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Four new species of genus *Acinopus* DEJEAN, 1821, subgenus *Acinopus* from southern Iran, from Sinai, and from western Saudi Arabia, and faunistic and taxonomic notes on species previously described (Coleoptera, Carabidae, Harpalini, Harpalina)

David W. WRASE & Boris M. KATAEV

A b s t r a c t : Four species of genus *Acinopus* DEJEAN, 1821, belonging to subgenus *Acinopus*, are described as new: *A. orszuliki* nov.sp. (type loc.: Dareh Bar, N30°05'54.1''/E057°24'49.1'', 2503 m, Mahan, Kerman, Iran); *A. sinaiticus* nov.sp. (type loc.: Wadi El Arbain, Sinai, Egypt); *A. brittoni* nov.sp. (type loc.: "Hedjaz" [Sarat al-Hejaz], Saudi Arabia); and *A. arabicus* nov.sp. (type loc.: Al Soudah, ca. 50 km NW Abha, 2800-3050 m, Asir Prov., Saudi Arabia). Comparisons are made with *A. laevigatus* MÉNÉTRIÉS, 1832, *A. picipes* (OLIVIER, 1795), *A. zagrosensis* AZADBAKHSH & WRASE, 2016, and *A. sabulosus* (FABRICIUS, 1794), illustrations of habitus, median lobes of male genitalia, hemisternites and gonocoxites of female genitalia of the new species are given.

Following new synonymies are proposed: *Acinopus* (*Acinopus*) *laevigatus* MÉNÉTRIÉS, 1832 = *Acinopus* (*Acinopus*) *laevigatus* ssp. *kashmirensis* SCHAUBERGER, 1927, nov.syn.; *Acinopus* (*Oedematicus*) *megacephalus* (P. ROSSI, 1794) = *Acinopus euphraticus* ALI, 1999, nov.syn.

K e y w o r d s : Coleoptera, Carabidae, Harpalini, Harpalina, *Acinopus*, new species, new synonyms, Iran, Iraq, Egypt, Saudi Arabia, India, Pakistan.

Introduction

The genus *Acinopus* DEJEAN, 1821 contains species which are medium-sized to large, black, without metallic shine, with appendages somewhat lighter, having the body glabrous, stout, more or less cylindrical, superior surface convex, in one case somewhat flat, and the head large, with the antennae long but fine, genae with praeocular sulcus for reception of antennomere 1, paraglossae setose, epilobes strongly widened anteriorly, ligula with two distal setae, penultimate segments of labial palpi relatively long, and with mandibles asymmetrical (right mandible with excision at upper edge) in most species. The pronotum is strongly transverse and basally completely bordered, the posterior angles are narrowly or widely rounded, without setae. The elytra are more or less parallel or somewhat oval (depending, if the species are macropterous or brachypterous), the elytral stria 8 in its middle portion removed from stria 9 and accordingly interval 9 widened there, the interval 3 with one or without pore puncture (often variable within one species), intervals 3 and 5 apically often with some pore punctures. Anal sternite in females distinctly swollen apically. Hind coxa with one posteromedial additional setigerous

pore puncture, femora with long numerous bristles, ventroapical tubercle of protibia with four (rarely three) to six spines arranged in a transverse row. Median lobe of aedeagus with orificium in dorsal position and terminal lamella flat, without apical capitulum. The distinctive characters distinguishing *Acinopus* from the related genera forming the Acinopi genus group within Harpalina were given in detail by KATAEV (1995).

In the Catalogue of Palaearctic Coleoptera, volume 1 (KATAEV et al. 2003: 367-369), 27 species of the genus were registered, belonging to five subgenera (*Acinopus* s. str. with 21 species, *Acmastes* SCHAUM, 1863, *Haplacinopus* SEMENOV, 1899, and *Osimus* FISCHER VON WALDHEIM, 1829, each with one species, and *Oedematicus* BEDEL, 1897 with three species), some of the species form subspecies. *Nesarpax labiatus* ERICHSON, 1843, a species from the Cape Verde Islands, formerly representing a genus of its own, was included into the genus *Acinopus* with *Nesarpax* ALLUAUD, 1936 as a subgenus by KATAEV (1995: 273), stating that the taxon is most probably closest to subgenus *Acinopus*. The above mentioned genus composition was also given in the "Systematic list of extant ground beetles of the world" (LORENZ 2005: 1149). *Acinopus* (*Oedematius*) *khalisensis* ALI, 1967 was synonymized with *A. megacephalus* (A. ROSSI, 1794) by WRASE (2005: 832), and *A.* (s. str.) *lepeletieri* LUCAS, 1846 from North Africa was treated as a distinct species by KATAEV & WRASE (2015: 292), formerly considered as a synonym of *A.* (s. str.) *sabulosus* (FABRICIUS, 1792). More recently, *A.* (s.str.) *zagrosensis* AZADBAKHSH & WRASE, 2016 was described from South Iran.

The species of the genus are distributed from the Cape Verde Islands (an archipelago of ten volcanic islands in the central Atlantic Ocean, located 570 kilometres off the coast of Western Africa) over a vast area of the Mediterranea to Middle Asia, the West Himalaya, and West China. The species occur in more or less dry, open habitats, notably grassland, in self-dug galleries under stones, they are phytophagous and are often attracted by light.

In course of investigating unidentified *Acinopus*, we could detect beside a species from Iran and a species from the Sinai Peninsula new to science two further ones from western Saudi Arabia, enlarging the known occurrence of species of the subgenus *Acinopus* into the Ethiopian region.

Material

Material examined is housed in the collections of institutions or in private collections as listed below:

BMNH ..... Natural History Museum, London, Great Britain (B. Garner, M. Barclay)

MFNB ..... Museum für Naturkunde Berlin (J. Frisch, B. Jaeger)

NME..... Naturkundemuseum Erfurt (M. Hartmann)

MNHN ..... Museum National d`Histoire Naturelle, Paris (A. Taghavian, T. Deuve)

OUMNH ..... The Hope Entomological Collections, Oxford University Museum of Natural History, Oxford, England (D.J. Mann, A. Spooner)

TAU ..... National Collections of Natural History, Tel Aviv University, Tel Aviv, Israel (A. Freidberg, L. Friedman)

ZIN..... Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia (B.M. Kataev)

ZSM ..... Zoologische Staatssammlung München, Germany (M. Balke)

cAZAD..... Coll. S. Azadbakhsh, Bandar-e ‘Abbās, Iran
cFEL..... Coll. R.F.F.L. Felix, Berkel Enschot, Netherlands
cGRK ..... Coll. V. Gurko, Chernovtsy, Ukraine
cHZ ..... Coll. W. Heinz: in Staatliches Museum für Naturkunde, Stuttgart, Germany (W. Schawaller)
cMUIL ..... Coll. J. Muilwijk, De Bilt, Netherlands
cORSZ ..... Coll. K. Orszulik, Frýdec-Místek, Czech Republic
cSCHN ..... Coll. P.H. Schnitter, Halle, Germany
cVELD ..... Coll. W.J. Veldkamp, Eibergen, Netherlands
cVON ..... Coll. P. Vonička in Severočeske Muzeum Liberec, Czech Republic
cWEIG ..... Coll. A. Weigel, Wernburg, Germany
cWR ..... Coll. D.W. Wrase, Berlin, Germany

Methods

Total body length (BL) is measured from the tip of the anterior margin of labrum to the apex of the longer elytron; the width of the head (HW) as the maximum linear distance across the head, including the compound eyes; the length of the pronotum (PL) from the anterior to the posterior margin along the midline; the length of the elytra (EL) from the basal border in the scutellar region to the apex of the longer elytron; the width of the pronotum (PW) and elytra (EW) at their broadest point.

These measurements, made at a magnification of 7.1X (body length) and 12.5X, respectively, and using an ocular micrometer in a Leica MZ 16 stereobinocular microscope, were combined in ratios or added as follows:

PW/HW: width of pronotum /width of head;

PW/PL: width /length of pronotum;

EW/PW: width of elytra/width of pronotum;

EL/EW: length/width of elytra.

Microsculpture was examined at a magnification of 100X.

Line drawings were prepared by using an ocular grid (10X10 squares) attached to a Leica MZ 16 stereobinocular microscope. Dissections were made with standard techniques; genitalia were preserved in Euparal on acetate labels, and pinned beneath the specimens from which they had been removed. Photographs were taken with a Canon EOS 450d, and were assembled from a stack of about 20 individual photographs taken at different focal planes using the software package Helicon Focus.

Most of main distinctive characters for genus and subgenus *Acinopus* in general are not repeated in the description, and it is only referred to characters important for discrimination.

In type specimens the label text is cited as originally given, using a forward slash for separating different lines.

10♂♂ and 10♀♀ of *Acinopus orszuliki* nov.sp. from the type locality were measured and all available material of the remaining new species were used for measurements to yield the above-mentioned ratios.

For examination of the female genitalia one female of every species was dissected. We

could recognise some minor differences between the species but for stating if these differences are constant, the examination of more females would be necessary, all the more since the gonocoxite 1 can be subject to wear and then showing a different form.

