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New data on the Oriental Xantholinini. XXIV. Nine new taxa of *Paratesba* from Danum Valley, Sabah, and dichotomic key of the bornean species (Coleoptera, Staphylinidae). 221° contribution to the knowledge of the Staphylinidae

A. BORDONI

A b s t r a c t : Nine new species of *Paratesba* from Danum Valley in Sabah (Borneo), collected by the Oxford University Museum of Natural History (UK), and by Guillaume de Rougemont (London), are described; a dichotomic key of the *Paratesba* of Borneo is given.

K e y w o r d s : Coleoptera, Staphylinidae, Xantholinini, *Paratesba*, Borneo, new species, dichotomic key.

Introduction

The genus *Paratesba* CAMERON 1932 was established for a species (*indica* EPPELSHEIM 1895) described as belonging to the genus *Tesba* SHARP 1876 who lives in South America. Recent studies (BORDONI 1996, 2002, 2004, 2005, 2009) have shown that *Paratesba* is composed by several species distributed in the Indo-Chinese and Indo-Malese subregions.

Normally, probably because of unknown biology, collection of specimens of this genus is sporadic and relates to isolated individuals, so it is not unusual that a species is known only to the type. Fortunately, some evident characters, related to the shape of labrum and pronotum and to the carinae on the surface of the head, to identify even the females than in other genera are often indeterminable.

Some years ago, colleagues of the Oxford Museum (UK) and Guillaume de Rougemont (London), had the good fortune to collect, independently of each other, with the technique of flight interceptor traps (FIT), a considerable number of specimens of *Paratesba* in the same site of Danum Valley in Sabah (Borneo).

In this valley is the Danum Valley Forest Centre, within the Ulu Segama Forest Reserve, near Lahad Datu, in the north-east of the island. The zone consists of primary lowland dipterocarp forest and is the largest remaining forest in Sabah. The dominant tree is the dipterocarp *Parashorea malaanonan* but *P. tomentella, Shorea johorensis, Rubroshorea* sp., bamboo and climbing plants are also frequent.

Recently (BORDONI 2005), I published another paper on Xantholinini of the same area.

They were found to belong to several species, most of them new to Science, which are subject of this contribution. I take this opportunity to summarize the current knowledge of the genus in relation to the island of Borneo, providing a dichotomic key for identification of the species.

The species of this genus are usually large and robust, among the larger individuals within Xantholinini, however recently were also collected specimens thinner and other much smaller. The following species are described from the smallest to the most robust and large.

All the *Paratesba* have shiny surface, head with very evident, deep and thick punctures, and with long carinae, sometime not very clear, antennae with the third article longer than second, labrum very large and prominent, pronotum with groups of deep and large points at the anterior and posterior angles, dorsal series of punctures, elytra narrow and long, with fine and regular punctuation, pubescence long, erect and yellowish.

Acronyms

cB.....coll. Bordoni, Firenze cR....coll. de Rougemont, London OUMNHOxford University Museum Natural History.

Material

Paratesba minuta nov.sp. (Figs 1, 11-12)

H o l o t y p e q: Malaysia, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valley Forest Centre, 04° 57.9'N-117° 48.1'E, 200 mt, XI.2005, 1° Forest, FIT, coll. Mann, Slade & Villanueva, OUMNH-2006-051 (OUMNH).

D e s c r i p t i o n : Body length 11,5 mm; length from anterior margin of head to posterior margin of elytra 6 mm.

Narrow body; head and pronotum blaks; elytra and legs reddish-orange; brown abdomen with reddish margins; labrum and antennae reddish. Head quadrate (Fig. 11), with superficial, barely visible carinae, with great and deep punctuation, distance between points equal to their diameter. Labrum as in Fig. 1. Pronotum much longer and narrower than head, with the anterior margin as in Fig. 12, with a wide and deep point at the anterior angles, a few other points at the anterior margin of pronotum and a pair located after the big point. Dorsal series formed from 3 points forward and 3 posteriad, all very fine. Epipleura almost flat, with fine points and a short transverse furrow. Elytra narrow and long, much longer than pronotum, wider, with straight sub rectilinear and sub parallel sides, with mediocre punctuation, arranged in several regular series. Abdomen with traces of transverse microstriation and fine and sparse punctuation.

