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A New Species of the Genus *Crassolabium* Yeates, 1967 (Nematoda: Dorylaimidae: Labronematinae) from India

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Abstract: *Crassolabium dhritiae* sp. n. has been described from Deccan Peninsular Biogeographic Zone, Keonjhar District, Odisha State, India (21^{0}17′53″N, 85^{0}50′46″E). The new species is characterised by its medium size and moderately slender body, rounded amalgamated lip region, wide and moderately longer odontostyle (about six times of odontostyle width or 1.2–1.4 times of lip-region width) with aperture occupying slightly less than the half to about one-third of the odontostyle, long pharynx (1/3.5 to 1/3.8 of body length), presence of *pars refringens vaginae*, presence of two round gland cells near vulva on both sides of vagina, short convex-conoid and ventrally straight tail with round terminus. *Crassolabium dhritiae* sp. n. can be differentiated from all other species of the genus except *C. brachycephalum*, *C. circuliferum*, *C. diversum*, *C. montanum*, *C. rhopalocercum* and two Indomalayan species *C. aenigmaticum* and *C. vietnamense* in having a well-marked longer pharynx in female.

Key words: Taxonomy, Description, New species, *Crassolabium dhritiae* sp. n.

Introduction

Yeates (1967) erected the genus *Crassolabium* to accommodate the new species *C. australe* from New Zealand. It was followed by a second species *C. robustum* Mukhina, 1992, described from a greenhouse near Magadan, Russia after a long span of time (Mukhina 1992). There were many controversies regarding the taxonomic status and validity of the genus *Crassolabium*. Andrássy (1976) considered it as a valid genus contradicting the opinion of Siddiqi (1969). However, Andrássy (1986) placed the type and only species *C. australe* in the genus *Thonus* Thorne, 1974. Further, Andrássy (1990) considered *Crassolabium* as a junior synonym of *Discolaimium* Thorne, 1939. Jairajpuri & Ahmad (1992) accepted *Crassolabium* as a valid genus, considering *C. australe* Yeates, 1967 as the only species in it. The validity of the genus *Crassolabium* was confirmed by Peña-Santiago & Ciobanu (2007, 2008). Andrássy (2009) included 34 species under this genus based on morphological similarities. The genus *Crassolabium* has been revised by Peña-Santiago & Ciobanu (2011). At present, 38 valid species distributed throughout the world have been included as well as two *species inquirendae* and eight species as *incertae sedis* (Peña-Santiago 2021). Hodda (2022) considered only five species referring the works of Siddiqi (1969) and Andrassy (1986) regarding the synonymy of *Crassolabium* with *Eudorylaimus* and *Thonus*, respectively.

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Subsequently, one more species, *C. alexeevi* Tsalolikhin, 2017, has been added (Hodda 2022).

This is worthy to mention several species described from India: *Eudorylaimus himalus* Jairajpuri & Ahmad, 1983, *Eudorylaimus odhneri* (Allgén, 1950) Andrássy, 1959, *Aporcelaimellus baqrii* Ahmad & Jairajpuri, 1982*, Thonus cylindricus* Thorne, 1974*, Thonus garhwaliensis* Ahmad, Nath & Haider, 1985, *Thonus goaensis* Ahmad, 1993, *Takamangai nothus* (Thorne & Swanger, 1936) Andrássy, 1992 and *Takamangai saccata* (Thorne, 1974) Andrássy, 1992. After their original descriptions (Jairajpuri & Ahmad 1982, Baqri 1985, Ahmad and Jairajpuri 1982, Ahmad et al. 1985, Ahmad 1993, Sharma 2011), they were subsequently accommodated under *Crassolabium* Yeates, 1967 as valid species (Peña-Santiago & Ciobanu 2008, Álvarez-Ortega & Peña-Santiago 2013, Peña-Santiago 2021).

In the present article, we describe a further new species of the genus *Crassolabium* found in soil of a forest ecosystem in Keonjhar District, Odisha State, India.

Materials and Methods

Soil sample of about 500 gm was collected from the rhizosphere of unidentified plant at the geographical coordinates $21^{0}17'53''$N and $85^{0}50'46''$E from a forest ecosystem. At the time of collection, the collection data were kept and the geographical coordinates of that particular sampling site were recorded by a GPS (Garmin GPS72H). The sample was kept in a transparent polythene bag and its open end was tied with a rubber band to avoid dehydration, with few minute holes on the bag to reduce the hygroscopic pressure. The collected soil sample was processed in laboratory by Cobb's sieving and decantation technique (Cobb 1918) to get rid of the debris and soil particles as far as possible with plenty of water with the aid of a coarse sieve (2 mm pore size) followed by a fine sieve of 300 mesh (pore size 53 µm). The washed soil sample was kept in a 250 ml glass beaker. From that sample, nematodes were extracted by modified Baermann funnel technique (Christie & Perry 1951). The extracted nematodes were killed and fixed instantly in their characteristic body posture by Seinhorst's method in hot formaldehyde-acetic acid (f. a. 4:1) solution (Seinhorst 1966: 178). These were preserved in the same solution with appropriate labels. The specimens were transferred in a cavity block containing glycerine-alcohol solution and were kept in a desiccator for at least 3 weeks. After complete dehydration, the specimens were mounted in anhydrous glycerine and sealing was done by paraffin wax (De Maeseneer & D'Herde 1963) to make permanent slides. Then they were observed under a compound DIC microscope (Nikon Eclipse Ni), measured and photographed by digital camera using inbuilt software. Drawings were prepared by drawing tube attached to the same microscope.

