

Digital supplementary material to

FOX, E.G.P., SMITH, A.A., GIBSON, J.C. & SOLIS, D.R. 2017: Larvae of trap-jaw ants, *Odontomachus* LATREILLE, 1804 (Hymenoptera: Formicidae): morphology and biological notes. – Myrmecological News 25: 17-28.

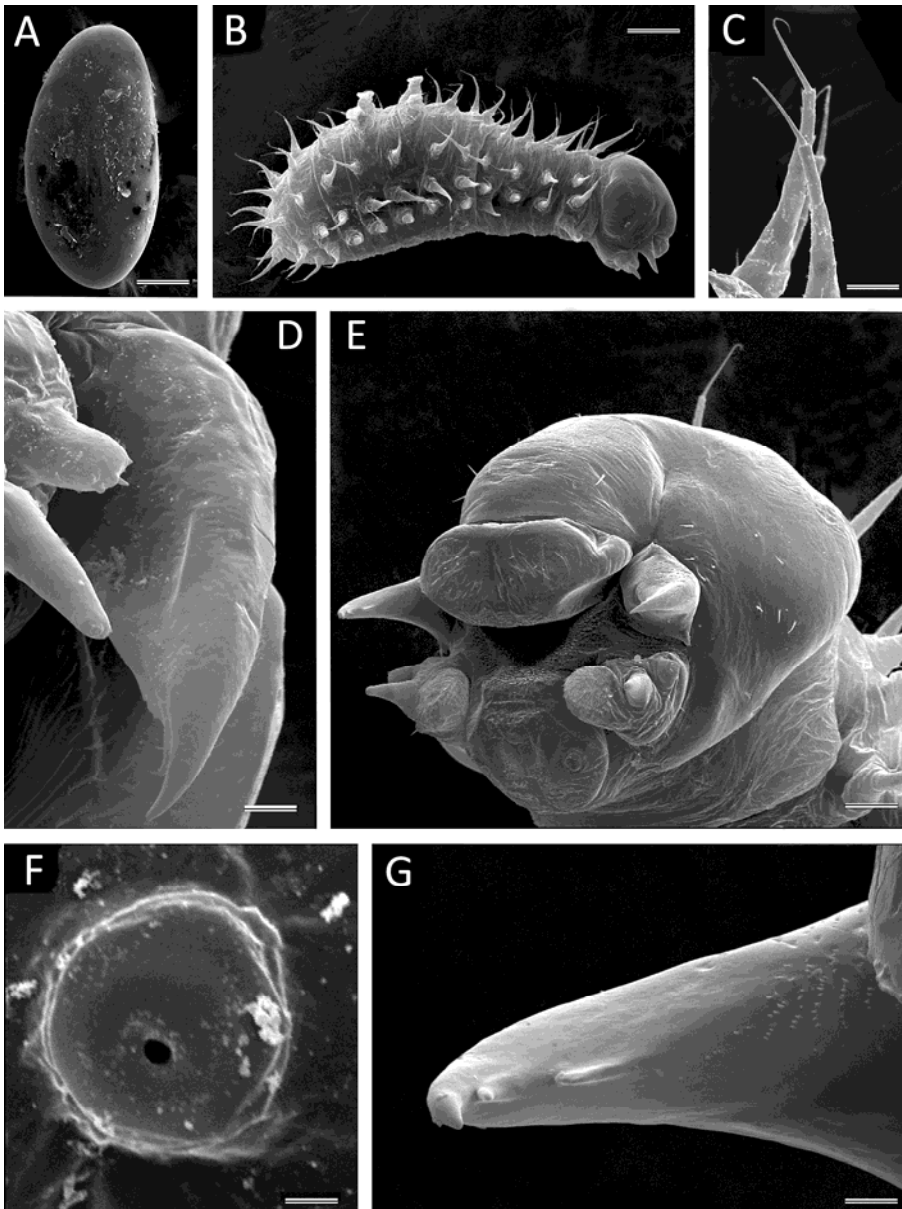


Fig. S1: Egg and aspects of first instar larvae of *Odontomachus brunneus*. (A) Egg in side view; (B) larva in side view; (C) detail on body protuberance; (D) full upside view of left mandible; (E) head capsule exposing mouthparts; (F) spiracle peritreme; (G) blade of mandible exposing teeth. Scale bars: (A) 220 μm ; (B) 210 μm ; (C) 15 μm ; (D) 35 μm ; (E) 55 μm ; (F) 7 μm ; (G) 8 μm .

