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Studies on Asian Carabidae. XII The subgenera and the species of genus *Oxycentrus* (Coleoptera, Carabidae, Harpalini)

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Abstract

A new subgenus, *Paroxycentrus*, is established for *Oxycentrus micros* SCHAUBERGER 1938, a new species and a new subspecies of the same genus are described from Malaysia and from Celebes, respectively, and redescrptions are given for *O. micros*, *O. orinus* (ANDREWES, 1931) and *O. kraatzi* (SCHAUBERGER, 1938).

Zusammenfassung

Es wird eine neue Untergattung, *Paroxycentrus*, aufgestellt für *Oxycentrus micros* SCHAUBERGER 1938, eine neue Art und eine neue Unterart derselben Gattung von Malaysia und Celebes beschrieben, und die Beschreibungen von *O. micros*, *O. orinus* (ANDREWES, 1931) und *O. kraatzi* (SCHAUBERGER, 1938) werden neu verfaßt.

Introduction

In this paper I am going to establish a new subgenus, *Paroxycentrus*, in the harpaline genus *Oxycentrus* CHAUDOIR, 1854 (type species: *Oxycentrus microps* SCHAUBERGER, 1938). It is characterized by lacking the scutellar striole, the dorsal pores on 3rd elytral interval and a small spine on the ventro-external margin of the female stylus. A new species, *O. (Oxycentropsis) iridicolor*, will be described from Malay Peninsula and a new subspecies, *O. (O) kraatzi celebesensis*, from Celebes. I will also redescrbe three species, *O. (Paroxycentrus) micros* SCHAUBERGER, 1938, *O. (Oxycentropsis) orinus* (ANDREWES, 1931) and *O. (Oxycentropsis) kraatzi* (SCHAUBERGER, 1938).

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Paroxycentrus subgen. nov.

Eyes not strongly prominent; 1st segment of labial palpus very tumid. Elytra with basal pores but without scutellar striole; setiferous pores on 3rd interval lacking. Hind tibia with subapical seta. Stylus without small spine on ventral outer margin.

Type species: *Oxycentrus micros* SCHAUBERGER, 1938 from Celebes.

Key to the subgenera of the genus *Oxycentrus*

- 1 Hind tibia with neither subapical seta nor spine on dorsal side (Figs. 4-6); labrum semicircularly depressed; body often relatively wide.
..... Subgen. *Oxycentropsis* SCHAUBERGER
- Hind tibia with subapical seta or spine (Figs. 1-3); labrum flat; body often narrow and parallel-sided. 2
- 2 Scutellar striole and dorsal pore on 3rd elytral interval lacking; female stylus without spine on outer margin of ventral side. Subgen. *Paroxycentrus* nov.
- Scutellar striole and dorsal pore of 3rd elytral interval present; female stylus with a small spine or seta on the margin. Subgen. *Oxycentrus* CHAUDOIR

Oxycentrus (Paroxycentrus) micros SCHAUBERGER, 1938 (Figs. 1, 7, 8)

Oxycentrus micros SCHAUBERGER, 1938, 5: 37-38.

Body small, very narrow and parallel-sided, pitchy brown, shiny, without any iridescent lustre, inner margins and apices of mandibles and frons brownish black.

Head rather well raised, not flattened even on vertex, wide, 3/4 times the pronotal width, finely and very sparsely punctate on most areas and coarsely so in part on frons; labrum transversely quadrate, subtruncate at apex; clypeus gently, uniformly swollen, mostly smooth except for a pair of rugosities near sides; clypeal suture clearly and fairly deeply carved; frontal impressions running arcuately behind, reaching eyes, and so deep throughout as to make conspicuous themselves; eyes small and not prominent as usual, interocular space a little more than 7/10 times the width of head; temples relatively developed, gently contracted behind and forming on each side an obtuse angle with neck constriction; genuine ventral margin of eye separated from buccal fissure by a narrow space; mandibles wide and long as usual, not strongly curved inwards, pointed at tips; antennae reaching basal fifth of elytra, 3rd segment weakly dilated distally, a little longer than 4th (1.1 in ratio) and 1/3 longer than 2nd; labial palpus robust, ovally dilated in 3rd segment; ligula weakly wedge-shaped, adnate to paraglossae almost lengthwise; paraglossae weakly divergent in front, more or less prolonged forwards beyond ligular apex, narrow in the portion free from ligula; median tooth of mentum narrow and fully produced in front, reaching apical level of lateral lobes, epilobes well expanded apically; microsculpture wholly invisible except for vague transverse meshes near temples.