Result

Description

Crassolabium dhritiae sp. n.

(Figs. 1 and 2)

Measurements. See Table 1. The measurements given hereafter are based on holotype. Minimum-maximum ranges of measurements of paratypes are given in parentheses.

Female. Body moderately slender, medium-sized, ventrally curved, particularly in posterior portion when fixed, tapering towards anterior end. Cuticle in two layers, with fine transverse striations almost uniformly thick throughout the body except on tail, 2 µm (1.5–2.0 µm) thick at anterior end at the level of middle of the odontostyle, 3 µm (2–3 µm) at mid-body and 6 µm (5.0–5.5 µm) on tail. Lateral chords 1/4–1/3 of the body width near mid-body. Lip region round, amalgamated, labial and cephalic papillae not distinct, almost continuous or weakly set off by depression, narrower than adjoining body, 5 µm (4–5 µm) high and 14 µm (13–15 µm) or 0.8 (0.7–0.8) adjacent body-widths wide. Amphid fovea funnel-shaped, its opening occupying 8 µm (6.5–8.0 µm) or about one-half of lip region width. Odontostyle 1.3 (1.2–1.4) lip region-widths long or 6.3 (6.3–6.6) times the width of odontostyle, thicker than cuticle at the same level, 3 µm wide; aperture occupying 6.5 µm (7.0–7.5 µm) or 34.2% (36.8–37.5%) of the odontostyle length. Guiding ring not much sclerotised, at 8 µm (8–9 µm) from anterior end. Odontophore simple, rod-like, 1.2 (1.1–1.2) times the odontostyle length. Nerve ring at 135 µm (128–161 µm) from anterior end or at 32.4% (29.2–34.6%) of pharynx. Cardia short, rounded to conoid, wide at pharyngo-intestinal junction and then narrow, 11 µm (8.5–11 µm) long. Pharynx long, gradually expands, slightly less than one-third or 28% (26.3–29.0%) of the body length. Expanded portion of pharynx slightly less than half of the pharyngeal length, 3.4 (3.7–4.2) times the neck base-width long or 42.7% (44.2–46.8%) of the pharyngeal length. Glandularium 157 µm or 88.2% (172–200 µm or 80.3–94.7%) of the expanded pharynx. Pharyngeal gland nuclei located as follows: D=62.2% (56.9–60.4%); AS_1=52.2% (47.3–57.0%); AS_2=56.0% (53.7–58.1%); PS_1=85.9% (75.5–81.9%); PS_2=88.5% (80.02–88.3%). Female

