Published August 28, 2000

Klapalekiana, **36**: 81-88, 2000
ISSN 1210-6100

New species of the genus *Cyclogethes* (Coleoptera: Nitidulidae: Meligethinae) from Thailand

Nový druh rodu *Cyclogethes* (Coleoptera: Nitidulidae: Meligethinae) z Thajska

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Taxonomy, new species, key, distribution, Coleoptera, Nitidulidae, Meligethinae, *Cyclogethes*, Oriental region

Abstract. *Cyclogethes fuscipennis* sp. n. from Thailand is described and illustrated. Occurrence of *Cyclogethes orientalis* Kirejtshuk, 1979 in Thailand, *C. abnormis* Kirejtshuk, 1979 in India and Thailand and *C. aldridgei* Kirejtshuk, 1980 in Nepal is recorded for the first time. Key to the species of *Cyclogethes* Kirejsthuk, 1979 is given.

INTRODUCTION

The genus *Cyclogethes* Kirejtshuk, 1979 was described to accommodate three new species of Meligethinae from Vietnam (Kirejtshuk 1979), the fourth species from India was described by Kirejtshuk (1980). New species of the genus, *C. fuscipennis* sp. n., is described in the present paper along with new data on distribution of further species of the genus. A key to identification of all species of the genus is given.

Following acronyms are used throughout the paper to indicate the deposition of the examined specimens: NHMB – Naturhistorisches Museum, Basel; NMPC – Národní muzeum, Praha.

TAXONOMIC PART

Cyclogethes Kirejtshuk, 1979

Cyclogethes Kirejtshuk 1979: 359.
Type species: *Cyclogethes orientalis* Kirejtshuk, 1979 (original designation).

The genus is characterized by following traits: body small (length mostly about 2.0 mm), broadly oval, convex; anterior margin of clypeus truncate, not bordered; antennal furrows parallel; antennae comparatively short with 3-segmented symmetrical oval club, equal in both sexes; mentum transverse; pronotum widest at base, shallowly emarginate anteriorly; elytra at most as long as their combined width, transversely strigose; outer margin of protibiae finely denticulate; meso- and metatibiae abruptly dilated inwards in basal portion, then subparallel-sided; tarsal claws simple; hypopygium with paired arcuate impressions; ovipositor short with contiguous gonostyloids and distinct styli. The paired arcuate impressions on hypopygium, the shape of antennae, short transverse mentum and parallel antennal furrows suggest a close relationship of *Cyclogethes* to *Meligethes* Stephens, 1830. It is separated from the latter genus by

combination of broadly oval body with short, transversely strigose elytra, finely denticulate outer margin of fore tibiae and dilated middle and hind tibiae, but none of those characters itself is sufficient for the separation of the genus, because each of them has a parallel within *Meligethes*. Moreover, *C. aldridgei* Kirejtshuk, 1980 seems to occupy a transitional position in some characters, such as comparatively longer elytra, long clypeus and narrower meso- and metatibiae. True taxonomic status of the genus should be reexamined in the context of the phylogeny of a considerably diversified genus *Meligethes* and other related genera.

The known species of *Cyclogethes* can be divided in two species groups, which are defined here for the first time. *Cyclogethes abnormis* species group, containing *C. abnormis* Kirejtshuk, 1979 and *C. aldridgei* Kirejtshuk, 1980, is characterized by narrow prosternal process regularly punctate all over its surface and by a generalized ancestral meligethine form of tegmen with deep V-shaped excision and smooth ventrolateral margins. Species of *Cyclogethes orientalis* species group (*Cyclogethes orientalis* Kirejtshuk, 1979, *C. spathulatus* Kirejtshuk, 1979 and *C. fuscipennis* sp. n.) are characterized by comparatively longer male genitalia with ventral margin of tegmen bearing a series of incisions. Moreover, prosternal process in *C. fuscipennis* and *C. orientalis* is wider, dilated behind procoxae and broadly rounded apically with almost impunctate apical portion. *C. spathulatus* could not be examined; its prosternal process, as figured by Kirejtshuk (1979, fig. 33), is comparatively narrow, but with somewhat arcuate lateral margins. Gradual abbreviation of clypeus, meso- and metatibiae seems to represent an anagenetic trend within the genus, with *C. aldridgei* and *C. orientalis* representing extreme cases in the transformation series.