Male unknown.

D i s t r i b u t i o n : It is known only from the type locality.

E t y m o l o g y : The specific epithet refers to the very little size of the body.

N o t e : It is the smallest species of the genus, similar for this reason the species later.

Paratesba rougemonti nov.sp. (Figs 2, 13-14, 31-33)

H o l o t y p e 3: Sabah, Danum Vallery BRL, G. de Rougemont 14-16.II.2007, Fit (cR); paratypes: same data, 13 (cB); Malaysia, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valley Forest Centre, 04° 57.9'N-117° 48.1'E, 200 mt, XI.2005, 1° Forest, FIT, coll. Mann, Slade & Villanueva, OUMNH-2006-051, 13 (OUMNH).

D e s c r i p t i o n : Body length 15 mm; length from anterior margin of head to posterior margin of elytra 6,5 mm.

Body narrow. Similar to the previous species but larger, with labrum reddish brown of a different shape; abdominal segments more reddened, with 5° and 6° segments to the posterior margin and the genital segment reddish.

Head with barely visible carinae (Fig. 13), and very superficial punctuation, arranged in more or less regular series. On the clypeus are striolae and the punctuation on the sides is larger and deeper. Labrum as in Fig 2. Pronotum similar to that to *Paratesba minuta* but with more abundant punctuation; anterior margin as in Fig. 14. Abdomen with fine and dense polygonal microreticulation and with fine and sparse punctuation, concentrated on the sides.

Tergite and sternite of the male genital segment as in Figs 32-33. Aedeagus (Fig. 31).

D i s t r i b u t i o n : It is known only from the type locality.

E t y m o l o g y : Dedicated to Guillaume de Rougemont.

Paratesba rubescens nov.sp. (Figs 3, 15-16, 34-36)

H o l o y p e ♂: Sabah, Danum Valley BRL, G. de Rougemont 14-16.II.2007, Fit (cR); paratype: Malaysia, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valley Forest Centre, 04° 57.9'N-117° 48.1'E, 200 mt, XI.2005, 1° Forest, FIT, coll. Mann, Slade & Villanueva, OUMNH-2006-051, 1♂ (OUMNH).

D e s c r i p t i o n : Body length 16 mm; length from anterior margin of head to posterior margin of elytra 7,5 mm.

Body narrow. Head and pronotum blaks; elytra red orange with blak scutellum; abdominal visible segments 1-4 red light, 5-6 black, with light red posterior margins; genital segment red light.

Antennae with 3° segment much longer than 2°. Head with clear, smooth carinae, as in Fig. 15; punctuation as in *Paratesba sabahensis* but denser, especially on the sides. Labrum as in Fig. 3. Pronotum a little longer and about the same width of the head, with anterior mergin as in Fig. 16, with much dense punctuation that in *P. sabahensis*, with dorsal series formed by 8-9 points. Elytra with the usual shape and punctuation. Abdomen with very fine and dense transversal microstriation and with more or less large punctuation, similar to *P. sabahensis* but much more superficial.

Tergite and sternite of the male genital segment as in Figs 35-36. Aedeagus (Fig. 34).

D i s t r i b u t i o n : It is known only from the type locality.

E t y m o l o g y : The specific epithet refers to the colour of the abdomen.

N o t e : It is unique because the shape of the labrum and the light red color of most of the abdomen.

Paratesba silvestris nov.sp. (Figs 4, 17-18)

H o l o t y p e q: Malaysia, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valley Forest Centre, 04° 57.9'N-117° 48.1'E, 200 mt, XI.2005, 1° Forest, FIT, coll. Mann, Slade & Villanueva, OUMNH-2006-051 (OUMNH); Paratype: same data, 04°58.660'N, 117°53.410'E, 2°Forest, FIT, Slade & Villanueva III.2005, 1 q, (cB).

D e s c r i p t i o n : Body length 20 mm; length from anterior margin of head to posterior margin of elytra 9 mm.