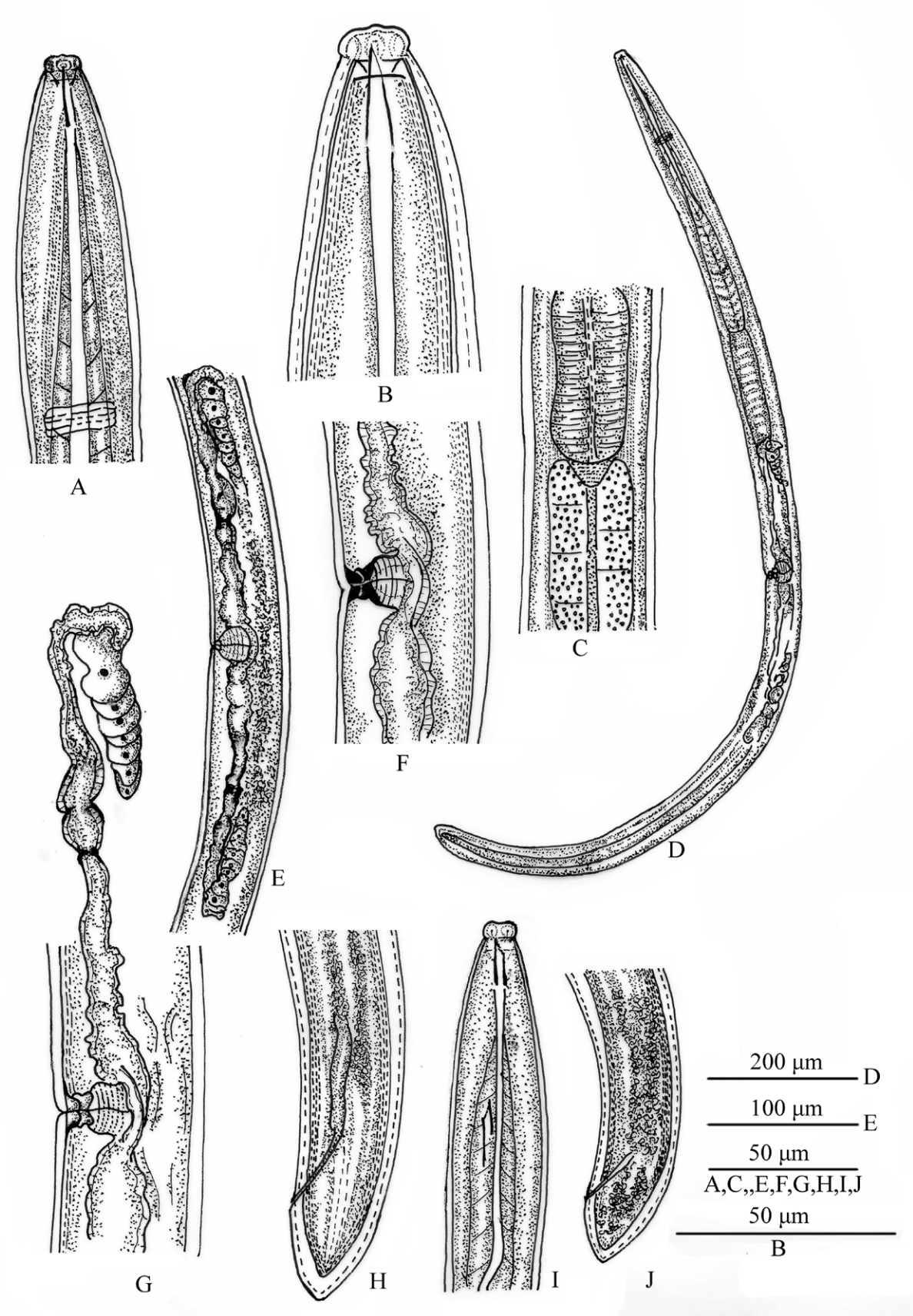

Fig. 1. A–J. *Crassolabium dhritiae* sp. n., females. A. Anterior end showing odontostyle; B. Odontostyle; C. Pharyngo-intestinal junction; D. Entire body; E. Reproductive system; F. Vulva and vagina; G. Vulva and anterior gonad; H. tail. Juvenile. I. Anterior end showing odontostyle and replacing odontostyle; J. tail.