Key to the species of *Cyclogethes*

1 (2) Elytra as long as their combined width. Prosternal process narrowed apicaly (Fig. 5). Clypeus comparatively long (Fig. 1). Meso- and metatibiae markedly narrower than in the following species (Fig. 22). Yellow-brown, elytra, metasternum and abdomen black, tips of elytra and apical margin of hypopygium yellowish. Male genitalia Figs 16, 17. Length 2.1-2.3 mm. India (Uttar Pradesh), Nepal. ..... *C. aldridgei* Kirejtshuk

2 (1) Elytra shorter than their combined width. Prosternal process not narrowed apically. Clypeus, meso- and metatibiae shorter than in the preceding species (Figs 2–4, 11, 23).Yellow-brown, at most partly infuscate.

3 (4) Prosternal process narrow, parallel-sided (Fig. 6). Male: tegmen with deep V-shaped excision and smooth ventrolateral margins, median lobe of aedeagus broadly arcuately emarginate apically (Figs 18, 19).Length 1.9 mm. Vietnam, Thailand, India (Darjeeling). ..... *C. abnormis* Kirejtshuk

4 (3) Prosternal process with more or less arcuate lateral margins (Figs 7, 9). Male: tegmen more elongate, its ventrolateral margins with series of incisions.

5 (8) Elytra transversely strigose with distinct, sometimes oblong, punctures.

6 (7) Male: genitalia similar to those of *C. orientalis*, tegmen with shallow apical emargination reaching about one fifth of its length, incisions of ventrolateral margins situated more proximally than the bottom of the emargination; median lobe parallel-sided, slender, with narrow terminal protuberance gently curved in lateral view (Kirejtshuk 1979: figs 34-36). Length 1.9-2.1 mm. Vietnam. ..... *C. spathulatus* Kirejtshuk

7 (6) Male: tegmen with apical emargination reaching about two fifths of its length, ventrolateral margins with series of incisions situated immediately at the tips of lateral lobes; median lobe of aedeagus without terminal protuberance (Figs 12-15). Length 1.7 mm. Thailand. ..... *C. fuscipennis* sp. n.

8 (5) Elytra transversely strigose without distinct punctures. Male: genitalia resembling those of *C. spathulatus*, tegmen with apical emargination reaching about one third of its length and series of incisions on ventrolateral margins situated besides the bottom of the incision; median lobe slender, parallel-sided with narrow terminal protuberance strongly hooked in lateral view (Figs 20, 21). Length 1.9-2.1 mm. Vietnam, Thailand. ..... *C. orientalis* Kirejtshuk

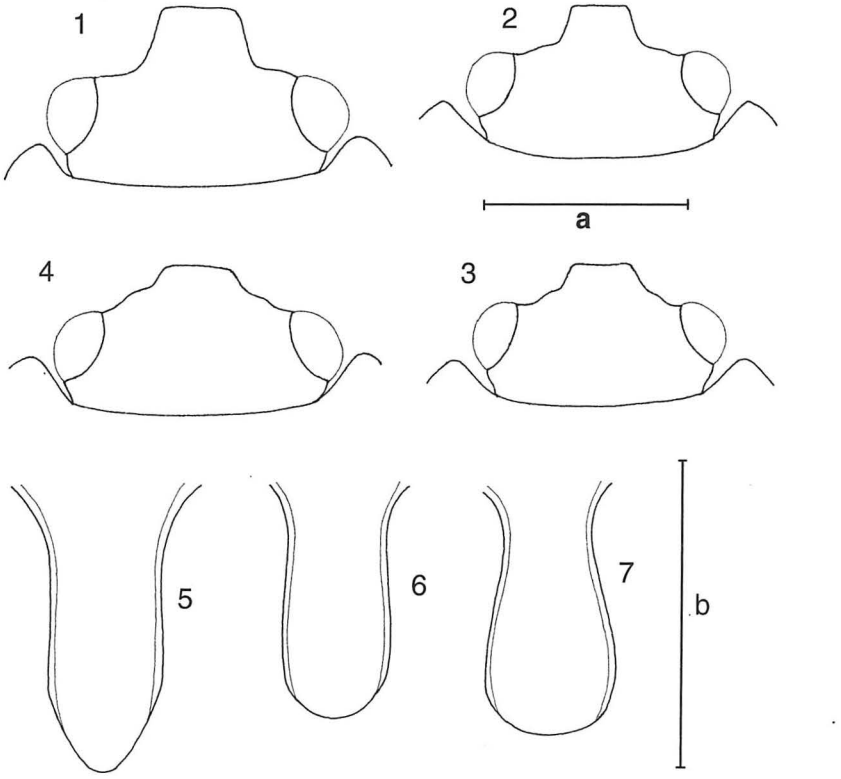
Cyclogethes abnormis Kirejtshuk, 1979
(Figs 2, 6, 18, 19, 23)

