



Entomofauna

ZEITSCHRIFT FÜR ENTOMOLOGIE

Band 21, Heft 5: 33-48

ISSN 0250-4413

Ansfelden, 30. April 2000

**Contributions to the knowledge of the genera
Scleropatrum REITTER, 1890 and
Polycoelogastridium REICHARDT, 1936
(Coleoptera, Tenebrionidae, Opatrini)**

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Abstract

The systematic position of the genera *Scleropatrum* REITTER, 1890 and *Polycoelogastridium* REICHARDT, 1936 is discussed. The holotype of *Polycoelogastridium octocostatum* (FAIRMAIRE, 1863) is figured and redescribed for the first time. Habitat and new records from Thailand and Indonesia are given. A new species from Oman, belonging to the genus *Scleropatrum* REITTER, 1890, is described and figured: *S. gallagheri* sp. nov. *Scleropatrum strigatum* (FABRICIUS, 1798) is recorded from the Arabian Peninsula for the first time, found in Oman. The aedeagus and particular features are figured for the first time after examination of the type. New species of *Scleropatrum* are described and figured from Burkina Faso: *Scleropatrum gustafssoni* sp. nov. and from Kenya: *Scleropatrum girardi* sp. nov.

Zusammenfassung

Die systematische Position der Gattungen *Scleropatrum* REITTER, 1890 und *Polycoelogastridium* REICHARDT, 1936 wird diskutiert. Der Holotypus von *Polycoelogastridium octocostatum* (FAIRMAIRE, 1863) wird zum ersten mal abgebildet und revidiert. Habitat und neue Nachweise von Thailand und Indonesia werden gemeldet. Eine neue Art der Gattung *Scleropatrum* REITTER, 1890, wird beschrieben und abgebildet: *S. gallagheri* sp. nov. *Scleropatrum strigatum* (FABRICIUS, 1798) wird erstmals für die arabische Halbinsel aus Oman nachgewiesen. Der Aedeagus und besondere Details werden erstmals abgebil-

det aufgrund eines Studiums des Holotypus. Neue *Scleropatrum*-Arten werden beschrieben und illustriert von Burkina Faso: *Scleropatrum gustafssoni* sp. nov. und von Kenya: *Scleropatrum girardi* sp. nov.

Résumé

La position systématique des genres *Scleropatrum* REITTER, 1890 et *Polycoelogastridium* REICHARDT, 1936 est discutée. L'holotype de *Polycoelogastridium octocostatum* (FAIRMAIRE, 1863) est réécrit et figuré pour la première fois. Son habitat et répartition nouvelle pour la Thaïlande et l'Indonésie sont discutées. Une nouvelle espèce de l'Oman, appartenant au genre *Scleropatrum*: *S. gallagheri* sp. nov. est décrite et figurée. *Scleropatrum strigatum* (FABRICIUS, 1798) est pour la première fois trouvé au Sultanat d'Oman. L'éédéage et les principaux caractères sont figurés pour la première fois. Deux nouvelles espèces de l'Afrique: *Scleropatrum gustafssoni* sp. nov. de Burkina Faso et *S. girardi* sp. nov. de Kenya, sont décrites et figurées.

Introduction

The genus *Scleropatrum* REITTER, 1890 was created to separate some species included in the genus *Opatrum* FABRICIUS, 1775 and characterized by a single row of punctures between the elytral striae. The genus *Polycoelogastridium* was created by REICHARDT (1936), separating some species described in the genera *Opatrum* and *Scleropatrum*. GEBIEN (1939: 465) included 8 taxa in this genus. However, *Scleropatrum arenarium* (GEBIEN loc. cit.) is a South African species (= *Opatrum arenarium* FABRICIUS, 1775) belonging to the genus *Gonocephalum* SOLIER, 1834: 498 without relationship with the genus *Scleropatrum* (cf. FERRER 1995a: 58-59).

The study of the taxa belonging to the genera *Scleropatrum* REITTER, 1890: 148 and *Polycoelogastridium* REICHARDT, 1936: 85 is difficult because some differential characters, used by authors in the available keys (REICHARDT 1936: 85-91, KASZAB 1942: 14-18) are unfortunately common for some species in both genera. Some species apparently belong in habitus and in some morphological characters to genus *Scleropatrum*, for example, *S. hirtulum* (BAUDI, 1876: 69) from Syria and Central Asia exhibits pronota feebly and longitudinally impressed in the middle, like the species belonging to the genus *Polycoelogastridium*. *Polycoelogastridium decellei* ARDOIN, 1969: 200 on pronotal details belongs without any doubt to this genus, but the elytra are subcostate, not costate, showing the usual aspect of species of *Scleropatrum*. The tuberculate sculpture, invoked by KASZAB (1942: 14) to recognize the elytra of some species of *Polycoelogastridium*, occurs in the problematic *Scleropatrum alaticolle* FAIRMAIRE, 1893, considered as belonging to the genus *Gonocephalum* by successive authors (cf. FERRER 1995b: 309-312). A species from Somalia, *Scleropatrum somalicum* FERRER, 1995c: 38-40, exhibits elytra with primary striae formed by strongly impressed, subquadrate punctures, arranged in longitudinal rows, distinctly concave intervals, subcostate discally and forming distinctly raised costae, resulting from this concavity at sides.