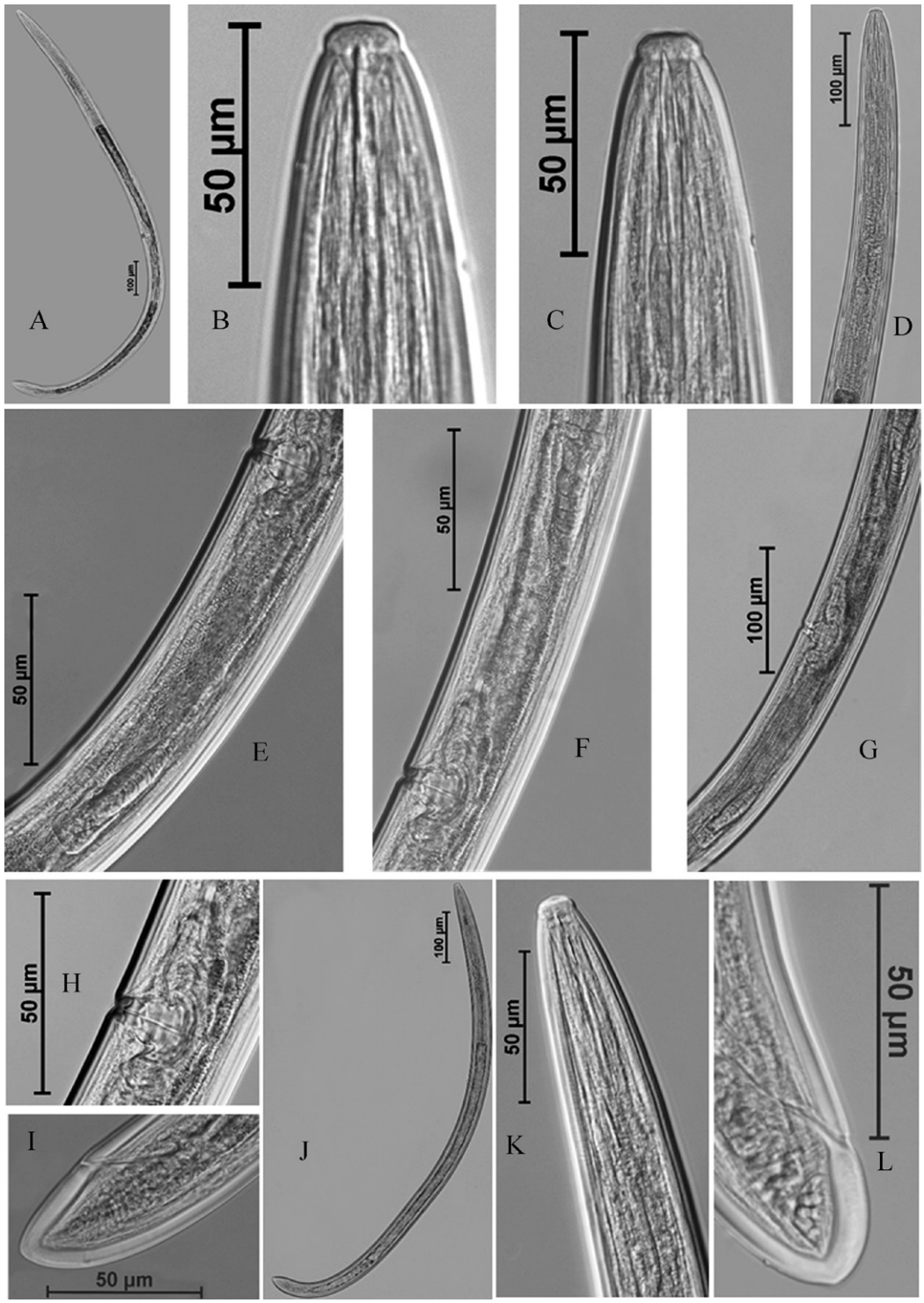

Fig. 2. A–L. Photomicrograph of *Crassolabium dhritiae* sp. n., females. A–I. Adult. A. Entire body. B. Odontostyle and amphid. C. Anterior end showing odontostyle. D. Pharynx. E. Posterior gonad. F. Anterior gonad. G. Reproductive system. H. Vulva and vagina. I. Posterior end showing tail. J–L. Juvenile. J. Entire body. K. Anterior end showing odontostyle. L. tail.

reproductive system didelphic-amphidelphic, with both genital branches equally well developed. Ovaries moderately large, posterior ovary longer than anterior ovary, reflexed (in one paratype reflexed up to sphincter); oocytes arranged in a single row except at the growth region. Anterior ovary 65 µm (63–68 µm) and posterior ovary 70 µm (63–101 µm) long. Oviduct long, tubular, joining the ovary sub-terminally, anterior oviduct 85 µm (95–101µm) and posterior oviduct 76 µm (84–95 µm) long. Indistinct sphincter

Table 1. Morphometrics of *Crassolabium dhritiae* sp. n. All measurements are in µm except L and body ratios, L in mm. Minimum-maximum range of measurements of paratype females are given in parentheses along with mean ± standard deviation.

Characters	Holotype female	Paratype female	Juvenile
n		6	2
L	1.47	1.58±0.04 (1.54–1.61)	1.02–1.23
a	27.3	29.33±0.98 (28.8–30.2)	25.5–26.2
b	3.5	3.53±0.21 (3.4–3.7)	3.2–3.5
c	47.6	63.56±13.22 (51.5–70.2)	53.5–53.7
c′	0.9	0.73±0.21 (0.6–0.9)	0.7–0.8
V%	50.4	50.16±3.88 (47.0–52.5)	–
G_1%	16.3	15.70±0.42 (15.4–16.0)	–
G_2%	16.9	15.50±1.55 (14.4–16.6)	–
Odontostyle length	19.0	19.33±0.70 (19.0–20.0)	17.0–18.0
Replacing Odontostyle	–	–	17.0–18.0
Odontophore length	23.0	23.66±0.70 (23.0–24.0)	17.0–23.0
Odontostyle aperture	6.5	7.16±0.35 (7.0– 7.5)	6.0–7.0
Odontostyle width	3.0	3.00±0 (3.0–3.0)	2.5–3.0
Guiding ring from anterior end	9.0	8.33±0.70 (8.0–9.0)	6.5–7.0
Nerve ring from anterior end	135.0	145.00±23.33 (128.0–161.0)	111.0–117.0
Maximum body width	54.0	54.00±3.53 (51.0–56.0)	40.0–47.0
Body width below lip region	17.5	17.83±0.35 (17.5–18.0)	14.0–15.0
Body width at neck base	52.0	50.33±2.82 (48.0–52.0)	39.0–45.0
Body width at vulva	54.0	54.00±3.53 (51.0–56.0)	–
Pharyngeal length	416.0	444.00±27.57 (426.0–465.0)	319.0–352.0
Expanded part of pharynx	178.0	203.00±16.26 (195.0–218.0)	146.0–189.0
Length of cardia	11.0	9.83±1.76 (8.5–11.0)	–
Length of anterior gonad	242.0	252.50±4.94 (249.0–256.0)	–
Length of posterior gonad	250.0	250.50±23.33 (234.0–267.0)	–
Length of vagina	30.0	27.66±0.70 (27.0–28.0)	–
Anterior end to vulva	746.0	801.66±46.66 (775.0–841.0)	–
Tail length	31.0	25.33±4.94 (23.0–30.0)	20.0–23.0
Anal body width	34.0	32.33±0.70 (32.0–33.0)	24.0–29.0
Length of prerectum	75.0	73.66±2.82 (71.0–75.0)	40.0–58.0
Length of rectum	31.0	35.33±2.12 (34.0–37.0)	23.0–28.0