Classification

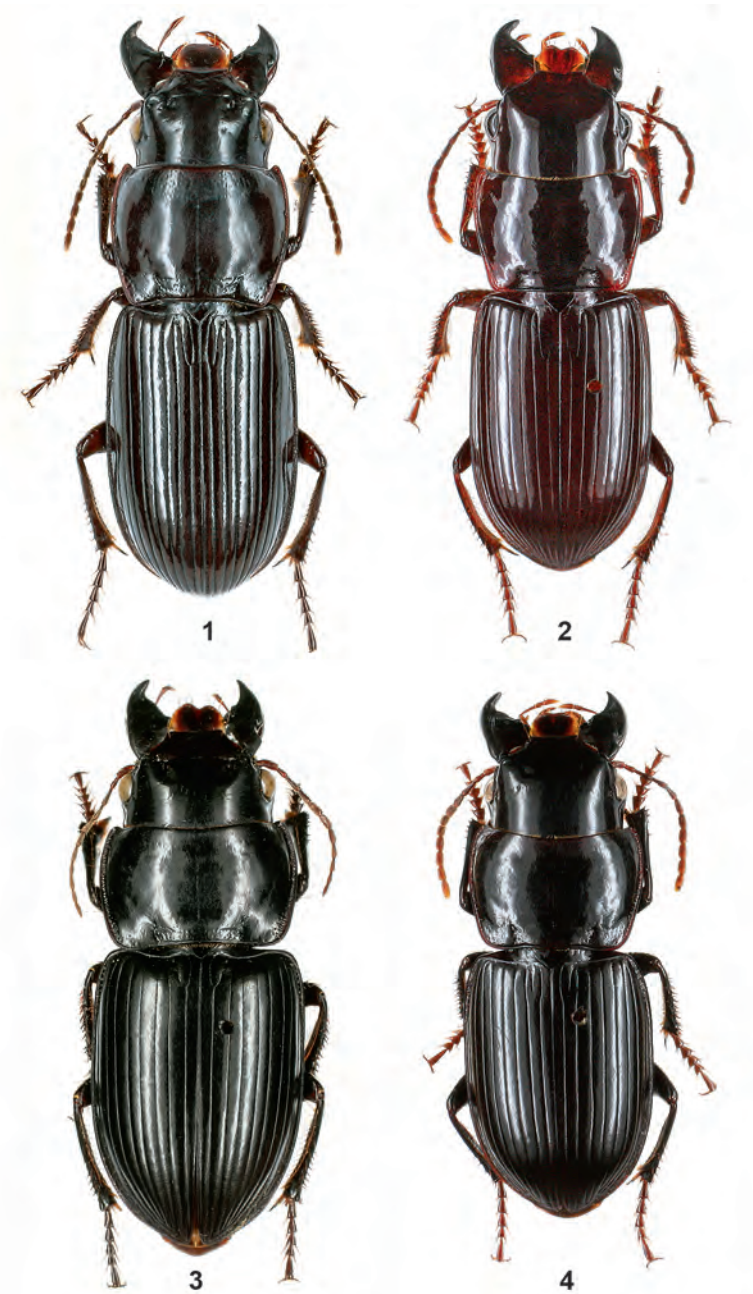
Acinopus (*Acinopus*) *orszuliki* nov.sp. (Figs 1, 5, 6, 13, 17)

T y p e m a t e r i a l : Holotype ♂: "IRAN prov. Kerman / Sarbizhan 5.5.2010 / 140km S Kerman / lgt. Orszulik 2700m" (cWR). Paratypes: 4♂♂, 5♀♀: with the same data (cORSZ, cWR). 12♂♂, 9♀♀: with the same data but "4.5.2010" and "3100m" (cORSZ, cWR, MFNB, ZIN). 2♂♂, 1♀: "Iran (Kerman) / Babidan vill., W Radiabar / (Kuh-i- Lalazar) 2800 m / ca 50 km NW Dgirouft) / 28.III.2006 W. Heinz" (cWR). 4♂♂: "Iran (Kerman) / Babidan-vill. 2800 m / Heinz leg. 28.III.2006", "Kuh-i- Lalazar / W. Radiabar / ≈ 60 km NW Dgirouft" (cHZ, cWR). 1 ♀: "S IRAN, prov. Kermān, 2213 m / 45km NNE Sābsvārān (Jiroft) / N28°58' E57°54', 19.VII.2004 / leg. Petr Kabátek" (OUMNH). 2♂♂, 3♀♀: "Iran, Kerman, Mahan, Dareh / Bar, N30°05'54.1'' / E057°24'49.1'', 2503 m 18-03- / 2007 leg. R.F.F.L. Felix" (cFEL). 5♂♂, 5♀♀: "Iran, Kerman, Qal eh'Askar, halverwege dal, N29°36'04.5'' / E056°40'31.2'', 2502 m. / 22-03-2007 leg. R.F.F.L. Felix" (cFEL, cWR, MFNB). 2♀♀: "Iran, Kerman, Kuh e Lalehzan, / N29°32'13.2'' E056°47'33.6'', / 2830 m. 19-03-2007 / leg. R.F.F.L. Felix" (cFEL). 2♀♀: "Iran, Kerman, 2 km W Sirch, / N30°13'09.1 E057°27'21.7'', / 2246 m. 17-03-2007 / leg. R.F.F.L. Felix" (cFEL). 1♂, 4♀♀: "IR Kerman / Qal'eh Askar / 22-III 2007 / Muilwijk leg" (cMUIL, cWR). 3♂♂, 2♀♀: "IR Kerman / Sirch env. / 17-III 2007 / Muilwijk leg" (cMUIL, cWR). 2♂♂, 1♀: IRAN (Kerman Prov., / Jiroft County) / Darb-e Behesht area / Sinabad, ca 2615 m / (75 km N Jiroft) / 29°14'00.99''N / 57°20'25.51''E / (orchard, pit fall traps) / 18.IV.- 8.VIII.2013 local collector" (cMUIL, cWR). 1♀: "IRAN 30 Km Z v / NEGAR 10-03-07 / VELDKAMP" (cVELD). 1♂, 1♀: "IR CAH MAHALI / BAKHTIYARI 31- / 3-07 VELDKAMP" (cVELD). 4♂♂, 2♀♀: IR SIRCH / 17-3-2007 / VELDKAMP" (cVELD, cWR). 1♂, 1♀: "IR HEMMAD ABAD / 40 Km O KERMAN / 18-3-07 VELDKAMP" (cVELD, cWR). 1♂, 1♀: "IRAN (Kerman Prov.) / Mahan SE Kerman 2500 m / N 29°53'34.1''/E 57°20'43.4'' / (*Artemisia*-high-altitude steppe, under stones) / 1.VI.2014 Wrase & Laser [06]" (MFNB, cWR, *[1]). "IRAN (Kerman Prov.) / Kūh-e Lālehzār / nr. Lālehzār vill. 3110-3300 m / N 29°28'35''/E 56°49'15'' / (mountain steppe, / under stones) / 3.VI.2014 Wrase & Laser [09B]" (cWR, *). 4♂♂, 7♀♀: "Iran, Prov. Kerman, Kerman S. / Mahan, *Artemisia*-Hochsteppe / N29°53'34.1'' E57°20'43.4'' /01.VI.2014 2500 m üNN / leg. A. Weigel IR 06 HF" (NME, cSCHN, cWEIG, cWR, *). 1 ♀: "Iran, Prov. Kerman, Kuh-e Lalehzar, / Lalehzar vill. Bachtal, N 29°57'59'' E 56°45'74'' / 03.VI.2014 3.400 müNN / leg. A. Weigel IR 09a HF" (cWEIG). 2♂♂: "IRAN (Kerman Prov.) / nr. Sirch vill. SE Kerman / 2560 m / N 30°10'56.4"/E 57°24'49.2" / (partly irrigated orchard, under stones, partly running at darkness) / 30.V.2014 Saeed Azadbakhsh [04]" (ZMAF, cAZAD, *). 1♂: "IRAN, Kerman Province / Bardsir-Baft road: / Qal'eh Askar, 2760m, N 29°30'18'' E 056°37'47'' / 06.05.2007, lg. Frisch & Serri" (MFNB). 1♀: "N 29°53'34.1''/E 57°20'43.4'' / Iran, Prov. Kerman, Kerman S. / Mahan, *Artemisia*-Hochsteppe / 01.06.2014 2500m üNN / leg.: Schnitter IR 06 HF" (cSCHN, *). 2♀♀ "dat. 29.5.2014 Irán IR /Kerman prov. (Jabel Baref / Deh Bakri (Jass) / N28°59'53'' E57°54'16'' / lgt. Černý Fr. 2300 m.n.m" (cVON).

E t y m o l o g y : Latinized patronym based on the surname of Kamil Orszulik (Frýdec-Místek, Czech Republic), whose indefatigable efforts in the field contributed substantial numbers of Carabid beetles, very interesting or new to science.

D i a g n o s i s : A micropterous species of small to medium size for *Acinopus*, with excision of dorsal edge of right mandible (subgenus *Acinopus*), dark rufopiceous or piceous (in mature condition), with appendages somewhat lighter, clypeus in general with one setiferous pore puncture at anterior angles, pronotum with anterior angles acutely pro-

[1] An asterix (*) indicates syntopic occurrence with *A. picipes* (OLIV.).



Figs 1-4: *Acinopus* DEJEAN, 1821. Habitus. (**1**) *A. orszuliki* nov.sp. (male paratype, type locality). (**2**) *A. sinaiticus* nov.sp. (male paratype, Mt. Katherine). (**3**) *A. brittoni* nov.sp. (female paratype, type locality). (**4**) *A. arabicus* nov.sp. (male paratype, type locality).

truding, and with posterior angles obtuse-angled, moderately rounded at tip, somewhat directed backwards with base rectlinear between basal fovae, elytra longer or shorter cylindrical, fused at suture, hind wings hardly half as long as elytra, metepisterna relatively short, pro- and mesotarsi in males only indistinctly widened, apical lamella of median lobe short, about somewhat elongate-triangular (dorsal view). Habitus see Fig. 1.

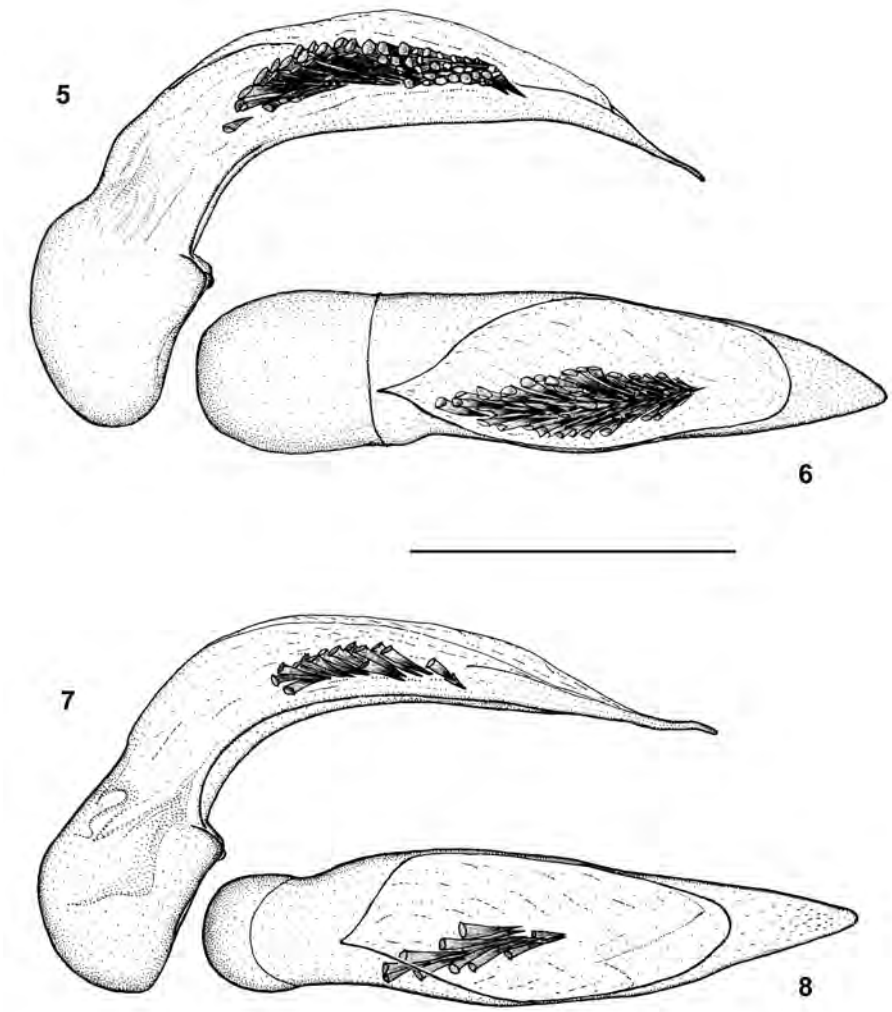
D e s c r i p t i o n : Body length 12.0-14.8 mm in males (holotype 14.4 mm), 11.9-15.5 mm in females; width 4.0-5.3 in males (holotype 5.1 mm), 4.3-5.5 mm in females.