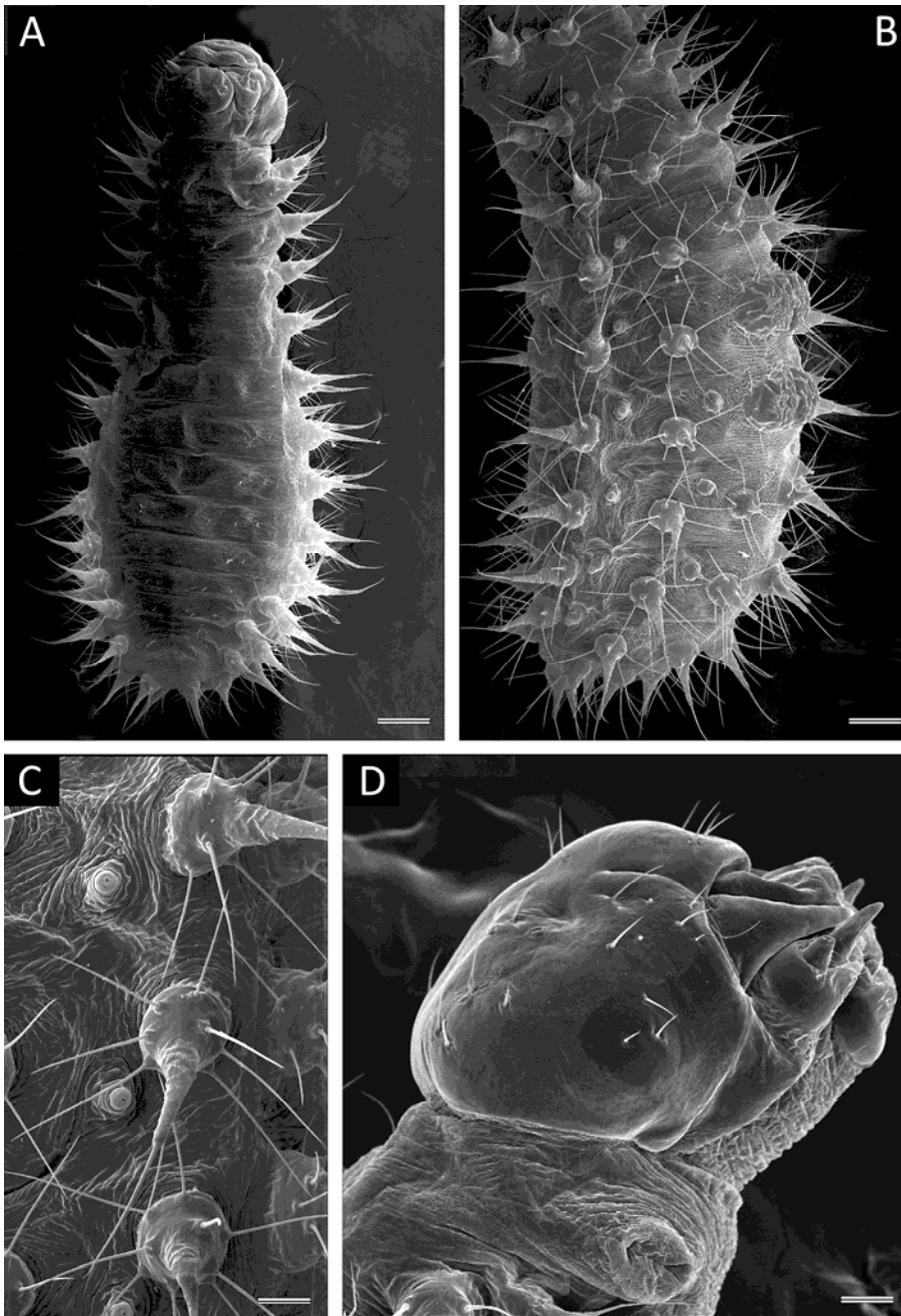


Fig. S2: The second instar larva of *Odontomachus brunneus*. (A) Full ventral view; (B) side view of body somites; (C) elevated spiracles and body protuberances; (D) side view of head capsule. Scale bars: (A) 200 μm ; (B) 215 μm ; (C) 80 μm ; (D) 47 μm .

