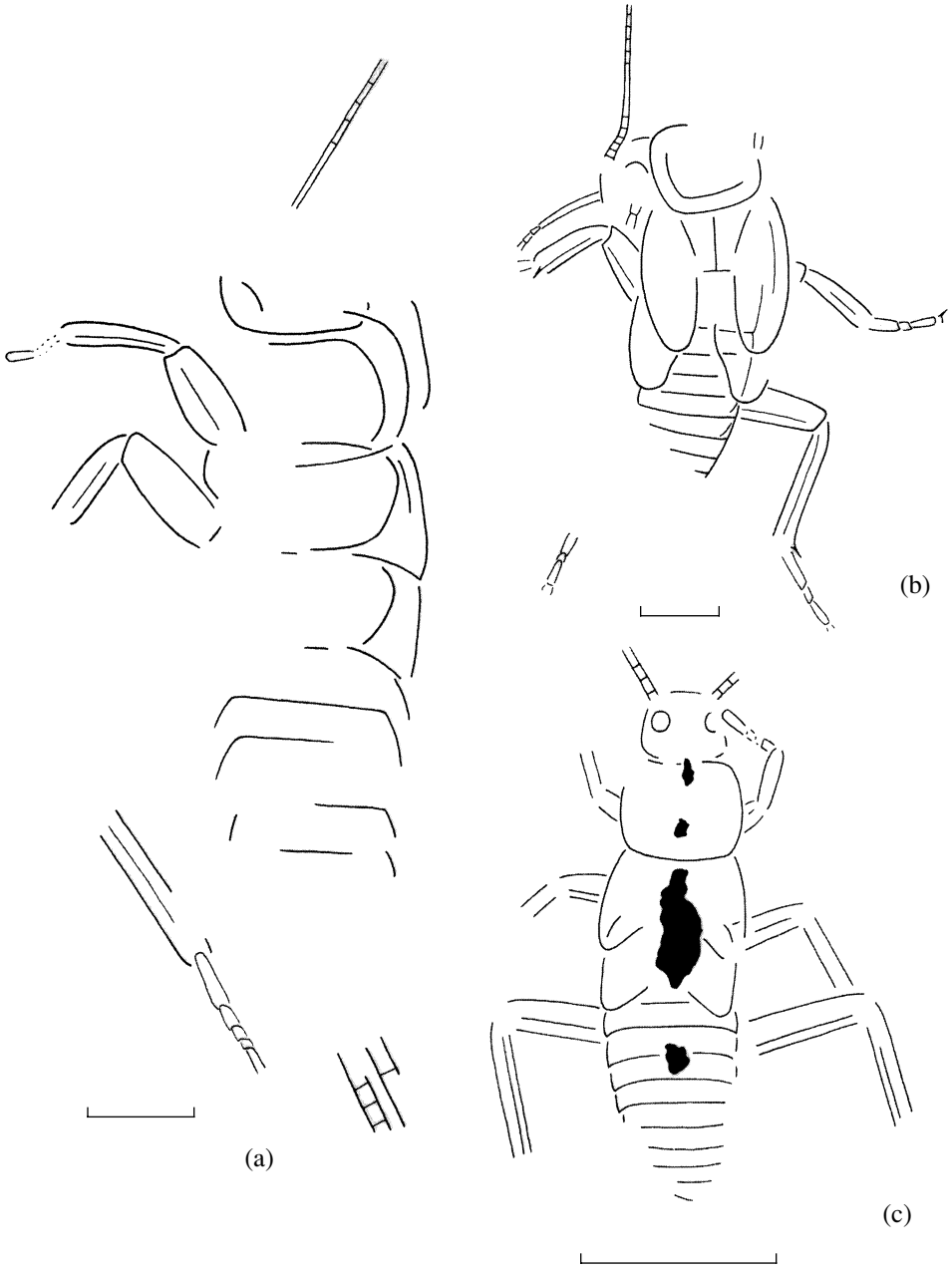

Fig. 35. Representatives of the genus *Tshekardites* gen. nov.: (a) *Tsh. bardensis* sp. nov., holotype PIN, no. 4902/11, nymph, general appearance; (b) *Tsh. comitialis* sp. nov., holotype SGM, KP-769-6, nymph, general appearance; (c) *Tsh. lientericus* sp. nov., holotype PIN, no. 4987/46, nymph, general appearance. Scale bar 2 mm in Fig. 35a, 3 mm in Fig. 35b, and 5 mm in Fig. 35c.