Cyclogethes abnormis Kirejtshuk, 1979: 365.

Material examined: NE Thailand, Chieng-Mai prov., Doi Suthep, 19.-22.iv.1991, S. Bílý leg., 1 male (NMPC); India, Darjeeling D., Monsong, 1100-1300 m, 6.-7.v.1983, 1 male, B. Bhakta leg. (NHMB).

Geographic distribution: Northern India, Thailand, Vietnam.

Both examined males agree with the original description. The species was described from a single pair of specimens and its peculiar aedeagus was described as having probably broken apex, but the median lobe of aedeagus of the examined males is perfectly the same as that figured by Kirejtshuk (1979), showing that it is really uniquely arcuately emarginate apically (Fig. 19). The species is recorded from India and Thailand for the first time.



Figs 1-7. Outline of head capsule (mouth parts and antennae omitted): 1 - *Cyclogethes aldridgei* Kirejtshuk; 2 - *C. abnormis* Kirejtshuk; 3 - *C. fuscipennis* sp. n.; 4 - *C. orientalis* Kirejtshuk. Prosternal process: 5 - *C. aldridgei* Kirejtshuk; 6 - *C. abnormis* Kitejtshuk; 7 - *C. orientalis* Kirejtshuk. Scale bar: a = 0.4 mm (Figs 1-4), b = 0.3 mm (Figs 5-7).

Obr. 1-7. Obrys hlavy bez ústních orgánů a tykadel: 1 - *Cyclogethes aldridgei* Kirejtshuk; 2 - *C. abnormis* Kirejtshuk; 3 - *C. fuscipennis* sp. n.; 4 - *C. orientalis* Kirejtshuk. Prosternální výběžek: 5 - *C. aldridgei* Kirejtshuk; 6 - *C. abnormis* Kirejtshuk; 7 - *C. orientalis* Kirejtshuk. Měřítko: a = 0,4 mm (obr. 1-4), b = 0,3 mm (obr. 5-7).

Cyclogethes aldridgei Kirejtshuk, 1980
(Figs 1, 5, 16, 17, 22)

Cyclogethes aldridgei Kirejtshuk, 1980: 849.

Material examined: Nepal, Pulchoki, 2600 m, 11.-14.vi.1976, W. Wittmer, C. Baroni / Cyclogethes aldridgei Kir. det Kirejtshuk, 1980, 1 male (NHMB).
Geographic distribution: India (Uttar Pradesh), Nepal.

Cyclogethes aldridgei is probably the most plesiotypic species of the genus, as suggested by its larger body and comparatively longer elytra, long clypeus (Fig. 1), prosternal process narrowed apically (Fig. 5) and comparatively narrow meso- and metatibiae (Fig. 22). The species was described from single female from India (Uttar Pradesh). The examined male does not essentially differ from the female. Metasternum is shallowly impressed behind its midlength. Length 2.3 mm. Tegmen with a deep V-shaped emargination and smooth ventrolateral margins, median lobe of aedeagus comparatively broad with short rounded terminal protuberance (Figs 16, 17). New for the fauna of Nepal.

Cyclogethes fuscipennis sp. n.
(Figs 3, 8-15)

Type material. Holotype, male, NW Thailand, Mae Hong Son, Ban Si Lang, 1200 m, 23.-31.v.1991, J. Horák leg. Paratype, 1 male, NW Thailand, Mae Hong Son, Ban Huai Po, 800-1600 m, 1.-15.v.1991, S. Bílý leg. Both NMPC.
Description. Male. Small, broadly oval, convex. Yellow-brown, elytra, scutellum and pygidium black-brown, narrow border of each elytron yellow-brown. Ventral surface yellow- to red-brown, peripheral parts of prosternal process, meso- and metasternum as well as abdominal sterna ii-iv infuscate, black-brown. Legs and antennae brown-yellow. Pubescence recumbent, yellow. Length 1.7 mm, width 1.0 mm.