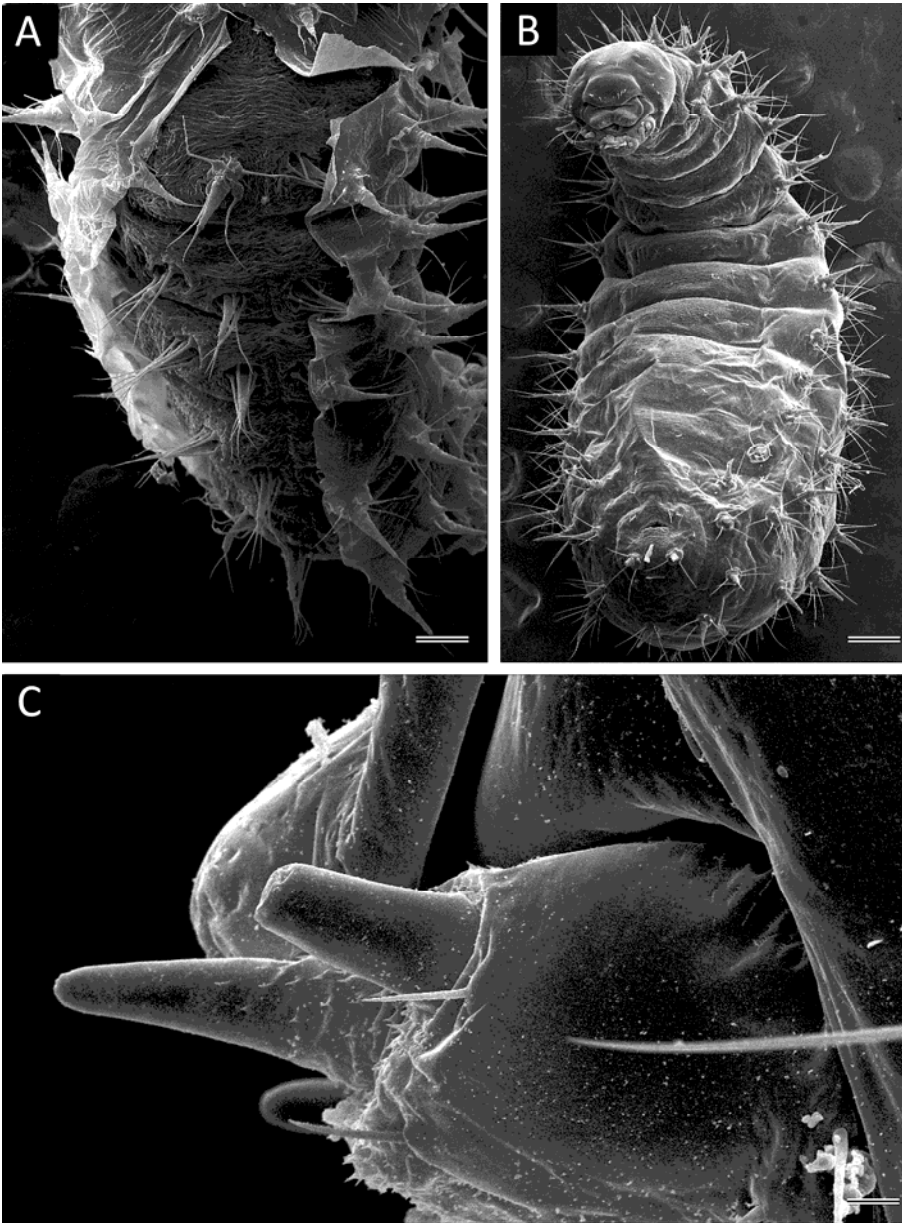


Fig. S3: The last instar larva of *Odontomachus brunneus*. (A) Detail of newly moulted larva; (B) full ventral view; (C) mouthparts in side view. Scale bars: (A) 105 μm ; (B) 250 μm ; (C) 15 μm .