pronotum is large and quadrangular, with weakly concave anterior margin and weakly convex lateral and posterior margins. The mesonotum is transverse, the forewing sheath has a convex anterior margin, acuminate apex, and concave posterior margin, and is reaching the basal third of the hindwing sheath. The latter has anterior and posterior margins that are both straight and an acuminate apex and is reaching the second abdominal segment. The forelegs are short, the middle legs are longer, and the hind legs are elongated. The fore femur, tibia, and tarsus are equally long. The abdomen is short, the paranotalia are short, with weakly attenuated backward posterior corners.

Measurements, mm: Body length, 13.

Comparison. This new species differs from *Tsh. bardensis* sp. nov. in having more developed wing sheaths combined with being smaller and having longer fore tarsi. From *Tsh. comitialis* sp. nov., it differs in longer hind legs and the posterior corners of the abdominal tergites being drawn out.

R e m a r k. The gut contents are visible against the body.

M a t e r i a l. Holotype.

***Tshekardites calcomessor* Aristov, sp. nov.**

E t y m o l o g y. From Latin *calculus* (pebble) and *comessor* (consumer).

H o l o t y p e. PIN, no. 4987/47, part and counterpart of satisfactorily preserved nymph without abdomen; Yulaevo locality; Kungurian, Koshelevka Formation.

D e s c r i p t i o n (Fig. 36a). The head is large, narrowing posteriorly, and is as long as it is wide, the eyes are large, the antennae are long, the first antennomere is enlarged, the others widen apically, basal antennomeres are as long as they are wide, distal antennomeres are elongated. The pronotum is as long as it is wide and narrows posteriorly. The forewing sheaths are diverging, their anterior margins are convex, the apices are acuminate, the posterior margins are sinuous; the anterior margins of the hindwing sheaths are convex. The legs are not elongated, the forelegs are the shortest, the hind legs are the longest. In the fore- and middle legs, the femora and the tarsi are longer than the tibiae; in the hind legs, the tibiae are not shortened. The middle and hind tibiae are widened apically. The tarsi are three-segmented, the second tarsomere is the shortest, the third segment has a pair of claws and an arolium.

M e a s u r e m e n t s, mm: Length of body without abdomen, 19.

C o m p a r i s o n. It differs from the species above described in the combination of the large eyes, narrowing posteriorly pronotum, short middle tibiae, and three-segmented tarsi.

M a t e r i a l. Holotype.

***Tshekardites curculiuculus* Aristov, sp. nov.**

E t y m o l o g y. From Latin *curculiuculus* (a small bug).

H o l o t y p e. PIN, no. 4987/48, part and counterpart of nymph without abdomen tip; Tshekarda locality; Kungurian, Koshelevka Formation.

D e s c r i p t i o n (Fig. 36b). The head is large, the antennae are wide and shorter than the body, antennomeres widen apically, basal antennomeres are wider than long, distal antennomeres are elongated. The pronotum is wider than it is long, trapezoidal, and narrowing posteriorly; the anterior margin is straight. The mesonotum is slightly wider than it is long, the metanotum is quadrangular. All legs are equally long, and the hind femora are wider than the others. The tibiae do not widen apically and are longer than the tarsi, the tarsi are three-segmented, the second tarsomere is the shortest. The abdomen is as wide as the thorax.

M e a s u r e m e n t s, mm: Body length, about 11.

C o m p a r i s o n. This species is closest to *Tsh. calcomessor* sp. nov., from which it differs in its transverse pronotum, neither shortened nor widened apically fore and middle tibiae, and in its legs being equally long.

M a t e r i a l. Holotype.

***Tshekardites gracilis* Aristov, sp. nov.**

Plate 7, fig. 4

E t y m o l o g y. From Latin *gracilis* (slender).

H o l o t y p e. PIN, no. 1700/2149, part and counterpart of satisfactorily preserved complete nymph without abdomen tip; Tshekarda locality; Kungurian, Koshelevka Formation.