Pronotum almost square, only 1/10 wider than long, gently convex, sparsely, rather coarsely punctate all over except for median line densely punctate; sides weakly narrowed towards both apex and base, shallowly sinuate before base, then subparallel to base; apex slightly emarginate, unbordered medially; base 1/5 wider than apex, subtruncate and weakly arcuate at sides, broken bordered; apical angles obtuse and narrowly rounded; basal angles almost rectangularly angulate; basal foveae small and round, isolated from lateral borders by slight convexities, shallowly grooved along middle; lateral furrows running in a line throughout along sides due to wide discal convexity; front transverse impression very shallow, but not invisible as the hind one; median line reaching both apex and base, deeply engraved, emphasized by the punctures of itself; microsculpture mostly not detected, rarely discernible as vague transverse meshes.

Hind wings fully developed. Elytra parallel-sided, elongate, a little more than 1.9 times as long as wide, fairly convex, flattened on disc, very sparsely and minutely punctate throughout; basal border shallowly emarginate, gently oblique at sides, humeral angles wider than rectangle and acute, toothed at tips; apex gently rounded at margin, with tips closed to each other; apical sinus very shallow, seemingly straight; striae deep even on disc, finely crenulate, scutellar striole lacking; intervals uniformly, rather well convex lengthwise, 3rd interval without setiferous pore; marginal series widely interrupted medially, consisting of (7-8) + (8-9) umbilicate pores; microsculptures vague, composed mostly of transverse meshes only near each stria.

Ventral surface without punctures, but coarsely rugose on mesosternum and obscurely so in lateral areas of mesosternum and in apical areas of 1st abdominal segment; metepisterna distinctly contracted behind in an elongate triangle, about twice as long as wide; abdomen very sparsely covered with short pubescence medially on 2nd and 3rd segments, apical margin of 6th in ♂ not produced behind, widely arcuate, and quadrisetose.

Tibiae and tarsi comparatively short; fore tibia robust, fully dilated distally, clearly sulcate on dorsal side, arranged with three spines longer than usual along apico-external margin, apex almost truncate, terminal spur simple, hind tibia bearing a subapical seta near external margin of dorsal side; hind tarsi 1/4 shorter than the width of head including eyes, 1st segment twice the 2nd and as long as 2nd and 3rd combined, claw segment bearing two setae ventrally along each side.

Stylus (Fig. 7) small, relatively robust, clearly curved outwards, bearing a seta before apex and without a small spine near basal curving; basal segment bisetose at outer apical corner; valvifer unisetose at apex.

Length 5.0 mm, width 1.5 mm.

Specimens examined: ♂ (Holotype, preserved in Deutsches Entomologisches Institut), Celebes.

This species is easily distinguished from the other species of the genus by the small and narrow body and the eyes not strongly convex, in addition to the subgeneric characteristics.

Subgenus *Oxycentropsis* SCHAUBERGER, 1934

Oxycentrus (Oxycentropsis) orinus (ANDREWES, 1931) (Figs. 4, 10, 12)

Trichotichnus orinus ANDREWES, 1931: 445-446.

Oxycentropsis orinus: SCHAUBERGER 1934: 89-90, 1938: 44.

Oxycentrus orinus: NOONAN 1985: 56-57; KIRSCHENHOFER 1992: 37; ITO 1993: 51.

Body widely oblong, pitchy black, very shiny; palpi, antennae and legs dark reddish brown, mandibles blackish brown, elytra faintly iridescent.

Head weakly convex, almost flattened on vertex, comparatively narrow, a little less than 2/3 times the pronotal width, very sparsely, microscopically punctate; labrum transversely quadrate, widely depressed in a rather clearly semicircle and widely blunt-notched at apex; clypeus weakly swollen, almost smooth, with vague short rugosities near sides; clypeal suture clear, though fine and not deep, frontal impression arcuately running behind from each end of the suture, very deep and hardly shallowed even near eye, the depth emphasized due to convexity of area in front of the impression; eyes hemispherically prominent; temples very short and steeply contracted to neck constriction; genuine ventral margin of eye adjoining buccal fissure; mandibles rather wide, moderately curved inwards, moderately prolonged distally, and acute at apices; palpi rather robust, 1st segment of labial palpus as long as 2nd; ligula weakly dilated in front and fused with paraglossae to near apex; paraglossae wide, straight at outer sides, fully produced forwards beyond ligular apex, and rounded at apices; mentum transverse, regular-triangularly toothed at the bottom of apical emargination, epilobes relatively widened in front; microsculpture invisible under 80 x magnification.

