

**Contribution to the *Dactylosternum* problem with description of new species
(Coleoptera: Hydrophilidae: Sphaeridiinae)
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ABSTRACT:

The systematic position of the Hydrophilid genus *Dactylosternum* within the tribe Coelostomatini is discussed, and a first draft of a cladistic analysis of the hitherto known species of *Dactylosternum* is presented as a basis for further investigations of this problematic genus.

Four new species, *D. bommelanum* sp.n., *D. despectum* sp.n., *D. destructum* sp.n., and *D. fikaceki* sp.n., all from Papua New Guinea, are described and illustrated. New records of well known species are indicated.

KEY WORDS:

Insecta, Coleoptera, Hydrophilidae, Sphaeridiinae, *Dactylosternum*, systematics, new species.

INTRODUCTION:

There are few genera that present such a large morphological diversity as can be seen in the genus *Dactylosternum*, both in terms of external characters and genital morphology.

Until now 71 species of *Dactylosternum* are described. It is the widest distributed genus of Coelostomatini, spread over all geographic regions; only two species have crossed the equator to north.

Dactylosternum is one of the most problematic genera of Hydrophilidae in systematic view because there is scarcely a morphological character to prove the genus to be monophyletic or even to distinguish *Dactylosternum* from *Coelostoma*. The genus *Dactylosternum* is probably polyphyletic, while the tribe Coelostomatini probably constitutes a monophyletic group (HANSEN 1995).

SYSTEMATICS:

a) Definition of *Dactylosternum*:

The classic definition of *Dactylosternum* (HANSEN 1991) and its delimitation from *Coelostoma* is based on the presence of elytral series on one hand, and the compact antennal club on the other.

This definition suffices so long as no *Coelostoma* without elytral series, but with compact antennal club, or *Coelostoma* with elytral series but loosely segmented antennal club are found. The more species of both genera are described the more the classic definitions become questionable.

Some morphological features of *Dactylosternum* (after Hansen 1991) have proved to be unreliable, such as

- "9-segmented antennae" (8-segmented at least in antennae),
- "Prosternum carinate medially" (the shape of prosternum varies from simply tectiform with or without a pronounced anteromedian process, or even carinate [while in *Coelostoma* never carinate]).
- "Elytra with 10 distinct rows of serial punctures" (but strongly reduced or even absent in many species, such as *detersum*, *coelostomoides*, *dachinabadense*, *foveolatum*, *indicum*, *prabhade*).
- "Sutural row deeply impressed in posterior half" (but less impressed in *abdominale*, *dytiscoides*, *corporaali*, *foveolatum*, *salvazai*, *arrowi*).

A fragmentary cladistic analysis of the genus *Dactylosternum*

Why fragmentary? The reason is that some of the early descriptions are extremely poor and the often unique type specimens are lost or unavailable. This first draft should be a basis for further investigations.

Catalogue:

R	Remarks
a	= head and pronotum shagreened
b	= midprosternum largely elevated
c	= surface bicoloured
d	= punctures of elytral interstriae r-shaped with fine scratches
e	= punctation of head double-sized
f	= body shape almost disc-like
g	= punctures of head and pronotum asymmetrical
h	= elytral interstriae strongly convex apically
i	= antennae 8-segmented
k	= elytra with 20 series
l	= elytral series irregular
m	= elytra seriate, not at all striate
n	= punctation of elytral interstriae double-sized
o	= pronotum basally distinctly foveolate
p	= meosternum with cavities for reception of procoxae
cos	= cosmopolitan
pac	= PACIFIC
Jap	= Japan
OR	= also ORIENTAL

Features:

1	Body shape	0 moderately convex 1 strongly convex
2	Elytral margin	0 distinctly explanate apically 1 not explanate
3	Elytral series	0 not reduced (10 series visible) 1 slightly reduced (basally, laterally) 2 strongly reduced or absent
4	Elytral series	0 not coarser laterally and apically 1 coarser laterally, not apically 2 coarser apically, not laterally 3 coarser laterally and apically
5	Interstrial punctation	0 almost absent 1 very fine 2 moderately fine 3 almost as coarse as series
6	Sutural stria	0 not impressed in apical half 1 impressed apically
7	Punctures (head, pronotum)	0 Punctuation forming normal round punctures 1 Punctuation forming fine v-shaped scratches
8	Eyes	0 hardly emarginate anteriorly 1 strongly emarginate anteriorly
9	Antennal club	0 loosely segmented 1 compact
10	Antennal scape	0 c. 2 x as long as pedicel 1 c. 5 x as long as pedicel
11	Prosternum	0 simply tectiform without median carina 1 carinate medially 2 with pronounced median process (generally not carinate)
12	1 st segment of hind tarsi	0 shorter than 2-3 together 1 as long as 2-3 together

