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### New Iranian Acridoidea

(Ergebnisse der Entomologischen Reisen Willi Richter, Stuttgart, im Iran 1954 und 1956 – Nr. 28)

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The present paper includes description of seven new species and three new sub-species of Acridoidea collected mainly by Mr. W. RICHTER in Iran in 1954 und 1956. These new forms represent only a part of the big collection of Iranian Acridoidea worked out by the author in the collaboration with Mr. W. RICHTER (BEY-BIENKO and RICHTER 1960).

All the types are deposited in the Staatliche Museum für Naturkunde in Stuttgart; some paratypes are left in the Zoological Institute, Academy of Sciences, Leningrad.

The author is most grateful to Mr. W. RICHTER for his interesting material.

#### *Paraconophyma* (?) *subaptera* n. sp.

Iranian Baluchistan: Kuh-i-Taftan, eastern slopes, elev. 2200 m, 10.–12. VI. 1954, 2 ♀♀ (W. RICHTER).

♀. Similar in general habitus and structure to *Paraconophyma* Uv., but wing scales practically absent. Brownish-grey, moderately rugose. Fastigium of vertex relatively narrow, nearly parallel-sided, slightly narrowed anteriorly; frontal costa between antennae flat, scarcely broader than fastigium, slightly narrowed and indistinctly sulcate below median ocellus; vertical diameter of eyes about twice as long as the subocular distance. Pronotum subcylindrical, prozona more than twice as long as metazona, hind margin moderately concave, lateral keels developed in anterior part of prozona only. Lateral parts of metanotum with a smooth spot. Prosternal tubercle relatively broad with roundly obtuse apex; mesosternal lobes scarcely broader than interspace between them. Wings in the form of very small, practically invisible scales. Legs short, hind femora with two dark external fasciae, lower surface yellowish; hind tibiae dirty olive-grey, inner and outer margins with 9 spines. Arolia between tarsal claws small, one third the length of claw. Abdomen less rugose than thorax, sides of basal tergites with dark spot; tympanal organ small, rudimentary, not quite distinct. Cerci small, relatively slender. Ovipositor short, pre-apical emargination of the upper valvae very feeble; basal part of the lower valvae with narrowly rounded external tooth. Length of body 16,5–19; pronotum 3,4–3,6; elytra 0–0,25; hind femora 8–8,8 mm.

Differs well from the species of the genus *Paraconophyma* Uv. in practically absent elytra, structure of prosternal tubercle and rudimentary tympanal organ. This species possibly represents an independent genus of intermediate position between *Paraconophyma* Uv. and *Conophyma* Zub.

#### *Cyclopternacris iranica* n. sp.

Iranian Baluchistan: Hamant-Kuh, 23. IV. 1954, 1 ♂ (W. RICHTER and FR. SCHÄUFFELE).

♂. Greyish-brown. Antennae moderately longer than head and pronotum together, dark brown, median joints about twice as long as broad. Head with distinctly reclinate face, frontal costa parallel-sided, constricted at the fastigium only, surface with shallow punctures, scarcely concave at the ocellus, practically flat. Fastigium of vertex

sloping, considerably longer than broad, surface feebly concave, lateral margins obtusely angulate; vertex between eyes about as broad as the frontal costa at the constriction, with a faint and short median carinula. Pronotum subcylindrical, lateral keels irregular, rugulose, almost obsolete; prozona distinctly tectiform, smooth, half again as long as the metazona, median keel thick, well developed; metazona practically flat, surface scarcely rugulose, median keel low and feeble, hind margin broadly rounded. Lateral lobes of pronotum as long as deep, moderately rugulose. Prosternal tubercle relatively short, conical, blunt. Elytra extending to the base of hind knees, moderately narrowed to the parabolic apex, with dense venation. Wings half again as long as broad with dark veins, indistinctly bluish at the base. Hind femora rather short and broad, upper surface with two dark fasciae, not reaching to the outer area, inner side black in basal half and pale in apical part, with black pre-apical fascia, knee blackened on both sides; lower surface crimson-red inwardly. Hind tibiae with 12—13 spines on both sides, blackish-blue, upper surface of the basal part and the subbasal ring yellow. Ultimate tergite interrupted in the middle and bearing a pair of short dentiform submedian projections. Supra-anal plate triangular, elongated, apex with feebly separated broadly triangular lobe. Cerci compressed laterally, foliaceous, apical part roundly curved down, the immediate apex roundly angulate. Subgenital plate short, thick with obtusely rounded apex. Length of body 24, pronotum 5,1, elytra 16, hind femora 14,3 mm.