Pronotum subquadrate, widest at apical two-fifths, about 1/3 wider than long, gently convex and flattened centrally, the convexity approaching near lateral margins, making lateral furrows very narrow, impunctate on most area, sparsely and finely punctate only in lateral furrows and basal foveae, finely transverse-rugose in central area; sides gently arcuate in front and almost straightly oblique behind from the widest point; apex shallowly emarginate and entirely bordered; base also completely bordered, subtruncate, slightly oblique laterally, and forming obtuse and narrowly rounded angles with the sides; basal foveae not deepened, shallowly and finely grooved in middle; front and hind transverse impressions obscure (absent with individuals); median line fine and clear, obliterated near both apex and base; microsculpture mostly absent, partly detected as obscure transverse meshes.

Hind wings almost reduced. Elytra widely oblong, about 1/2 longer than wide, gently raised, almost flat in disc, quite smooth; sides subarcuately, slightly divergent to middle from humeri, then gradually strongly narrowed behind, and hardly sinuate before apices; apices weakly produced behind and separately, narrowly rounded, not angulate at sutural angles; bases gently curved at sides; humeral angles obtusely angulate and not toothed; striae somewhat wide and moderate in depth, scutellar striole short; intervals almost flat on disc, gradually increased in convexity towards outer area, 3rd interval with a row of three to five setiferous pores along 2nd stria in apical half portion; marginal series widely interrupted medially, consisting of (8-9) + (11-13) umbilicate pores; microsculpture invisible under 80 x magnification.

Ventral surface not punctate, metacoxae bearing long and rather sparse pubescence, pro- and metasterna and middle area of 3rd to 6th abdominal segments sparsely pubescent, only several hairs detectable on apical two segments; metepisterna not elongate, a little less than 1.3 times as long as wide; outer margins of 6th abdominal segment finely, entirely bordered, in ♂ clearly arcuate at apex and quadrisetose laterally.

Tibiae and tarsi short; fore tibia rather robust, weakly protuberant at middle of apex, and clearly sulcate on dorsal side, with two spines along apico-external margin, terminal spur simple, hind tibia without subapical seta on dorsal side; 1st segment of mid tarsus furnished with ventral adhesive hairs only in apical third; hind tarsi of ♂ 1/10 longer than

the width of head, 1st segment not long, 1/10 shorter than 2nd and 3rd together, 2nd 1.25 times as long as 3rd, claw segment bisetose along each ventral margin.

Aedeagus (Fig. 12) slender and straightly prolonged towards apex, gently curved dorsally near apex; apex very thin and simple at tip; apical lobe spatulate, elongate and three times as long as wide, finely bordered at apical margin; apical orifice not wide, gradually narrowed towards base, slit longitudinally, inner sac bearing several long spinous copulatory pieces; ventral side widely depressed longitudinally, minutely denticulate and clearly bordered at the portion of apical lamella, the border serrulate and widened at apex.

Length 8.2 mm, width 3.0 mm.

Specimens examined: 1 ♂, Kina Baru, 1 ♂, North Borneo, WATERSTRADT leg. (both examples without further data, preserved in Deutsches Entomologisches Institut); 3 ♂♂, 1 ♀, Kinabalu, Borneo (preserved in Oö. Landesmuseum); 1 ♂, Keningau, Borneo Is., East Malaysia, 2.IV.1992 (preserved in MORITA's coll.).