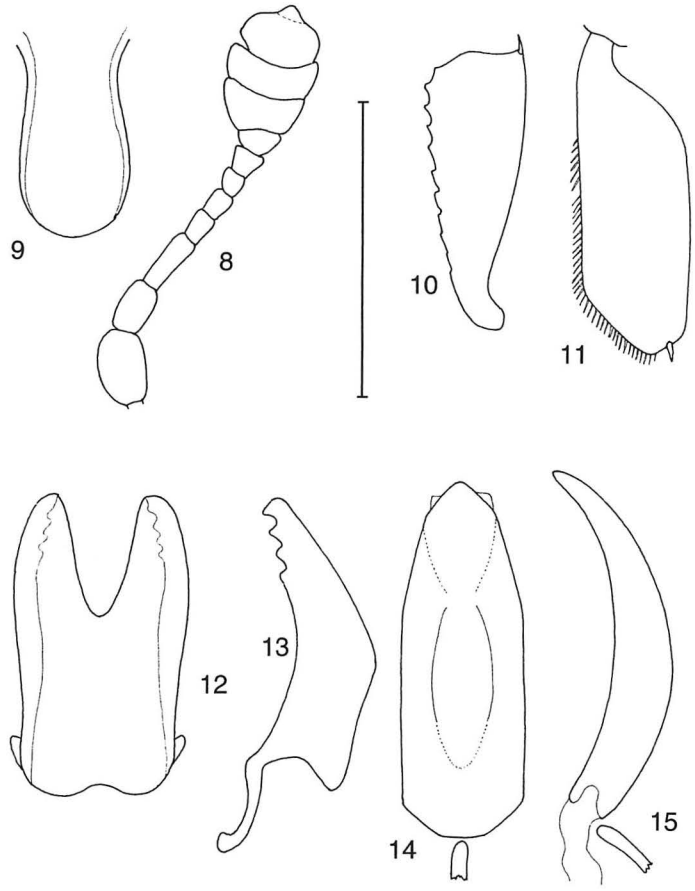
Head with eyes almost as wide as the distance between anterior corners of pronotum. Eyes rather large, strongly convex. Frons flat without impressions, clypeus short, its anterior margin truncate, not bordered. Punctures of frons nearly equal in size to eye facets, separated by about one diameter in the middle, markedly less laterally; spaces between them smooth and shining. Antennae shorter than the width of head across eyes (Fig. 8).

Pronotum widest at basal fourth, 2.02-2.08 times wider than in the middle long, slightly narrowed posteriorly. Ratio of distances between posterior and anterior angles of pronotum 1.80. Anterior margin not bordered, truncate, anterior angles broadly obtuse, short. Sides broadly arcuate, narrowly canaliculate, not wider than lateral rim. Basal margin not bordered, almost straight, faintly emarginate besides scutellum. Posterior angles obtuse. Disc of pronotum convex both longitudinally and laterally, punctures slightly finer than those of frons, separated by about 1.5 diameters and more or less regularly dispersed in the middle, becoming very close in transverse dircction at posterior corners; spaces between them smooth and shining. Scutellum subtriangular, feebly transversely substrigose and shallowly densely punctate.

Elytra widest at basal fourth, slightly wider than long, broadly separately rounded apically, reaching their maximum length in sutural half. Humeral and sutural angles obtuse, sutural lines

distinct in distal three fourths of suture, very close to it. Sides not explanate. Dorsal surface transversely strigose with distinct elongate punctures, otherwise smooth and shining. Pygidium obtusely angulate apically, moderately convex, shining, finely punctate.