Colour: Lighter to darker rufo-piceous or piceous also in mature condition (never completely black, if dark always with a piceous ground colour), appendages somewhat lighter.

Head: wide (as normal in *Acinopus*), only somewhat narrower than pronotum (PW/HW in males 1.16-1.28, average 1.22, in holotype 1.26; 1.23-1.29 in females, average 1.25), Eyes small and relatively flat, tempora oblique, as long as diameter of eye or somewhat shorter (dorsally seen), rectlinearly or weakly convexly converging to neck. Frontal fovae mostly small and shallow, sometimes elongately prolonged backwards. Disc with sparse, fine, and shallow puncturation, hardly visible, sometimes between frontal fovae more or less strongly wrinkled. Excision of dorsal lateral edge of right mandible somewhat variable in size and strength, moderately strong to shallow, basal angle of excision as a rule situated somewhat anterior to or somewhat behind level of anterior margin of clypeus (with mandibles closed). Labrum weakly incised at anterior margin, clypeus weakly and semicircularly incised, anterior angles with one setiferous pore puncture each (in one specimen from Sarbizhan as well as the strong, long seta with two additional short, fine setae at both sides). Mentum with a small tooth, submentum with one pair of long setae.

Pronotum (Fig. 1): Transverse (PW/PL 1.30-1.44 in males, average 1.36, in holotype 1.44; in females 1.32-1.41, average 1.37), widest at about end of anterior third, there lateral seta inserted. Disc convex, area of posterior angles more or less strongly flattened in most specimens, anterior and posterior transverse impressions very shallow or only indicated, median line weakly impressed, mostly terminated anterior to transverse impressions. Basal foveae round or elongate, shallowly impressed, in some specimens only indicated. Anterior margin somewhat wider than posterior margin, only weakly excavate, anterior angles distinctly, acutely projecting forward, only narrowly rounded at tip in most specimens. Lateral gutter narrow, somewhat widened toward anterior angles. Sides moderately curved apicad, from widest point weakly convex, in some specimens almost rectlinearly narrowed toward posterior angles. Posterior angles obtuse-angled, moderately rounded at tip, more or less distinctly projecting backwards, base rectilinear between basal fovae in most specimens.

Elytra (Fig. 1): Longer or shorter cylindrical (EL/EW in males 1.48-1.61, average 1.55, in holotype 1.52; in females 1.54-1.68, average 1.58), hardly wider or only somewhat wider than pronotum (EW/PW in males 1.01-1.11, average 1.08, in holotype 1.10; in females 1.07-1.21, average 1.14), fused at suture. On disc strongly convex, humeri distinctly developed, widely rounded at tip, without humeral tooth; toward behind somewhat convexely or almost parallely enlarged, widest somewhat behind middle. Basal bead weakly sinuate, arcuately curving inside humerus and weakly angled or round towards lateral margin. Scutellar pore puncture present, scutellar stria long. Striae fine, smooth or only weakly punctured, intervals flat or weakly convex, with a pore puncture in interval 3 at about beginning of apical fourth at or close to stria 2, sometimes lacking on one or both elytra. Interval 5 and 7 without pore punctures apically. Preapical sinuation only suggested.



Figs 5-8: *Acinopus* DEJEAN, 1821. Median lobe of male. (**5, 6**) *A. orszuliki* nov.sp. (**5**) Lateral view (holotype). (**6**) dorsal view (paratype, type locality). (**7, 8**) *A. sinaiticus* nov.sp. (**7**) Lateral view (holotype). (**8**) dorsal view (paratype, Mt. Katherine). Scale bar: 1.6 mm.

Hind wings: Reduced, hardly half as long as elytra.

Ventral surface: Prosternum, proepisternum, anterior part of mesepisternum, and metepisternum with sparse, fine setae, prosternal process with long setae apically. Metepisternum relatively short, ratio of anterior margin/internal margin (visible parts) about 0.87, moderately narrowed behind. Abdominal sternites III-V with scattered setae of unequal length, some of them arranged in suggested transverse rows about at middle of sternites. Last sternite, beside some fine scattered setae with two pore punctures bearing a long seta on each side at apical margin in both sexes.

Legs: Normal for *Acinopus* species. Pro- and mesotarsi indistinctly dilated in males (only somewhat wider than in females), with pro- and mesotarsomere 2 to 4 only in apical half with biseriate adhesive vestiture. Ventroapical tubercle of protibia with about four to five spines, arranged in a transverse row. Spines of lower surface of fore tibia arranged in one row of about eight spines, often a second, internal row, somewhat irregular and consisting of spines lower in number. Outer distal margin of protibia with about seven to nine spines. Tarsi smooth on superior surface except obligatory setae.

Microsculpture of surface: Head and pronotum in males with weakly engraved somewhat irregular slightly transverse meshes, elytra with the same kind of meshes somewhat less strongly engraved and more confused as on the forebody, surface very shiny, in females meshes somewhat stronger engraved, surface less shiny.

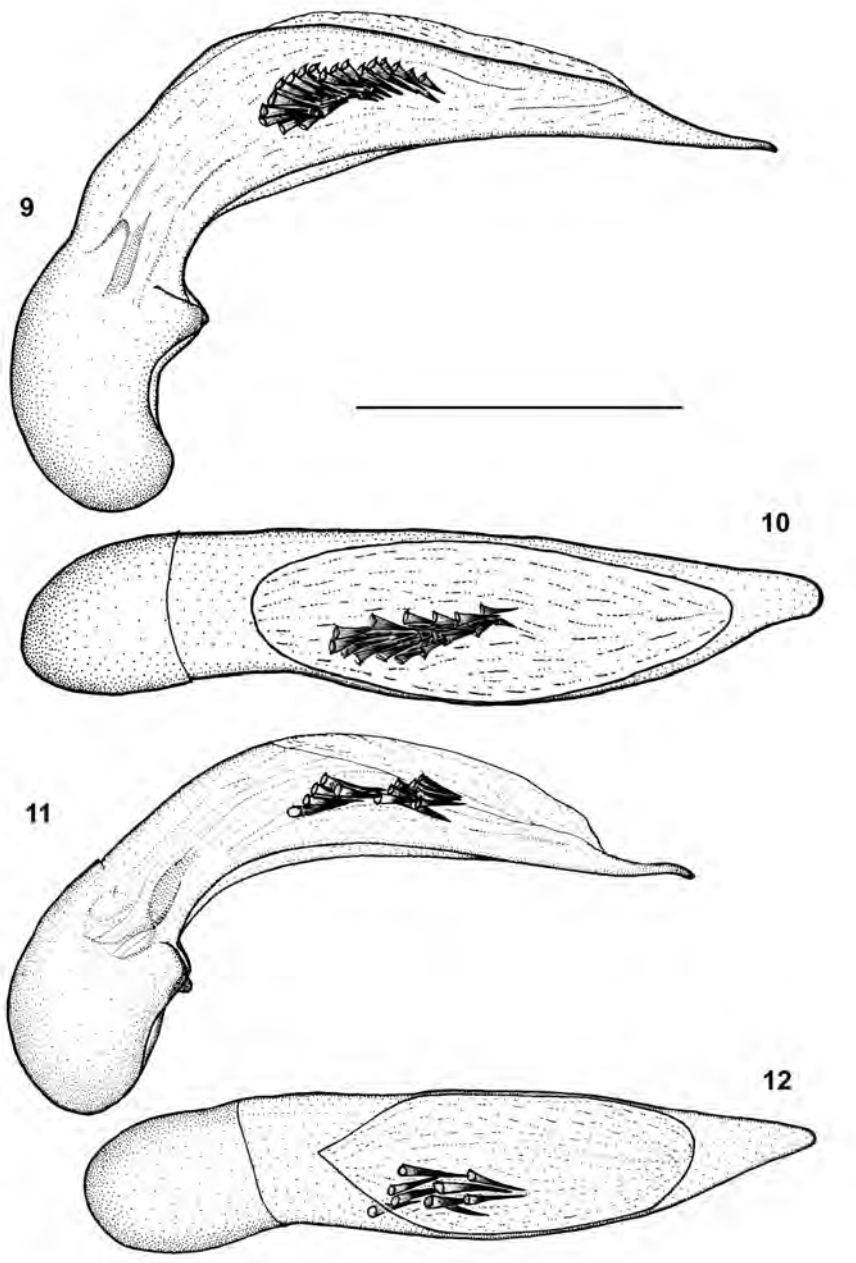
Median lobe of aedeagus (Figs 5, 6): Of normal construction for *Acinopus* species: terminal lamella somewhat elongate-triangular (dorsal view), and somewhat reflexed apically (lateral view), internal sac with a large, elongate group of about 40-50 medium-sized to small spines.

Female genitalia (Fig. 13): Hemisternite asymmetrical, with numerous scattered setae in its internal, somewhat hyaline part. Gonocoxite 1 elongate, apically with numerous setae, gonocoxite 2 scoop-shaped, apically somewhat blunt, with a double-sensilla in a furrow, and with numerous fine long setae at concave side.