***Oxycentrus (Oxycentropsis) kraatzi* SCHAUBERGER, 1938 (Figs. 5, 9, 13, 14)**

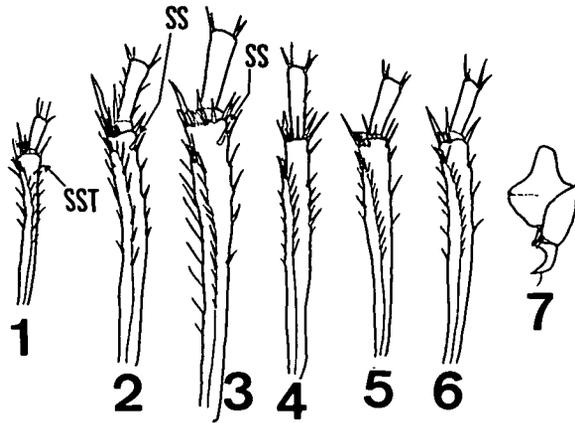
Oxycentropsis kraatzi SCHAUBERGER, 1938: 44-46.

Oxycentrus kraatzi: NOONAN 1985: 56-57; KIRSCHENHOFER 1992: 37; ITO 1993: 51.

Body narrowly oval, gently convex, pitchy black to brownish black, without any iridescent lustre even on elytra, palpi and antennae light brown, mandibles, lateral margins of pronotum and legs dark reddish brown.

Head narrow, 3/5 to 2/3 times as wide as pronotum, gently convex, almost flattened in a triangular area from vertex to frons, with very sparse punctures which are so fine as to be observed only under 40 x magnification; labrum transversely trapezoidal, truncate apically, with a semicircular depression shallow and ill-defined; clypeus thick and transversely swollen, quite smooth or bearing one or two obscure rugosities near each side, almost straight apically, clearly sutured with frons by moderately deep line; frontal impressions well deep, arcuately divergent behind, and reaching eyes; eyes not large, about 1/3 times the width of head, well prominent hemispherically; temples very short, present along the prolongation of eye contour, forming on each side an acute angle with neck constriction; space between buccal fissure and genuine ventral margin of eye more or less wide; mandibles robust and moderately long, gradually strongly curved inwards, pointed at tips; antennae submoniliform, extending little beyond pronotal base, 3rd relatively dilated distally, glabrous in basal 1/2, 1,5 longer than 4th, and about twice as long as 2nd; ligula rather wide, trapezoidally contracted forwards in areas free from paraglossae; paraglossae prolonged in front a little beyond ligular apex, narrowed from the point separated from ligula; median tooth of mentum fully produced to an apical level of lateral lobe, occupying bottom of apical emargination of mentum, and rounded at tip, epilobes more or less widened in front; microsculpture invisible even near apex of clypeus under 80 x magnification.

Pronotum more or less transversely quadrate, not more than 1.3 times as wide as long, rather well convex, obscurely and finely transverse-rugose centrally, largely impunctate and sparsely, not coarsely punctate in basal foveae, the punctures spread over to basal 1/2 along lateral furrows; sides not strongly rounded in front and gently obliquely contracted behind from the widest point at apical two-fifths; apex almost truncate and clearly bordered throughout; base also truncate or hardly bisinuate, its border clear only near sides, interrupted partly; basal angles a little wider than rectangle and angularly rounded at tips; each lateral furrow engraved in a line due to the wide discal convexity,



Figs. 1-7. Left hind tibia and female genitalia of *Oxycentrus* spp.:

- 1, 7) *O. micros* SCHAUBERGER; 2) *O. argutoroides* (BATES); 3) *O. omaseoides* BATES;
 4) *O. orinus* (ANDREWES); 5) *O. kraatzi kraatzi* (SCHAUBERGER); 6) *O. iridicolor* sp. nov.
 1-6) left hind tibia; 7) female genitalia; SS) subapical spine; SST) subapical seta.

not widened even near base; basal foveae not deepened, small and ill-defined; both front and hind transverse impressions shallow and vague; median line clearly marked, extending to near apex and base; microsculpture comparatively clear and partly absent centrally, consisting of transverse meshes near apex and lateral furrows and in basal foveae, and of transverse lines centrally.

Hind wings entire. Elytra oblong to narrowly oval, with weakly arcuate sides, about 1/2 longer than wide, rather well and uniformly convex; base shallowly sinuate, forming a fully wide and acute angle with each side; apices weakly produced behind, narrowly separate from each other and well rounded, blunt at sutural angles; apical sinus distinctly shallow; striae rather wide near sides, finely crenulate, scutellar striole very short; intervals hardly convex on disc, incassant in convexity towards base and apex, 3rd with a row of three (rarely two) setiferous pores; marginal series composed of two groups, front group consistinh of (7-8) umbilicate pores, and hind group of (9-10) pores; microsculpture not discernible under 80 x magnification.