D e s c r i p t i o n (Figs. 36c, 37a). The head is large, the epicranial suture connects to the frontal sutures, the antennae are longer than the body, the first two antennomeres are enlarged, basal antennomeres are as long as they are wide, distal antennomeres are elongated. The pronotum is transverse, with rounded margins; the paranotalia are narrow. The mesonotum is trapezoidal and is wider than it is long, its anterior margin is straight and its lateral margins are convex. The forewing sheaths reach the end of the first abdominal segment, their anterior margins are convex, the apices are obtuse, and their posterior margins are concave. The metanotum is having a straight anterior margin and convex lateral margins. The hindwing sheaths reach the second abdominal segment, their both anterior and posterior margins are straight and apices are obtuse. The legs are elongated and slender, the forelegs are the shortest, the hind legs are the longest. The fore and middle femora, tibiae and tarsi are subequally long, the tarsi are slender, the first tarsomere is about one-third of its entire length. The hind legs are elongated, the tibiae are longer than the femora and slightly widen apically. The tarsi are as long as the femora, five-segmented, the first tarsomere is the largest, the fourth tarsomere is the smallest. The abdomen is rather long, posterior corners of tergites are not drawn out, the cerci are short and wide.

M e a s u r e m e n t s, mm: Body length, 10–18.5.

C o m p a r i s o n. It differs from other species in the combination of slender antennae, the transverse pronotum, slender and unequally long legs, and five-segmented tarsi.

R e m a r k. Food remains are visible against the paratype abdomen.

M a t e r i a l. Besides the holotype, paratype PIN, no. 4987/49 from the same locality.

Genus *Sylvaclinicus* Aristov, gen. nov.

E t y m o l o g y. From the Sylva River and Latin *clinicus* (a pallbearer).

T y p e s p e c i e s. *S. echinatus* sp. nov.

D i a g n o s i s. Stocky nymphs. Head small, with large eyes. Pronotum not large, trapezoidal, and narrowing posteriorly; paranotal ring transverse, with heavily attenuated and acuminate lateral margins. Legs