Narrow body. Colour similar to that of *Paratesba minuta*: I describe the species that is devoid of the genital segment and aedeagus because especially recognizable for the shape of the labrum, colour and punctuation. Head with carinae well clear and smooth, arranged as in Fig. 17; punctuation of medium size, deep, larger on the sides; there are some minute irregular striolae on the clypeus. Labrum as in Fig. 4. Puntuation on the head confluent. Pronotum much longer and the width of the head; anterior margin as in Fig. 18. Puntuation at the anterior angles very sharp, deep, thinner at the posterior angles; dorsal series of 6 spots in front and back 2-3 spots. Elytra with the usual shape and punctuation. Abdomen similar to *Paratesba sabahensis*

D i s t r i b u t i o n : It is known only from the type locality.

E t y m o l o g y : From the latin *silvestris- e* (sylvan).

Paratesba danum BORDONI 2004 (Figs 5, 19, 20, 37-38)

M a t e r i a l e x a m i n e d : Malaysia, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valley Forest Centre, 04°57.9'N-117°48.1'E, 200 mt, XI.2005, 1° Forest, FIT, coll. Mann, Slade & Villanueva, OUMNH-2006-051, $1 \neq$ (OUMNH), $1 \circ$ (cB).

N o t e: The collection of such a large number of specimens and species of *Paratesba* in the Danum Valley, given the normal scarsity of the same during several previous entomological expeditions in the Oriental Region, prompted me to review more carefully the typical series of *Paratesba danum* descibed some years ago (BORDONI 2005). This study showed that in fact three specimens attribuited at first at *Paratesba danum* belong to different species, as indicated below. Some of the figures proposed in the description of *P. danum* are incorrect, especially on the head, anterior margin of pronotum and that of the labrum, tergite of male genital segment and aedeagus is not very precise. It is therefore appropriate to refer to the figures provided in this paper (respectively Figs 19, 20, 5, 38, 37).

D i s t r i b u t i o n : It is known only from the Danum Valley.

Paratesba sabahensis nov.sp. (Figs 6, 21-22, 39-41)

H o l o t y p e ♂: Malaysia, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valley Forest Centre, 04° 57.9'N-117° 48.1'E, 200 mt, XI.2005, 1° Forest, FIT, coll. Mann, Slade & Villanueva, OUMNH-2006-051 (OUMNH).

D e s c r i p t i o n : Body length 21,5 mm; length from anterior margin of head to posterior margin of elytra 9,5 mm.

Narrow body. Head, pronotum and abdomen blacks; scutellum blak with red elytra; reddish genital segment. Labrum brown. Head with carinae arranged as in Fig. 21. Puntuation medium-sized, deep, larger on the sides; ther are some striolae on the clypeus. Labrum as in Fig. 6. Pronotum much longer and the width of the head; anterior margin as

in Fig. 22. Puntuation dense and large at both the anterior and posterior angles; dorsal series of 4-5 spots in front and 3-4 spots behind. Elytra similar in structure and puntuation to that *danum* but wider. Abdomen with transerse very fine and dense microstriation and with thick subtriangular punctuation, arranged in regular series.

Tergite and sternite of the male genital segment as in Figs 40-41. Aedeagus (Fig. 39).

D i s t r i b u t i o n : It is known only from the type locality.

E t y m o l o g y : The specific epithet refers to Sabah.

Paratesba confusa nov.sp. (Figs 7, 23-24, 42-44)

H o l o t y p e δ : Sabah, Danum Valley BRL, G. de Rougemont 14-16.II.2007 (cR) (olim paratype of *Paratesba danum* mihi).

D e s c r i p t i o n : Body length 21,5 mm; length from anterior margin of head to posterior margin of elytra 10 mm.

Body much less robust than in *Paratesba differens*. Colour similar to that of *Paratesba differens*, with lighter elytra. Head with carinae arranged as in Fig. 23. Puntuation similar to *Paratesba fluvialis*; clypeus with thinner striolae. Labrum as in Fig. 7. Pronotum just longer and about the same width of the head, with *Paratesba fluvialis*-like punctuation, with anterior margin as in Fig. 24; dorsal series of 12-13 spots. Elytra with the usual form and punctuation. Abdomen with fine and dense polygonal micro reticulation, with dense and superficial punctuation.