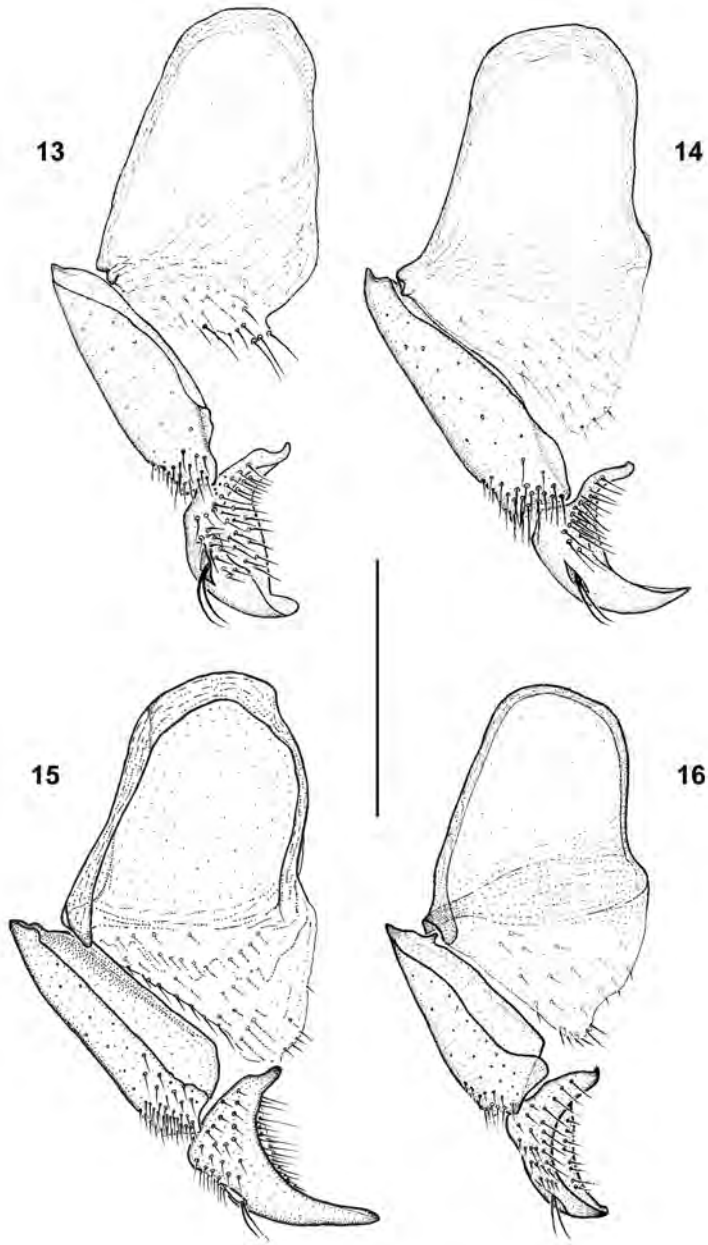
I n t r a s p e c i f i c v a r i a b i l i t y : All external characters have a great variability (as normal in *Acinopus*), this concerns mainly the excision of the dorsal edge of the right mandible and its position (somewhat variable in size and strength, moderately strong to shallow, proximal (basal) angle of excision as a rule situated somewhat anterior to somewhat behind level of clypeus), the form of the pronotum, especially the construction of the anterior angles (distinctly, acutely projecting forward, only narrowly rounded at tip in most specimens, sometimes less distinctly projecting forward), the excavation of the base (distinctly excavate in most specimens, with posterior angles obtuse-angled, moderately rounded at tip, distinctly projecting backwards, sometimes less distinctly excavate with posterior angles less distinctly projecting backwards), and the form of the elytra (longer or shorter cylindrical), also the elytral pore puncture in interval 3 can be absent on one or both elytra. A variability in geographical aspect cannot be stated.

C o m p a r i s o n s : It's the combination of colour, the male pro- and mesotarsomeres only weakly enlarged, the labrum only weakly incised apically, the anterior pronotal angles distinctly, acutely projecting forward, the pronotal base excavate with posterior angles shifted backward, and by the hind wings reduced (and connected with that, the metepisterna short) make this species distinct from its congeners.

Easily distinguished from *A. picipes* (OLIVIER, 1795), a species having been recorded syntopic with the new species, and *A. laevigatus* MÉNÉTRIÉS, 1832, otherwise widely distributed in the Iran but not yet known from the Kerman Province, by its dark rufopiceous colour and the only indistinctly widened male pro- and mesotarsomes, by its pronotum with base distinctly excavate, with posterior angles less rounded at apex and somewhat directed backwards, and with anterior angles acutely protruding, and by its hind wings reduced. The latter two species are blackish in mature condition, have distinctly widened male pro- and mesotarsomes, a pronotum with base rectilinear, with posterior angles widely rounded, and with anterior angles less acutely protruding. Additionally, *A. picipes* has the excision of the right mandible close to the base.



Figs 9-12: *Acinopus* DEJEAN, 1821. Median lobe of male. (**9, 10**) *A. brittoni* nov.sp. (**9**) Lateral view (holotype). (**10**) dorsal view (paratype). (**11, 12**) *A. arabicus* nov.sp. (**11**) Lateral view (paratype). (**12**) dorsal view (holotype). Scale bar: 1.6 mm.



Figs 13-16: *Acinopus* DEJEAN, 1821. Female genitalia, (right hemisternite, gonocoxite1, 2, ventral view). (**13**) *A. orszuliki* nov.sp. (paratype, type locality). (**14**) *A. sinaiticus* nov.sp. (paratype, Mt. Katherine). (**15**) *A. brittoni* nov.sp. (paratype, type locality). (**16**) *A. arabicus* nov.sp. (paratype, type locality). Scale bar: 1.0 mm.

Fig. 17: One of the localities where *A. orszuliki* nov.sp. was found (Mahan, SE Kerman, 2500 m, *Artemisia*-high-altitude steppe).

Similar to *A. sinaiticus* nov.sp. in its body colour but this species has the male pro- and mesotarsomeres more strongly enlarged, the labrum distinctly incised apically, the anterior pronotal angles not as strong and less acutely projecting forward, the pronotum laterally anterior to the posterior angles somewhat sinuate and with its base more or less rectilinear, the elytra somewhat flattened, the hind wings fully developed (folded anterior to apex), and the metepisterna longer.

The new species differs distinctly from *A.* (*Acinopus*) *zagrosensis* AZADBAKHSH & WRASE, 2016, recently described from the Zagros Mts. in western Iran, by its colour (lighter to darker rufo-piceous or piceous, in *A. zagrosensis* black), by the pronotal anterior angles distinctly, acutely projecting forward (in *A. zagrosensis* anterior angles only moderately and somewhat less acutely projecting forward), by the posterior angles obtuse-angled, only moderately rounded at tip (in *A. zagrosensis* widedy rounded at apex). While the new species has the hind wings only reduced on about half of the elytral lengths, *A. zagrosensis* has the hindwings reduced to only small scales. The external construction of the median lobe is similar in both species, but in *A. orszuliki* nov.sp. the internal sac has a larger group with spines more numerous (about 40-50), while in *A. zagrosensis* the group is smaller by spines less numerous (about 10 to 18, compare Figs 5, 6 with Fig. 2 in AZADBAKHSH & WRASE 2016: 585).

D i s t r i b u t i o n : Up to now only known from several localities in the mountainous regions of the Iranian Province of Kerman, in altitudinal ranges of about 2200 to 3400 m. Due to its inability to fly most likely a wider occurrence of *A. orszuliki* nov.sp. can be excluded.

H a b i t a t a n d b i o n o m i c n o t e s : The specimens, collected by R. Felix and J. Muilwijk in the Kūh-e Lālehzār massif were found in a green, grassy valley partly covered by snow, with low shrubs, along a little stream and in a more open stony and grassy hillside also along this stream, the specimens from Mahan on poor, dry fields and field edges, while the specimens from Sirch and Qal eh'Askar were collected on grassland (R. Felix, pers. comm.). The specimens from Sinabad were found in an orchard by pit fall traps. Finally, the specimens, recently collected by S. Azadbakhsh, B. Laser, P. Schnitter, A. Weigel, and D.W. Wrase (see above under types), were taken in daytime in *Artemisia*-high-altitude steppes (Fig. 17) and in an orchard, mainly from under stones, or running around at darkness.

Interestingly, the series of *Acinopus* species from the Kerman Province we could examine, collected in March to middle of May, contained only two specimens of *A. picipes* (Golmalek nr. Dehbakry, ca 55 km N Jiroft, 26.III.2006, W. Heinz leg., 1 male, cHZ; Jiroft, Anbar-Abad, 1.-18.V.1956, W. Richter leg., 1 female, cWR), contrary, in findings from May 30 to June 7 the series comprised mainly *A. picipes* (often in more or less immature condition) and only a few specimens of the new species, the latter often with strongly worn tibiae and tarsi, also with lacking parts of the appendages, one specimen was found dead, so seemingly both species which could be registered syntopic in three localities, share the same localities, with *A. orszuliki* nov. spec. as the species earlier appearing, and disappearing when *A. picipes* emerges as adults.

Acinopus (*Acinopus*) *sinaiticus* nov.sp. (Figs 2, 7, 8, 14)

Acinopus laevigatus MÉNÉTRIÉS: PEYERIMHOFF 1907: 6
Acinopus laevigatus MÉNÉTRIÉS: SCHATZMAYR 1936: 76
Acinopus laevigatus MÉNÉTRIÉS: ALFIERI 1976: 21
Acinopus laevigatus MÉNÉTRIÉS: HOSNI et al. 2003: 561

T y p e m a t e r i a l : Holotype ♂, labelled: "Sinai / ISRAEL / W[adi El]. Arbain / 4.IV.1974 / D.Furth" (TAU). Paratypes: 2♂♂, 1♀, labelled: "Sinai 2500 m / ISRAEL / Mt. Katherine / 8.IV.1974 / D.Furth" (TAU, ZIN, cWR). 1♀, labelled: "Acin. laevigatus Mén / Sinai: Dj. Safsafeh /22.2.1902" (handwritten by Peyerimhoff, species name in black, locality and date in red), "Bedel / vidit (handwritten in red by Peyerimhoff) (MNHN).

E t y m o l o g y : The specific epithet is a latinizid adjective, based on the name of the region in which this species was found.

D i a g n o s i s : A macropterous species of small to medium size for *Acinopus* with excision of dorsal edge of right mandible (subgenus *Acinopus*), dark rufopiceous (in mature condition), with appendages somewhat lighter, labrum strongly incised at anterior margin, clypeus with one setiferous pore puncture at anterior angles, pronotum almost cordate with base rectilinear throughout, toward the posterior angles rectilinearly and anterior to posterior angles weakly sinuately narrowed, anterior angles acutely or more or less roundly protruding, posterior angles obtuse-angled, relatively narrowly rounded at tip, elytra cylindrical, somewhat flattened on disc, metepisternum slightly longer than wide. Pro- and mesotarsi in males distinctly widened. Apical lamella of median lobe moderately long, about somewhat elongate-triangular (dorsal view). Habitus see Fig. 2.