Prosternum as long as the width of antennal club, transversely convex, shining, with dispersed shallow punctures, hypomera obsoletely longitudinally alutaceous, with silky shine. Prosternal process flat, somewhat dilated behind procoxae, rounded apically, with rather large dense punctures in proximal portion, almost impunctate behind procoxae (Fig. 9). Metasternum with subtriangular impression in posterior half between metacoxae, with fine, slightly rasp-like punctures separated by more than one diameter, between them smooth and shining. Mesocoxal lines broadly arcuate, almost reaching posterior lateral corners of metasternum. Hind coxae

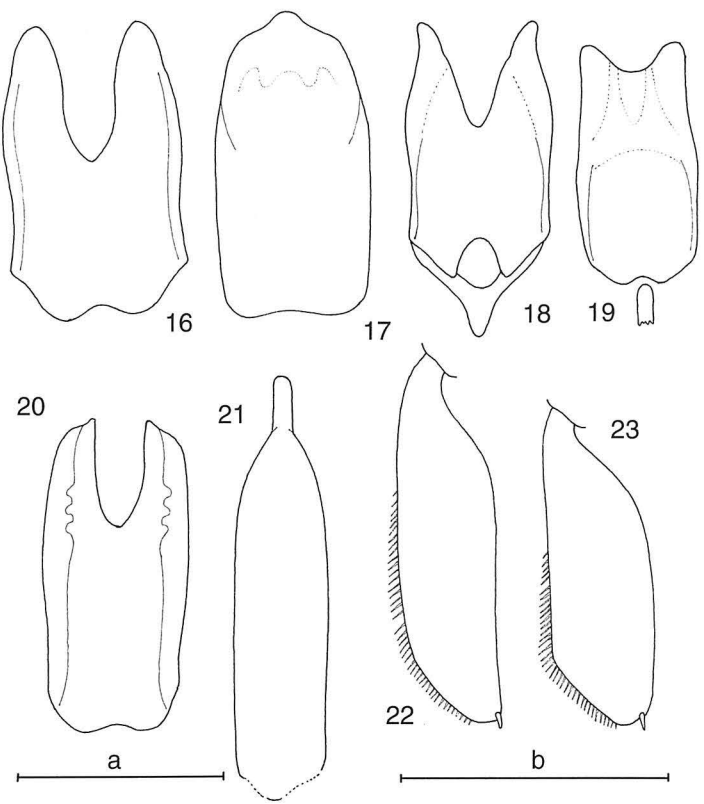


Figs 8-15. *Cyclogethes fuscipennis* sp. n. 8 - antenna; 9 - prosternal process; 10 - left anterior tibia; 11 - left posterior tibia; 12 - tegmen dorsally; 13 - tegmen laterally; 14 - median lobe of aedeagus dorsally; 15 - median lobe of aedeagus laterally. Scale bar 0.3 mm.

Obr. 8-15. *Cyclogethes fuscipennis* sp. n. 8 - tykadlo; 9 - prosternální výběžek; 10 - levá přední holeň; 11 - levá zadní holeň; 12 - tegmen dorsálně; 13 - tegmen laterálně; 14 - aedeagus dorsálně; 15 - aedeagus laterálně. Měřítko 0,3 mm.

1.7 times more apart than the middle ones, posterior margin of metasternum between them very flatly arcuate, almost subtruncate. Punctures of abdominal sterna somewhat larger than those of metasternum, separated by about one diameter, in the middle of the first sternum finer and sparser. Posterior margin of hypopygium truncate in the middle. Femora broadly oval, nearly 1.9 times longer than wide. Protibia nearly 2.5 times longer than wide, somewhat wider than antennal club, its outer margin finely denticulate (Fig. 10). Meso- and metatibiae 2.4 and 2.8 times longer than wide respectively, flat, strongly arcuately dilated inwards in their basal third, then nearly parallel-sided, outer margins abruptly obtusangulately curved at their apical fifth, running to insertions of tarsi; their outer margins bearing dense and rather long yellow bristles (Fig. 11). Tarsal claws bluntly angulate at base.

Male genitalia as figured (Figs 12-15).Tegmen with deep V-shaped excision reaching about two fifths of its length, lateral lobes narrowly rounded, ventrolateral margins with several



Figs 16-23. Tegmen and median lobe of aedeagus dorsally: 16-17 - *Cyclogethes aldridgei* Kirejtshuk; 18-19 - *C. abnormis* Kirejtshuk; 20-21 - *C. orientalis* Kirejtshuk. Left posterior tibia: 22 - *C. aldridgei* Kirejtshuk; 23 - *C. abnormis* Kirejtshuk. Scale bar: a = 0.3 mm (Figs 20–21), b = 0.3 mm (Figs 16-19, 22-23).