present separating oviduct from uterus. Uterus muscular, short and simple, anterior uterus 92 µm (85–93 µm) and posterior uterus 104 µm (76–82 µm) long. Vulva transverse, equatorial, at 47–52.5% of the body. Two round gland cells present near vulva on both sides of vagina. Vagina extending inward about half or 55.5% (48.2–54.9%) of the corresponding body width. The length of *pars proximalis vagina* 20 µm (17–20 µm), *pars refringens vaginae* 7 µm (5–7 µm), sclerotised pieces almost triangular with concavity at the distal end, combined width of *pars refringens vaginae* 12 µm (10–12 µm); length of *pars distalis vagina* 3 µm in all specimens. Prerectum 2.2 (2.1–2.3) anal body widths or 2.4 (2.0–2.2) times the rectum length. Rectum 0.9 (1–1.1) anal body widths long. Tail short, ventrally straight and dorsally convex, conoid with rounded terminus, 0.9 (0.6–0.9) anal body-widths long. Caudal pores indistinct.

Male. Not found.

Juvenile (J4). Morphologically similar to females except smaller body, absence of female reproductive organs and differences in other measurements. Transverse cuticular striations very prominent, cuticle 2.0–2.5 µm thick at anterior end and at mid-body, 4–5 µm on tail. Lip region narrower than adjoining body, 4 µm high and 11–12 µm (or 0.7–0.8 adjacent body-widths wide). Amphids funnel shaped, 7 µm wide or about half of the corresponding body width. Func-

tional odontostyle and replacing odontostyle same in length, 1.4–1.6 lip region-widths long, 2.5–3.0 µm wide, aperture occupying 6–7 µm or 35.2–38.8% of the odontostyle length. Guiding ring at 6.5–7.0 µm from anterior end. Odontophore 1.0–1.2 times the odontostyle length. Nerve ring at 111–117 µm from anterior end or at 31.5–36.6% of pharynx. Pharynx about one-third of body, 1/3.2–3.5 or 28.5–31.2% of the body length. Expanded portion of pharynx 3.7–4.2 times the neck base-width long or 45.7–53.6% of the pharyngeal length. Prerectum 1.6–2.0 and rectum 0.90–0.95 anal body widths long. Tail short, convex both dorsally and ventrally, conoid with rounded terminus, 0.7–0.8 anal body-widths long.

Type habitat and locality. Collected from the forest ecosystem, soil around the roots of unidentified plant at Harichandrapur, Daldihi (21^{0}17′53″N, 85^{0}50′46″E), Keonjhar District, Odisha State, India.

Type specimens. Holotype along with three female paratypes, one juvenile on the same slide (ZSI Holotype Registration Number WN4814/1) and three female paratypes and one juvenile on another slide (ZSI Paratype Registration Number WN4814/2-9) have been deposited in the National Zoological Collection, Zoological Survey of India, Kolkata, India.

Etymology. The new species has been named after Dr (Mrs) Dhriti Banerjee, Director, Zoological Survey of India.

Discussion

Diagnosis and relationships. The newly described species is characterised by its medium and moderately slender body, rounded amalgamated lip region, wide and moderately longer odontostyle (about 6 times of odontostyle width or 1.2–1.4 times of lip-region width), aperture occupying slightly more than one-third of the odontostyle length. It has long pharynx slightly less than one-third of the body (1/3.5 to 1–3.8 or 26.3–29.0% of body length). In addition, it has two round gland cells near the vulva on both sides of vagina and is characterised by the presence of well-marked *pars refringens vaginae* as well as short convex-conoid, ventrally straight tail with rounded terminus.

Crassolabium dhritiae sp. n. can be distinguished from all other species of the genus in having a longer pharynx except *C. diversum* (Ciobanu, Popovici, Abolafia & Peña-Santiago, 2007) Peña-Santiago & Ciobanu, 2008 and some of the closely related species (see Table 2). In all other species except the closely related ones, length of pharynx ranges from 170–397 µm and in *C. diversum* the length is 350–410 µm in females *vs.* 416–465 µm in *C. dhritiae* sp. n.). The new species shows some morphological similarities and morphometric overlaps to the type-species *C. australe* Yeates, 1967 as well as to several other congeneric species. These are *C. brachycephalum* (Thorne & Swanger, 1936) Peña-Santiago & Ciobanu, 2008, *C. circuliferum* (Loof, 1961) Peña-Santiago & Ciobanu, 2008, *C. montanum* (Ciobanu et al., 2008) Peña-Santiago & Ciobanu, 2008, *C. rhopalocercum* (De Man, 1876) Peña-Santiago & Ciobanu, 2008 and two Indomalayan species *C. aenigmaticum* Vu et al., 2010 and *C. vietnamense* Vu et al., 2010. However, there are some notable differences. A comparison of morphology and morphometrics of females between *C. dhritiae* sp. n. and its most closely-related species is shown in Table 2.