D e s c r i p t i o n : Body length in males 11.6-15.3 mm, in holotype 14.6 mm, in the female paratypes 13.2 and 15.1 mm; width in males 4.3-5.3 mm, in holotype 15.1 mm, in the female paratypes 5.6 mm and 5.9 mm.

Colour: Lighter to darker rufo-piceous or piceous also in mature condition (never completely black, if dark always with a piceous ground colour), appendages somewhat lighter.

Head: wide (as normal in *Acinopus*), only somewhat narrower than pronotum (PW/HW in males 1.13-1.20, average 1.17, in holotype 1.13; in the female paratypes 1.16 and 1.20). Eyes small and relatively flat, tempora oblique, about three fourth as long as diameter of eye or somewhat shorter (dorsally seen), rectilinearly converging to neck. Frontal fovae mostly small and shallow, sometimes elongately prolonged backwards. Disc smooth. Excision of dorsal lateral edge of right mandible relatively small, almost semicircular, relatively close to base of mandible, proximal (basal) angle of excision situated somewhat anterior to level of anterior margin of clypeus (with mandibles closed). Labrum strongly and angulately incised at anterior margin, clypeus weakly, somewhat angulately incised, with anterior angles with one setiferous pore puncture each. Mentum tooth small, submentum with one long and one to three short, fine setae laterally each side.

Pronotum (Fig. 2): Transverse, almost cordate (PW/PL in males 1.47-1.57, average 1.53, in holotype 1.55; in the female paratypes 1.54 and 1.61), widest at about end of anterior third, there lateral seta inserted. Disc convex, area of posterior angles more or less strongly flattened, anterior and posterior transverse impressions very shallow or only indicated, median line indistinctly impressed, terminated anterior to transverse impressions and hardly reaching basal margin. Basal foveae short, elongate, distinctly converging basad, shallowly or more strongly impressed. Anterior margin a little wider than posterior margin, only weakly, somewhat angulately excavate, anterior angles moderately projecting forward, relatively widely rounded at tip. Lateral gutter narrow, somewhat widened toward anterior angles. Sides moderately curved apicad, basad from widest point almost rectlinearly, and anterior to posterior angles weakly sinuately narrowed. Posterior angles distinct, obtuse-angled, relatively narrowly rounded at tip. Base rectilinear throughout or between the basal foveae very weakly excavate.

Elytra (Fig. 2): Longer or shorter cylindrical (EL/EW in males 1.48-1.58, average 1.52, in holotype 1.52; in female paratypes 1.41 and 1.55), hardly or only somewhat wider than pronotum (EW/PW in males 1.06-1.15, average 1.10, in holotype 1.10; in female paratypes 1.09 and 1.17). On disc somewhat flattened, humeri distinctly developed, widely rounded at tip, or with a suggested angle meeting the lateral margin, without humeral tooth; toward behind somewhat convexely or almost parallely enlarged, widest somewhat behind middle. Basal bead weakly sinuate, arcuately curving inside humerus and weakly angled or round towards lateral margin. Scutellar pore puncture present, scutellar stria long. Striae fine, smooth, intervals flat on disc, becoming convex toward elytral declivity, interval 3 without pore puncture (holotype and one paratype), or with pore puncture (three paratypes) at about beginning of apical fourth close to stria 2. Interval 5 with one to two pore punctures apically (in one female paratype lacking), interval 7 with two to four pore punctures apically. Preapical sinuation weak.

Hindwings: Completely developed (folded anterior to apex).

Ventral surface: Prosternum and apex of prosternal process with long setae, proepisternum and anterior part of mesepisternum with sparse, fine setae, metepisternum and metasternum (laterally) with sparse, coarse seta-bearing punctures. Metepisternum relatively long, ratio of anterior margin/internal margin (visible parts) about 0.71, moderately narrowed behind. Abdominal sternites III-V with scattered setae of unequal length.

Last sternite, beside some fine scattered setae with two pore punctures bearing a long seta on each side at apical margin in both sexes.

Legs: Normal for *Acinopus* species. Pro- and mesotarsi distinctly widened in males (about as strong as in *A. laevigatus*), with pro- and mesotarsomere 2-4 with biseriate adhesive vestiture. Ventroapical tubercle of protibia with about four to five spines, arranged in a transverse row. Eight to ten spines on lower surface of protibia arranged in one row. Outer distal margin of fore tibia with six to eight spines. Tarsi smooth on superior surface except obligatory setae.

Microsculpture of surface: Head with weakly engraved somewhat irregular isodiametric meshes, pronotum and elytra with somewhat irregular slightly transverse meshes, somewhat more strongly engraved and more confused as on head, surface very shiny, in females meshes somewhat stronger engraved, surface less shiny.

Median lobe of aedeagus (Figs 7, 8): Of normal construction for *Acinopus* species. Middle and apical part somewhat bent to the left, terminal lamella wide and flat, somewhat elongate-triangular (dorsal view), and somewhat reflexed apically (lateral view), internal sac with a small, elongate group of about ten medium-sized spines.

Female genitalia (Fig. 14): Hemisternite asymmetrical, with numerous scattered setae in its internal, somewhat hyaline part. Gonocoxite 1 elongate, apically with numerous setae, gonocoxite 2 scoop-shaped, apically somewhat blunt, with a double-sensilla in a furrow, and with numerous fine long setae at concave side.

I n t r a s p e c i f i c v a r i a b i l i t y : Though the material is small, at least a statement can be made concerning the body size (varies from 11.6-15.3 mm), the construction of the pronotal base (rectilinear throughout or between the basal foveae very weakly excavate), and of basal foveae (shallowly or more distinctly impressed). The elytra are longer or shorter cylindrical with interval 3 lacking pore puncture or with pore puncture at about beginning of apical fourth close to stria 2, and with interval 5 with one to two pore punctures apically or these pore punctures lacking.

C o m p a r i s o n s : Similar in its colour to *A. orszuliki* nov.sp., but different in having pro- and mesotarsomeres distinctly enlarged, the labrum distinctly incised apically, the anterior pronotal angles not as strong and less acutely projecting forward, the pronotal base more or less rectilinear, the pronotum anterior to the posterior angles laterally somewhat sinuate, the elytra somewhat flattened, and the hind wings fully developed (folded anterior to apex), and the metepisterna longer.

The species is distinguishable from *A. picipes* and *A. laevigatus* by its dark rufopiceous colour, the pronotum anterior to the posterior angles somewhat sinuate and with posterior angles distinctly angled, the elytra somewhat flattened, from *A. picipes* additionally by having the clypeal anterior angles with only one setiferous pore puncture each (in *A. picipes* as a rule with two setiferous pore punctures each).

H a b i t a t : Nothing is known about biotope and circumstances of collecting, but it can be supposed that the members of this species live under stones on moist soil with vegetation.

D i s t r i b u t i o n : Up to present only known from Egypt from some localities in the Mount Sinai near the town of Saint Catherine.

R e m a r k s : There is only one species of *Acinopus* recorded from Egypt (in fact from

the Sinai Peninsula) with the name *A. laevigatus* MÉNÉTRIÉS, 1832 (PEYERIMHOFF 1907: 6, mentioned the locality "Djebel Safsafeh, vers. 1800", based on his own finding, obviously only one specimen, which we could examine, see "Type material"). SCHATZMAYR (1936: 76) and HOSNI et al. (2003: 561) refered on PEYERIMHOFF (l. c.). ALFIERI (1976: 21), beside the reference on PEYERIMHOFF (l. c.) added a second locality: Wadi El Lega (which is identic with Wadi el Arbain). Without doubt, the species mentioned as *A. laevigatus* by ALFIERI also refers on *A. sinaiticus* nov.sp.

Acinopus (*Acinopus*) *brittoni* nov.sp. (Figs 3, 9, 10, 15)

Acinopus sabulosus (FABRICIUS, 1792): BRITTON 1948: 109

T y p e m a t e r i a l : Holotype ♂, labelled: "El Hahaz / Milliger [sic]", "El Hedjaz. / Millingen. /1915-38" (both labels black print on white labels), "El Hedjaz." yellow underlined) "Acinopus / sp." (handwritten), "Acinopus / sabulosus F / Determined from / description. E.B.B." (species' name handwritten in black by Britton, rest black printed) (BMNH). Paratypes: 1♂, 1♀ with the same first two labels as the holotype, the female additionally with a handwritten label "Acinopus (A.) sabulosus BM 313"(subsequently added) (ZIN, BMNH); 3♂♂: "Hedjaz" (handwritten in black) and "BMNH" (handwritten, subsequently added) (BMNH, cWR); 1 female with "Hedjaz. Millingen" (handwritten in black) and "BMNH" (handwritten, subsequently added) (BMNH); 1♀: "Hedjaz" (handwritten in black), "Kiesenwetter", "Sammlung / Cl. Müller" (both labels black print on white label) (ZSM).

E t y m o l o g y : The species name is a latinized patronym based on the surname of Everard B. Britton (1912-2004), who made a substantial contribution to our overall knowledge on Carabidae of New Zealand, Hawaii and the fauna of Yemen, and who mentioned a species of subgenus *Acinopus* occurring in the Arabian region for the first time.

D i a g n o s i s : A brachypterous species of medium to large size for *Acinopus*, with excision of dorsal edge of right mandible (subgenus *Acinopus*), black, tarsomeres and antennae dark reddish-brown, labrum deeply incised at anterior margin, clypeus with one setiferous pore puncture at anterior angles, pronotum laterally toward the obtuse-angled posterior angles almost rectilinearly or very weakly convexly narrowed, apicad weakly convex, anterior angles strongly protruding, narrowly rounded at tip, posterior angles widely rounded at tip, elytra short-oval, somewhat flattened on disc, metepisternum transverse, pro- and mesotarsi in males moderately widened, apical lamella of median lobe short, about somewhat elongate-triangular (dorsal view). Habitus see Fig. 3.

D e s c r i p t i o n : Body length 13.4-18.1 mm in males, 15.5 mm in holotype, 15.7-17.8 mm in females; width 5.8-7.1 mm in males, 6.4 mm in holotype; 6.3-6.9 mm in females.