Obr. 16-23. Tegmen a aedeagus dorsálně: 16-17 - *Cyclogethes aldridgei* Kirejtshuk; 18-19 - *C. abnormis* Kirejtshuk; 20–21 - *C. orientalis* Kirejtshuk. Levá zadní holeň: 22 - *C. aldridgei* Kirejtshuk; 23 - *C. abnormis* Kirejtshuk. Měřítko: a = 0,3 mm (obr. 20-21), b = 0,3 mm (obr. 16-19, 22–23).

incisions situated immediately behind the tips of lateral lobes. Median lobe of aedeagus 2.7 times longer than wide, angulate apically, in lateral view moderately arcuate.

Female. Unknown.

Bionomy. Unknown.

Geographic distribution. As yet known from two localities in the province Mae Hong Son in northwestern Thailand.

Differential diagnosis. Short, broadly oval body, transversely strigose elytra with distinct oblong punctures, ventral margins of tegmen with series of incisions and the aedeagus moderately curved in lateral view resemble conditions in *C. spathulatus* Kirejtshuk, 1979 from Vietnam. The new species differs from the latter one by markedly deeper apical excision of tegmen, incisions of ventral tegminal margins situated immediately at the apex of lateral lobes and by shorter median lobe of aedeagus with simply angulate apex. Minor differences in pigmentation of the body do not seem to be significant because of possible variation. Key to the identification of all known species of *Cyclogethes* is given above.

Name derivation. From Latin fuscus (dark) and penna (feather, wing), referring to the darker pigmentation of elytra.

Cyclogethes orientalis Kirejtshuk, 1979
(Figs 4, 7, 20, 21)

Cyclogethes orientalis Kirejtshuk, 1979: 362.

Material examined: Vietnam, 50 km NE Thai-Nguyen, 400 m, 2.iii.1967, Kabakov / Paratypus *Cyclogethes orientalis* det. Kirejtshuk A., 1978, 1 male (NMPC); S Thailand, Betong, 25.iv.1992, S. Bílý leg., 1 female (NMPC).

Geographic distribution: Thailand, Vietnam.

Cyclogethes orientalis is apparently the most derived species of the genus as suggested by its very short clypeus (Fig. 4), broad prosternal process (Fig. 7) and reduced puncturation of elytra. It has been known from northern Vietnam and is recorded here from Thailand for the first time.

Cyclogethes spathulatus Kirejtshuk, 1979

Cyclogethes spathulatus Kirejtshuk, 1979: 363.

Geographic distribution: Vietnam.

I could not examine any material of this species, known from Vietnam only. Many years ago I examined one male of *Cyclogethes* from the collection Motschulsky (Zoological Museum of the State University, Moscow), which, according to my drawings, probably belonged to this species. The specimen was attached to the series of syntypes of *Pocadius subquadratus* Motschulsky, 1858 from Sri Lanka, but its geographic origin and the true appurtenance to the original series of syntypes remain doubtful – see Jelínek (1980).

ACKNOWLEDGMENTS. It is my pleasant duty to express my thanks to Svatopluk Bílý (National Museum, Praha), Michel Brancucci (Naturhistorisches Museum, Basel), Jan Horák (Praha) and Alexander G. Kirejtshuk (Zoological Institute, Russian Academy of Sciences, Skt. Peterburg), who provided me with the material upon which this paper is based. This study was supported by grant No. VZ F02/98: NMP M00001 of the Ministry of Culture of the Czech Republic.

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KIREJTSHUK A. G. 1980: Novye vidy zhukov-blestyanok podsem. Meligethinae (Coleoptera, Nitidulidae) iz Oriental'noy oblasti i sopredel'nykh territoriy. (New species of Meligethinae (Coleoptera, Nitidulidae) from the Oriental region and adjacent territories). *Entomol. Obozr.*, 59: 833-851 (in Russian, English title).