Species	Size	R	Body shape		Elytral margin	Elytral series	Elytral series	Interstrial punct.	Sutural stria	Punctures (head, pronotum)	Eyes	Antennal club	Antennal scape	Prosternum	1 st segment of hind tarsi
			1	2	3	4	5	6	7	8	9	10	11	12	
AFROTROPICAL															
<i>abdominale</i> (FABRICIUS)	3.7-5.0	cos	0	1	0	0	2	0	0	1	1	1	2	1	
<i>antennale</i> ORCHYMONT	5.5-6.0	h,i	0	0	0	0	1	1	0	1	1	0	2	1	
<i>arabicum</i> BALFOR-BROWNE	5.0-6.0	l	0	1	0	0	1	1	0	0	0	0	2	1	
<i>cassidaeforme</i> (BRULLÉ)	5.0-6.0	e	0	0	0	3			0						
<i>depressum</i> (KLUG)	4.0-5.0	h	0	0	0	0	2	1	0	1	1	1	1	1	
<i>diaperinum</i> (KLUG)	8.0-9.0		1	1	0	1	1	1	0	1	1	1	2	1	
<i>intermedium</i> RÉGIMBART	4.0-4.5		1	0	0	0	2	1	0	1	1	1	2	1	
<i>profundum</i> RÉGIMBART	4.5-5.5		0	0	0	1	2	1	0	1	1	1	1	1	
<i>pygmaeum</i> RÉGIMBART	3.0		1	1	0	2			0		0				
<i>rarum</i> KNISCH	5.0		0	1	0	0	1	1	0	1	1	1	0	1	
<i>scutellare</i> RÉGIMBART	4.7-5.5	h	0	0	1	3	2	1	0	1	1	1	1	1	
<i>vinsoni</i> BALFOUR-BROWNE	4.7-5.2		1	1	1	3	1		0	0	1		0		
AUSTRALIAN (* = Papua NG endemic)															
<i>*bommelatum</i> sp.n.	2.5		1	0	0	3	3	1	1	0	1	1	0	0	
<i>*borneanum</i> HEBAUER	2.7-3.0		0	0	0	3	1	1	1	0	1	1	0	0	
<i>auripes</i> FAUVEL		a				0			1	0	0		2		
<i>*desertum</i> HEBAUER	2.8-3.1	a	1	0	0	1	2	1	1	0	0	1	0	0	
<i>*despectum</i> sp.n.	3.0-3.3		1	0	0	3	2	1	1	0	1	1	0	0	
<i>*destructum</i> sp.n.	3.0		1	0	2	1	0	0	1	1	1	1	0	0	
<i>*detersum</i> HEBAUER	2.7-3.2		1	0	2	2	1	1	1	0	?	1	0	1	
<i>dytiscoides</i> (FABRICIUS)	7.5	c	0	1	0	0	1	0	0	0	?	1	1	0	
<i>*fikaceki</i> sp.n.	4.0-4.2		1	0	0	3	0	1	1	0	1	1	0	0	
<i>helleri</i> ORCHYMONT	4.0		1	0	1	3			0	1	0		0	0	
<i>*falsum</i> HEBAUER	4.0-4.2		1	0	0	1	2	1	1	0	0	1	0	0	
<i>hydrophiloides</i> (MCLEAY)	7.5	OR	0	0	0	3	1	1	0	1	1	1	2	0	
<i>*ilaganum</i> HEBAUER	3.5-4.5	d	1	0	1	3	0	1	1	0	1	1	0	0	
<i>*illutum</i> HEBAUER	4.5-5.0	d	1	0	1	1	0	1	1	0	1	1	0	1	
<i>leverii</i> BALFOUR-BROWNE	4.0	pac	0	1	0	3			1		0		0	0	
<i>marginale</i> (SHARP)	5.5	b,p	0	0	0	0	1	1	0	1	1	1	0	1	
<i>montaguei</i> BALFOUR-BR.	4.1-4.4	a	0		0	3				0	0		1		
<i>*papuense</i> BALFOUR-BR.	4.0-4.5	d	1	0	0	3	0	1	1	0	0	1	0	0	
<i>subquadratum</i> (FAIRM.)	3.0	pac	0	0	0	3	0	1	1	0	1	1	0	1	
<i>superficiale</i> KNISCH	4.9-6.0	pac	0	0	0	0	1	1	0	0	1	1	1	1	
<i>*trilobatum</i> HEBAUER	4.0-4.5		1	0	0	1	1	1	1	0	0	1	0	0	
<i>*waigeuense</i> BALFOR-BR.	4.3-5.5	d	0	0	0	3	0	1	1	0	0	1	0	1	
ORIENTAL															
<i>bakeri</i> ORCHYMONT	3.0	m	0	1	0			1		0	0		1	0	
<i>bryanti</i> ORCHYMONT	3.7-4.0		1	0	0	1	2	1	1	0	0	1	0	1	
<i>coelostomoides</i> ORCH.	5.0-5.5	a	1	1	2				1						
<i>corbetti</i> BALFOUR-BROWNE	3.4-4.3	d	0	0	0	3	1	1	1	0	0	1	0	0	
<i>corporeali</i> ORCHYMONT	2.7		1	0	0	1	0	0			1		0	0	
<i>cycloides</i> KNISCH	4.2-4.4		1	0	1	3	1	1	1	0	0	1	0	0	
<i>dachinabadense</i> ORCH.	6.0		0	1	2	0	3	1	0	0	0	1	2	1	
<i>densepunctatum</i> ORCH.	3.8-3.9	e,k	1	0	0	0	3	1	0	0	0	1	2	0	
<i>dohertyi</i> BALFOR-BROWNE	3.2-4.1	n,m	1	1					0		0	1	0	0	
<i>fletcheri</i> ORCHYMONT	4.0		1	1	1	3	3	1	0	0	0	0		1	
<i>foveolatum</i> JAYASWAL	5.5	o	1	1	2	0	3	0	0		0		0	1	
<i>inaequale</i> KNISCH	3.0-3.2		1	1	1	3	3		0				1	1	