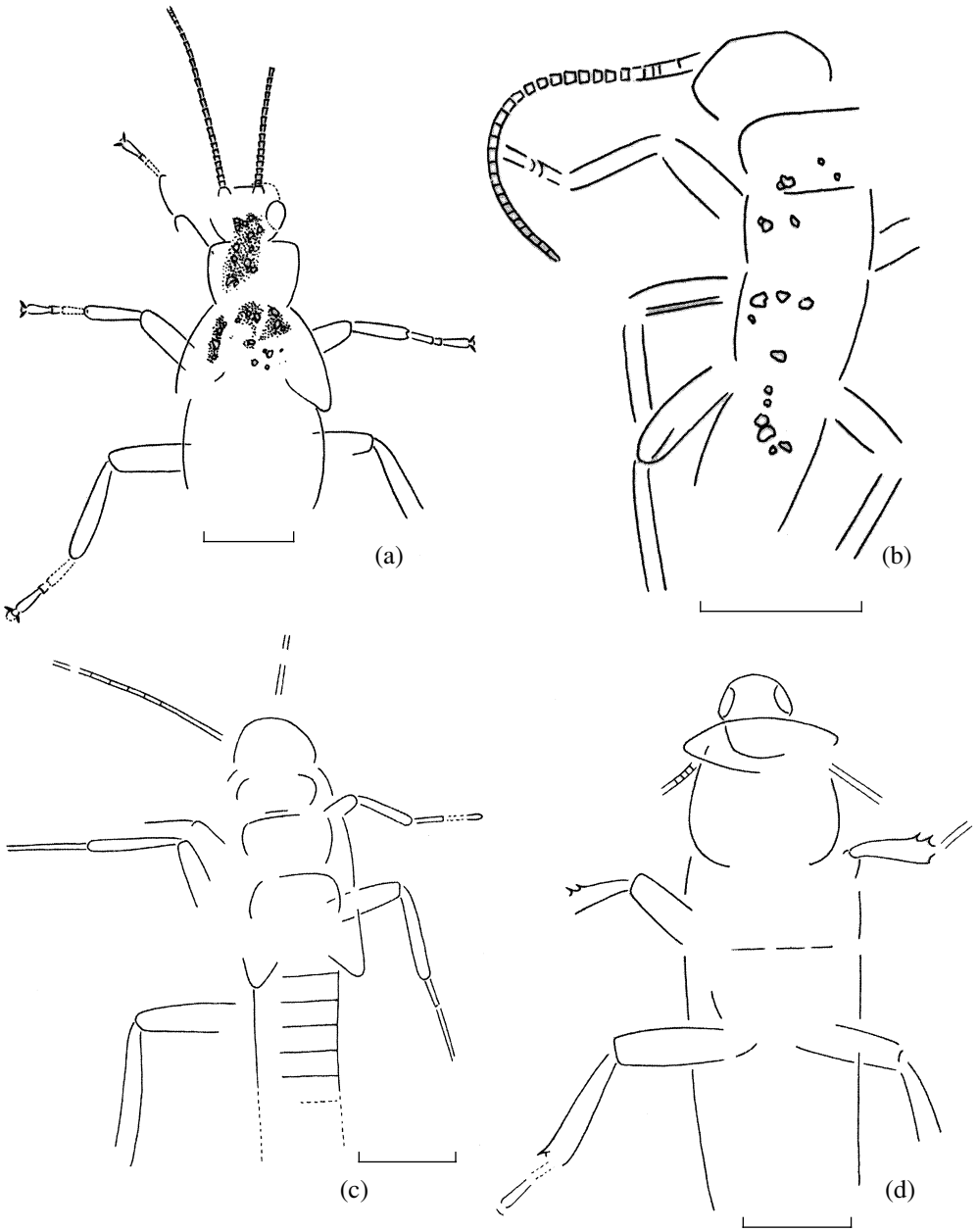

Fig. 36. Nymphs of grylloblattid insects, general appearance: (a) *Tshekardites calcomessor* sp. nov., holotype PIN, no. 4987/47; (b) *Tshekardites curculiuculus* sp. nov., holotype PIN, no. 4987/48; (c) *Tshekardites gracilis* sp. nov., holotype PIN, no. 1700/2149; (d) *Sylvaclinicus echinatus* sp. nov., holotype PIN, no. 1700/2190. Scale bar 5 mm in Fig. 36a, 2 mm in Fig. 36b, 3 mm in Fig. 36c, and 2 mm in Fig. 36d.

stout, with wide femora and strongly widened apically tibiae that are armed with large spines; tarsi short.

Species composition. Type species.

Comparison. This insect differs from all known grylloblattid nymphs in its paranotal ring having heavily attenuated and acuminate lateral margins and in the strongly widened apically tibiae bearing large spines.

***Sylvaclinicus echinatus* Aristov, sp. nov.**

Plate 7, fig. 2

Etymology. From Latin *echinatus* (spiny).

Holotype. PIN, no. 1700/2190, positive impression of satisfactorily preserved nymph without a part of abdomen; Tshekarda locality; Kungurian, Koshelevka Formation.

Description (Fig. 36d). The antennae seem to be short, antennomeres are as long as they are wide.