A few taxa have been described from Europe, Asia and Africa: *Polycoelogastridium sexcostatum* (MOTSCHULSKY, 1858) from Crete, *P. octocostatum* (FAIRMAIRE, 1863) from Cambodia, *P. andrewsi* (BLAIR, 1929) from India, *P. vicinguerrae* (GRIDELLI, 1930) from

the Libyan desert, *P. tenuipes* KASZAB, 1942 from India, and *P. decellei* ARDOIN, 1969 from Guinea.

Among Tenebrionidae from Indonesia, kindly communicated by Mr. Rolf RÖBER, Vällingby, Sweden, I have received a specimen belonging to this genus and found it to be identical to the type of *Opatrum octocostatum* FAIRMAIRE, 1863, described from Tonkin, Cambodia. KASZAB (1942: 14) gave a few characters and a key for the oriental species of *Polycoelogastridium*, but no new characters permitting recognition of this species. The identification of the specimens from Indonesia, was impossible without examination of the type.

The aim of the present paper is to describe in more detail the morphological characters of those two genera, giving the first figures of *Poecilogastridium octocostatum* and completing data of its geographical distribution.

New species belonging to the genus *Scleropatrum* are described: *S. gallagheri* sp. nov. from Oman, communicated by Mr. Michael GALLAGHER, curator of the Oman Natural History Museum; *S. gustafssoni* sp. nov. from Burkina Faso, communicated by Mr. Bert GUSTAFSSON, Naturhistoriska riksmuseet, Stockholm; *S. girardi* sp. nov. from Kenya, communicated by Dr. Claude GIRARD, Muséum National d'Histoire Naturelle, Paris.

Supplementary description of *Polycoelogastridium octocostatum* (FAIRMAIRE, 1863) (fig. 33)

The following account and figures supplement FAIRMAIRE'S (1863) comprehensive original description:

Body length 6 mm, max. width (elytra) 2,8 mm.

Body 1.5 x as long as broad, brownish black with dull reddish antennae, buccal appendages and legs. Sparsely covered with short, golden setae. Normally winged. Head transverse, with deeply incised epistome, the space between the genae and the epistome clearly sinuate, the genal zone roundly obtuse, broader than the eye in dorsal aspect, the ocular sulcus complete. Canthon occupying approximately a third of the eye, which is composed of three rows of corneal facets. The contour of the eye strictly reniform, the space between the eyes at front equal to nearly 5 x the diameter of an eye, measured dorsally. The frontal area is convex, forming a supraorbital crest and separated from the epistome by a transverse depression before the eyes. The head enclosed in the pronotum up to genal angles. The integument completely hidden under the vestiture of adherent particles of earth.

Surface of the integument granular and pubescent, each granule bearing a short, golden seta, inclined backwards, isodiametric shiny microsculpture. Tempora subapart, much finer and more densely granulate than the surface of the rest of the head. Antennae shorter than the horizontal width of the head, bearing golden seta, hardly reaching the middle of pronotum, shaped as in fig. 2.

Pronotum transverse, nearly twice as broad as long. The anterior margin straight, the anterior angles broadly rounded and projected forwards, the sides broadly rounded anteriorly and gradually becoming subparallel posteriorly, abruptly constricted basally. The lateral margin serrate, the maximum width behind the middle. The posterior angles obtuse, the lateral zones broadly explanate, the base feebly sinuate at each side. The integument completely covered with earth, shiny and strongly granular, like the head. The

disc longitudinally impressed at the middle and with a very deeply impressed zone, diagonally disposed at each side of the basal third.

Elytra only 1.5 times longer than broad, roundly oval, the maximum width immediately after the middle. The base well sinuated, the shoulders obtuse, the elytral lateral carinae unexposed dorsally. Each elytron exhibiting two rows of rounded foveae, forming striae discally and four carinae dorso-laterally raised between the rows of foveae, representing the primary striae. The space between the suture and the first costa is much broader than the others intervals, without setiferous granulae, but the discal intervals 1 and 2 exhibit a fine line of traceable granulae, bearing setae, which are absent in *octocostatum*, according to KASZAB (1942).

Ventral side of body shiny, black, except the buccal appendages, antennae and legs, which are reddish brown. The antennal sulcus well incised, mentum broad and short, cordiform, deeply excavated at each side, with some golden reddish setae at the anterior margin, strongly punctured. Under each eye the stypes of the maxilla are dull and reddish, contrasting with the black, shiny cuticule of the rest of the head. Gula superficially and transversally ridged, the postgenal and posttemporal zones strongly punctured.

Propleura deeply excavate. Apophysis of prosternum subtrapezoidal, dilated and truncate apically. Mesosternum shiny and a little convex, deeply punctured. Metasternum strongly and longitudinally impressed at middle, strongly punctate. Epipleura broadly excavate and finely margined, constricted apically, strongly punctured. Abdomen strongly punctured (fig. 3), except at the anal sternite, which is finely punctured and unmargined. The underside of body is finely and sparsely pubescent.

Femora claviform, with broadly dilated protibiae, the distal margin broader than the four first protarsomeres together, finely dentate at the external side distally (fig. 5). Mesotibiae a little sinuated basally, much smaller than the protibiae. Metatibiae without particular features, all legs densely and finely pubescent.

Male unknown.

Female genitalia: Length 0,3 mm, max. width 0,4 mm. I have figured the extracted gonapophysis (fig. 4); terminology after CANZONERI (1962: 4-6).

Geographical distribution: Southern Asia, Cambodia, Thailand, Indonesia.