Species	Size	R	1	2	3	4	5	6	7	8	9	10	11	12
ORIENTAL														
<i>indicum</i> ORCHYMONT	5.5		0	1	2	1	3	1			0		2	1
<i>lanipes</i> HEBAUER	3.5	e,f	0	0	0	0	0	1	0	0	0	1	0	0
<i>prabhaae</i> JAYASWAL	5.0-5.5		1	1	2	0	3	1	0		0		2	0
<i>proxime</i> ORCHYMONT	3.0	m	1	1	0	3	2	1			1		0	0
<i>salvazai</i> ORCHYMONT	7.5		1	1	0	1	1	0	0	1	1	1		0
<i>seriatum</i> KNISCH	2.5-3.0	g	1	0	0	3	2	1	0	0	0	1	0	0
<i>vitalisi</i> ORCHYMONT	6.3-7.0		1	1	0	3	1	1	0	1	1	1		0
NEARCTIC														
<i>advectum</i> HORN	4.5													
<i>cacti</i> (LECONTE)	5.0		0	1	0	1	2	1	0	1	1	1	2	0
NEOTROPICAL														
<i>americanum</i> (MULSANT)														
<i>arrowi</i> KNISCH	5.0-5.5		1	1	0	3	1	0	0	0	0		1	
<i>cayannum</i> (MULSANT)														
<i>centrale</i> (SHARP)			1	0	1	3	0	1	0	0	0	1		1
<i>dispar</i> (SHARP)	7.5	e	0	1	0	0			0					
<i>externum</i> (SHARP)														
<i>flavicornis</i> (MULSANT)														
<i>fryanum</i> KNISCH	4.4													
<i>fulgens</i> ORCHYMONT	4.2		1	1	0	1	1	1	0	0	0		1	
<i>grossulum</i> (SHARP)	8.8		0		1	1								
<i>miraculum</i> KNISCH	3.7-4.0		1	1	1	3		1					1	
<i>pivicorne</i> (MULSANT)	6.0-6.5		0	1	0	3	1	1	0	1	1	1	1	1
<i>punctigerum</i> KNISCH	3.8													
<i>subdepressum</i> (CAST.)	5.0-7.		0	1	0	1	1	1	0	1	0	1	1	1
<i>sublevigatum</i> (MULSANT)														
<i>subrotundum</i> (FABRICIUS)														
<i>tibiale</i> (SHARP)	5.3			1	1	0			0	0				
PALEARCTIC														
<i>latum</i> (SHARP)	Jap													

SYSTEMATIC POSITION OF DACTYLOSTERNUM WITHIN COELOSTOMATINI:**Catalogue:****Remarks:**

- 1st ventrite only basally carinate.
- Elytra with very indistinct rows of serial punctures
- Claws very large strongly curved, with two very conspicuous unequal teeth.
- B. mahensis* with 8-segmented antennae.
- D. dytiscoides* with not impressed sutural row in posterior half.
- Pronotum humpy in the middle; elytra with coarse and rather irregular punctures.
- 1st ventrite of *Coelostoma* generally not carinate, but in many species more or less carinate, e.g. completely carinate in *martensi*, *rubens*, *simulans*, *surkhetensis*, *tumai*, while incompletely (at least basally) carinate in *bipunctatum*, *himalayanum*, *horni*, *medi-anum*.

Features:

1	Antennal club	0	loosely segmented
		1	compact
		2	some species compact or loosely
2	Antennal segments	0	9 (normal)
		1	8 (reduced)
		2	some species 8-segmented
3	Ratio scape : pedicel	x:1	
4	Eyes' distance	Ratio distance : eye diameter	
5	Elytral series	number, in () reduced in some species in [] split off	
6	Sutural stria	p	only in posterior half
		a	only extremely apical
		-	absent
7	1 st Ventrite	0	not carinate medially
		1	carinate medially
		(0)	carinate or not carinate
8	1 st Tarsal segment	s	shorter than 2nd segment
		e	both segments almost equal
		l	c. 1.5x as long as 2 nd segment
		ll	c. twice as long as 2 nd segment
9	Prosternum	0	not carinate medially
		1	carinate medially
		(1)	carinate or not carinate medially

Genus	Size	R	Antennal club 1	Antennal segments 2	Ratio scape : pedicel 3	Eyes' distance 4	Elytral series 5	Sutural stria 6	1 st Ventrite 7	1 st Tarsal segment 8	Prosternum 9
<i>Cyloma</i>	2.0-4.5		0	1	3	5-7	10	p	0	s	0
<i>Adolopus</i>	2.0-3		0	0	2	6	10	p	1	s	1
<i>Hydroglobus</i>	2.5-3.0		0	0	3	4	0	a	0	e	0
<i>Cyclotypus</i>	6.0-6.5		0	0	3	5	10	p	0	ll	0
<i>Coelostoma</i>	3.0-7.5	g	2	0	3	5.5	0	p	(0)	l	0
<i>Coelofletium</i>	4.0-7.0	a	0	0	4	5-6	0	-	(0)	e	1
<i>Elocomosta</i>	2.5-2.7	b	0	0	2	4.5	(0)	-	0	ll	0
<i>Phaenonotum</i>	1.5-4.5		0	0	3	5	0	-	0	l	0
<i>Phaenostoma</i>	3.0-3.5		0	0	3	4.5	0	p	0	ll	0
<i>Coeloctenus</i>	4.0-4.5	c	0	0	2	3	(10)	p	0	e	0
<i>Lachnodacnum</i>	4.0-6.5		0	0	3	7-8	0	a	0	l	0
<i>Bourdonnaisia</i>	1.7-2.3	d	0	2	2	6	20	-	0	ll	0
<i>Rhachioestethus</i>	2.3		1	0	2	5	0	-	1	e	0
<i>Dactylostethus</i>	2.5-3.0		1	0	5	8	0	-	1	e	0
<i>Galapagodacum</i>	7.0		1	0	5	4.5	0	p	1	l	1
<i>Dactylosternum</i>	2.5-7.5	e	2	2	5	6	(10)	p	1	ll	(1)
<i>Kruia</i>	5.0	f	1	1	6	6	x	-	1	ll	1
<i>Hemikruia</i>	4.8		1	0	3	5	10	p	0	l	0
<i>Toma</i>	1.4-1.6		0	0	2	4.5	20	p	0	e	1

RESULT:

At present the monophyletic status of *Dactylosternum* remains questionable, but there are well defined species groups:

A group of Oriental and Australian species which differs from "typical" species by:

- 1) Relatively short prosternum (not longer than in, e.g., *Rhachistethus*).
- 2) Elevated middle portion of mesothorax narrow-linear (reminiscent *Phaenonotum*).
- 3) Round, convex body with elytral striae more or less obsolete, posteriorly on dorsal portion where they may be completely absent – elytra rather explanate in some spp.
- 4) Pronotum with "gull"-punctures (shaped like a flat v).

The difficulty is that these "groups" overlap in their characters, as well as some genera of Coelostomatini, overlap here and there.