Crassolabium dhritiae n. sp. can be distinguished from *C. australe* by its slightly longer body and pharynx. In addition, the new species is characterised by its equatorial vagina, rounded lip region without distinct labial and cephalic papillae, gland cells on both sides of vagina, about one-third of the odontostyle aperture, distinctly longer pharynx, longer pre-rectum and noticeably longer tail with thick cuticle. In *C. australe*, L = 0.91–1.51 mm, b = 3.4–4.4, vulva is post-equatorial (V = 52.9–57.7%), lip region angular with protruding labial and cephalic papillae, no gland cells near vagina, aperture occupying two-fifth of odontostyle length, pharynx 286.0 µm long, pre-rectum 1.7 times anal body diameter long, tail 19.5 µm long and cuticle 3.5 µm thick on tail.

The new species is distinct from *C. brachycephalum* based on its little shorter and moderately slender body, less a and b values, amalgamated, narrower weakly set off lip region by depression and smaller but wider odontostyle and gland cells on both sides of vagina. In *C. brachycephalum*, L = 2 mm, a = 39, comparatively more slender body, b = 4.5, wider angular lip region (20 µm wide) set off by constriction; odontostyle 24 µm long but relatively slender, 11.5 times as long as wide; absence of gland cells on the sides of vagina.

Crassolabium dhritiae sp. n. can be distinguished from *C. circuliferum* in having a moderately slender body evident from less a value (overlapping but with a broader range in *C. circuliferum*). The new species has different body shape, less b value indicating longer pharynx, less c' value (overlapping but with a broader range in *C. circuliferum*), rounded lip region without distinct labial and cephalic papillae, smaller odontostyle aperture, shorter odontophore and well-developed genital system. In the females of *C. circuliferum*, J-shaped body is moderately slender to very slender, a = 27–47, pharynx is shorter (340.0–416.0 µm, b = 3.7–5.0, c'=0.7–1.1). In addi-

Table 2. Morphological comparison between females of *Crassolabium dhritiae* sp. n. and the related species. All measurements are in µm except L (in mm).

Characters	*C. dhritiae* sp. n.	*C. australe*	*C. brachycephalum*	*C. circuliferum*	*C. montanum*	*C. rhopalocercum*	*C. aenigmaticum*	*C. vietnamense*
L	1.54–1.61	0.91–1.51	2.0	1.16–2.06	1.56–1.90	1.36–2.10	1.25–1.51	1.55–1.88
a	28.8–30.2	21.8–30.9	39.0	27.0–41.1	31.4–39.2	28.0–47.0	24.0–35.0	30.0–36.0
b	3.4–3.7	3.4–4.4	4.5	3.7–5.0	3.3–4.4	3.7–5.0	3.7–4.3	3.6–4.9
c	51.5–70.2	44.0–66.0	63.0	53.0–73.4	54.1–72.8	66.0–120.0	70.0–84.0	71.0–86.0
c′	0.6–0.9	0.7–0.8	1.0	0.7–1.1	0.8–1.2	0.6–0.9	0.5–0.7	0.6–0.8
V%	47.0–52.5	52.9–57.7	51.0	45.0–54.0	54.3–59.2	44.0–56.0	54.0–59.0	55.0–59.0
Position of vulva	Equatorial	Post-equatorial	Equatorial	Equatorial	Post-equatorial	Pre- to post-equatorial	Post-equatorial	Post-equatorial
Lip region	Rounded, amalgamated, labial & cephalic papillae not distinct	Angular, mostly amalgamated, labial & cephalic papillae protruding	Angular, amalgamated, cephalic papillae not reported	Weakly angular, amalgamated, labial & cephalic papillae slightly protruding	Almost rounded and amalgamated, labial and cephalic papillae slightly protruding	Almost rounded & amalgamated, lips and papillae not very distinct	Rounded, almost completely amalgamated, labial and cephalic papillae very slightly protruding	Angular, moderately separate and distinct, labial and cephalic papillae protruding
Body shape	Ventrally curved, more in posterior region, moderately slender	Open ‘C’-shaped, moderately slender	Ventrally curved, slender	Weakly ventrally curved in posterior region, J-shaped, moderately to very slender	Ventrally curved, more in posterior region, moderately slender to slender	Ventrally curved, moderately slender to very slender	Open ‘C’ shaped, moderately slender to slender	Open ‘C’ shaped, moderately slender to slender
Gland cells near vagina	Present on both sides of vagina	Not reported	Not reported	Present on both sides of vagina	Present at vagina-vulva junction	Not reported	Not reported	Not reported
Lip region diameter	13.0–15.0	14.0–14.5	20.0	7.0–14.0	15.0–18.0	13.0–14.0	13.5–15.5	17.0–20.0
Odontostyle length	19.0–20.0	18.0–20.0	24.0	9.0–19.0	20.0–22.5	15.0–20.0	17.0–19.0	19.0–22.0

Table 1. Continuation.