Colour: Black, tarsomeres and antennae reddish-brown.
Head: wide (as normal in *Acinopus*), only somewhat narrower than pronotum (PW/HW in males 1.21-1.26, in holotype 1.23; in females 1.21-1.28). Eyes small and relatively flat, tempora oblique, about half to three fourth as long as diameter of eye (dorsally seen), rectilinearly converging to neck. Frontal foveae mostly small and shallow, sometimes elongately prolonged backwards. Disc smooth, sometimes laterad with widely spaced micropunctures. Excision of dorsal lateral edge of right mandible well developed, almost semicircular, in short distance from base of mandible, proximal (basal) angle of excision situated distinctly anterior to level of anterior margin of clypeus (with mandibles closed). Labrum strongly and somewhat angulately incised at anterior margin (about as strong as

in *A. sabulosus*), clypeus weakly semicircularly incised, with anterior angles with one setiferous pore puncture each. Mentum tooth small, submentum with one long seta laterally on each side.

Pronotum (Fig. 3): Strong transverse (PW/PL in males 1.70 - 1.77, in holotype 1.73; in the two female paratypes 1.76-1.78), widest at about end of anterior third, there or somewhat before lateral seta inserted. Disc convex, area of posterior angles strongly flattened, anterior and posterior transverse impressions very shallow or only indicated, median line weakly impressed, terminated before anterior margin and sometimes reaching basal margin. Basal foveae short, elongate, distinctly converging basad, shallowly or more strongly impressed, some punctures of unequal size in and around fovae, more or less widely spaced and continuing to the area of posterior angles. Anterior margin a little wider than posterior margin, deeply excavate, anterior angles strongly projecting forward, relatively narrowly rounded at tip. Lateral gutter relatively narrow in small specimens, somewhat wider in larger specimens, sometimes somewhat widened toward anterior angles. Sides moderately curved apicad, almost rectilinear or weakly convexly narrowed from widest point basad. Posterior angles somewhat obtuse-angled, widely rounded at tip. Base almost rectilinear between basal foveae, posterior angles very weakly deflexed backwards.

Elytra (Fig. 3): short-oval (EL/EW in males 1.26-1.32, in holotype 1.30; in the two female paratypes 1.36 and 1.37), only somewhat wider than pronotum (EW/PW in males 1.07-1.14, in holotype 1.08; in the two female paratypes 1.08 and 1.09). On disc only moderately convex, humeri distinctly developed, somewhat angled, rounded at tip, without humeral tooth, not fused at suture, somewhat convexly enlarged toward behind, widest about in middle. Basal bead weakly sinuate, arcuately curving inside humerus and weakly angled or round towards lateral margin. Scutellar pore puncture present, scutellar stria long. Striae fine, smooth, intervals flat on disc, becoming convex toward elytral declivity, interval 3 without pore puncture (holotype, four paratypes), or with a pore puncture at about beginning of apical fourth close to stria 2 (two paratypes). Interval 5 with one or two pore punctures apically, or such lacking on one or both elytra, interval 7 with one to three pore punctures apically, often in different numbers on both elytra. Preapical sinuation weak in males, only suggested in females.

Hindwings: Strongly reduced to small scales.

Ventral surface: Prosternum with short setae, apex of prosternal process with long setae, proepisternum and anterior part of mesepisternum with sparse, fine setae, metepisternum and metasternum (laterally) with sparse, coarse seta-bearing punctures. Metepisternum very short, ratio of anterior margin/internal margin (visible parts) about 1.07, moderately narrowed behind. Abdominal sternites III-V with scattered setae of unequal length. Last sternite, beside some fine scattered setae with two pore punctures bearing a long seta on each side at apical margin in both sexes.

Legs: Normal for *Acinopus* species. Pro- and mesotarsi moderately widened in males (somewhat weaker than in *A. laevigatus*), pro- and mesotarsomere 1 with two small adhesive scales apically, pro- and mesotarsomere 2-4 with biseriate adhesive vestiture. Ventroapical tubercle of protibia with five to eight spines, arranged in a transverse row. Eight to nine spines on lower surface of protibia arranged in one row, sometimes single spines out of the line. Outer distal margin of fore tibia with five to nine spines. Tarsi smooth on superior surface except obligatory setae.

Microsculpture of surface: Head and pronotum in males with slightly transverse meshes weakly engraved and somewhat irregular, elytra with the same kind of meshes but somewhat more strongly engraved than on the forebody, surface very shiny, in females meshes somewhat stronger engraved, surface less shiny.

Median lobe of aedeagus (Figs 9, 10): Of normal construction for *Acinopus* species. Middle and apical part somewhat bent to the left, terminal lamella wide and flat, somewhat short-triangular, and apically widely rounded (dorsal view), apicad almost rectilinear (lateral view), internal sac with an elongate group of about 20 medium-sized and small spines.

Female genitalia (Fig. 15): Hemisternite asymmetrical, with numerous scattered setae in its internal, somewhat hyaline part. Gonocoxite 1 elongate, apically with numerous setae, gonocoxite 2 scoop-shaped, apically somewhat blunt, with a double-sensilla in a furrow, and with numerous fine long setae at concave side.

Intraspecific variability: The material is too small to make an extended statement on this item. Concerning the eight specimens examined it can be noted that the body size can vary considerably and that the elytra can have or have not one pore puncture in interval 3, with the possibility that only one elytron has this puncture, also the number of pore punctures in interval 5 and 7 can vary.

Comparisons: *Acinopus brittoni* nov.sp. is similar in general habitus to *A. sabulosus* (FABRICIUS, 1792). Comparisons of more than 60 specimens of *A. sabulosus* from Morocco, Algeria, and Tunisia with the specimens of the new species from the Hedjaz region showed that both species have the same number of clypeal setae, a labrum also strongly and somewhat angulately incised at anterior margin, the same position of the excision of the right mandible, a metepisternum very short (in *A. sabulosus* ratio of anterior margin/internal margin about 1.04 to 1.12), a similar construction of the male pro- and mesotarsomeres, and also a similar external construction of the median lobe of the aedeagus, but revealed some significant differences. *A. sabulosus* has the pronotal posterior angles more widely rounded, the area of the posterior angles is not or at most weakly flattened, the pronotum and the elytra are much more convex (contour distinctly broken at junction of pronotum and elytra, laterally seen), the hindwings are reduced to small scales, the elytra are fused at suture, and the elongate group of spines of the internal sac of the median lobe consists of more spines (about 20 to 30, rarely less numerous). In *A. brittoni* spec.nov. the pronotal posterior angles are obtuse-angled, though widely rounded at apex, the body is relatively flat (contour hardly broken at junction of pronotum and elytra, laterally seen), the hindwings are longer (about one third as long as elytral length), the elytra are not fused at suture, and the elongate group of spines of the internal sac of the median lobe consists of spines less numerous (about 20). For differences to *A. arabicus* nov.sp. see below under *A. arabicus* nov.sp.

The new species has in common with *A. laevigatus*, a species extremely variable, the same body colour, the clypeal anterior angles with only one setiferous pore puncture each, the pro- and mesotarsomeres in males are widened about to the same extent, but differs by a larger, shorter and flatter body, by the position of the lateral excision of the dorsal edge of the right mandible (basal angle of excision anterior to level of anterior margin of clypeus) which is situated in about the basal third, the pronotum shorter, by the short-oval elytra with mostly weakly angulate humeri, reduced hindwings and shorter metepisterna, finally also by a somewhat different construction of the median lobe of the male genitalia which is stouter, with an apical lamella shorter, apicad almost rectilinear (lateral view), the internal sac with

only one elongate group of about 20 medium-sized and small spines. *A. laevigatus* has the excision of the dorsal edge of the right mandible somewhat anterior to somewhat behind the middle of the mandible (basal angle of excision behind level of anterior margin of clypeus, but very variable in this aspect), the pronotum as a rule is longer with posterior angles with a suggested angle, though rounded at tip. The elytra are more or less cylindrical and widest behind the middle, the hindwings are fully developed and the metepisterna long (ratio of visible parts of anterior margin/internal margin about 0.71) and strongly narrowed towards behind. The median lobe of the male genitalia is slender, with an apical lamella distinctly longer and distinctly reflext dorsad, the internal sac has a higher number of spines (about 30 to 50, rarely fewer) arranged mostly in two more or less distinct elongate groups.

Acinopus picipes, a macropterous species similar to *A. laevigatus* in its habitus, differs from *A. brittoni* nov.sp. by a more convex body, the possession of clypeal anterior angles as a rule with two setiferous pore puncture each, by the position of the excision of the dorsal edge of the right mandible which is inserted shortly behind the base, by the elytra more or less cylindrical and as a rule widest behind the middle, the hindwings are fully developed and the metepisterna long (ratio of anterior margin/internal margin (visible parts) about 0.77) and strongly narrowed towards behind.

H a b i t a t : Nothing is known about the exact localities, biotope, and circumstances of collecting. The Hedjaz region as the northern part of the Sarawat Mountains rises about 2100 meters. It is likely (as in the case of *A. arabicus* nov.sp., described below) the species lives in higher altitudes with enough moisture, which makes plant growth possible.

D i s t r i b u t i o n : Likely to be endemic to the Hedjaz Mountains in Saudi Arabia. See also the remarks to *A. arabicus* nov.sp. below.

R e m a r k s : This new species was firstly mentioned as *Acinopus sabulosus* (FABRICIUS, 1792) from the "Hejaz" ("HEJAZ: 7 ex without detailed record (Millingen)") by BRITTON (1948: 109) in his paper on Cicindelidae and Carabidae collected during the British Museum expedition to South-West Arabia. The name "Hejaz" refers to the modern Al-Hejaz, Hijaz, or al-Ḥiğāz, a region in the west of present-day Saudi Arabia, forming the northern part of the Sarawat mountain range, which runs parallel to the western coast of the Arabian Peninsula, starting from the border of Jordan in the north to the Gulf of Aden in the south, running through Saudi Arabia and Yemen. The record of *A. sabulosus* from Yemen (KATAEV et al. 2003: 368) is based on this erroneous record from the Hejas region made by Britton because it was mistakenly not designated as belonging to the present-day Saudi Arabia but to Yemen. Therefore the distribution of *A. sabulosus* seems to be restricted only to northern Africa from Morocco, Algeria, and Tunisia to Libya. This species is very variable, it concerns an extreme variability within members of one population as well as geographical variability. There are several names, partly interpreted as synonyms, or as subspecies (KATAEV et al. 2003: 368), or distinct species (KATAEV & WRASE 2015), a revision is badly needed.