The large number of New Guinean endemic *Dactylosternum* represents a very homogeneous group of species, characterized by:

- a) Body shape strongly convex,
- b) Size rather small, comparable (2.5 – 4.0 mm, rarely more),
- c) Elytral series in most species not reduced,
- d) Punctuation of head and pronotum characteristically forming fine v-shaped scratches.

NEW AND UNPUBLISHED RECORDS:***Dactylosternum abdominale* (FABRICIUS, 1792):**

AUSTRIA: Bezirk Linz Land, Haid near Ansfelden, 24. 10. 1983, 1 ex. leg. & coll.. A. Link, det. A. Komarek. New to Austria. (See SCHUH, R., PLONSKI, I. S. & BROJER, M., 2006).

GREAT BRITAIN: East Northamptonshire (See WELCH, 2006); Dorset (See ALLEN, 2004).

GERMANY: Bavaria inf., Rain-Dürnhart (N48.896220; E12.441407; c.300 mNN), 1 ex., from decaying vegetation, leg. H. Hebauer (CHH). GERMANY: Bavaria, inf. Grafing-Ulrichsberg (N48.909043; E12.997695, c. 630 mNN); 1 ex., leg. F. Bretzendorfer (CFB); Badenia mer. Wyhlen, 5.XI.1977, 3 exs. leg. W. Schiller (CFH); same locality: 24.-29.9.1982, Kompost, 5 exs. leg. Schiller (CFH).

SLOVENIA: Police-luc, 21.7.2001, 290 m, 1 ex. leg. B. Drovenik (CFH).

SPAIN: Hispania Canary Isl., La Gomera, 1.-10.3.1998, 1 ex. leg. Hillger (CFH).

TENERIFE: Tenerife, Anaga Gebirge, 1 ex. leg. G. Frey. III 33 (CFH).

CAMEROON: W-Kamerun, Moliwe b. Victoria, 18.-30.XI.1807, 1 ex. leg. Frfr. v. Malizan G. (CFH).

LIBERIA: Bong Town, 24.III.1988, leg. F. Krek (MNS).

NIGERIA: Ile-Ife, 10.VII. 1985, Leg. F. Krek (MNS).

KENYA: Nairobi, 7.2.1979, 1 ex. leg. Leiler (CFH).

RWANDA: Rwanda Cyangugu Nyakabuye, 1 ex. 28.10.-2.11.1983, leg. H. Mühle (CFH).

SOUTH AFRICA: RSA: Eastern Cape (Transkei / Mbotyi Coast and Forest, 29.XI.-3.XII.2003, 2 exs. leg. W. Schawaller (MNS, CFH).

TANZANIA: Tanganyika, Kigonsera, 25.I.1960, 1 ex. leg. T. O. Morger (CFH); D.O.Afrika, Amani, 1.-4.2.1906, 1 ex. leg. Vosseler, S. G. (CFH).

MADAGASCAR: NW-Madagaskar, J. Nossibe, 1.III.1895, 1 ex. leg. Voelzkow S. (CFH); Sambawa, 2.10.1987, leg. P. & H. Schüle (MNS); Nosy Beo, 9.8.-15.9.1987; leg. P. & H. Schüle (MNS); Morondava distr., Miandrivazo, 246 km W of Antsirabe, 5.01.2002, 2 exs., leg. D. Hauck (MNS).

LA RÉUNION: Ravin de St. Gilles, Bassin Cormoran env., 13.-14.1.1992, 1 ex. J. Janák lgt. (CFH).

YEMEN: Sokotra Hadibo, 15.2.2000, 2 exs. leg. W. Wranik (CFH).

OMAN: Ayn Tobruk, Dhofar, 19°06' N; 54°20' E; to light, 7-9pm; 2 Dec. 1997, No. 8911; 1 ex., leg. MD Gallagher (CFH).

INDIA: Inde du Sud, Pondicherry, Karikal, VIII. 70, 4 exs. leg. Nathan (CFH); India, Madras, Manapakhan, 4.1997, 1 ex. leg. Saluk S.V. (CFH).

VIETNAM: 180 km SSW Hanoi, 40 km SW Than Hoa Ben En. Nat. Park, 05.-08.VIII. 1997, leg. A. Napolov (NME).

INDONESIA: "Sumatra, coll. Hayek" 2 exs. (CFH).

AUSTRALIA: Australia Q Clump Pt., X.1951, 1 ex. leg. J. Sedlacek (CFH); AUS/S.A. / Umg. Kangaroo Isl., 12/97, 1 ex. leg. Roppel (CFH).

***Dactylosternum antennale* D'ORCHY MONT, 1924:**

AFRICA: KENYA: Kakamega F., (0°22' N / 34°50'E, 1600 m), 5 exs.; 7.-11.2.1999, leg. Th. Wagner (CTW); KENYA: Nakuru, 2001, at light, 12 exs., leg. Th. Wagner, et al. (CFH, CTW).

***Dactylosternum arabicum* (BALFOUR-BROWNE, 1951):**

SAUDI ARABIA: Wadi Baktarabiyah, 2470 m, 15.IV.1980, 1 ex. leg. W. Büttiker (CFH); Wadi Bagaigah, 22°52'N – 39°52'E; 26.IV.85, 1120 m, 1 ex. leg. W. Büttiker (CFH).

***Dactylosternum borneanum* HEBAUER, 2001:**

INDONESIA: Irian Jaya: Baliem Dist. Ilugwa, Melanggama, 9.-12.9.1990, 1900-2200 m, 2 exs. leg. A. Riedel (MNS); Irian Jaya: Jayawijaya, Bime, 1600-1900 m, 22.9.1993, 3 exs. leg. A. Riedel (MNS); Irian Jaya: Jayawijaya, N. Bime, 2000-2070 m, 21.9.1993, 1 ex. leg. A. Riedel (MNS); Irian Jaya: Jayawijaya, Diuremna, 9.-11.9.1992, 1900-2100 m, 4 exs. leg. A. Riedel (MNS); Irian Jaya: Anggi, Tetako Iranmeba, 1500-1800 m, 25.III.1993, 1 ex. leg. A. Riedel (MNS); Irian Jaya: Jayapura, Lake Sentani, Südufer, 100 m NN, VI.1998, 1 ex. leg. A. Riedel (MNS).