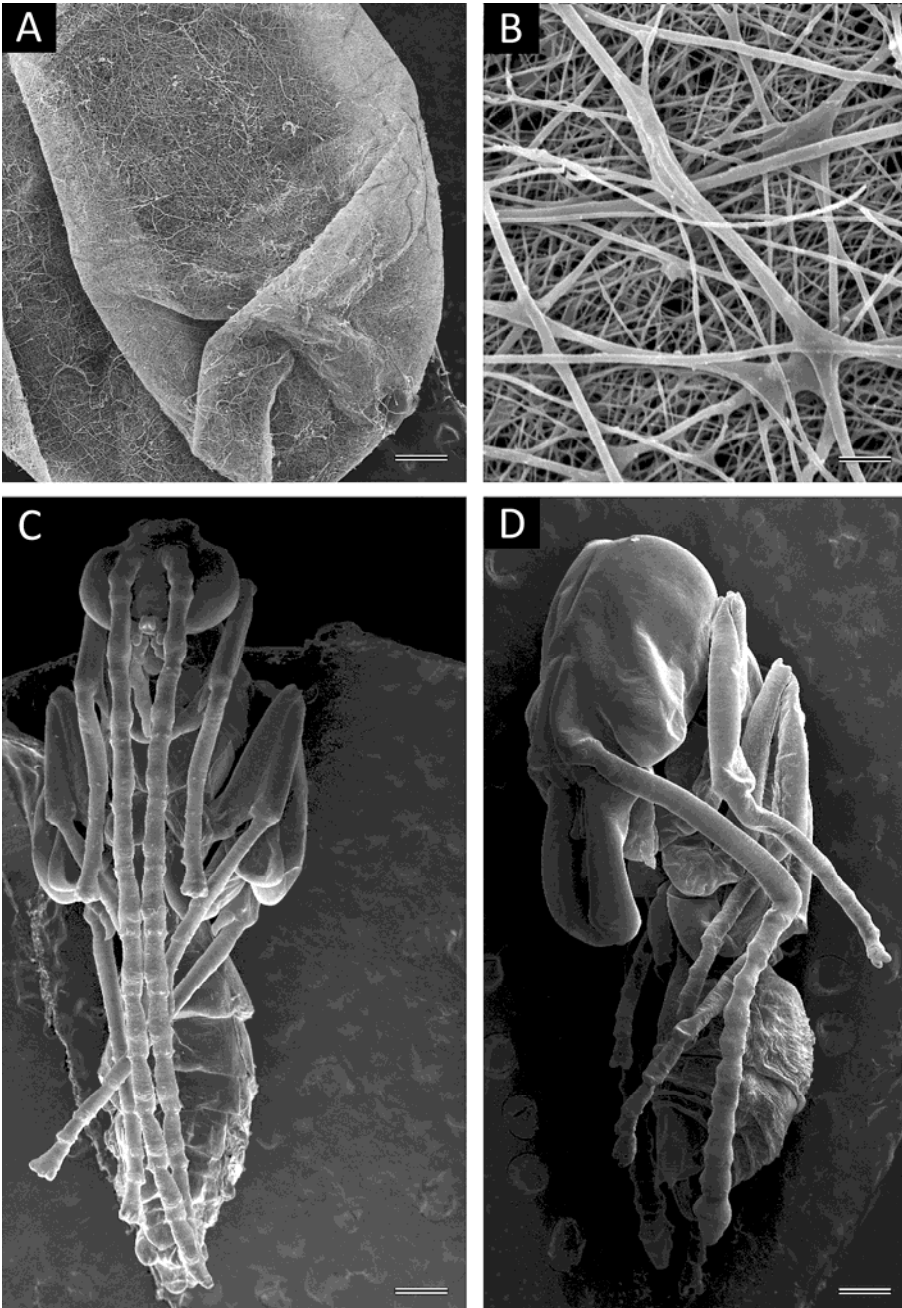


Fig. S4: Aspects of the pupal stages of *Odontomachus brunneus*. (A) Dissected cocoon of a worker pupa; (B) detail on thread organisation in a cocoon; (C) a male imaginal stage; (D) a worker pupa. Scale bars: (A) 220 μm ; (B) 15 μm ; (C) 330 μm ; (D) 600 μm .

Table legends: Wherever $N > 10$, all measurements are given as means \pm SD; values in parentheses are minimum - maximum interval and number of individuals measured; "nm" stands for "not measured", and missing values "-" mark structures which are not found in that instar. Abbreviations are defined in Material and methods of the main article; raw data available in FOX & al. (2017).

Tab. S1: Structure sizes (in μm) of the larval instars of workers of the trap-jaw ant *Odontomachus bauri*.

Measured part	Larval instar		
	1 st	2 nd	3 rd
BL	2.00 (1.70 - 2.70; N = 4)	4.01 \pm 0.97 (3.10 - 5.68; N = 13)	6.83 \pm 1.22 (3.96 - 5.98; N = 62)
BLS	2.70 (N = 1)	3.35 (3.30 - 3.90; N = 4)	5.52 \pm 0.63 (4.6 - 6.3; N = 10)
BW	0.70 (0.50 - 1.00; N = 4)	1.37 \pm 0.35 (0.98 - 1.88; N = 13)	1.97 \pm 0.27 (1.25 - 2.55; N = 62)
LBH	12.25 \pm 6.97 (6.00 - 27.50; N = 20)	40.59 \pm 18.12 (15.20 - 81.50; N = 30)	67.30 \pm 21.40 (12.20 - 109.80; N = 30)
LPH	55.74 \pm 20.94 (16.60 - 113.60; N = 30)	111.90 \pm 59.79 (42.40 - 157.60; N = 30)	173.40 \pm 22.96 (133.30 - 207.40; N = 30)
HCP	127.70.18.91 (90.90 - 151.50; N = 20)	187.90 \pm 20.87 (139.40 - 236.30; N = 30)	219.60 \pm 26.79 (183.00 - 268.40; N = 30)
WCP	63.78 \pm 6.71 (51.50 - 72.70; N = 20)	95.74 \pm 10.48 (72.70 - 121.20; N = 30)	155.75 \pm 13.38 (134.20 - 183.00; N = 30)
HDP	80.00; 75.00 (N = 2)	50.00 (N = 1)	Slight elevation
WDP	60.00; 65.00; 70.00 (N = 3)	50.00 (N = 1)	-
DS	11.55 \pm 0.72 (10.50 - 12.00; N = 10)	18.88 \pm 1.27 (18.20 - 21.20; N = 40)	27.41 \pm 2.45 (23.10 - 30.80; N = 100)
HW	0.33 (0.30 - 0.43; N = 4)	0.54 \pm 0.01 (0.53 - 0.65; N = 13)	0.71 \pm 0.03 (0.63 - 0.78; N = 62)
LHH	29.70 \pm 14.13 (10.00 - 65.00; N = 30)	51.52 \pm 13.00 (30.30 - 34.80; N = 30)	66.86 \pm 14.01 (48.50 - 109.10; N = 30)
AD	35.50 (N = 1)	48.48; 48.48 (N = 2)	57.78 \pm 2.69 (54.50 - 60.60; N = 10)
LL	204.90; 167.56 (N = 2)	nm	310.00 (300.00 - 318.15; N = 4)
LHL	4.00; 3.00 (N = 2)	3.00; 3.00 (N = 2)	13.00; 6.00; 8.00 (N = 3)
ML	145 (121.00 - 166.70; N = 5)	212.10 (206.00 - 224.22; N = 5)	275.74 \pm 13.47 (248.50 - 296.90; N = 5)
MW	85.00 (69.70 - 93.90; N = 5)	115.14 (109.10 - 127.30; N = 4)	144.35 \pm 11.53 (121.20 - 163.60; N = 27)
LM	165.13 (N = 1)	206.04; 206.04; 199.98 (N = 3)	227.26 \pm 11.60 (212.10 - 248.5 ; N = 13)
HMP	32.50 (27.00 - 36.36; N = 5)	45.45 (42.42 - 45.45; N = 4)	59.91 \pm 4.44 (48.50 - 66.70; N = 27)
LHM	10.16 \pm 6.71 (3.00 - 21.20; N = 11)	19.70 (18.20 - 42.40; N = 8)	41.82 \pm 10.83 (27.30 - 60.60; N = 30)
LLA	135.00; 113.28 (N = 2)	nm	206.04 (199.98 - 221.19; N = 6)
LHLA	1.00; 1.00 (N = 2)	1.00; 2.00; 2.00 (N = 3)	15.00 (6.00 - 16.00; N = 7)
HG	47.67 (42.00 - 54.54; N = 5)	72.72 (66.66 - 72.72; N = 4)	85.17 \pm 6.45 (63.60 - 90.9; N = 27)
HLP	9.09; 10.00; 8.75 (N = 3)	18.18 (12.12 - 18.18; N = 4)	34.15 \pm 3.42 (30.30 - 41.20; N = 19)
HPP	-	-	35.00; 35.00 (N = 2)