Material examined: Type (Holotype), Cambodia, "Tonkin, Beauhy", Type (Muséum Paris coll. L. Fairmaire). - ♀, 1906, "Opatrum 8-costatum Fairm. Tonkin" (Muséum National d'Histoire Naturelle, Paris). - ♀, Thailand, Bangkok, 17.XI.1975, Thure PALM leg. (coll. of the author). - ♀, Indonesia, Bali, Kuta, 20.VIII.1982, T. CUNES & X. BALLEs leg. (Hungarian Natural History Museum; Budapest). - 2♀♀, Lombok Isle West, Senggigi, 30.X.1995, Rolf RÖBER leg. (coll. of the author).

Habitat: The specimens from Lombok Isle were collected in the evening, attracted to electric light in a cultivated zone, near the beach and the natural forest, together with a female specimen of *Leichenum canaliculatum* (FABRICIUS, 1798), another sabulicolous tenebrionid species, widely distributed in Africa, Asia and Australia.

New records and new species belonging to *Scleropatrum* REITTER, 1890

***Scleropatrum gallagheri* sp. nov. (figs 6-10)**

Body length 8,2 mm, max. width (elytra) 3,5 mm.

Body shiny, reddish brown with lighter buccal appendages and apical antennomeres, shortly pubescent. Normally winged.

Head densely covered with setiferous granulae bearing short, yellowish setae, inclined backwards. The epistome deeply incised, the clypeo-genal zones feebly sinuate and sharply demarcated by an impression at each side, separating the epistome from the front. The eyes smaller than the prominent temples, the canthon occupying 2/3 of the eye in lateral view, well separated at front by a distance equivalent to 5 x the diameter of an eye, measured dorsally. Antennae shorter than the width of the head dorsally, with elongate second and third antennomeres (figs. 6 and 9).

Pronotum convex, strongly explanate at sides, with a feebly impressed, longitudinal line discally. The anterior margin and the base clearly sinuate at each side, the anterior angles nearly rightangles, the posterior angles acute, the lateral sides rounded regularly, from the base to the anterior margin, the lateral margin finely granulate, serrate. The integument shiny, strongly punctured discally (fig. 7), granulate at the explanate sides, each puncture of granula, bearing a yellowish, reclined seta.

Elytra about 1.9 x longer than broad, subparallel at sides, ovaly-rounded apically, the lateral carina invisible in dorsal aspect, the base broadly open, revealing the foramen, smaller than the base of pronotum, with rounded shoulders. Integument shiny, each elytron subcostate, with moderate raised lines of yellowish setae, curved backwards and forming regular striae. Intervals moderately convex, with single line of 9 rows of punctures (fig. 8).

Ventral surface shiny, except the head, which is microgranulate and densely covered with a fine, yellowish pubescence. The lateral zones of propleuron are coriaceous, dull, isodiametrically sculpted and feebly granulose. Each granule bearing a short, yellowish seta, forming sparse but clear pubescence. Apophysis of prosternum broadly margined, dilated apically and hardly visible in lateral aspect, bearing longer, golden hairs apically. The margin of pronotum apically and foramen protected by a fringe of dense, shorter golden hairs. The integument of prosternum strongly punctured.

Mesosternum broadly flattened, receiving the apophysis of prosternum, weakly carinate at middle, shiny, the metasternum broadly open, strongly punctured, shiny and pubescent, sculpted like the disc of pronotum (fig. 7). Epimeral zones becoming a little more coriaceous, shagreened. Elytral epipleura strongly margined and granulose, becoming more concave posteriorly, strongly sinuate and abruptly constricted before apex.

Abdomen densely sculpted, granulose and pubescent. Each granule bearing a yellowish seta, curved backwards, as long as the space between two granules. The anal sternite unmargined and depressed at each side.

Legs without particular features. The protibia strongly dilated distally.

Male unknown.

Female genitalia: Length 0,5 mm, max. width 0,6 mm. The extracted gonapophysis are figured in ventral view (fig. 4); terminology after CANZONERI (1962: 4-6).

Distribution: Sultanate of Oman. New record of this genus for the Arabian region (cf KASZAB 1982).

Material examined: Holotype ♀, Sultanate of Oman, N of Sur, 5 km of Khawr Ghamah (22°37'00"N-59°29'50"E), 23.X.1995, leg. M. BALKENOHL (Swedish Museum of Natural History, Stockholm). - 1 Paratype ♀, same data and collector (in the author's collection). - 2 paratypes id. (in the Oman Natural History Museum, Muscat).

Remarks: The habitus of this species is very similar to *Scleropatrum hirtulum* (BAUDI, 1876 described from Syria and widely distributed from the Mesopotamian region to Central Asia. However, *Scleropatrum gallagheri* sp. nov. is larger, the lateral zones of pronotum are more explanate, the shoulders are rounded, not angular and the protibiae are round, not truncate distally (figs. 11-12).

Derivatio nominis: I have much pleasure naming this new species after Mr Michael GALLAGHER, curator of Oman Natural History Museum, Muscat, who kindly communicated material for study.

Scleropatrum gustafssoni sp. nov. (figs 17-21)

Body length 5,8 mm, max. width (elytra) 2,5 mm.

Dorsal surface shiny, brown with lighter, reddish buccal appendages, legs and antennae.

Head strongly punctured, granulate, the integument densely covered of fossulate punctures, bearing a setiferous granule.