SOUHRN

Rod *Cyclogethes* Kirejtshuk, 1979 je blízký široce rozšířenému rodu *Meligethes* Stephens, 1830, od něhož se liší souborem následujících znaků: přední okraj klypeu uťatý, nevroubený; vnější hrana předních holení jemně ozubená; krovky nanejvýš stejně dlouhé jako široké, zpravidla kratší, vždy s příčnými rýžkami; střední a zadní holeně na vnitřní straně rozšířené. Dosud byly známy pouze čtyři druhy tohoto rodu z jižní Asie. V práci je popsán druh *C. fuscipennis* sp. n. z Thajska a jsou uvedeny nové údaje o výskytu dalších druhů: *C. abnormis* Kirejtshuk, 1979 (Indie, Thajsko), *C. aldridgei* Kirejtshuk, 1980 (Nepál) a *C. orientalis* Kirejtshuk, 1979 (Thajsko).

Druhy rodu *Cyclogethes* mohou být rozděleny do dvou skupin podle tvaru samčích genitálií. U skupiny *C. abnormis*, zahrnující *C. abnormis* Kirejtshuk, 1979 a *C. aldridgei* Kirejtshuk, 1980, jsou genitálie kratší, tegmen je hluboce vykrojený s hladkými ventrolaterálními hranami a odpovídá původnímu typu tegminu podčeledi Meligethinae. U skupiny *C. orientalis* (*C. fuscipennis* sp. n., *C. orientalis* Kirejtshuk, 1979 a *C. spathulatus* Kirejtshuk, 1979) jsou genitálie delší a ventrolaterální hrany tegminu jsou opatřeny několika vruby.

Dosud známé druhy rodu *Cyclogethes* je možno určit podle následujícího klíče:

1 (2) Krovky stejně dlouhé jako široké. Výběžek předohrudi na konci zúžený (obr. 5). Klypeus poměrně dlouhý (obr. 1). Střední a zadní holeně výrazně užší než u následujících druhů (obr. 22). Žlutohnědý, krovky, zadohruď a zadeček černé, konce krovek a hypopygia žlutavé. Samčí genitálie viz. obr. 16, 17. Délka 2,1-2,3 mm. Indie (Uttar Pradéš), Nepál. ..... *C. aldridgei* Kirejtshuk

2 (1) Krovky širší než dlouhé. Výběžek předohrudi na konci nezúžený. Klypeus, střední a zadní holeně kratší než u předešlého druhu (obr. 2-4, 11, 23). Žlutohnědý, nanejvýš částečně poněkud tmavší.

3 (4) Výběžek předohrudi úzký s rovnoběžnými stranami (obr. 6). Samec: tegmen s hlubokým výkrojem ve tvaru V a hladkými ventrolaterálními hranami, penis na konci široce obloukovitě vykrojený (obr. 18, 19). Délka 1,9 mm. Vietnam, Thajsko, Indie (Darjeeling). ..... *C. abnormis* Kirejtshuk

4 (3) Strany výběžku předohrudi více či méně zaoblené (obr. 7, 9). Samec: tegmen delší, jeho ventrolaterální hrany s řadou vrubů.

5 (8) Krovky s jemnými příčnými rýžkami a zřetelnými, někdy podlouhlými tečkami.

6 (7) Samec: genitálie podobné jako u *C. orientalis*, tegmen na konci s mělkým výkrojem dosahujícím asi do jedné pětiny jeho délky, vruby na ventrolaterální hraně leží za tímto výkrojem. Penis úzký, s rovnoběžnými stranami a úzkým koncovým výběžkem, který je při bočním pohledu lehce zakřivený (Kirejtshuk 1979 obr. 34-36). Délka 1,9-2,1 mm. Vietnam. .... *C. spathulatus* Kirejtshuk

7 (6) Samec: tegmen s výkrojem dosahujícím do dvou pětin jeho délky, vruby na ventrolaterální hraně umístěné bezprostředně na konci tegminu. Penis bez koncového výběžku (obr. 12-15). Délka 1,7 mm. Thajsko. ..... *C. fuscipennis* sp. n.

8 (5) Krovky s jemnými příčnými rýžkami, ale bez zřetelných teček. Samec: genitálie podobné jako u *C. spathulatus*, ale koncový výkroj tegminu dosahuje jedné třetiny jeho délky a vruby na vetrolaterálních hranách jsou umístěny na úrovni dna tohoto výkroje. Penis úzký, s rovnoběžnými stranami, úzký koncový výběžek je při bočním pohledu silně hákovitě zakřivcný (obr. 20, 21). Délka 1,9-2,1 mm. Vietnam, Thajsko. ..... *C. orientalis* Kirejtshuk