***Dactylosternum cacti* (LECONTE, 1855):**

AMERICA BOR.: ?"Cynodotus cacti Lec." 1 ex. (CFH).

***Dactylosternum bryanti* D'ORCHY MONT, 1925:**

SABAH: Borneo Sabah, Kimbalu N.P. Head Quarter, 6°03'N - 116°32'E, at 1650 m, 25.8.-4.9.1978, 1 male, leg. J. Bogenberger & Bachl (CFH); Sabah: Mt. Kimbalu, 1500 m, 21.V.1987, 1 ex. leg. Burckhardt & LoebI (CFH).

SARAWAK: Borneo Sarawak, Belaga, 5 km S Long Linau, 18.-21.3.1990, 1 ex. leg. A. Riedel (CFH).

***Dactylosternum cassidaeforme* (BRULLÉ, 1835):**

MADAGASCAR: Madagascar G., Antsiranana, prov., 20.-26.12.2002, 2 exs. leg. Ivo Jenis (CFH);

***Dactylosternum corbetti* BALFOUR-BROWNE, 1942:**

PHILIPPINES: Leyte: Lake Danao, forest edge, 500 m, 1991, 4 exs. leg. W. Schawaller (MNS, CFH).

***Dactylosternum cycloides* KNISCH, 1921:**

CHINA: Kuatun Fukien, 9.7.[19]46, (Tschung Sen.), 1 ex. (CFH).

***Dactylosternum densepunctatum* D'ORCHYMONT, 1937:**

MALAYSIA: Singapore / Nee Soon, swamp forest, small path n. pipeline, 21.-28.4.1997, Flight intercept trap, 1 ex. leg. Balke & Hendrich (CFH); Malaysia Cameron Highland, Gn. Beremban, 1.-3.4.1990, 1 ex. leg. A. Riedel (CFH).

***Dactylosternum depressum* (KLUG, 1833):**

MADAGASCAR: Amber Gebirge, Nd. Madagaskar, 3 exs. leg. H. Bolle Berlin, SW 11 (CFH); NW-Madagaskar, J. Nossibe, 15.VIII.95, 1 ex. leg. Voelzkow S. (CFH); Madag., Tananarive, G. Schauer leg. 1 ex. (CFH); Madagaskar, Ilot Prune b. Tanatave, 1914, 2 exs. leg. Friederichs (CFH); Madagascar, Tananarivo, Fort Duchesne, 2 exs. leg. Dr. Friederichs (CFH).

SEYCHELLES: Seychellen, Mahé, 1 ex. leg. Schulthess Merian (CFH).

LA RÉUNION: Réunion, 13.-14.1.1992, Ravine de St. Gilles, Bassin Cormoran env., 2 exs. J. Janák lgt. (CFH); same locality: but 22.-23.1.1992, 1 ex. (CFH); Réunion, 16.-19.12.1991, Bras des Chevrettes, 1 ex. J. Janák lgt. (CFH).

***Dactylosternum detersum* Hebauer, 2001:**

INDONESIA-IRIAN JAYA: Wandammen Bay, Wondiwoi Mts., Wasior, 250-600 m, 4.I.2001, 2 exs., leg. A. Riedel (MNS,CFH); IRIAN JAYA: Jayawijaya, Borme, 1000-1300 m, 13.-18.8.1992, 1 ex., leg. A. Riedel (MNS); IRIAN JAYA: Prov. Jayawijaya, Borme, 12.-18.8.1992, 1000-1300 m, 1 ex., leg. A. Riedel. (MNS); IRIAN JAYA: 50 km S Nabire Pusspenssar, 13.I. 1997, 1 male, leg. A. Weigel (NME); PAPUA N. G. Morobe Prov., Mindik, 1400-1550 m, 27.4.1998, 1 male, leg. A. Riedel (CFH).

***Dactylosternum diaperinum* (KLUG, 1833):**

MADAGASCAR: Manakara, XII.50, 1 ex. (CFH).

***Dactylosternum dytiscoides* (FABRICIUS, 1775):**

MALAYSIA: Penang, 16.1.1981, 2 exs. leg. T.E. Leiler (CFH).

***Dactylosternum fletscheri* D'ORCHYMONT, 1923:**

NEPAL: Prov. Koshi, dist. Sankhuwagabha Furure, N. Bachaue, Gesiebe, 27°33.44'N – 87°16.14'E; 2100 m, 07.XII.1998, leg. M. Hartmann (CFH, NME).

***Dactylosternum hydrophiloides* (MACLEAY, 1825):**

LAOS centr.: Khammouan prov. Nakai env. (N17°12.8'; E105°0.80'; 560 m); 1 ex., leg. Jendek & Sousa (CFH); LAOS: c. Khammouan prov. Nakai env., N17°43'; E105°09'; alt. 500-600 m, 22.5.-8.6.-2001, 5 exs., leg. E. Jendek & O. Sousa (CFH); LAOS centr.: 20 km NW Louang (N21°09.2'; E105° 18.2', alt. c. 500m; 11 exs.; leg. Jendek & Sousa (CFH, etc.); Laos centr.Khammouan prov., Nakar env. 4.-8.5.1998, Route No. 8, alt. c. 500 m, N17°42.8' – E105°08.9'; leg. E. Jendek & O. Sausa (CFH); Laos north, 20 km NW Louang, Namtha c. 705 m, N21°07'- E101°21'; 1997, 11 exs. (CFH);

INDONESIA: Sumatra: Montes Battak, ex coll. Fruhstorfer, 2 exs. (CFH); Sumatra: Tebing Maru, 2 ex. (CFH); Sumatra: Padang, coll. Hayek, 1 ex. (CFH); Sumatra: 156 km SE Padang, 1000 m, 1 ex. leg. Hayek (CFH); Java: Sulpiz Kurz, 1 ex. (CFH); Sarawak: Borneo; Sarawak, Belaga D., Belaga Airp., 17.3.[19]87, 1 leg. Hiermeier (CFH).