Ventral surface smooth or very sparsely punctate partly on mesosternum and metepisterna, sparsely pubescent on hind coxae and very sparsely short-pubescent along middle of 2nd to 6th abdominal segments (pubescence of 2nd somewhat denser than in the others); metepisterna well narrowed behind and elongate, 3/5 longer than wide; 6th abdominal segment possessing a short and weak swell near apex, outer margin finely bordered, quadrisetose in both sexes, and more gently arcuate in ♂ than in ♀.

Fore tibia more or less robust, with three spines arranged along apico-external margin, terminal spur simple, hind tibia not bearing subapical seta; 1st segment of mid tarsus with biseriate adhesive hairs only near apex, hind tarsi more or less robust, short, 1/10 shorter in both male and female than the width of head, 1st segment 1.8 times the 2nd and as long as 2nd and 3rd combined, 3rd 2/5 longer than 4th, claw segment bisetose along each ventral margin.



Oxycentrus
micrus Schaub.
det. Dr. E. Schaub. 36

Holotypus

Type

Celebes.

Coll. Kraatz

DEI
Eberswalde

Oxycentropis
Kraatzii Kraatz. 1896.
det. Dr. E. Schaub. 34

Holotypus

Type

Sunatra

S.T.

Coll. Kraatz

DEI
Eberswalde

11



Figs. 8-11. *Oxycentrus* spp.:

- 8) *O. micrus* SCHAUBERGER; 9) *O. kraatzi kraatzi* (SCHAUBERGER);
10) *O. orinus* (ANDREWES); 11) *O. iridicolor* sp. nov.

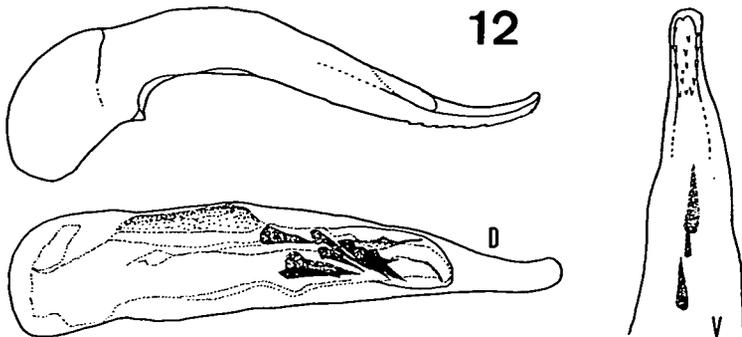


Fig. 12. Male genitalia of *Oxycentrus orinus* (ANDREWES):
D) dorsal view; V) ventral view.

Aedeagus (Fig. 13) thin and sublinear, gently tapered distally in apical 1/3, spherically thickened at apex; dorsal side occupied by large apical orifice, apical lobe weakly convergent apically and elongate, 4/5 longer than wide, arcuate at apex, inner sac bearing about ten conical pieces in front and along spinous pieces in same number behind; ventral side bordered near apex and uniseriately thorned along each border. Apical segment of stylus (Fig. 14) slender and long, well gently curved outwards, acute at tip, with a relatively short seta before apex and a small spine near base of external ventral margin; basal segment unisetose at apex; valvifer bearing two setae at apex and a seta a little before the middle of inner margin.

Length 6.5 - 7.0 mm, width 2.5 - 2.7 mm.

Specimens examined: ♂ (holotype), Sumatra, 8 ♂♂, 1 ♀ (cotypes), Sumatra (preserved in Deutsches Entomologisches Institut).