The type is unique.

This is a first Iranian species of the genus *Cyclopternacris* Ramme, previously known from Arabian Peninsula and Egypt. The new species differs well from other known species of the genus in the coloration of hind legs, structure of the supra-anal plate and roundly angulate apex of cerci.

*Truxalis obesa* n. sp. (fig. 1)

Iranian Baluchistan: Sangun (eastern of Kuh-i-Taftan), elev. 1650 m, 4.—18. VI. 1954, 1 ♂ and 1 ♀ (type) (W. RICHTER).

Large, robust, green. Antennae as long (♂) or slightly shorter than head and pronotum together, strongly widened in basal part, especially in ♀, and suddenly narrowing in apical third (♀) or half (♂). Head robust, fastigium of vertex with indistinctly concave (♂) or straight sides, apex parabolic (♀) or rectangulate (♂).



Fig. 1. *Truxalis obesa*, n. sp. ♀, head and pronotum from above (type).

Pronotum not saddle-shaped, lateral keels in prozona straight and very feebly divergent backwards, in metazona weakly excurved, practically parallel in ♀, ratio of prozona to metazona 1,1 : 1 (♀) or 1,04 : 1 (♂); hind margin acuteangulate with concave sides. Mesosternal interspace constricted in the middle and broadened at apex; metasternal interspace quadrate (♀) or twice as long as broad (♂). Elytra relatively broad, moderately projecting beyond the hind knee, apex roundly angulate in ♂ (damaged in

♀); ratio of length to width about 8 : 1; coloration uniformly green. Wings with pink basal disc, more intensive in ♀, the immediate base bluish (♀) or colorless (♂); tessellated pattern on transverse veinlets relatively narrow. Upper genicular lobes of hind femora moderately elongated, in ♀ scarcely longer than lower lobes. Tarsal claws strongly broadened in basal half, arolia very small, one third the length of claw (♂) or smaller (♀). Subgenital plate of ♂ relatively long, conical, its upper margin distinctly S-shaped incurved, hind margin slightly concave. Length of body ♂ 56,5, ♀ 95; pronotum ♂ 10, ♀ 16; elytra ♂ 47, ♀ 72; hind femora ♂ 33,5, ♀ 49,5 mm.

Very related to *T. robusta* Uv. and *T. mesopotamica* Dirsh (1951), but differs in less divergent, practically parallel lateral keels of pronotum, wing coloration and shape of male subgenital plate.

*Ochrilidia curta* n. sp. (fig. 2)

Iranian Baluchistan: Iranshar, elev. 800 m, 11.–30. IV. 1954, 1 ♂ and 2 ♀♀, including the type (W. RICHTER and FR. SCHÄUFFELE); pass north of the river Karwanda, elev. 1335 m, 8. IV. 1954, 1 ♀ (W. RICHTER and FR. SCHÄUFFELE).