Acinopus (*Acinopus*) *arabicus* nov.sp. (Figs 4, 11, 12, 16)

T y p e m a t e r i a l : Holotype ♂, labelled: "SAUDI ARABIA / Asir Prov., 2800-3050 m / Al Soudah, ca. 50 km NW Abha / 4.1.1994 / H.J. Bremer leg." (black print on white label), (MFNB). Paratypes: 1♂, 1♀: same data (MFNB, cWR).

E t y m o l o g y : The specific epithet is a latinizid adjective, based on the name of the region in which this species was found.

D i a g n o s i s : A micropterous species of small to medium size for *Acinopus*, with excision of dorsal edge of right mandible (subgenus *Acinopus*), black, tarsomeres and antennae dark reddish-brown, labrum moderately incised at anterior margin, clypeus with one setiferous pore puncture at anterior angles, pronotum laterally almost rectilinearly or very weakly convexly narrowed toward the obtuse-angled posterior angles and weakly convexly narrowed apicad, anterior angles somewhat protruding, narrowly rounded at tip, posterior angles widely rounded, elytra short-oval, moderately convex on disc, metepisternum very short, pro- and mesotarsi in males moderately widened, apical lamella of median lobe short, about somewhat elongate-triangular (dorsal view). Habitus see Fig. 4.

D e s c r i p t i o n : Body length in males 14.4-14.7 mm, in holotype 14.7 mm, in the female paratype 12.9 mm; width in males 5.4-5.5 mm, in holotype 5.5 mm; in the female paratype 5.1 mm.

Colour: Black, tarsomeres and antennae reddish-brown.

Head: Wide (as normal in *Acinopus*), only somewhat narrower than pronotum (PW/HW in males 1.18-1.21, in holotype 1.18; in the female paratype 1.24). Eyes small and relatively flat, tempora oblique, about three fourth as long as diameter of eye or somewhat shorter in female paratype (dorsally seen), rectilinearly converging to neck. Disc smooth, laterad with small, weakly impressed and widely spaced punctures. Labrum strongly and somewhat angulately incised at anterior margin, clypeus weakly semicircularly incised, with anterior angles with one setiferous pore puncture each. Mentum tooth small, submentum with one long seta laterally each side. Excision of dorsal lateral edge of right mandible well developed, almost semicircular, relatively close to base of mandible, basal angle of excision situated distinctly anterior to level of anterior margin of clypeus (with mandibles closed).

Pronotum (Fig. 4): Transverse (PW/PL in males 1.52-1.58, in holotype 1.52; in the female paratype 1.50), widest at about end of anterior third, where the lateral seta inserted. Anterior margin a little wider than posterior margin, only weakly excavate, anterior angles moderately projecting forward, relatively narrowly rounded at tip. Sides moderately curved apicad, basad from widest point almost rectilinear at a short distance, and anterior to posterior angles gently convexly narrowed. Posterior angles somewhat obtuse-angled, widely rounded at tip. Basal edge almost rectlinear between the basal foveae, posterior angles very weakly shifted backwards. Basal foveae short, elongate, distinctly converging basad, shallowly or more strongly impressed, some punctures of unequal size in and around fovae, more or less widely spaced and continuing to the area of posterior angles. Disc convex, area of posterior angles more or less strongly flattened, anterior and posterior transverse impressions very shallow or only indicated, median line weakly impressed, terminated anterior to apical margin and hardly reaching basal margin. Lateral gutter narrow, somewhat widened toward anterior angles.

Elytra (Fig. 4): short-oval (EL/EW in males 1.39-1.43, in holotype 1.39; in female paratype 1.42), somewhat wider than pronotum (EW/PW in males 1.08-1.11, in holotype 1.11; in female paratype 1.12). On disc moderately convex, humeri distinctly developed, rounded at tip, without humeral tooth, not fused at suture; toward behind somewhat convexely enlarged, widest about in middle. Basal bead weakly sinuate, arcuately curving inside humerus and weakly angled or round towards lateral margin. Scutellar pore puncture present, scutellar stria long. Striae fine, smooth, intervals flat on disc,

becoming convex toward elytral declivity, interval 3 without pore puncture (two paratypes), holotype with pore puncture on right elytron only at about beginning of apical fourth close to stria 2. Interval 5 with one to tree pore punctures apically, interval 7 with two to four pore punctures apically (holotype), or such punctures lacking (remaining two paratypes). Preapical sinuation weak in males, only suggested in female paratype.

Hindwings: Reduced, about one third as long as elytral length.

Ventral surface: Prosternum with short setae, apex of prosternal process with long setae, proepisternum and anterior part of mesepisternum with sparse, fine setae, metepisternum and metasternum (laterally) with sparse, coarse seta-bearing punctures. Metepisternum very short, ratio of anterior margin/internal margin (visible parts) about 0.91, moderately narrowed behind. Abdominal sternites III-V with scattered setae of unequal length. Last sternite, beside some fine scattered setae, with two pore punctures bearing a long seta on each side at apical margin in both sexes.

Legs: Normal for *Acinopus* species. Pro- and mesotarsi moderately widened in males (less wider than in *A. laevigatus*), pro- and mesotarsomere 1 with two small adhesive scales apically, pro- and mesotarsomere 2-4 with biseriate adhesive vestiture. Ventroapical tubercle of protibia with three to five spines, arranged in a transverse row. Outer distal margin of fore tibia with five to eight spines. Eight to nine spines on lower surface of protibia arranged in one row. Tarsi smooth on superior surface except obligatory setae.

Microsculpture of surface: Head and pronotum in males with transverse to almost isodiametric meshes weakly engraved and somewhat irregular, elytra with about the same kind of meshes somewhat more strongly engraved as on the forebody, surface very shiny, in females meshes somewhat stronger engraved, surface less shiny.

Median lobe of aedeagus (Figs 11, 12): Of normal construction for *Acinopus* species, middle and apical part somewhat bent to the left, terminal lamella wide and flat, somewhat elongate-triangular (dorsal view), and somewhat reflexed apically (lateral view), internal sac with a small, elongate group of about ten medium-sized spines.

Female genitalia (Fig. 16): Hemisternite asymmetrical, with numerous scattered setae in its internal, somewhat hyaline part. Gonocoxite 1 elongate, apically with numerous setae, gonocoxite 2 scoop-shaped, apically somewhat blunt, with a double-sensilla in a furrow, and with numerous fine long setae at concave side.

I n t r a s p e c i f i c v a r i a b i l i t y : The material is too small to make an extended statement on this item. Concerning the three specimens examined it can be noted that the body size varies somewhat and that the elytra can have or have not one pore puncture in interval 3, with the possibility that only one elytron has this puncture, also the number of pore punctures in interval 5 and 7 can vary.

C o m p a r i s o n s : The species is closest to *A. brittoni* nov.sp. in having the same body colour, a somewhat flattened body, a clypeus with anterior angles with one setiferous pore puncture each, and the same position of the excision of the dorsal lateral edge of the right mandible, but differs in smaller body size, a wider head (compared with pronotum), a longer pronotum with a somewhat narrower lateral gutter and with less protruding anterior angles, and with a less strongly flattened area of the posterior angles. In addition, the elytra of the new species are somewhat longer and a little less oval, the median lobe of the aedeagus is somewhat shorter and stouter, the apical lamella a little longer and almost evenly narrowed, apically more acute (dorsal view), somewhat reflexed apically (lateral view), the spines of the internal sac are lower in number (compare Figs 11, 12, and 9, 10).

H a b i t a t : Nothing is known about biotope and circumstances of collecting. Al Soudah is situated west of Abah City on the Sirwat Mountains, a massif with heights of more than 3000 m a.s.l. After a source in the internet (http://www.the-saudi.net/saudi-arabia/abha/abha_city.htm) the Abha region has the highest level of rainfall of any part of Saudi Arabia, the mountains are covered with stands of Araar trees, *Tetraclinis articulata* (VAHL) MASTERS, an evergreen coniferous tree of the cypress (family Cupressaceae) and other natural forests.

D i s t r i b u t i o n : Up to present only known from one locality in the Sirwat Mountains (Saudi Arabia), situated in the Sarat 'Asir region in the middle of the Sarawat Mountain range, but surely more widely distributed in that massif.

R e m a r k s : The Sarawat mountain range, a massif running parallel to the western coast of the Arabian Peninsula and is among the Peninsula's most prominent geographical features, starts from the border of Jordan in the north to the Gulf of Aden in the south, running through Saudi Arabia and Yemen. The range's northern half, known as Sarat al-Hejaz rarely rises about 2100 meters, while the middle and southern portions (Sarat 'Asir and Sarat al-Yemen, respectively) can reach heights of over 3,300 meters. The discovery of two members of the subgenus *Acinopus* in western Saudi Arabia, both similar to the North African *A. sabulosus*, is very interesting in a zoogeographical point of view. There is a wide gap of about thousand kilometres between eastern populations of *A. sabulosus* from Libya and the populations of two new species in Saudi Arabia (from Egypt, in fact from the Sinai Peninsula, only one rather dissimilar and apparently unrelated species, *A. sinaiticus* nov.sp., is known). It can probably be hypothetizied, due to the relative similarity of *A. sabulosus* and the two species from Saudi Arabia, that *A. sabulosus* on the one hand and the two Arabian species on the other hand are adelphotaxa with an ancestor widely distributed over North Africa and the Arabian Peninsula in the Neogene, most likely not earlier than the middle Miocene, because in the Paleogene and the early Miocene, North Africa was dominated by tropical forests; by the middle Miocene grass-dominated ecosystems begin to spread and vegetation changed into a more open grassland vegetation towards the end of the Miocene (e.g., MICHEELS et al. 2009: 193; JACOBS et al. 2010: 69). The continuous distribution of the common ancestor of the species discussed was probably divided into the African and Arabian parts by lowland desert areas appeared for the first time in North Africa at around the Miocene/Pliocene boundary (e.g., LE HOUEROU 1997). This separation was aided by the Red Sea which formation began in the Eocene and became a sea in the Miocene, causing the isolation of the mountains of South-West Arabia from those of Africa (BRITTON 1948: 89). The result of alternating dry and damp climatic periods in a region today drier than in the past, caused a further splitting in two species with a relict-like occurrence, which need for surviving plants and herewith connected moisture, in the high mountains of western Arabia, in one species in the Sarat al-Hejaz in the northern portion of the Sarawat mountain range, and a second one in the Sarat 'Asir in its middle part.