Tab. S2: Structure sizes (in μm) of the larval instars of males of the trap-jaw ant *Odontomachus bauri*.

Measured part	Larval instar		
	1 st	2 nd	3 rd
BL	1.35 \pm 0.29 (1.10 - 2.00; N = 10)	2.85 \pm 0.55 (2.10 - 3.60; N = 7)	5.13 \pm 0.79 (4.00 - 6.90; N = 15)
BLS	1.90; 2.00 (N = 2)	2.90 (2.00 - 3.70; N = 6)	6 (4.10 - 7.30; N = 7)
BW	0.66 \pm 0.07 (0.60 - 0.80; N = 10)	1.07 \pm 0.19 (0.80 - 1.40; N = 8)	1.82 \pm 0.22 (1.40 - 2.10; N = 15)
LBH	-	30.33 \pm 12.25 (16.00 - 50.00; N = 25)	45.25 \pm 13.94 (24.40 - 73.20; N = 15)
LPH	31.61 \pm 13.55 (9.10 - 54.50; N = 30)	93.93 \pm 25.80 (54.50 - 151.50; N = 30)	164.70 \pm 28.63 (97.60 - 207.40; N = 30)
HCP	127.90 \pm 23.32 (78.80 - 154.50; N = 30)	150.80 \pm 29.76 (90.90 - 218.20; N = 30)	203.10 \pm 29.26 (164.70 - 280.60; N = 30)
WCP	51.25 \pm 6.40 (36.40 - 60.60; N = 20)	71.30 \pm 13.38 (54.50 - 103.00; N = 30)	141.88 \pm 21.23 (115.90 - 195.20; N = 30)
HDP	nm	nm	-
WDP	nm	nm	-
DS	10.63 \pm 0.90 (9.10 - 12.10; N = 10)	14.97 \pm 1.64 (12.00 - 19.80; N = 50)	24.30 \pm 3.75 (18.20 - 27.30; N = 60)
HW	0.40 \pm 0.02 (0.37 - 0.43; N = 10)	0.53 (0.46 - 0.54; N = 7)	0.65 \pm 0.03 (0.59 - 0.71; N = 16)