Tergite and sternite of the male genital segment as in Figs 43-44. Aedeagus (Fig. 42).

D i s t r i b u t i o n : It is known only from the type locality.

E t y m o l o g y : The specif epithet refers to the fact that the species was confused in the typical series of P. danum.

Paratesba fluvialis nov.sp. (Figs 8, 25-26, 45-47)

H o l o t y p e ♂: Malaysia, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valley Forest Centre, 04° 57.9'N-117° 48.1'E, 200 mt, XI.2005, 1° Forest, FIT, coll. Mann, Slade & Villanueva, OUMNH-2006-051 (OUMNH); paratype: 1 ♀, Danum Valley BRL, G. de Rougemont 14-16.II.2007 (cB) (olim paratype of *Paratesba danum* mihi).

D e s c r i p t i o n : Body length 22 mm; length from anterior margin of head to posterior margin of elytra 10 mm.

Body very robust. Colour similar to *Paratesba lithocarpi* nov.sp., with reddish genital segment. Head with carinae arranged as in Fig. 25, and with denser punctuation. Clypeus with more thin minute striolae. Labrum as in Fig. 8. Pronotum more massive, large, proportionally shorter, with the anterior margin as in Fig. 26. Puntuation lot more dense, so that the entire surface, apart from a middle band, is covered with deep spots; dorsal series of 12-13 elongated, subrectangular spots. Elytra with the usual form and punctuation. Abdomen with traces of polygonal, extremely fine and dense microreticulation, with thin punctuation (the distance between points is equal to two to three times their diameter).

Tergite and sternite of the male genital segment as in Figs 46-47. Aedeagus (Fig. 45).

D i s t r i b u t i o n : It is known only from the type locality.

E t y m o l o g y : From the latin *fluviatilis- e* (fluvial).

Paratesba lithocarpi nov.sp. (figs 9, 27-28, 48-50)

H o l o t y p e ♂: Malaysia, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valley Forest Centre, 04° 57.9N-117° 48.1′E, 200 mt, XI.2005, 1° Forest, FIT, coll. Mann, Slade & Villanueva, OUMNH-2006-051 (OUMNH); paratypes: same data, 2 ♀ ♀ (OUMNH), 2 ♀ ♀ (cB), 1 ♂ (cR).

D e s c r i p t i o n : Body length 22,5 mm; length from anterior margin of head to posterior margin of elytra 10,5 mm.

Body very robust. Head, pronotum, scutellum, abdomen blacks; elytra red ligth orange, almost yellow; apex of genital segment red. Head with carinae arranged as in Fig.27, with punctuation similar to *Paratesba fluvialis* but more dense. Clypeus with minute striolae, more or less obvious. Antennae with 3° article muh longer than 2°. Labrum as in Fig. 9. Pronotum massive, broad, with anterior margin as in Fig. 28, with *Paratesba fluvialis*-like punctuation, but with dorsal series of 5-6 spots in front and 3 spots behind. Elytra with the usual form and punctuation. Abdomen with traces of transverse microstriature and *Paratesba fluvialis*-like punctuation, but much thicker.

Tergite and sternite of the male genital segment as in Figs 49-50. Aedeagus (Fig. 48).

D i s t r i b u t i o n : It is known only from the type locality.

E t y m o l o g y : The specific epithet refers to the lithocarp forest in where live the species.

Paratesba differens nov.sp. (Figs 10, 29-30, 51-53)

H o l o t y p e ♂: Malaysia, Sabah, Lahad Datu, Ulu Segama For. Res., Danum Valley Forest Centre, 04° 57.9'N-117° 48.1'E, 200 mt, XI.2005, 1° Forest, FIT, coll. Mann, Slade & Villanueva, OUMNH-2006-051 (OUMNH); paratype: Danum Valley BRL, G. de Rougemont 14-16.II.2007, 1 ♀ (cR) (olim paratype of *Paratesba danum* mihi).

D e s c r i p t i o n : Body length 25,5 mm; length from anterior margin of head to posterior margin of elytra 13 mm.