***Oxycentrus (Oxycentropsis) kraatzii celebesensis* ssp. nov.** (Fig. 15)

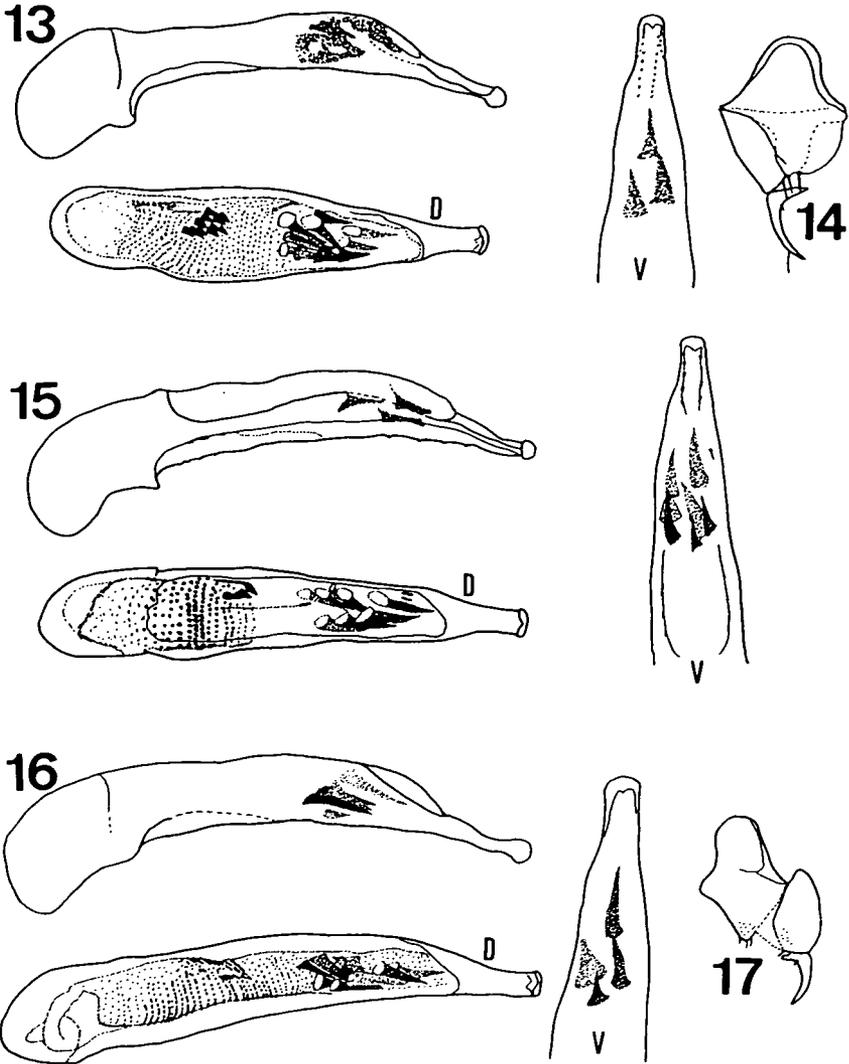
The new subspecies is different from the original species in having the aedeagus a little robust and bearing the copulatory pieces less in number.

Holotype: ♂, Celebes, SCHULTHEISS leg., without further data (preserved in Deutsches Entomologisches Institut).

***Oxycentrus (Oxycentropsis) iridicolor* sp. nov.** (Figs. 6, 11, 16, 17)

Body widely oblong, pitchy black or slightly brownish, with a weakly iridescent lustre on elytra, palpi, antennae, and tarsi light brown, labrum, mandibles, tibiae, and femora dark reddish brown.

Head relatively small, about 2/3 times the width of pronotum, weakly convex and flattened on vertex, very minutely and sparsely punctate; labrum transverse, with gently arcuate sides, apex shallowly and widely notched, rounded at apical corners, the depression transversely oval, smaller and shallower than in *O. orinus*; clypeus almost smooth, thick and more or less raised transversely in basal half, sutured aslant with frons; frontal impressions deeply carved, arcuately divergent behind, and prolonged up to eyes,



Figs. 13-17. Genitalia of *Oxycentrus* spp.:
13-14) *O. kraatzi kraatzi* (SCHAUBERGER); 15) *O. kraatzi celebesensis* ssp. nov.;
16-17) *O. iridicolor* sp. nov.
13, 15-16) male genitalia; 14, 17) female genitalia; D) dorsal view; V) ventral view.

space in front of the impression well swollen; eyes semispherically prominent; temples short and not swollen at all, abruptly convergent towards neck-constriction; genuine ventral margin of eye adjoining buccal fissure; mandibles long and sharpened apically as usual, gently curved inwards, inner margin of left mandible with a widely triangular protuberance and of right mandible with a small tooth a little before the middle; antennae submoniliform, short and passing little pronotal base, 3rd rather well dilated distally, relatively long, 3/10 longer than the 4th and a little less than twice the 2nd (1.8 in ratio); labial palpi relatively slender (rather robuster in the paratype), 3rd 1/5 longer than 2nd; ligula rather wide, weakly narrowed in front from just behind apex; paraglossae divergent forwards at sides and produced beyond ligular apex, portion free from ligula abruptly contracted distally and narrowly rounded at apex; median tooth of mentum wide, fully produced, but extending only to the mid-level of lateral lobes, blunt at apex, epilobes widened in an isosceles triangle; microsculpture largely invisible, observed as obscure transverse lines only near supraorbital setae.