MYANMAR: S.O. Burma, Dawna, 1 ex. (CFH);

THAILAND: near Klaeng, 1 ex. leg. Wolf (CFH); Thailand: Amphoe Chiang Dao, Doi Chiang Dao, 9.1.1989, 1500 m, 1 ex. leg. Trautmann & Geigenmüller (CFH).

***Dactylosternum intermedium* RÉGIMBART, 1907:**

SEYCHELLES: Mahé S.G. 1 ex. leg. Schulthess-Merian (CFH);

COMORES: Gr. Comoro, Morotzo, 300 m, 8.-10.VII.1903, 2 exs. leg. Voeltzkow S. (CFH).

***Dactylosternum picicorne* (MULSANT, 1844):**

JAMAICA: Jamayka, ex Bromelia, 1993, 2 exs. leg. B. Klausnitzer (CFH).

COSTA RICA: San José, 1 ex. (CFH).

SURINAME: ?Eiyo... 1 ex. (CFH).

***Dactylosternum profundum* RÉGIMBART, 1907:**

CAMEROON: Lolodorf, Kamerun, Acc. 5263, May 1914; 1 ex. (CFH); Batanga Kamerun, A.I.Good, C.M.Acc. \ Jan. 1911 \ 4366, 1 ex. (CFH).

REPUBLIK SOUTH AFRICA: Transvaal, Umg. Pretoria, 18.VII.1953, 1 ex. leg. A. von Peez (CFH);

RWANDA: Afrika Ruanda, Pref. Cyangugu Umg. Nyakabuye, 1983-1984; 25 exs. leg. H. Mühle (CFH);

EQUATORIAL GUINEA: Span. Guinea, Nkolentangan, XI.07.-V.08, 1 ex. leg. Teßmann S.G. (CFH);

DR CONGO: Westafrika, Uelleburg, VI.-VIII.08, 1 ex. leg. Teßmann S.G. (CFH).

TOGO: Bismarckburg, 15.-17.IV.[18]93, 1 ex. leg. L. Conradt S. (CFH);

ETHIOPIA: Abessinien 1938, Prov. Wallega, 1 ex. leg. P.B. Neuhaus (CFH).

***Dactylosternum rarum* KNISCH, 1924**

CAMEROON: Kamerun, Joko, N. 174, 1 ex. leg. Waibel S., Thorbecke G. (CFH); Lolodorf Cameroon, A. I. Good, Acc. 7789, 1 ex. (CFH).

EQUATORIAL AFRICA: W.-Afrika, Fernando Po, V.1900 / VI. 1900, 4 exs. leg. L. Conradt, S.V. (CFH).

***Dactylosternum salvazai* D'ORCHYMONT, 1925:**

LAOS: Laos-NE, Hua Phan prov., Ban Saluei; Phi Phan Mt., 20°15'N – 104°02'E; 1500-2000 m, 26.4.-11.5.2001, 2 exs. J. Bezdek leg. (CFH).

***Dactylosternum scutellare* RÉGIMBART, 1907:**

EQUATORIAL GUINEA: Span. Guinea: Nkolentangan, XI.07-V.08; 1 ex. leg. G. Teßmann S.G. (CFH);

IVORY COAST: Côte d'Ivoire, Parc du Banco, 5.III.1977, 3 exs. leg. J. Löbl (CFH).

TANZANIA: Kilimandscharo Dschagga-Land, Madschame, 1 ex. T. Paesler leg. (CFH); Usambara, 1 ex. leg. Bethel von Allwart (CFH).

***Dactylosternum seriatum* KNISCH, 1921:**

MALAYSIA: Cameron Highland Gn. Beremban, 1.-3.4.1990, 2 exs. leg. A. Riedel (CFH).

***Dactylosternum subdepressum* (CASTELNAU, 1840):**

ARGENTINA: Misiones Iguazu, IV.1981, 1 ex. (CFH).

BOLIVIA: Chimborazo 120477, Sibambe, 1860 m, 08.03.1995, Kescher, 1 ex. leg. Ing. Herwig Burtscher (CFH).

BRASILIA: Brasilien, Nova teutonia, 27°11'N – 52°23'W; 300-500 m, III.1968, 1 ex. leg. Fritz Plaumann (CFH).

PERU: Peru IQUITOS, 26.-27.VIII.1975, 2 exs. leg. D. Erber (CFH).

***Dactylosternum subquadratum* (FAIRMAIRE, 1849)**

is proved for New Guinea at first time ("Neu Guinea"; Biró 1901; Friedrich Wlh.-hafen."- I have examined a male (c.m.) with the typical aedeagus (see Balfour-Browne 1942, p.856!), (TMB, CFH).

***Dactylosternum superficiale* KNISCH, 1925:**

INDONESIA: Irian Jaya, Japen, Ambeidiru, 1 ex.: 6.-10.VIII.1996, leg. Schüle / Stüben (MNS).

***Dactylosternum trilobatum* HEBAUER, 2001:**

INDONESIA-IRIAN JAYA: Wamena Ilugwa, Melanggama, 1900-2000 m, 1 female, 11.9.1990, leg. A. Riedel (MNS); IRIAN JAYA: Testega, 1100-1300 m, 1 female, 30.III.-2.IV.1993, leg. A. Riedel (MNS).

***Dactylosternum vitalisi* D'ORCHYMONT, 1925:**

LAOS: Laos-NE, Hua Phan prov., Ban Saluei; Phi Phan Mt., 20°15'N – 104°02'E; 1500-2000 m, 26.4.-11.5.2001, 2 exs. J. Bezdek leg. (CFH).