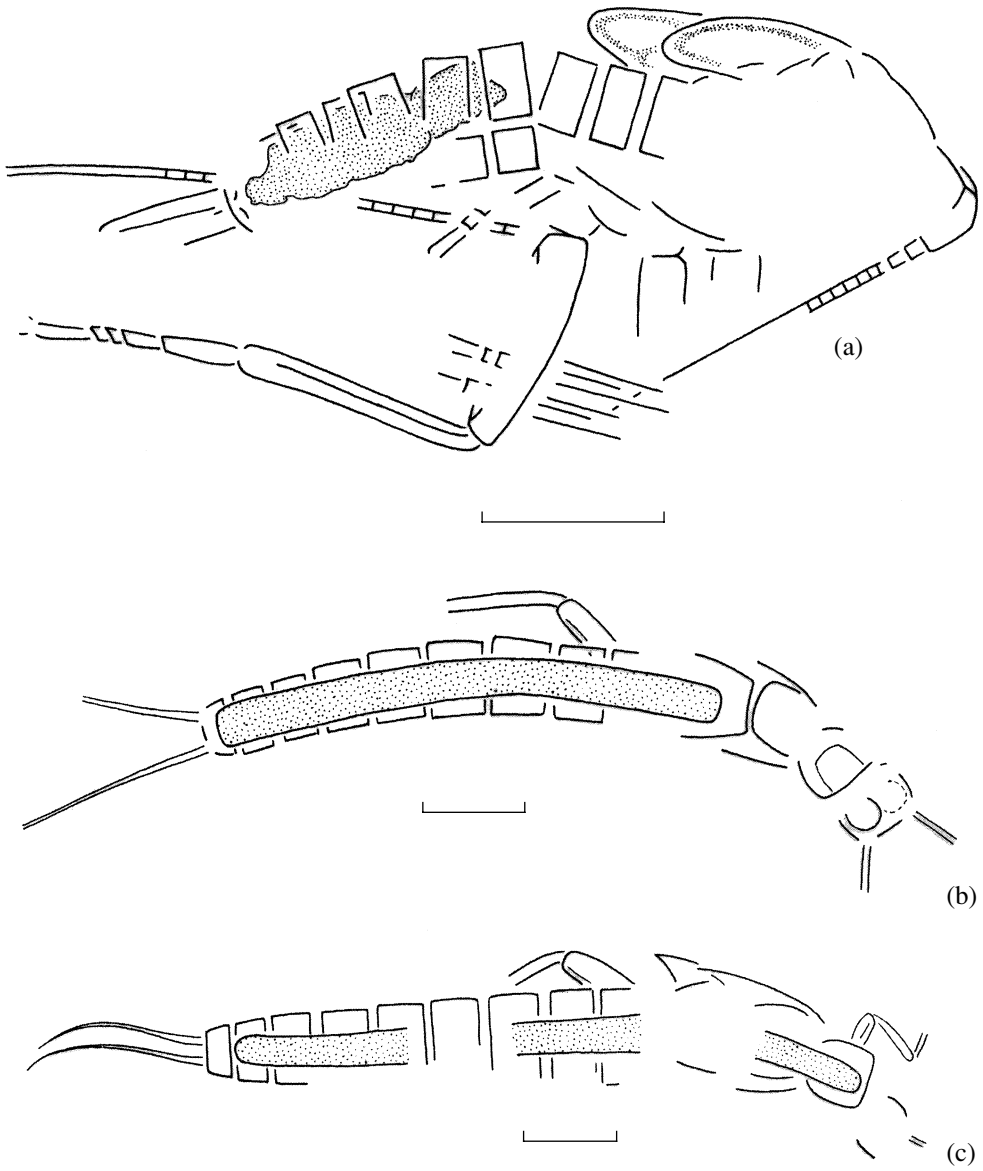

Fig. 37. Nymphs of grylloblattid insects, general appearance: (a) *Tshekardites gracilis* sp. nov., paratype PIN, no. 4987/49; (b, c) *Permedax effertus* sp. nov.: (b) holotype PIN, no. 1700/1988; (c) paratype, PIN, no. 1700/1987. Scale bar 5 mm in Fig. 37a and 2 mm in Figs. 37b and 37c.

The mesonotum is large, slightly wider than it is long, and slightly narrowing anteriorly, its posterior corners are rounded. The metanotum is transverse, the hind coxae are large, the hind tarsi are apparently three-segmented, the third tarsomere is the largest and widens apically. The abdomen is wide.

Measurements, mm: Body length, 12–13.

Material. Holotype.

Genus *Permedax* Aristov, gen. nov.

Etymology. From the Permian and Latin *edax* (voracious).

Type species. *P. effertus* sp. nov.

Diagnosis. Nymphs with a strongly elongated body. Head large, with round eyes and slender antennae. Pronotum comparable to head, as long as it is wide, slightly narrowed posteriorly, its anterior margin straight, lateral margins convex. Mesonotum quadrangular, with convex lateral margins, metanotum larger and widened anteriorly. Forelegs small and short, femora twice as wide as tibiae, tarsi short, hind legs much larger. Abdomen very long, its segments wide, cerci slender, rather long, and narrowing apically.