Eyes separated at front by a distance equivalent to 3 1/2 times the diameter of an eye, measured dorsally. Epistome transversally impressed before the front. The vertex convex, the temples constricted, forming with the lateral contour of the eyes an obtuse angle. Antennae longer than the width of the head, reaching the middle of pronotum. The third

Figs 1-33 (p. 39-42)

Figs 1-5: *Polycoelogastridium octocostatum* (FAIRMAIRE, 1863). - 1) habitus; 2) antenna; 3) apex of the elytral epipleura; 4) ♀ genitalia: introflexed urosternite of the extracted gonapophysis, in ventral aspect; 5) protibia left, in ventral view.

Figs 6-11: *Scleropatrum gallagheri* sp. nov. - 6) habitus; 7) discal sculpture of pronotum; 8) discal sculpture of elytra; 9) antenna; 10) ♀ genitalia: introflexed urosternite of the extracted gonapophysis in ventral aspect; 11) protibia of ♀ in ventral aspect.

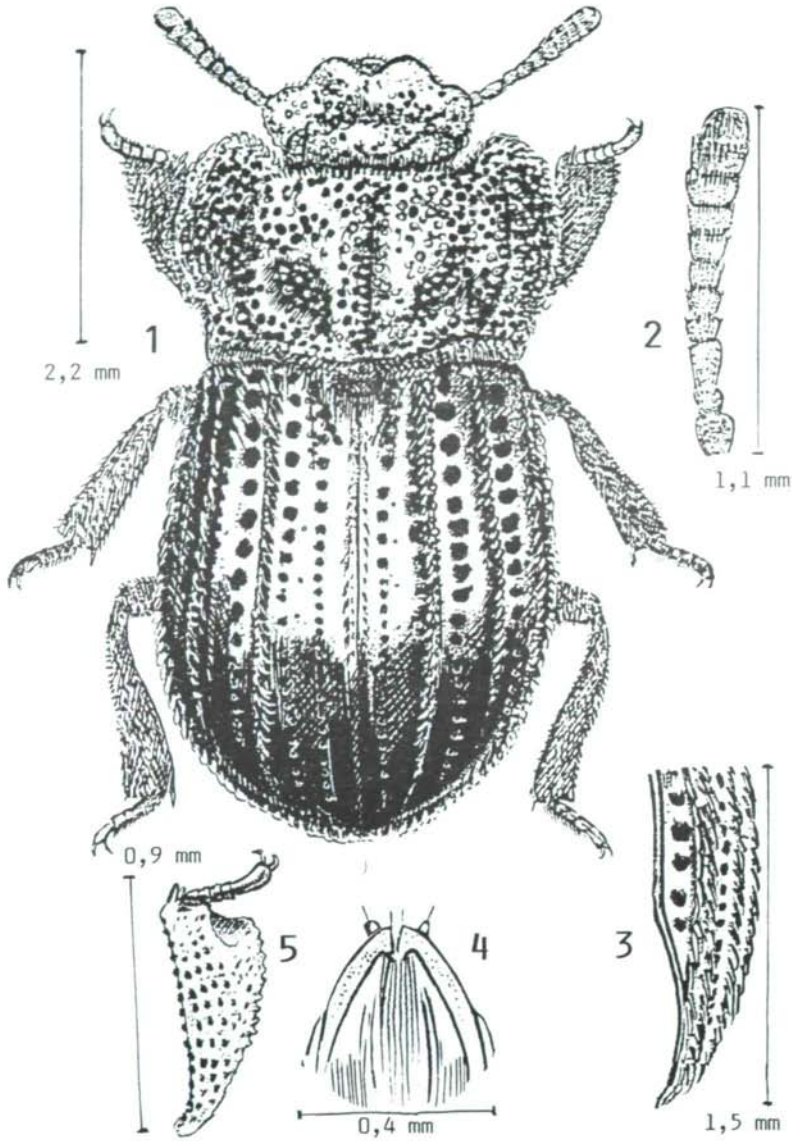
Fig. 12: *S. hirtulum* (BAUDI, 1876), protibia of ♀ in ventral aspect, from Buchara region (coll. BREMER, Heidelberg).