Similar to the Arabian *O. obtusa* Uv. (UVAROV, 1936). General coloration stramineous, Antennae very feebly dilated in the basal third (♀) or quarter (♂), as long as head and pronotum together (♂) or scarcely extending beyond typical sulcus of pronotum (♀). Third joint trapezoidal, a little broader than long, fourth very short, strongly transverse, other basal joints subsequently elongated, eleventh moderately elongated, the rest cylindrical, about twice as long as broad (♀) or distinctly shorter (♂). Head short, upper surface with broad white longitudinal stripe; fastigium of vertex in ♀ very short, broadly rounded and obtuse anteriorly, in ♂ triangular, median carinula distinct, long (♂) or subobsolete (♀). Foveolae of vertex incomplete, represented by a small irregular depression at the ocellus, their upper margin very thick, distinctly broader than foveolae. Face very slightly convex in profile, forming with the fastigium a broadly rounded angle. Frontal ridge slightly widened between antennae, its sulcus well developed, practically reaching to the level of antennae (♂) or distinctly above ocellus (♀). Disc of pronotum whitish, slightly tectiform, lateral keels straight, a little divergent backwards; hind margin practically rounded. Lateral lobes of pronotum a little deeper than long, with distinct and irregular longitudinal callosities, lower margin weakly sinuate. Mesosternal interspace relatively broad, about half again as long as wide in the basal part. Elytra extending beyond hind knees by less than a fourth of their length. Hind femora short and thick, without a filiform subapical part, inner knee lobe lacking a dark spot. Hind tibiae dirty bluish. Length of body ♂ 18,5, ♀ 22–23,5; pronotum ♂ 3,3, ♀ 5; elytra ♂ 14, ♀ 19–21; hind femora ♂ 8,6, ♀ 13–13,3 mm.

Differs from *O. arabica* Uv. in longer antennae, less developed median carinula of vertex and more developed sulcation of frontal costa.

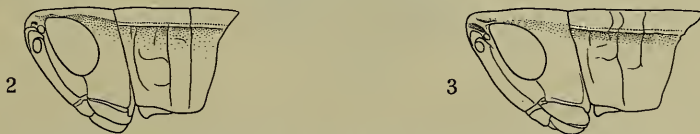


Fig. 2. *Ochrilidia curta*, n. sp. ♀, head and pronotum in profile (type).

Fig. 3. *Ochrilidia richteri*, n. sp. ♀, head and pronotum in profile (type).

*Ochrilidia richteri* n. sp. (fig. 3)

Iranian Baluchistan: Pass north of Karwanda, 1335 m, 8. IV. 1954, 1 ♀ type and 16. VII. 1954, 1 ♂ (W. RICHTER and FR. SCHÄUFFELE); Karwanda, 16. VII. 1954, 2 ♂♂ (W. RICHTER and FR. SCHÄUFFELE); Iranshar, 800 m, 11.–21. IV. 1954, 1 ♀ (W. RICHTER and FR. SCHÄUFFELE).

Similar to *O. filicornis orientalis* Salfi from Iranian Baluchistan (SALFI, 1931). General coloration stramineous or light greenish. Antennae well dilated in the basal two-fifths (♀) or third (♂) of their length, as long as head and pronotum together (♂) or only reaching to the typical sulcus of pronotum (♀). Third joint irregularly semi-lunar, transverse, fourth very short, strongly transverse, the remaining basal joints subsequently elongated, tenth or eleventh quadrate, eleventh or twelfth elongated and slightly flattened, twelfth or thirteenth in ♀ elongated and slightly flattened, the rest cylindrical, less than twice as long as broad. Head moderately elongated, upper longitudinal whitish stripe indistinct or completely disappearing; fastigium of vertex triangular, its apex rounded, obtuse, but forming an angle about 90°; median carinula distinct and long in ♂, subobsolete in ♀. Foveolae of vertex elongated, about three times as long as broad, distinctly incurved, moderately impressed behind and gradually obsolescent in front, their upper margin normal, not very thick. Face very slightly convex in profile, forming with the fastigium a narrowly rounded angle. Frontal ridge slightly widened between antennae, its sulcus well developed, reaching the interantennal part. Pronotum with disc slightly tectiform, lateral keels practically straight, parallel or scarcely divergent behind; hind margin obtuse-angulate. Lateral lobes without distinct irregular callosities, moderately rugulose in metazona, as long as deep; lower margin weakly sinuate or in ♂ sometimes nearly straight. Mesosternal interspace relatively broad, about half again as long as wide at the base. Elytra relatively short, extending beyond hind knees by less than fourth of their length. Hind femora short and thick, subapical filiform part absent, inner knee lobe without a dark spot. Hind tibiae dirty bluish. Length of body ♂ 19,5, ♀ 30—32; pronotum ♂ 3,4—3,6, ♀ 5,6—5,9; elytra ♂ 14—14,5, ♀ 21—22,5; hind femora ♂ 9,5—9,7, ♀ 14—15 mm.