***Dactylosternum waigeuense* BALFOUR-BROWNE, 1942:**

INDONESIA: Irian Jaya, Nabire area, road Nabire-Ilaga, km 62, 03°30'936"S, 135°41'945"E, 250 mNN, IV.1998, leg. M. Balke & E. Konyorah \ Sammlung Naturkundemuseum Erfurt (NME).

NEW SPECIES:

(For a standardized description of *Dactylosternum* species see HEBAUER 2007b).

***Dactylosternum bommelanum* sp.n.**

TYPE MATERIAL: Holotypus (male): 2.5 x 1.75 mm.- "IRIAN JAYA, 4.10.1996, Jayawijaya Prov. Bommela, 1700 – 1900 m, leg. A. Riedel" (NMW).- Paratypes: 1 ex. (female): "Irian Jaya. Jayawijaya, Bime, 1600 – 1900 m, 22.9.1993, leg. A. Riedel" (MNS).

DIAGNOSIS: This species comes extremely close to *D. despectum*, but clearly differs in the following features: smaller size, elytra hardly explanate laterally, at least in apical half; elytral intervals slightly convex. The shape of aedeagus is quite different.

DESCRIPTION: Total length: 2.5 mm; total width: 1.75 mm.- Body short and strongly convex, black; legs ferrugineous, mouthparts testaceous. Eyes distinctly emarginate anteriorly. Antennal scape c. 5 x as long as pedicel, club compact. Punctuation of head and pronotum forming fine v-shaped scratches. All elytral series visible, becoming coarser laterally and apically. Sutural stria impressed in apical half. Interstrial punctation at least half as coarse as serial punctures, the latter slightly striate. Gula well developed, not particularly narrowed anteriorly. Prosternum normally developed, not carinate medially, without a distinct dentiform pro-

cess anteromedially. Mesosternum without cavities for reception of procoxae; Preepisternal elevation of mesothorax broad, arrowhead shaped. 1st segment of hind tarsi only little longer than 2nd segment.

Aedeagus slender, almost parallel-sided; median lobe shorter than parameres, narrowed and obtusely point at apex; parameres narrow and pointed apicad. Basal piece c. 1/3 of aedeagus length (Fig. 1).

ETYMOLOGY: This species is named after the type locality Bommela.

DISTRIBUTION: Obviously endemic of New Guinea.

***Dactylosternum despectum* sp.n.**

TYPE MATERIAL: Holotypus (male): 3.0 x 1.0 mm.- "IRIAN JAYA: Baliem Distr., Kangime, 4.9.1990, 1900 m, leg. A. RIEDEL" (MNS).- Paratypes: 36 exs., same data as holotype (MNS, CFH).

DIAGNOSIS: The new species comes closest to *D. bommelanum*, but it differs from that in the larger size, in the elytral intervals not at all convex, in the elytral sides clearly explanate from base to apex, and in the quite different aedeagus.

DESCRIPTION: Total length: 3.0 mm; total width: 1.0 mm.- Body convex, black; legs ferrugineous, mouthparts testaceous. Eyes hardly emarginate anteriorly. Antennal scape c. 5 x as long as pedicel; antennal club compact. Punctuation of head and pronotum forming fine v-shaped scratches. All elytral striae visible; elytra posteriorly with impressed sutural stria; elytral margin distinctly explanate in posterior half; series coarser laterally and apically; elytral intervals totally flat, interval punctuation about half as coarse as series. Gula well developed, not particularly narrowed anteriorly. Prosternum normally developed, not carinate medially, without a distinct dentiform process anteromedially. Mesosternum without cavities for reception of procoxae. Pre-episternal elevation of mesothorax broad, arrowhead shaped. 1st segment of hind tarsi only little longer than 2nd segment.

Aedeagus almost parallel-sided, slightly narrowed in the middle; median lobe shorter and wider than parameres, with broadly rounded apex; parameres almost parallel-sided as far as the obliquely cut off and pointed apices; basal piece very short (Fig.2).

ETYMOLOGY: Latin: *despectum* = despised. (The specimens were originally sorted among *D. bommelanum* sp.n.).

DISTRIBUTION: Obviously endemic of New Guinea.

***Dactylosternum destructum* sp.n.**

TYPE MATERIAL: Holotypus (male): 3.0 x 2.0 mm.- "IRIAN JAYA: Japen Isl., Kontinuai, 600 – 750 m, 26.XII.2000, leg. A. RIEDEL." (MNS).

DIAGNOSIS: This species differs from almost all New Guinean species, except *D. detersum*, in the extremely reduced elytral series. It differs from the latter also in the obsoletely punctate elytral apex as well as in the less emarginated eyes.

DESCRIPTION: Total length: 3.0 mm; total width: 2.0 mm.- Body strongly convex, black, diffusely reddish laterally and apically; shining; legs ferrugineous, mouthparts testaceous. Eyes strongly emarginated anteriorly. Antennal scapae c. 5 x as long as pedicel. Antennal club compact. Punctuation of head and pronotum forming very fine v-shaped scratches. Elytral series rather fine, strongly reduced, at most the lateral pair of series distinct, entirely absent apicad. Elytra without impressed sutural stria, narrowly explanate in posterior half. Interstitial punctuation hardly finer than series. Gula strongly narrowed anteriorly, narrow and parallel-sided in the anterior half. Prosternum normally developed, not carinate medially, without dentiform process anteromedially. Mesosternum without cavities for reception of procoxae; Pre-episternal elevation of mesothorax broad, arrowhead shaped. 1st segment of hind tarsi only little longer than 2nd segment.

Aedeagus rather slender, simply trilobited; median lobe a little shorter and more slender than parameres, with narrowly rounded apex; parameres almost parallel-sided, with obtusely rounded apex, c. 2.5 x as long as basal piece. (Fig. 3).

ETYMOLOGY: Latin: *destructus* = destroyed (concerning the elytral series).