Body robust and broad. Head, antennae, labrum, pronotum, scutellum, abdomen, legs blacks; elytra dark red, partially blackened; genital segment a little reddish. Antennae with 3 article much longer than 2°. Head with very prominent carinae, arranged as in Fig. 29, with punctuation convergent into the grooves with numerous striolae. Labrum as in Fig. 10. Pronotum stocky and wide, with anterior margin as in Fig. 30, just longer and narrower than the head, with punctuation similar to *Paratesba lithocarpi*, but more dense and deep, and the area at the anterior angles with clear promined and oblique striolae, arranged by the lateral margin of pronotum to the neck. Irregular dorsal series, consisting of 5-6 spots in front and behind by 3-4 spots. The median area of pronotum is prominent. Elytra very long, dilated posteriad, with much finer and more dense punctuation of the standard. Abdomen with extremely fine and thick transverse microstriation, and with dense and superficial punctuation.

Tergite and sternite of the male genital segment as in Figs 52-53. Aedeagus (Fig. 51).

D i s t r i b u t i o n : It is known only from the type locality.

E t y m o l o g y : From the latin *differens- entis* (different) because confused in the type series of *P. danum*.

Dichotomic key of the species of *Paratesba* from Borneo (all the species occurs in Sabah, except *Paratesba borneensis* BORDONI from Brunei)

1	Body of variable size (11,5-21,5 mm) but always narrow and slender2
-	Body on averange larger (19-27 mm), always robust and wide
2	Abdomen black with genital segment and part of 6° segment visible reddish
-	Abdomen with 1°-4° visible segments reddish. 5°-6° black with posterior margins and genital segment reddish; Body about 16 mm long. Head as in Fig. 15; labrum as in Fig. 3; pronotum as in Fig. 16. Aedeagus as in Fig. 34
3	Labrum light, from red to red brown
-	Labrum dark, from black brown to black
4	Black body with orange-red elytra, scutellum blackish brown, abdomen brown with red margins, red antennae, small body, 11,5 mm long. Head as in Fig. 11, labrum as in Fig. 1, pronotum as in Fig. 12. Male unknown
-	Similar color but genital segment brown, a little red; 5°-6° visible segments and genital segment reddish; larger body, about 15 mm long. Head as in Fig. 13; labrum as in Fig. 2; pronotum as in Fig. 14. Aedeagus as in Fig. 31 <i>P. rougemonti</i> nov.sp.
5	Smaller body, about 17 mm long, black with red elytra and brown more or less blackish abdomen. Head as in Fig. 19; labrum as in Fig. 5; pronotum as in Fig. 20. Aedeagus as in Fig. 37
-	Body more robust
6	Coloration similar to that of <i>P. minutus</i> but with labrum and antennae brown black; smaller body (20 mm long); the type is devoid of genital segment. Head as in Fig. 17; labrum as in Fig. 4; pronotum as in Fig. 18 <i>P. silvestris</i> nov.sp.
-	Black body with red elytra, scutellum black, labrum dark brown, genital segment reddish; body 21,5 mm long. Head as in Fig. 21; labrum as in Fig. 6; pronotum as in Fig. 22. Aedeagus as in Fig. 39
7	Shorter body (19-22,5 mm)
-	Longer body (25,5-27 mm)
8	Abdomen with only genital segment reddish
-	Abdomen with segments at least partially reddish10
9	Red elytra, pronotum with dorsal series of 12-13 spots; body about 22 mm long. Head as in Fig. 25; labrum as in Fig. 8; pronotum as in Fig. 26. Aedeagus as in Fig. 45
-	Elytra light red, almost yellow; body black with apex of genital segment reddish; robust body, 22, 5 mm long; pronotum with 5-6 anterior spots and 3-4 posterior spots. Head as in Fig. 27; labrum as in Fig. 9; pronotum as in Fig. 28. Aedeagus as in Fig. 48 <i>P. lithocarpi</i> nov.sp.
-	Black body with red elytra and genital segment just reddish; pronotum with dorsal series of 12-13 spots; body 21,5 mm long. Head as in Fig. 23; labrum as in Fig. 7; pronotum as in Fig. 24. Aedeagus as in Fig. 42
	Body about 19 mm long; 5° and/or 6° abdominal visible segments and genital segment reddish
-	Body longer12
11	Body longer
-	Posterior margin of 6° visible segment and genital segment yellow. Head, labrum, aedeagus (Figs II, 3-7 in BORDONI 2004) <i>P. kinabaluensis</i> BORDONI
12	Body about 22 mm long; posterior margin of visible segments 5°-6° and genital segment reddish; pronotum with irregular dorsal series between thick punctuation. Head, labrum, anterior margin of pronotum, aedeagus (Figs 750-756 in BORDONI 2002) <i>P. pluvialis</i> BORDONI