Differs well from *O. filicornis orientalis* Salfi in the structure of antennae and narrower fastigium of vertex.

*Stenohippus iranicus* n. sp. (fig. 4)

Kerman: Anbar-Abad (Djiroft), 21.—30. IV., 1.—18. V. 1956, 2 ♂♂, 3 ♀♀ (W. RICHTER). — Iranian Baluchistan: Iranshar, 800 m, 11.—21. IV., 2. VI. 1954, 4 ♂♂ and 9 ♀♀, including the type (W. RICHTER and FR. SCHÄUFFELE); North-West of

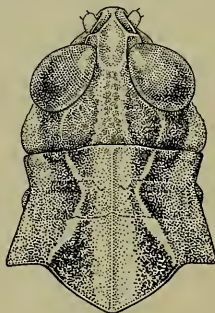


Fig. 4. *Stenohippus iranicus*, n. sp. ♀, head and pronotum from above (type).

Iranshar, dry valley, 6.—27. IV., 13. VII. 1954, 5 ♀♀ (W. RICHTER and FR. SCHÄUFFELE); Bampur, V. 1953, 1 ♂, 1 ♀ (FR. SCHÄUFFELE); Hamant-Kuh, 12. III. 1954, 1 ♀ (W. RICHTER and FR. SCHÄUFFELE); Sarbaz, 20.—22. III. 1945, 1 ♂, 1 ♀ (MIR SALAVATIAN) [coll. Zool. Institute, Leningrad]. — Makran: Bakhu-Kelat, V. 1950, 1 ♀ (FAMOURI) [coll. Zool. Institute, Leningrad].

Closely allied to *S. arabicus* Uv. from Arabia (UVAROV, 1936). Small, brownish-yellow, variegated with brown, somewhat with dark postocular stripe and large spot on the lateral pronotal lobes (as in the f. *castaneopicta* of *Notostaurus* B.-Bienko and

*Dociostaurus* Fieb.). Antennae distinctly ( $\delta$ ) or scarcely ( $\varphi$ ) longer than head and pronotum together. Head in  $\delta$  distinctly prominent above the level of pronotum, face oblique ( $\delta$ ) or moderately oblique ( $\varphi$ ). Frontal ridge shallowly sulcate ( $\delta$ ) or practically flat ( $\varphi$ ) below ocellus, strongly constricted and almost linear between the foveolae. Fastigium of vertex deeply concave, narrower and more acute than in *S. arabicus* Uv., as broad as the frontal ridge between antennal bases. Foveolae of vertex broad, short, about half again as long as broad, not narrowed anteriorly, in  $\varphi$  distinctly broader than in *S. arabicus* Uv., very narrowly separated in front. Pronotum slightly saddle-shaped, typical sulcus placed before the middle, lateral keels distinctly inflexed about the middle of prozona, strongly divergent backwards, subobliterated between transverse sulci (in f. *castaneopicta* lateral keels in prozona less inflexed or subparallel, not obliterated between sulci); hind angle more pronounced than in *S. arabicus* Uv., obtuse. Mesosternal interspace broad, not less than half again as wide as long. Elytra variable in length, moderately or distinctly extending beyond hind knees; cubital field in  $\delta$  slightly broader than median, in  $\varphi$  without or with incomplete false vein. Hind femora short and broad, upper surface with two to four dark spots, external lower surface darkened or greyish, internal surface light yellowish; hind tibiae light dirty-bluish. All arolia between tarsal claws narrow and small. Subgenital plate of  $\delta$  short, as in *S. arabicus* Uv. Ovipositor darkened, lower valvae with callous basal part and relatively short apical tooth. Length of body  $\delta$  11,5—12,5,  $\varphi$  14,5—16,5; pronotum  $\delta$  2—2,3,  $\varphi$  2,5—3; elytra  $\delta$  10—11,5,  $\varphi$  11,7—14,5; hind femora  $\delta$  7,3—7,8,  $\varphi$  8—9,5 mm.