LHH	10.16 ± 3.19 (4.50 - 17.60; N = 30)	34.85 ± 9.44 (15.20 - 48.50; N = 30)	75.55 ± 15.56 (36.40 - 97.00; N = 30)
AD	21.6; 25.75; 23.2 (N = 3)	30.30; 36.36 (N = 2)	42.42 (41.20 - 48.48; N = 5)
LL	202.86; 212.16 (N = 2)	230.28; 257.04 (N = 2)	260.58; 324.60; 299.82 (N = 3)
LHL	nm	nm	nm
ML	154.53; 147.00; 131.04 (N = 3)	216.16 (190.90 - 233.30; N = 6)	284.82 (251.50 - 296.90; N = 8)
MW	78.78 (N = 1)	100.00 (93.90 - 115.10; N = 5)	145.44 (133.30 - 157.60; N = 6)
LM	124.23 (N = 1)	206.04; 206.04; 199.98 (N = 3)	227.26 ± 11.60 (212.10 - 248.5; N = 13)
HMP	24.24 (N = 1)	42.42 (36.36 - 51.50; N = 5)	54.54 (51.51 - 69.69; N = 6)
LHM	6.06 (3.00 - 9.06; N = 7)	14.06 ± 5.53 (6.10 - 24.00; N=16)	25.66 ± 6.54 (18.20 - 42.40; N = 17)
LLA	141.44 (N = 1)	178.77; 187.68 (N = 2)	227.22; 202.51 (N = 2)
LHLA	nm	nm	nm
HG	45.45 (N = 1)	60.60 (56.05 - 78.80; N = 5)	81.81 (71.20 - 87.87; N = 6)
HLP	10.60 (N = 1)	15.15 (12.12 - 15.15; N = 4)	39.39 (21.21 - 42.42; N = 23)
HPP	-	-	nm

Tab. S3: Structure sizes (in μm) of the larval instars of males of the trap-jaw ant *Odontomachus meinerti*.

Measured part	Larval instar		
	1 st	2 nd	3 rd
BL	1.31 ± 0.39 (0.90 - 3.00; N = 29)	2.64 ± 0.34 (1.80 - 3.60; N = 17)	4.39 ± 0.65 (3.40 - 5.90; N = 24)
BLS	1.80 (1.20 - 2.30; N = 7)	2.20; 2.70; 3.60 (N = 3)	5.05 (4.20 - 5.40; N = 7)
BW	0.64 ± 16 (0.50 - 1.10; N = 29)	1.10 ± 0.13 (0.90 - 1.40; N = 17)	1.5 ± 0.29 (1.10 - 2.10; N = 24)
LBH	12.22 ± 4.04 (5.60 - 21.20; N = 30)	30.75 ± 9.40 (12.90 - 58.10; N = 30)	54.27 ± 27.53 (18.20 - 109.80; N = 30)
LPH	52.62 ± 21.90 (18.20 - 90.90; N = 30)	125.60 ± 24.96 (72.70 - 163.60; N = 30)	191.70 ± 36.26 (109.10 - 268.40; N = 30)
HCP	121.30 ± 21.12 (76.40 - 157.60; N = 30)	186.40 ± 40.09 (48.50 - 242.40; N = 20)	189.10 ± 26.48 (146.40 - 244.00; N = 30)
WCP	51.82 ± 11.20 (36.40 - 81.80; N = 30)	94.91 ± 13.82 (73.40 - 121.20; N = 20)	145.38 ± 23.22 (97.60 - 183.00; N = 23)
HDP	nm	nm	-
WDP	nm	nm	-
DS	11.24 ± 1.54 (8.20 - 14.30; N = 60)	16.83 ± 0.59 (15.50 - 17.20; N = 20)	25.38 ± 1.19 (22.40 - 26.90; N = 50)
HW	0.35 ± 0.03 (0.29 - 0.40; N = 29)	0.48 ± 0.02 (0.46 - 0.51; N = 17)	0.56 ± 0.02 (0.54 - 0.60; N = 24)
LHH	19.70 ± 9.35 (6.10 - 42.40; N = 30)	50.47 ± 14.99 (22.70 - 81.80; N = 30)	79.99 ± 15.22 (48.50 - 115.10; N = 30)
AD	24.20 (22.70 - 27.30; N = 30)	36.36; 28.78 (N = 2)	48.48; 42.42 (N = 2)
LL	177.08 (172.71 - 215.13; N = 4)	256.00; 259.06; 239.37 (N = 3)	290.88; 336.33; 280.60 (N = 3)
LHL	nm	nm	nm
ML	145.44 (121.20 - 163.60; N = 7)	202.00; 224.20; 212.10 (N = 3)	260.58 (248.50 - 260.60; N = 6)
MW	72.72 (66.70 - 78.80; N = 7)	109.08; 106.05 (N = 2)	127.26 (121.20 - 130.30; N = 5)
LM	127.26 (121.20 - 136.35; N = 5)	172.71; 178.77 (N = 2)	224.22; 224.22; 230.28 (N = 3)
HMP	33.33 (24.24 - 36.36; N = 6)	45.45; 45.45 (N = 2)	51.51 (45.45 - 54.54; N = 5)
LHM	9.09 (6.10 - 19.70; N = 9)	19.74 ± 6.04 (9.10 - 27.30; N = 12)	34.72 ± 6.66 (21.20 - 48.50; N=13)
LLA	153.01; 121.20; 125.82 (N = 3)	184.00; 196.95; 206.04 (N = 3)	224.22; 239.37; 202.40 (N = 3)
LHLA	8.00 (7.57 - 9.09; N = 5)	15.15; 15.15 (N = 2)	33.33 (30.30 - 33.33; N = 5)
HG	45.45 (33.33 - 45.45; N = 6)	63.63; 60.60 (N = 2)	72.72 (66.66 - 75.75; N = 5)
HLP	-	-	nm
HPP	-	-	nm

Tab. S4: Structure sizes (in μm) of the larval instars of workers of the trap-jaw ant *Odontomachus meinerti*.