DISTRIBUTION: Probably endemic of New Guinea.

***Dactylosternum fikaceki* sp.n.**

Holotypus (male): 4.0 x 2.5 mm.- IRIAN JAYA: Wandammen Bay, Wasior, 200 m, 8.I.2001, leg. A. RIEDEL" (MNS).- Paratypes: 1 female: "IRIAN JAYA, Wandammen Bay, Wondiwoi Mts., Wasior, 300 – 850 m, 5.I.2001, leg. A. RIEDEL" (CFH).

DIAGNOSIS: This new species is hardly separated from some other endemics of Irian Jaya without a male from the same locality. It comes closest to the species of same size with the elytral series coarser apically and laterally, especially to *D. ilaganum*, *papuense* and *trilobatum*. From *D. ilaganum* it differs in the elytral series not at all reduced, especially at base. From *D. trilobatum* it differs in the elytral series coarser laterally and apically, and in the antennal club more compact. From *D. papuense* it differs in the antennal club more compact, and in the 1st segment of hind tarsi a little shorter than segments 2- 3 together.

DESCRIPTION: Total length: 4.0 – 4.1 mm; total width: 2.5 mm.- Body convex, black; legs ferrugineous, mouthparts testaceous. Eyes hardly emarginate anteriorly. Antennal scape c. 5 x as long as pedicel; antennal club compact. Punctuation of head and pronotum forming fine v-shaped scratches. All elytral series visible, serial punctures very fine and densely arranged, coarser laterally and apically; interstitial punctuation extremely fine and very dense; elytra without impressed sutural stria; margin distinctly explanate from base to apex. Gula well developed, not particularly narrowed anteriorly. Prosternum normally developed, not carinate medially, without distinct dentiform process anteromedially. Mesosternum without cavities for reception of procoxae; preepisternal elevation of mesothorax broad, arrowhead shaped. 1st segment of hind tarsi only little longer than 2nd segment.

Aedeagus rather robust, with median lobe characteristically pear shaped, strongly narrowed in distal half, obtusely rounded at apex, a little shorter than parameres; the latter finger shaped and rounded apically (Fig. 4).

ETYMOLOGY: This species is dedicated to Martin Fikáček, specialist in Sphaeridiinae at the National Museum of Praha (Czech Republik).

DISTRIBUTION: Known up to now only from the type locality; obviously endemic of New Guinea.

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ABBREVIATIONS:

- CFB Coll. Franz Bretzendorfer, Ludwigsburg, Germany
- CFH Coll. Franz Hebauer, Plattling, Germany
- CHH Coll. Hans Hebauer, Rain-Dürnhart, Germany
- CTW Coll. Thomas Wagner, Mainz, Germany
- MNS Museum für Naturkunde, Stuttgart
- NME Naturkundemuseum Erfurt
- TMB Természettudományi Múzeum Budapest, Hungary

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Fig. 1: *Dactylosternum bommelanum* sp.n.: aedeagus.

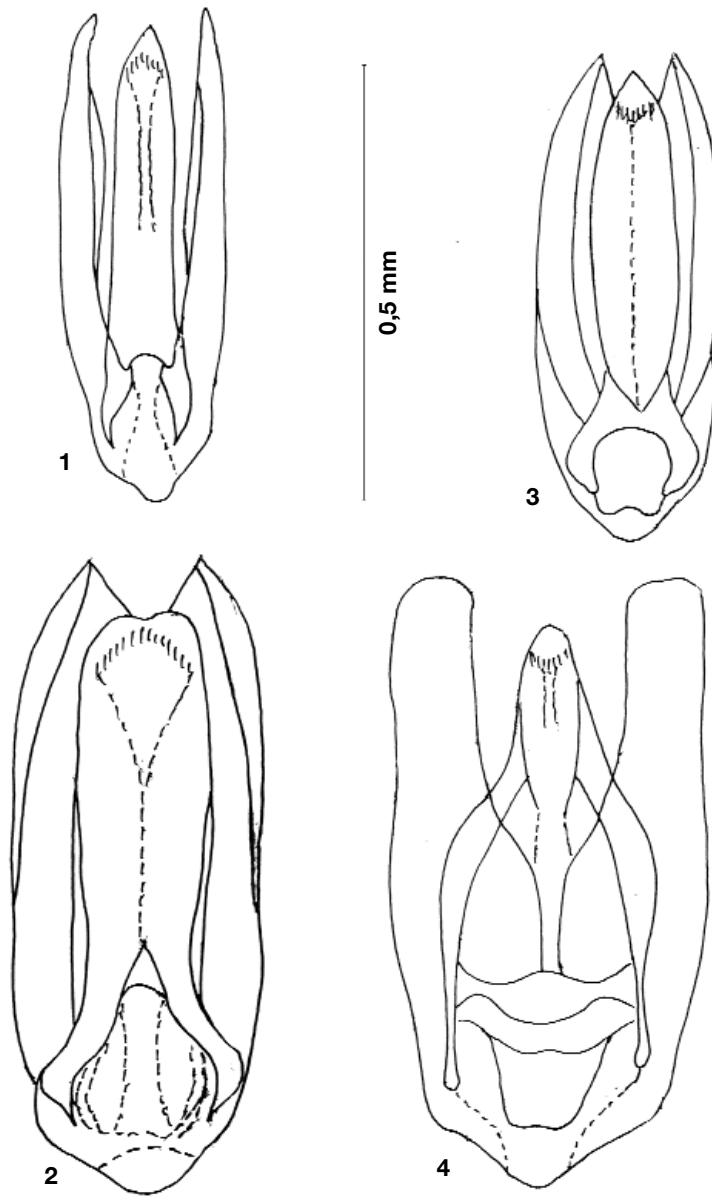


Fig. 2: *Dactylosternum despectum* sp.n.: aedeagus.

Fig. 3: *Dactylosternum destructum* sp.n.: aedeagus.

Fig. 4: *Dactylosternum fikaceki* sp.n.: aedeagus.

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