Differs from *S. arabicus* Uv. (a pair of that species from Jidda, Arabia, det Dr. D. RAGGE, is in the collections of the Zoological Institute, Leningrad) in form of fastigium of vertex, broader female foveolae, longer metazona of pronotum with more distinctly pronounced hind angle and shorter apical tooth of lower valvae of ovipositor.

*Chorthippus hyrcanus* n. sp. (fig. 5)

Gorgan, Northern Iran: Scharoud in Tasch, elev. 2500—3000 m, 4. VIII. 1952, 2  $\delta\delta$ , including the type, and 9  $\varphi\varphi$  (K. KRELL).

A brachypterous species related to *Ch. salavanicus* Uv. from North-Western Iran (UVAROV, 1933; BEY-BIENKO and MISTSHENKO, 1951) and especially to *Ch. mistshenkoi* Avak. from Southern Transcaucasia (AVAKIAN, 1956).

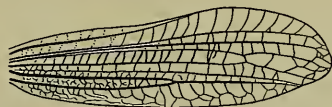


Fig. 5. *Chorthippus hyrcanus*, n. sp.  $\delta$ , right elytron (type).

$\delta$ . Pale-brown. Antennae slender, half again as long as head and pronotum together, median joints about twice as long as broad. Fastigium of vertex triangular, its apex practically rectangular; foveolae well defined, a little more than three times as long as broad, nearly straight, upper margin with distinctly oblique apex. Frontal ridge convex in profile, slightly impressed at the ocellus, distinctly punctured between antennae, lateral keels gradually divergent downwards, practically parallel-sided in median part. Pronotum slightly tectiform above, median keel well raised, lateral keels moderately convergent towards the middle of prozona, almost regularly divergent posteriorly, hind margin very obtusely angulate, hind transverse sulcus placed at the middle of pronotum. Mesosternal interspace about twice as broad as long. Elytra scarcely reaching the base of supra-anal plate, widened to the apical third, apex narrowly parabolic; anterior field narrow, reaching the middle of the costal margin, costal field broadened, about twice as broad as the median field, Sc and R almost straight, regularly divergent, cubital field distinctly narrower than median. Wings a

little shorter than half the elytra. Anterior femora and tibiae with dense short hairs. Hind femora brownish-pale, external surface unicolorous, inner side with a black oblique stripe in basal part, knees concolorous; hind tibiae brownish-yellow. Arolia between tarsal claws relatively narrow, a little shorter, than half the claws. Abdomen yellowish-brown, lower surface pale-yellow. Tympanal organ with relatively narrow orifice. Supra-anal plate triangular, lateral parts with incassate transverse ridge, apex sharpened, lobiform. Cerci thick, short, moderately narrowing apically.

♀. Antennae almost as long as head and pronotum together. Fastigium of vertex slightly transverse, its apex rectangular; frontal ridge scarcely impressed below median ocellus. Lateral keels of pronotum sharply defined, in metazona whitish, with black longitudinal stripe along inner margin of the whitish part. Elytra slightly separated above, reaching the apex of the third abdominal segment, widening from the base to the middle, then narrowing apically, with apex narrowly rounded; longitudinal veins straight, incassate, anterior field with a false veinlet, a little narrower than costal field, median field about half again as broad as the cubital field. Anterior legs with distinct but not dense hairs. Hind femora sometimes with a series of dark dots along lower keel of externomedian area. Valvae of ovipositor shorth, of usual structure.