Species composition. Type species.

Comparison. It differs from all known grylloblattid nymphs in having a strongly elongated body.

***Permedax effertus* Aristov, sp. nov.**

Plate 6, fig. 3, Plate 7, fig. 1

Etymology. From Latin *effertus* (filled).

Holotype. PIN, no. 1700/1988, part and counterpart of well-preserved complete nymph; Tshekarda locality; Kungurian, Koshelevka Formation.

Description (Figs. 37b, 37c). The forewing sheath has weakly convex anterior margin and acuminate apex, reaches the metanotum midlength, the hindwing sheath also has acuminate apex. Each of the fore and hind femora has a longitudinal ridge. The width of abdominal segments gradually decreases, starting from the distal third of the abdomen.

Measurements, mm: Body length, 14–15.

Remark. The body cavity is filled with food remains.

Material. Besides the holotype, paratype PIN, no. 1700/1987 from the same locality.

Genus *Sylvamicropteron* Aristov, gen. nov.

Etymology. From the Sylva River, Greek *micron* (small) and Greek *pteron* (wing).

Type species. *S. harpax* sp. nov.

Diagnosis. Medium-sized insects. Head medium-sized and slightly wider than it is long, eyes not large and irregular-shaped, labrum trapezoidal, mandibles stocky and having acute teeth, antennae slender, with elongated segments. Pronotum rounded trapezoidal, with straight anterior and convex lateral and posterior margins. Paranotal ring narrow and even slightly narrower anteriorly. Fore femora wide and strongly elongated. Anterior margin of micropterous wing convex, apex rounded.

Species composition. Type species.

Comparison. This new genus differs from one known micropterous grylloblattid, *Protoblattinella minutissima* Meunier (Protoperlidae) from the Late Carboniferous of France (Storozhenko, 2002), in the straight anterior margin of pronotum and in the fore femora being long.

***Sylvamicropteron harpax* Aristov, sp. nov.**

Etymology. From Greek *harpax* (rapacious).

Holotype. PIN, no. 4987/50, part and counterpart of micropterous insect fragment; Tshekarda locality; Kungurian, Koshelevka Formation.

Description (Fig. 38). The epicranial suture is merged with the frontal one, the parietal sutures reach the eyes. In the forewing, the costal field is twice as wide as the subcostal one and crossed with five simple or dichotomized anterior branches of SC, which is reaching the wing apex; R is straight.

Measurements, mm: Body fragment length, 15; forewing length, 7.5.

Material. Holotype.

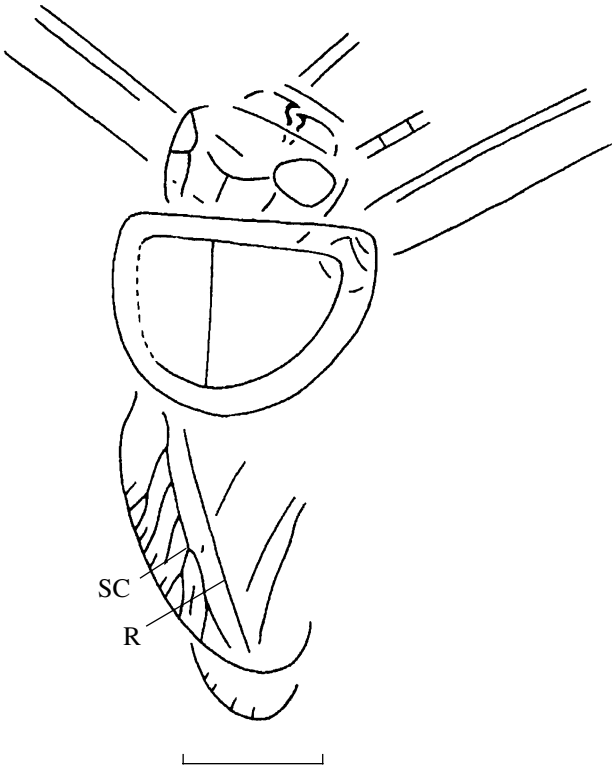

Fig. 38. *Sylvamicropteron harpax* sp. nov., holotype PIN, no. 4987/50, general appearance. Scale bar 3 mm.

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