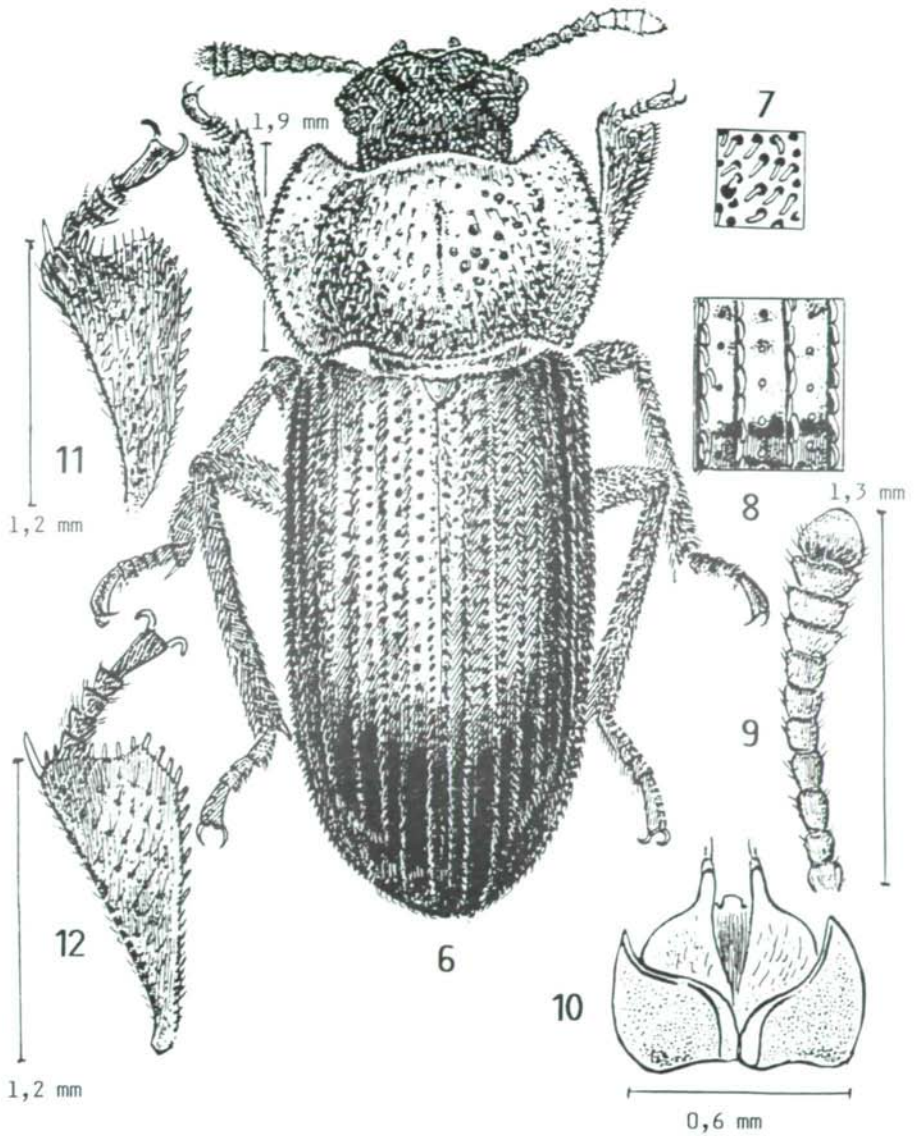
Figs 13-17, 23: *S. strigatum* (FABRICIUS, 1798). - 13, 14) aedeagus in dorsal and lateral aspect; 15) pronotal discal sculpture; 16) discal sculpture of elytra; 17) ♂ protibia; 23) pronotum and head.

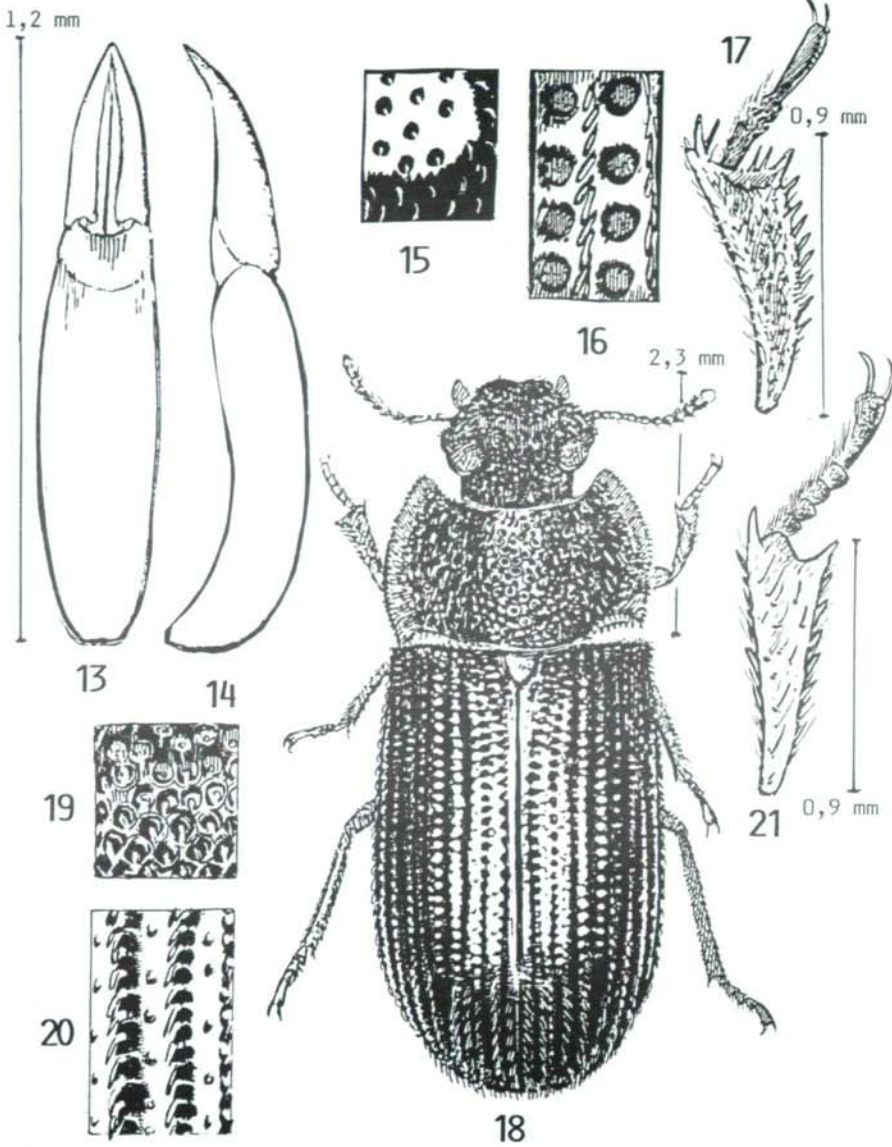
Fig. 18-21: *S. gustafssoni* sp. nov. - 18) habitus; 19) pronotal discal sculpture; 20) discal sculpture of elytra; 21) protibia of ♀.