Measured part	Larval instar		
	1 st	2 nd	3 rd
BL	1.71 \pm 0.40 (1.19 - 2.71; N = 61)	2.91 \pm 0.43 (1.01 - 5.02; N = 48)	5.22 \pm 0.9 (3.63 - 6.86; N = 70)
BLS	2.15 \pm 0.39 (1.50 - 2.80; N = 10)	3.27 \pm 0.33 (2.70 - 3.80; N = 10)	5.79 \pm 0.57 (5.00 - 6.70; N = 10)
BW	0.63 \pm 0.12 (0.43 - 0.86; N = 61)	1.00 \pm 1.40 (0.79 - 1.65; N = 48)	1.65 \pm 0.25 (1.25 - 2.15; N = 70)
LBH	–	22.14 \pm 10.29 (9.30 - 54.50; N = 30)	66.08 \pm 16.81 (30.50 - 103.70; N = 30)
LPH	57.98 \pm 9.93 (42.40 - 84.80; N = 30)	111.80 \pm 12.42 (84.80 - 139.40; N = 30)	175.10 \pm 18.17 (146.40 - 206.00; N = 30)
HCP	129.10 \pm 16.69 (90.90 - 163.60; N = 30)	165.30 \pm 13.53 (139.40 - 195.20; N = 30)	185.60 \pm 26.69 (146.40 - 256.80; N = 23)
WCP	71.62 \pm 12.45 (48.50 - 97.00; N = 30)	97.78 \pm 12.74 (72.70 - 122.00; N = 30)	127.64 \pm 15.36 (85.40 - 159.50; N = 30)
HDP	nm	nm	–
WDP	nm	nm	–
DS	11.30 \pm 2.13 (5.00 - 16.20; N = 100)	17.57 \pm 1.89 (13.60 - 22.80; N = 100)	24.89 \pm 1.80 (18.20 - 28.80; N = 100)
HW	0.33 \pm 0.03 (0.30 - 0.40; N = 57)	0.47 \pm 0.03 (0.43 - 0.53; N = 48)	0.59 \pm 0.02 (0.56 - 0.66; N = 70)
LHH	28.89 \pm 7.99 (15.20 - 45.50; N = 30)	56.05 \pm 8.15 (42.40 - 72.70; N = 30)	65.46 \pm 5.25 (54.50 - 78.80; N = 30)
AD	26.85 (25.80 - 28.80; N = 6)	34.85 (30.30 - 36.40; N = 6)	47.00 (44.00 - 48.50; N = 6)
LL	114.00; 148.00 (N = 2)	256.30 (253.89 - 258.63; N = 4)	295.10 (290.88 - 305.40; N = 7)
LHL	nm	nm	nm
ML	143.46 \pm 18.00 (122.00 - 166.70; N = 16)	206.40 \pm 12.78 (187.90 - 227.30; N = 13)	257.97 \pm 11.81 (245.40 - 284.80; N = 16)
MW	79.27 \pm 11.57 (65.30 - 93.90; N = 16)	109.97 \pm 6.83 (103.00 - 122.00; N = 13)	141.24 \pm 11.31 (127.30 - 157.60; N = 16)
LM	151.50; 148.47; 163.62 (N = 3)	195.43 (184.83 - 212.10; N = 4)	224.22 (216.64 - 254.52; N = 5)
HMP	28.24 \pm 4.24 (21.20 - 33.33; N = 14)	44.17 \pm 2.93 (39.40 - 48.50; N = 11)	55.51 \pm 4.47 (48.50 - 60.60; N = 14)
LHM	7.81 \pm 3.52 (3 - 15.2; N = 30)	18.36 \pm 6.75 (9.10 - 30.30; N = 19)	32.28 \pm 11.31 (15.80 - 66.70; N = 27)
LLA	94.24; 110.00 (N = 2)	174.75 (166.65 - 180.11; N = 5)	196.98 (195.00 - 218.16; N = 7)
LHLA	7.57 (6.81 - 10.92; N = 7)	16.15 (15.15 - 21.21; N = 7)	33.78 \pm 3.87 (30.30 - 42.40; N = 10)
HG	44.57 \pm 4.41 (36.40 - 48.60; N = 14)	63.57 \pm 3.52 (57.60 - 66.70; N = 11)	73.91 \pm 2.83 (69.70 - 78.80; N = 15)
HLP	9.09 (6.81 - 10.92; N = 7)	18.18 (15.15 - 21.21; N = 7)	33.78 \pm 3.87 (30.30 - 42.40; N = 13)
HPP	–	–	nm

Tab. S5: Structure sizes (in μm) of the larval instars of males of the trap-jaw ant *Odontomachus brunneus*.