Length of body ♂ 13,5—14, ♀ 19—22; pronotum ♂ 2,9—3, ♀ 3,3—3,8; elytra ♂ 6,5—6,8, ♀ 4—6; hind femora ♂ 8,5—9, ♀ 10—11 mm.

Differs both from *Ch. salavanicus* Uv. and *Ch. mestshenkoi* Avak. by somewhat larger size, less acute fastigium of vertex, longer and more slender antennae and antennal joints and some other morphological features.

*Sphingonotus maculatus externus* n. ssp.

Kerman: Anbar-Abad (Djiroft), 21. IV.—18. V. 1956, 5 ♂♂ and 7 ♀♀ (W. RICHTER). — Iranian Baluchistan: Iranshar, elev. 800 m, 1.—21. V. 1954, 21 ♂♂, including the type, and 1 ♀ (W. RICHTER and FR. SCHÄUFFELE).

As typical form from Middle Asia, but wings in ♂ with distinct smoky-dark apical spot; wings in ♀ bluish at the base. Inner side of hind femora dark in basal part, apical part pale with black transverse band; knees black inside. Length of body ♂ 18,5—19, ♀ 27—31; pronotum ♂ 3—3,4, ♀ 4,8—5; elytra ♂ 18—19,5, ♀ 28—29; hind femora ♂ 9,8—10, ♀ 13,5—13,8 mm.

Number of branches of RS on elytra variable: ♂ with 1—2 branches, ♀ with 2—3 branches.

*Hyalorrhapis turcmena grandis* n. ssp.

Iranian Baluchistan: Iranshar, elev. 800 m, 1.—22. IV. 1954, 35 ♂♂ and 44 ♀♀, including the type (W. RICHTER and FR. SCHÄUFFELE); dunes Rig Ispakeh near Iranshar, 2. IV. 1954, 1 ♂ (W. RICHTER and FR. SCHÄUFFELE); North-Western of Iranshar, 5. V. 1954, 1 ♀ (W. RICHTER and FR. SCHÄUFFELE); Kalang, 36 km North of Iranshar, 19. IV. 1954, 1 ♂ (W. RICHTER and FR. SCHÄUFFELE); Bampur, V. 1950, 1 ♂ (SARKISSIAN) [coll. Zool. Institute, Leningrad].

Superficially very distinct from typical form known from southern part of Middle Asia and Eastern Iran (UVAROV, 1926; BEY-BIENKO and MISTSHENKO, 1951), but differs in much larger body, especially in ♀. Length of body ♂ 25—26,5, ♀ 30—34; pronotum ♂ 4—4,3, ♀ 5—5,8; elytra ♂ 24,5—26, ♀ 27,5—33; hind femora ♂ 11—11,5, ♀ 13,8—15 mm.

*Hyalorrhapis shestoperovi gedrosica* n. ssp.

Iranian Baluchistan: Sarawan, 19. VI. 1954, 2 ♂♂ including the type, and 1 ♀ (W. RICHTER).

Differs from the typical form, known from Turkmenia and Northern and Eastern Iran (BEY-BIENKO and MISTSHENKO, 1951) in slightly larger body; general coloration lighter, ashy-grey; dark specks on elytra less distinct, subobsolete, anal part in ♂ with

more dense specks; wings scarcely bluish at the base, radiate veins of fan distinctly bluish; lower margin of lateral pronotal lobes straight of scarcely concave, anterior lower angle moderately obtuse. Length of body ♂ 15—15,5, ♀ 25; pronotum ♂ 2,7—2,8, ♀ 4,1; elytra ♂ 14,8—15, ♀ 22,5; hind femora ♂ 7,8—8,3, ♀ 12,3 mm.

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