Pronotum subquadrate, 1.3 times as wide as long, gently convex, flattened centrally, the convexity extending so closely to lateral borders as to make lateral furrows very narrow; sides weakly arcuate in front and gently oblique behind from the widest point at apical 1/3, not or hardly sinuate before base; apex almost truncate and entirely bordered; base very shallowly bisinuate and slightly oblique at sides, with the border interrupted medially; basal angles obtuse and angularly rounded, minutely protuberant at tips; basal foveae not deepened and ill-defined; both front and hind transverse impressions quite vague; median line fine but clearly marked, obliterated near apex and base; surface mostly smooth, very finely and sparsely punctate medio-apically and finely, sparsely in basal foveae, the basal punctures spread over lateral furrows and becoming gradually sparser towards apex; microsculpture more or less clear, composed of fine transverse meshes in most areas and of isodiametric meshes partly in apical area.

Hind wings entire. Elytra narrowly oval, 1/2 longer than wide, fairly convex, rather steeply declivous to sides near humeri, very sparsely, microscopically punctate; sides gently arcuately widened to middle from humeri, then gradually strongly arcuate distally, and very shallowly sinuate before apex; apex not produced behind, widely separated, and quite rounded at tips; striae relatively wide, finely crenulate; intervals almost flat centrally (weakly convex in the paratype), convex basally and apically, 3rd interval with a row of 3 setiferous pores along 2nd stria, scutellar striae short; marginal series widely interrupted in the middle, consisting of 8 + 10 umbilicate pores; microsculpture observable only as very vague transverse lines here and there.

Ventral surface almost impunctate, very sparsely punctate only on mesosternum; metepisterna relatively contracted behind and not elongate, 2/5 longer than wide; abdomen sparsely covered with short pubescence along middle, the pubescence on 4th to 6th segments especially sparse, 6th even on the surface and in both male and female quadrisetose along outer margin, which is widely and gently arcuate.

Fore tibia weakly dilated distally, clearly sulcate on dorsal side, almost truncate at apex, and armed with three spines along apico-external margin, hind tibia without subapical seta; 1st segment of mid tarsus without adhesive hairs, hind tarsus in ♂ as long as and in ♀ 1/10 shorter than the width of head, 1st equal in length to 2nd and 3rd together, 2nd 1/5 longer than the 3rd, 4th 2/3 times the 3rd, claw segment trisetose along each ventral margin.

Aedeagus (Fig. 16) almost straightly prolonged apicad, somewhat thick, though thinned before apex, which is spherically thickened; apical orifice widely open, inner sac similar

in form and in position of pieces to that of *O. kraatzi*, bearing eight long peg-shaped pieces in apical portion and several small conical thorns in basal portion; apical lobe elongate and twice as long as wide, weakly constricted medially, rounded at apex; ventral side seriatly denticulate along each side in apical fourth, widely bordered at apex. Female stylus (Fig. 17) slender, gently arcuate outwards, with a short seta before apex, a spine on outer ventral margin very indistinct.

Length 7.5 - 8.0 mm, width 2.8 - 3.0 mm.

Holotype: ♂, Gap, Malaysia, 24.III.1974, Y. KIYOYAMA leg. (preserved in T. SHIBATA's coll., Osaka); paratype: 1 ♀, same locality as the holotype, 5.V.1975, Y. KIYOYAMA leg.

This new species has the aedeagal characteristics similar to those of *Oxycentrus kraatzi*. The external characteristics of the new species resembles *Oxycentrus (Oxycentropsis) subovatus* N. ITO, 1993 but the pronotum is wider, the fore tibiae are robuster, the elytra are more ovate and bear flatter intervals, and the apex of aedeagus is spherical instead of being knob-shaped.

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