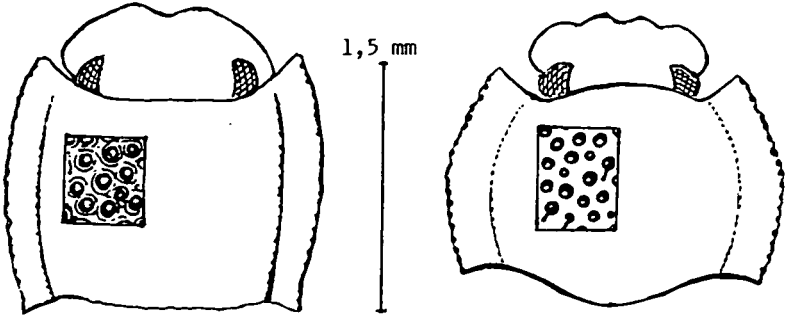
Figs 22, 24, 30-32: *S. patrizii* GRIDELLI, 1945. - 22) pronotum and head; 24) elytral sculpture; 30-32) aedeagus in ventral, tergal and lateral view.

Figs 25-29: *S. girardi* sp. nov. - 25) Pronotum and head; 26) elytral sculpture; 27-29) Aedeagus in ventral, tergal and lateral view.



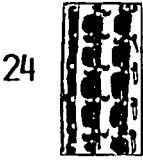




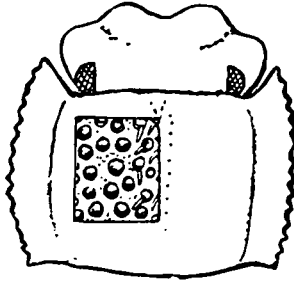


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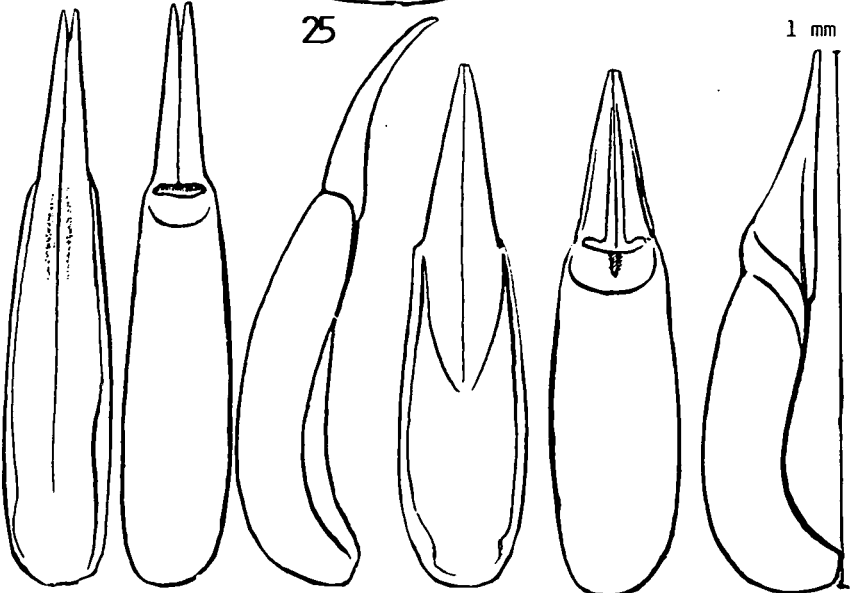
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antennomere twice longer than broad, the fourth a little longer than broad, but shorter than the preceding, the fifth a little shorter; the two followings subequals, nearly as long as broad, the seventh and following antennomeres 8-10 becoming transverse, the apical antennomere as long as broad and feebly acuminate apically.

Pronotum transverse, nearly twice broader than long, the anterior margin broadly opened, the lateral sides regularly curved from base to the anterior right angles. The lateral zones explanate, the disc convex, the base deeply bisinuate at each side, the posterior angles acute. The integument covered of contiguous, fossulate punctures, forming a circle, bearing a setiferous granule. Each granule bearing a yellowish, backwards curved seta, a little longer than the diameter of a puncture (fig. 19). The granulation becoming simple and smaller at the explanate sides.

Elytra subparallel, 1.5 x as long as broad, the base straight, the lateral carina invisible in dorsal aspect. The shoulders acute, the integument shiny, as the rest of the body. The striae deeply and densely punctured, smaller than the intervals, which are convex and bearing a single row of granules at middle. Each granule bearing a yellowish-golden seta, curved backwards, forming a regular line (fig. 20).

Legs without peculiar features. Protibia figs. 17 and 21.

Male unknown.

Derivatio nominis: This species is named in honour of M. Bert GUSTAFSSON, custodian of the section of Entomology of the Swedish Museum of Natural History, Stockholm.

Distribution: Only known from the type locality.

Material examined: Holotype ♀, Burkina Faso, "Ob. Volta, Pundu, Ulsufiew" (Naturhistoriska riksmuseet, Stockholm / SMNH).