Characters	*C. dhritiae* sp. n.	*C. australe*	*C. brachycephalum*	*C. circuliferum*	*C. montanum*	*C. rhopalocercum*	*C. aenigmaticum*	*C. vietnamense*
Odontostyle width	Wide, thicker than cuticle at the same level	Thicker than cuticle at the same level	Comparatively slender	As thick as cuticle at the same level	Wide, as thick as cuticle at the same level	Wide	Robust. Wider than cuticle at the same level	Relatively slender, little wider than cuticle at same level
Odontostyle aperture	34.2–37.5%, slightly more than 1/3 of the odontostyle length	Two-fifth of odontostyle length	About one-third of odontostyle length	Two-fifth to one-half of odontostyle length	33–45% of odontostyle	One-third to one-half of odontostyle length	43–47% of odontostyle length	42–50% of odontostyle length
Pharynx	426.0–465.0	286.0	444.0	340.0–416.0	400.0–553.0	368.0–415.0	319.0–397.0	387.0–455.0
Basal expansion of pharynx	178.0–218.0 (42.7–46.8% of the pharyngeal length)	131.0 (46% of the pharyngeal length)	Nearly half of the pharyngeal length	200.0–270.0, two-fifth (39–42%) of the pharyngeal length	49–56% of the pharyngeal length	Nearly half of the pharyngeal length	156.0–193.0, about half of the pharyngeal length (48–51%)	190.0–246.0, about half of the pharyngeal length (47–56%)
Prerectum	71.0–75.0 (2.1–2.3 times anal body diameter)	1.7 times anal body diameter	3 times the rectum length	44.0–72.0 (1–3 anal body diameter)	78.0–190.0 (3.0–6.3 anal body diameter)	42.0–120.0 (2.5–3.5 times the rectum length)	30.0–66.0 (1.1–2.2 times the anal body diameter)	37.0–71.0 (1.1–2.3 times the anal body diameter)
Tail shape and terminus	Convex-conoid, ventrally straight, dorsally convex	Convex-conoid to rounded	Convex-conoid, ventrally straight, rounded	Convex-conoid, ventrally straight, Rounded	Conoid, ventrally straight, dorsally concave towards terminus	Rounded to hemispherical, swollen or clavate	Short and rounded, almost hemispherical or slightly clavate	Rounded, slightly less convex ventrally
Tail length	23.0–31.0	19.5	31.5	19.0–35.0	25.0–33.0	15.0–23.0	16.0–20.0	19.0–23.0
Thickness of cuticle on tail	**5.0–6.0**	3.5	Not reported	5.0	3.5–5.0	8.0–9.0	Not reported	5.5–7.5
Male	Not found	Present	Present	Present	Not known	Not known	Present	Present

tion, the lip region is weakly angular and with slightly protruding labial and cephalic papillae, aperture occupies two-fifth to half of odontostyle length and odontophore is 1.8–1.9 times the odontostyle length. Genital branches are poorly developed.

The proposed new species can be differentiated from *C. montanum* in having a moderately slender body (evident from less *a* value and less *c′* value**)**, fine transverse striations on cuticle, lacking distinct cephalic papillae. In addition, it has comparatively shorter odontostyle and pharynx, considerably shorter pharyngeal expansion and prerectum, an equatorial vulva and a different tail shape in females. In females of *C. montanum*, the body is slender, *a* = 31.4–39.2, *c′* = 0.8–1.2, the cuticle has coarse transverse striations and the cephalic papillae are slightly protruding. In addition, the odontostyle is 20.0–22.5 µm, the pharynx is 400–553 µm and the pharyngeal expansion is 200–270 µm, occupying 49–56% of pharyngeal length. Further differences include the post-equatorial vulva situated at 54.3–59.2% of body length, prerectum 78–190 µm long (3.0–6.3 of anal body diameter) and tail dorsally concave towards terminus.

The new species can be separated from *C. rhopalocercum* in having moderately slender body and longer tail evident from less *a* and *c* value, less *b* value indicating longer pharynx, equatorial vulva, presence of two gland cells near vulva on both sides of vagina, shorter prerectum, distinctly different shaped longer tail with less thick cuticle. In the females of *C. rhopalocercum,* the body is moderately slender to very slender, *a* = 28–47, *b* = 3.7–5.0, *c* = 66.0–120.0. Pharynx = 368.0–415.0 µm. Pre- equatorial to post-equatorial vulva, V = 44.0–56.0%, gland cells absent near vulva. Prerectum 42–120 µm long (2.5–3.5 times the rectum length). Cuticle on tail 8.0–9.0 µm thick; tail short, rounded to hemispherical, swollen or clavate, 15–23 µm long.

Despite some overlaps in morphometrics of Indomalayan species *C. aenigmaticum* Vu et al., 2010 (*a, c′***)** and *C. vietnamense* Vu et al., 2010 (*L, c′* and odontostyle length overlapping), the new species can be distinguished from them based on other morphometrics and morphological characters.

Crassolabium dhritiae n. sp. can be differentiated from *C. aenigmaticum* in having slightly longer body, less *b* and *c* value indicating longer pharynx and tail, respectively. The vulva is equatorial, without distinct labial and cephalic papillae; gland cells on both sides of vagina. The odontostyle is slightly longer; aperture about one-third of the odontostyle. Pharynx is distinctly longer. Pre-rectum is longer. The tail is distinctly differently shaped and longer. In the females of *C. aenigmaticum*, *L* = 1.25–1.51 mm, *b* = 3.7–4.3, *c* = 70.0–84.0. The vulva is post-equatorial, V = 54.0–59.0%. Labial and cephalic papillae are very minutely protruding. Gland cells absent near vagina. Odontostyle = 17.0–19.0 µm; odontostyle aperture = 43.0–47.0% of odontostyle length. Pharynx = 319.0–397.0 µm. Prerectum = 30.0–66.0 µm long (1.1–2.2 times the anal body diameter). Tail is short and rounded, almost hemispherical or slightly clavate, 16.0–20.0 µm long.