-	Body 22,5 mm long; posterior margin of 6° visible segment and genital segment
	reddish. Head and labrum (Fig. II, 2 in BORDONI 2004). Male unknown

13	Body about 22 mm long; 6° visible abdominal segment and genital segment reddisch Head, labrum, anterior margin of pronotum, aedeagus (Figs 7, 21-24 in BORDONI 1996)
	Dody robust and langar (22.5.27 mm)	14

-	Body robust and longer (22,3-27 mm)
14	Elytra dark red, partially blackened; genital segment a little reddish; pronotum with
	dorsal series of 5-6 anterior spots and 3-4 posterior spots; body 25.5 mm long. Head as
	in Fig. 29; labrum as in Fig. 10; pronotum as in Fig. 30. Aedeagus as in Fig. 51
	P. differens nov.sp.

Note to the figures

The figures relating to the labrum are not to scale. For all other figures the bar scale is equal to 0,1 mm. The figures relating to head and left anterior angles and margin, right half omitted, are considered schematic. In the case of pronotum showing the pucntuation, the seate have been omitted.

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I wish to thank my colleagues James Hogan (Oxford University Natural History Museum) and Guillaume de Rougemont (London) for the loan of the material which this study is based on, and for the generous gift of some specimens.

Zusammenfassung

Aus Danum Valley in Sabah (Borneo) werden 9 neue *Paratesba*-Arten (Staphylinidae) beschrieben, gesammelt vom Oxford University Museum, dem Natural History Museum in London und von Guillaume de Rougemont (London). Ergänzend wird ein Bestimmungsschlüssel der *Paratesba*-Arten aus Borneo vorgestellt.

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Figs 1-10: Labrum of *Paratesba: P. minuta* nov.sp. (1); *P. rougemonti* nov.sp. (2), *P. rubescens* nov.sp. (3); *P. silvestris* nov.sp. (4); *P. danum* BORDONI (5); *P. sabahensis* nov.sp. (6); *P. confusa* nov.sp. (7); *P. fluvialis* nov.sp. (8); *P. lithocarpi* nov.sp. (9); *P. differens* nov.sp. (10).





Figs 11-18: Head and pronotum (right half omitted) of *Paratesba minuta* nov.sp. (11-12); head (right half omitted) and anterior angle of pronotum of *Paratesba rougemonti* nov.sp. (13-14); *P. rubescens* nov.sp. (15-16); *P. silvestris* nov.sp. (17-18).



Figs 19-26: Head (right half omitted) and anterior angle of pronotum of *Paratesba danum* BORDONI (19-20); *P. sabahensis* nov.sp. (21-22); *P. confusa* nov.sp. (23-24); *P. fluvialis* nov.sp. (25-26).





Figs 27-30: Head and pronotum (right half omitted) of *Paratesba lithocarapi* nov.sp. (27-28); head (right half omitted) and anterior angle of pronotum of *Paratesba differens* nov.sp. (29-30).





Figs 31-38: Aedeagus, tergite and sternite of male genital segment of *Paratesba rougemonti* nov.sp. (31-33); *P. rubescens* nov.sp. (34-36); aedeaagus and tergite of male genital segment of *P. danum* BORDONI (37-38).





Figs 39-44: Aedeagus, tergite and sternite of male genital segment of *Paratesba sabahensis* nov.sp. (39-41); *P. confusa* nov.sp. (42-44).





Figs 45-50: Aedeagus, tergite and sternite of male genital segment of *Paratesba fluvialis* nov.sp. (45-47); *P. lithocarpi* nov.sp. (48-50).



Figs 51-53: Aedeagus, tergite and sternite of male genital segment of Paratesba differens nov.sp.

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