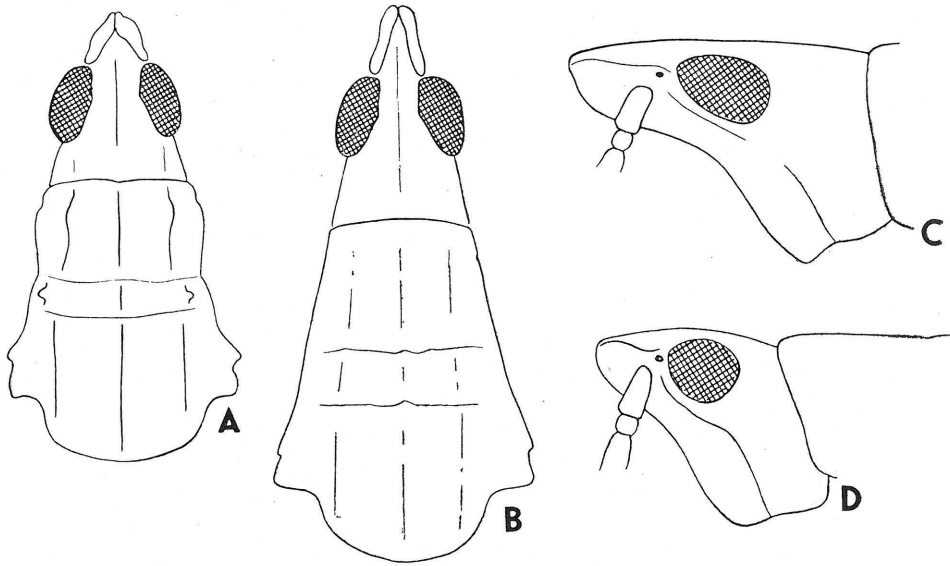


Fig. 8. A: head and pronotum, from above, of *Pyrgomorpha cyprica*, nov. sp., and: B: *P. conica deserti* B.-Bienko. — C: head, laterally, of *P. cyprica*, nov. sp., and D: *P. conica deserti* B.-Bienko.

femur laid alongside abdomen. Hind wing hardly shorter than tegmen, colorless.

Length of body: 21 mm; tegmen: 19; hind femur: 10,5; hind tibia: 10; antenna: 4,5 mm.

Holotype and one paratype female: Larnaka, Cyprus, May 1901, legit Glaszner. Deposited in the Zoological Department of the Hungarian Natural History Museum, Budapest.

(Comparison and separation [differential diagnoses] of the new taxa described above to be found in the keys of identifications).

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