Further, *C. dhritiae* n. sp. can be distinguished from *C. vietnamense* in having less *a*, *b* and *c* value indicating less slender body, longer tail and pharynx (although upper ranges overlapping) and equatorial vulva. The lips are rounded, amalgamated, without distinct labial and cephalic papillae. Gland cells present on both sides of vagina. Smaller odontostyle aperture, longer prerectum and longer tail in the new species. In the females of *C. vietnamense*, *a* = 30.0–36.0, *b* = 3.6–4.9, and *c* = 71.0–86.0, vulva post-equatorial, V = 55.0–59.0%. Lip region angular, lips moderately separate and distinct, labial and cephalic papillae protruding. Gland cells near vagina absent. Odontostyle aperture = 42.0–50.0% of odontostyle length. Prerectum = 37.0–71.0 µm long (1.1–2.3 times the anal body diameter). Tail short, 19.0-23.0 µm long.

In conclusion, *C. dhritiae* n. sp. is easily distinguishable from the species transferred from other genera to *Crassolabium* being described and reported from India. Those are *C. baqrii* (Ahmad & Jairajpuri, 1982) Álvarez-Ortega & Peña-Santiago, 2013*, C. cylindricum* (Thorne, 1974) Peña-Santiago & Ciobanu, 2008*, C. garhwaliense* (Ahmad, Nath & Haider, 1985) Peña-Santiago & Ciobanu, 2008, *C. goaense* (Ahmad, 1993) Peña-Santiago & Ciobanu, 2008, *C. himalum* (Jairajpuri & Ahmad, 1983) Peña-Santiago & Ciobanu, 2008, *C. nothus* (Thorne & Swanger, 1936) Peña-Santiago & Ciobanu, 2008*, C. odhneri* (Allgén, 1950) Álvarez-Ortega & Peña-Santiago, 2013 and *C. saccatum* (Thorne, 1974) Peña-Santiago & Ciobanu, 2008.

The proposed new species can be segregated from the above-mentioned Indian species by its morphometric variations, distinctly longer body (except *C. baqrii, C. odhneri* and *C. saccatum*) and pharynx (except *C. baqrii* and *C. saccatum)*, equatorial vulva (except *C. cylindricum*), longer or shorter odontostyle, longer prerectum and longer tail with different shape except C. *himalum.* In the females of *C. baqrii*, L = 1.81–2.05 mm, vulva post-equatorial, V = 53.0–57.0%, odontostyle long (24.0–26.0 µm), pharynx long (507.0–544.0 µm) and hemispheroid tail. In the females of *C. cylindricum*, *a* = 32.0–38.0, *b* = 4.1–4.8, odontostyle short = 12.0–13.0 µm, pharynx shorter = 356.0–374.0 µm. In the females of *C. garh-*

waliense, L = 1.02–1.13 mm, pharynx = 261–279 µm, vulva post-equatorial, V=56.0-59.0%, odontostyle short 15–16 µm, prerectum = 35–50 µm, short round tail 15–17 µm long. In the females of *C. goaense*, L = 0.78–1.00 mm, pharynx = 207–274 µm, vulva post-equatorial at 58–64% of the body, odontostyle short 15–17 µm, prerectum = 30–50 µm, short round tail 14–17 µm. In the females of *C. himalum*, L = 1.18–1.31 mm, pharynx = 308–363 µm, vulva post-equatorial at 51–55% of the body, odontostyle 21–24µm long, prerectum = 54–77 µm, tail 21–24 µm long. In the females of *C. nothus*, L = 0.7–1.24 mm, *c* = 30.0–57.0, *c'* = 0.9–1.2, vulva post-equatorial, V = 51.0–60.0%; odontostyle shorter, 12.0–13.0 µm. In the females of *C. odhneri*, body longer, L = 1.9–2.0 mm, tail short, about half anal body diameter. In the females of *C. saccatum*, L=1.6–2.1 mm; *a*=37.0, *b*=4.3, *c'*=1.1 and odontostyle = 15.0 µm.

Apart from morphometrics, morphologically *C. dhritiae* n. sp. is distinguishable from *C. garhwaliense*, the later having distinct sphincter at uterus-oviduct junction and uterus with a distal *pars dialata*. *Pars refringens vaginae* of *C. goaense* consists of two separate cuticularised pieces with a piece in-between these, thus cuticularised pieces being three in number. In contrast, in *C. dhritiae* n. sp., the *pars refringens vaginae* consist of only two cuticularised pieces.

The new species can be differentiated from *C. himalum* by the presence of *pars refringens vaginae* with small cuticularised pieces, long attenuated odotostyle and presence of saccate bodies on ventral side of tail in *C. himalum*.

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