Scleropatrum girardi sp. nov. (figs 25-29)

Body length 4,3 mm, max. width (elytra) 1,8 mm.

Dorsal surface brown, shiny, isodiametrical sculptured.

Head strongly sculptured, with broadly incised epistome, the space between the genae and the epistome clearly sinuated, the genal zone forming an obtuse angle with the lateral contour of the eye, raised over the level of the eyes and frons, prominent in lateral view. The front convex, the ocular canthon occupying only a very reduced space (about a third of the eye measured laterally) the eyes small and well separated at front. The space between the eyes superior to 5 x the diameter of an eye measured dorsally. Integument strongly granulate, each granule bearing a yellowish short, backwards curved setae.

Antennae slender, longer than the width of the head, reaching the base of pronotum, the third antennomere twice longer as broad, the fourth 1,5 longer as broad, the followings 5-7 shorter and quadrate; the eighth a little transverse; the followings 9-10 subequals and transverse, twice broader as long. The apical antennomere broadly and transversely rounded and a little longer than the penultimate.

Pronotum transverse, 1.5 x broader as long, with acute anterior angles. The sides regularly curved and largely explanated, the disc convex, strongly granulate as the head. The base weakly sinuate at each side, the margin strongly serrate (fig. 25).

Elytra subparallel, 1.5 x broader as long, the base straight, the shoulders obtuse. The lateral carina invisible in dorsal aspect. Each elytron with rows of deeply incised punc-

tures between the costiform interwalls, bearing a row of short, yellowish, backwards curved setae (fig. 26).

Ventral face shiny, isodiametrically sculptured, strongly granulate and scarcely pubescent, each granule bearing a short, yellowish, curved seta.

Mentum subpentagonal, carinate at middle, the eyes well separated, the gular zone weakly and transversally impressed.

Pronotum strongly granular, the prosternal apophysis coarsely rugose and deflected between the anterior coxae. Mesosternum very coarsely punctured, and broadly opened in a V, receiving the prosternal apophysis. Metasternum coarsely punctured, the anterior margin rounded, depressed between the posterior coxae, deeply and longitudinally impressed at the middle. Epipleuron finely margined at the interior side.

Abdomen shiny, coarsely punctured, the penultimate sternite transversally convex, the others much more flattened. The anal sternite strongly margined.

Legs simples without particular features.

Aedeagus slender, simple, pointed apically, curved in lateral view (figs.: 27-29).

Derivatio nominis: This species is named after Dr Claude GIRARD, Muséum National d'Histoire Naturelle, Paris (MNHN), communicating the holotype.

Distribution: Only known from the type locality.

This new species is similar in facies to *Scleropatrum patrizii* GRIDELLI, 1945: 2, 26-28, but it is clearly separable by sinuate clypeo-genal zones, microphthalmic eyes, more transverse pronotum (fig. 25), the pronotal sculpture, consisting in well separated, simple granules (fig. 25), without circles or vestigial punctures surrounding each granule, as indicated in fig. 4, the round punctures of elytra (fig. 26), not confluent disposed (as indicated in fig. 24), and in the much more elongate and curved aedeagus (figs. 27-29).

I have examined the type of *Scleropatrum patrizii*, kindly communicated by Dr Giorgio ALBERTI, Museo Civico di Storia Naturale di Trieste, collected in Somalia: Foci del Giuba, Belet Amin, VII.1934, Saverio PATRIZI leg., and for the first time figured the aedeagus (FERRER 1993: 113, figs. 54-55), and another male from Ethiopia, Gambela prov. 30 km W of Abobo, between 15. and 26.XII.1986, RYBALOV leg. (in the author's coll.). The record for Ethiopia is new.

Material examined: Holotype ♂, Kenya, Turkana Nord, Mts Murueris, 900-1000 m. 1932-1933; Miss. de l'Omo, C. ARAMBOURG, P.A. CHAPPUIS & R. JEANNEL leg. (MNHN). ♂♀

First record from Oman of

Scleropatrum strigatum (FABRICIUS, 1798) (figs 13-16)

Opatrum strigatum FABRICIUS, 1789 (lapsus: "strigaium" in GEBIEN 1938: 465) is an asiatic species of *Scleropatrum*, inhabiting India and Sri Lanka. I have examined the type of FABRICIUS, preserved in the Zoologisk Museum of the University of Copenhagen and some specimens collected in diverse localities and preserved in my own collection:

3 Ex., India, Goa, Mober, Suceto, 13.II.1997, J. NIELSEN leg. - 2 Ex., Sri Lanka, Negombo, 12-15.XII.1984, at light in garden, Stig ADEBRATT leg. - 1 Ex., Sri Lanka, N. Prov., Giant's Tank, 10 miles south-east of Mannar, 15.II.1962, Pond in grass area, P. BRINCK et al. - 2 Ex., NO Thailand, Khon Caen, 23.XI.1980, S. Sastri SAOVOKONTHA and Miss Sunanta AUPHANANSIN leg. (ex. coll. H.J. BREMER). - 1 Ex., Sultanate of Oman,

Dhafar Maghbi, 24.XI.1994, A. RIHANE leg. - 3 Ex. (in Oman Natural History Museum); 3 Ex., Sultanate of Oman, Mughsail, 3.XII.1997, I.D. HARRISON and M. GALLAGHER leg. (n° 8913) (in Oman Natural History Museum).