Acinopus (*Acinopus*) *laevigatus* MÉNÉTRIÉS, 1832

Acinopus laevigatus ssp. *kashmirensis* SCHAUBERGER, 1927: 7 (type loc.: "Poo im westlichen Himalaja") **nov.syn.**

SCHAUBERGER (1927: 7) described the subspecies *A. l. kashmirensis* based on several (at least six: see GUSENLEITNER 1990: 763) specimens which differ from specimens from South Russia and West Asia by the excision of the right mandible longer and more shal-

low and by the pronotum stronger and more evenly rounded. Though not having examined the types, we investigated several hundreds of specimens of *Acinopus laevigatus* from all areas of its western distribution and compared them with specimens from the western Himalaya (including specimens coming from the area of the type locality) not only in external characters, but also concerning the construction of the median lobe of the aedeagus, stating that the characters Schauberger mentioned are very variable and can be met also in specimens coming from western areas outside the West Himalaya, hence, a variability in geographical aspect cannot be stated. Therefore we propose to treat *A. l. kashmirensis* as a junior subjective synonym of *A. laevigatus*. For other synonyms of *A. laevigatus* see KATAEV et al. 2003: 368.

Material from western Himalaya examined (32 specimens):

India: Himachal Pradesh: Lahaul and Spiti district: Keylong ("Kyelang", 1 spcm., MFNB). Kinnaur district: Poo ("Bashar State Poo", 10♂♂/♀♀; "Kaschmir Poo", 5♂♂/♀♀, MFNB); "Poo Kashmir" (2♀♀, BMNH). Shimla District: Shimla ("Simla", 2 spcms., MFNB, one with label: Acinopus laevigatus Mén. H.W. Andrewes det.). - Jammu and Kashmir: Ladakh District: "Khalatse 15000'." (9♂♂/♀♀, MFNB). Ganderbal District: Sonamarg, 2800-4000 m, 23./27.VI.2003, R. Novák leg. (1♂, cWR); "Sonemarg (Cachemire)", "G. Babault, VIII.1914" (1♂, MNHN). Srinagar District: Srinagar, Zabarwan Range, Pari Mahal, from under stones/dung, 25.V.1967, Gy. Topál leg. (1♂, ZIN).

Pakistan: Khyber Pakhtunkhwa Province: Swat Valley, 7.VI.2008, local collector (1♂, cWR); NW Pakistan, Swat Prov., Madyan, 35°70' N 71°90' E, 1400 m, 19.VI.-4.VII.1971, C. Holzschuh leg. (1♂, NME). - Azad Jammu and Kashmir: env. Naran "NW from Junkar", 3000 m, 1.-10.VII.2003, V. Gurko & S. Ovchinnikov leg. (1♂, cGRK).

Acinopus (*Oedematicus*) *megacephalus* (P. ROSSI, 1794)

Acinopus euphraticus ALI, 1999: 60 (type loc.: Baghdad) **nov.syn.**

ALI (1999: 60) described *A. euphraticus* on basis of nine specimens coming from Baghdad; the holotype was deposited in the Natural History Museum, London but could not be found there (B. Garner, pers. comm.). A sketch of the male genitalia was added at the end of the description, but the image depicted is very poorly observed and is difficult to reconcile as belonging to genus *Acinopus*.

But the case of *A. euphraticus* remains enigmatic taking into consideration several inconsistencies in the text. The description is identical with that of *A. khalisensis* ALI, 1967, which was synonymized with *A.* (*Oedematicus*) *megacephalus* by WRASE (2005), word by word, including the results of measurements (for instance the holotype of *A. khalisensis* would have a body length of 16.33 mm and a width of 5.86 mm, the holotype of *A. euphraticus* 16.33 mm and 5.86 mm, too!) The descriptions differ only in the type localities, which are in close proximity to one another [*A. khalisensis* is described from "Khalis" (= Al-Khalis, the north-east environments of Bagdhad)] and in the number of the type specimens. In the text no comparisons were made with a species close to the new species, but the passage "...clypeus deeply emarginate..." applies to a member of subgenus *Oedematicus* BEDEL, 1897. Hence we have reasons to suppose that Ali's paper of 1999 is a result of a confusion for reasons unknown.

Without doubt, *A. euphraticus*, like *A. khalisensis*, is a junior synonym of *A.* (*Oedematicus*) *megacephalus*. For other synonyms of *A. megacephalus* see KATAEV et al. 2003: 368].

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Zusammenfassung

Vier Arten der Gattung *Acinopus* DEJEAN, 1821, in die Untergattung *Acinopus* gehörend, werden beschrieben: *A. orszuliki* nov.sp. (loc. typ.: Dareh Bar, N30°05'54.1''/E057°24'49.1'', 2503 m, Mahan, Kerman, Iran); *A. sinaiticus* nov.sp. (loc. typ.: Wadi El Arbain, Sinai, Ägypten); *A. brittoni* (loc. typ.: "Hedjaz" [Sarat al-Hejaz], Saudi-Arabien); und *A. arabicus* nov.sp. (loc. typ.: Al Soudah, ca. 50 km NW Abha, 2800-3050 m, Asir Prov., Saudi-Arabien). Die neuen Arten werden mit *A. laevigatus* MÉNÉTRIÉS, 1832, *A. picipes* (OLIVIER, 1795), *A. zagrosensis* AZADBAKHSH & WRASE, 2016, und *A. sabulosus* (FABRICIUS, 1794) verglichen. Der Habitus, der Medianlobus des männlichen Genitals, das Hemisternit und die Gonocoxite des weiblichen Genitals der neuen Arten werden abgebildet. Folgende Synonyme werden vorgeschlagen: *Acinopus* (*Acinopus*) *laevigatus* MÉNÉTRIÉS, 1832 = *Acinopus* (*Acinopus*) *laevigatus* ssp. *kashmirensis* SCHAUBERGER, 1927, nov.syn.; *Acinopus* (*Oedematicus*) *megacephalus* (P. ROSSI, 1794) = *Acinopus euphraticus* ALI, 1999, nov.syn.

References

ALFIERI A. (1976): The Coleoptera of Egypt. — Mémoires de la Société Entomologique d'Égypte **5**: i-xiii, 1-361.

ALI H.A. (1967): New species of Carabidae (Insecta: Coleoptera) from Iraq. — Bulletin of the Biological Research Centre, University of Baghdad **1**: 12-29.

ALI H.A. (1999): A new species of ground beetles (Coleoptera: Carabidae) from Iraq. — Bulletin of the Iraq Natural History Museum, University of Baghdad **9** (1): 59-63.

AZADBAKHSH S. & D.W. WRASE (2016): A new species of the genus *Acinopus* DEJEAN, 1821 from west of Iran (Coleoptera; Carabidae; Harpalini) with a key to species of Iran. — Zootaxa **4147** (5): 583-588.

BRITTON E.B. (1948): Coleoptera: Cicindelidae and Carabidae. Pp. 87-125, pl. 7-9. — In: Expedition to South-west Arabia 1937-8, Vol. 1. London: British Museum (Natural History), pp. 67-178, pl. 4-9 [with an appendix by P. BASILEWSKY: Trois nouveaux Carabiques du Sud-Ouest de l'Arabie, pp. 126-131].

GUSENLEITNER F. (1990): Die Typen der Carabidae-Sammlung Dr. Erwin Schauberger am Oberösterreichischen Landesmuseum in Linz, Austria (Insecta: Coleoptera: Carabidae). — Linzer biologische Beiträge **22** (2): 725-785.

HOSNI M.T., AL-SHARKAWY A.Z., OSHAIBAH A.A., HASSAN M.I. & A.A. EL-GHARBAWY (2003): Classification of subfamily Harpalinae (family: Carabidae - order: Coleoptera) in Egypt. II - tribes Harpalini, Masoreini and Amarini. — Egyptian Journal of Entomology **40**: 549-573.

JACOBS B.F., PAN A.D. & C.R. SCOTESE (2010): A review of the Cenozoic vegetation history of Africa. Pp. 57-72. — In: WERDELIN L. & W. SANDERS (eds), Cenozoic Mammals of Africa. Berkeley: University of California Press, 986 pp.

KATAEV B.M. (1995): On taxonomic position of *Nesarpax labiatus* (ERICHSON), endemic to the Cabo Verde Islands, with remarks on Acinopi genus-group (Coleoptera: Carabidae). —Zoosystematica Rossica **3** (2): 273-278.

KATAEV B.M. & D.W. WRASE (2015): *Acinopus sabulosus* and *A. lepeletieri* from north-west Africa are two distinct species (Coleoptera: Carabidae: Harpalini). — Zootaxa **4007** (2): 290-294.

KATAEV B.M., WRASE D.W. & N. ITO (2003): Harpalina, pp. 367-397. — In: LÖBL I. & A. SMETANA (eds), Catalogue of Palaearctic Coleoptera, Vol. 1 - Myxophaga - Adephaga. Stenstrup: Apollo Books, 819 pp.

LE HOUEROU H.N. (1997): Climate, flora and fauna changes in the Sahara over the past 500 million years. — Journal of Arid Environments **37**: 619-647.

LORENZ W. (2005): Systematic List of extant Ground Beetles of the World (Insecta Coleoptera "Geadephaga": Trachypachidae and Carabidae incl. Paussinae, Cicindelinae, Rhysodinae). Second Edition. — Tutzing: W. Lorenz, 530 pp.

MICHEELS A., ERONEN J. & V. MOSBRUGGER (2009): The Late Miocene climate response to a modern Sahara desert. — Global and Planetary Change **67**: 193-204.

PEYERIMHOFF P. de (1907): Liste des coléoptères du Sinai. — L`Abeille. Journal d'Entomologie **31** [1907-1923]:1-55.

SCHATZMAYR A. (1936): Risultati scientifici della spedizione entomologica di S.A.S. il Principe Alessandro della Torre e Tasso in Egitto e nella penisola del Sinai. XII. Catalogo ragionato dei Carabidi finora noti d'Egitto e del Sinai. — Publicazioni del Museo Entomologico "Pietro Rossi", Duino **1**: 1-114.

SCHAUBERGER E. (1927): Beitrag zur Kenntnis der paläarktischen Harpalinen, III. — Coleopterologisches Centralblatt **2** [1927-1928]: 6-19.

WRASE D.W. (2005): Nomenclatorial, taxonomic and faunistic notes on some Palaearctic genera and species of ground-beetles (Coleoptera, Carabidae: Apotomini, Chlaeniini, Cyclosomini, Harpalini, Lebiini, Licinini, Platynini, Siagonini, Sphodrini). — Linzer biologische Beiträge **37** (1): 815-874.

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