The specimens from Oman were found to be identical to the type and other material of *S. strigatum*. The records from the Arabian Peninsula and the Sultanate of Oman, are all new ones. The aedeagus and particular features of this species are here figured for the first time (figs. 13-17 and 23).

Distribution: Previously recorded from India and Ceylon. Thailand and Sultanate of Oman are new regional records.



Fig. 33: Locality of *Polyceloagstridium octocostatum* (FAIRMAIRE, 1863) in Senggigi, Lombok Isle, near Bali I.

Acknowledgements

I am very grateful to Dr. Giorgio ALBERTI, Museo Civico di Storia Naturale di Trieste, to Prof. Dr. Hans BREMER, University of Heidelberg, to Mr. Michael GALLAGHER and Mr. A. RIHANI, Oman Natural History Museum, Muscat, Sultanate of Oman, to Dr. Claude GIRARD, Muséum National d'Histoire Naturelle, Paris, and to Dr. Otto MÉRKL, Hungarian Museum of Natural History, Budapest, for communication of types and scientific material, to Mr Jörgen NIELSEN and Mr. Rolf RÖBER, Vällinby, Sweden, for communication of fresh specimens of *Scleropatrum strigatum*, collected in Goa, and for the communication of the Indonesian specimens of *Polycoelogastridium octocostatum*, to Mr. Paul WHITEHEAD, Worcestershire, England, and to Mr. Michael GALLAGHER for advice and assistance in reviewing this manuscript.

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Literaturbesprechung

SVENSSON, L., GRANT, P.J., MULLARNEY, K. & ZETTERSTRÖM, D. 1999: Der neue Kosmos-Vogelführer. Alle Arten Europas, Nordafrikas und Vorderasiens. - Franckh-Kosmos-Verlag, Stuttgart. 400 S., 4112 Farbzeichnungen, 541 Verbreitungskarten.

In diesem neuen Standard-Bestimmungswerk werden 758 Vogelarten aus Europa, Nordafrika und Vorderasien beschrieben und anhand exklusiv angefertigter Zeichnungen farbig dargestellt. Die Anordnung erfolgt nach der modernen Familiensystematik, beginnend mit den See- und Lappentauchern und endet mit den Sperlingsvögeln. Die einzelnen Arten werden in Kennzeichen, Aussehen, Größe und Vorkommen detailliert beschrieben, spezielle Bestimmungsmerkmale sind markiert. Neben den Hauptabbildungen zeigen Zeichnungen in kleinerem Maßstab u.a. Flugbilder, verschiedene Kleider, Unterarten, Variationen, Erscheinungsbilder der Vögel bei schlechtem Licht oder aus großer Entfernung sowie die typischen Lebensräume. Sehr viele Informationen sind somit zeichnerisch dargestellt und auf einem Blick erkennbar. Der den Bildtafeln gegenüberliegende Text enthält die Verbreitungskarten und informiert über Kennzeichen und Stimme.

Ein fantastisches Bestimmungswerk für Einsteiger und Fortgeschrittene auf neuestem feldornithologischem Stand. Roland GERSTMIEIER

CLOUDSLEY-THOMPSON, J.L. 1999: The Diversity of Amphibians and Reptiles. - Springer-Verlag, Berlin-Heidelberg. 254 S.

Der weltbekannte Zoologe gibt hier eine Einführung in die Evolution und Biologie der Amphibien und Reptilien, natürlich stark funktionsmorphologisch und -physiologisch geprägt. Trotzdem hat sich der Autor bemüht, eine Brücke zu schlagen, die sowohl von interessierten Laien als auch von Spezialisten begangen werden kann. So sind zwar die grundlegenden Prinzipien ohne Fachterminologie erklärt, allerdings hätte man sich in einzelnen Fällen eine bessere (oder überhaupt eine) Illustration gewünscht. Alle wesentlichen Aspekte aus der Biologie der Amphibien und Reptilien werden behandelt, u.a. Evolution, Konvergenz und Extinktion, Bewegungsmechanismen an Land, auf Bäumen, im Wasser und in der Luft, Verteidigungsstrategien, Ernährungsspektren, Reproduktion, thermische Diversität und Temperaturregulation, Wasserhaushalt und Exkretion sowie die Beziehungen zum Menschen. Eine spannende und gut lesbare Lektüre, mit reichhaltigen Literaturzitaten zum vertieften Studium. Roland GERSTMIEIER

Druck, Eigentümer, Herausgeber, Verleger und für den Inhalt verantwortlich:

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Eibenweg 6, A-4052 Ansfelden

Redaktion: Erich DILLER (ZSM), Münchhausenstrasse 21, D-81247 München, Tel.(089)8107-159

Fritz GUSENLEITNER, Lungitzerstrasse 51, A-4222 St. Georgen / Gusen

Wolfgang SCHACHT, Scherrerstrasse 8, D-82296 Schöngeising, Tel. (089) 8107-146

Erika SCHARNHOP, Himbeerschlag 2, D-80935 München, Tel. (089) 8107-102

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Zeitschrift/Journal: [Entomofauna](#)

Jahr/Year: 2000

Band/Volume: [0021](#)

Autor(en)/Author(s): Ferrer Julio

Artikel/Article: [Contributions to the knowledge of the genera Scleropatrum REITTER, 1890 und Polycoelogastridium REICHARDT, 1936 \(Coleoptera, Tenebrionidae, Opatrini\). 33-47](#)