Measured part	Larval instar		
	1 st	2 nd	3 rd
BL	1.39 \pm 0.39 (0.84 - 2.02; N = 16)	2.10 \pm 0.36 (1.61 - 3.16; N = 23)	3.36 \pm 0.71 (1.62 - 4.92; N = 62)
BLS	nm	nm	nm
BW	0.92 \pm 0.17 (0.62 - 1.16; N = 16)	1.29 \pm 0.28 (1.01 - 1.83; N = 23)	1.79 \pm 0.23 (1.06 - 2.21; N = 62)
LBH	–	nm	nm
LPH	nm	nm	nm
HCP	nm	nm	nm
WCP	nm	nm	nm
HDP	nm	nm	–
WDP	nm	nm	–
DS	nm	nm	nm
HW	0.40 \pm 0.02 (0.36 - 0.44; N = 16)	0.51 \pm 0.03 (0.47 - 0.56; N = 23)	0.62 \pm 0.02 (0.58 - 0.72; N = 64)
LHH	nm	nm	nm
AD	nm	nm	nm
LL	nm	nm	nm
LHL	nm	nm	nm

ML	nm	nm	nm
MW	nm	nm	nm
LM	nm	nm	nm
HMP	nm	nm	nm
LHM	nm	nm	nm
LLA	nm	nm	nm
LHLA	nm	nm	nm
HG	nm	nm	nm
HLP	nm	nm	nm
HPP	–	–	nm

Tab. S6: Structure sizes (in μm) of the larval instars of workers of the trap-jaw ant *Odontomachus brunneus*.

Measured part	Larval instar		
	1 st	2 nd	3 rd
BL	1.12 ± 0.22 (0.76 - 1.67; N = 26)	2.15 ± 0.52 (1.39 - 3.39; N = 57)	3.02 ± 0.59 (2.09 - 4.14; N = 66)
BLS	1.67 (1.49 - 1.79; N = 4)	2.41 (2.33 - 2.64; N = 5)	2.52 (2.26 - 2.63; N = 5)
BW	0.71 ± 0.11 (0.54 - 0.96; N = 26)	1.25 ± 0.20 (0.99 - 1.71; N = 57)	1.64 ± 0.24 (1.19 - 2.09; N = 66)
LBH	9.94 ± 3.40 (5.00 - 16.00; N = 17)	57.50 (52.50 - 87.50; N = 7)	60.00 ± 19.50 (25.00 - 105.00; N = 23)
LPH	27.50 ± 7.25 (12.50 - 35.00; N = 15)	47.50 ± 20.00 (17.50 - 90.00; N = 43)	101.00 ± 11.25 (75.00 - 125.00; N = 40)
HCP	180.00 ± 22.00 (145.00 - 215.00; N = 17)	116.50 ± 37.50 (87.50 - 225.00; N = 31)	150.00 ± 18.50 (112 - 190; N = 36)
WCP	43.82 ± 8.50 (35.00 - 65.00; N = 17)	28.90 ± 11.34 (15.00 - 52.00; N = 18)	28.00 ± 6.00 (20.00 - 35.00; N = 36)
HDP	100.00; 90.00 (N = 2)	105.00 (60.00 - 120.00; N = 4)	Slight elevation
WDP	80.00; 90.00; 95.00 (N = 3)	90.00 (60.00 - 110.00; N = 6)	220.00; 220.00; 200.00 (N = 3)
DS	13.00 (N = 1)	20.00; 24.00; 25.00 (N = 3)	30.00 (N = 1)
HW	0.39 ± 0.19 (0.35 - 0.44; N = 26)	0.52 ± 0.03 (0.45 - 0.56; N = 57)	0.61 ± 0.02 (0.57 - 0.67; N = 67)
LHH	9.94 ± 3.40 (5.00 - 16.00; N = 17)	29.75 ± 9.50 (12.50 - 40.00; N = 14)	30.00 ± 8.00 (12.50 - 45.00; N = 19)
AD	18.00 (N = 1)	20.00 (N = 1)	29.00; 40.00 (N = 2)
LL	110.00 (112.50 - 195.00; N = 4)	195.00 (160.00 - 260.00; N = 5)	270.00; 300.00 (N = 2)
LHL	2.00; 3.00; 3.00 (N = 3)	10.00 (8.00 - 12.00; N = 4)	19.5 ± 3.34 (13 - 25; N = 12)
ML	90.00 (65.00 - 100.00; N = 5)	170.00 (150.00 - 180.00; N = 7)	261.30 ± 8.34 (250.00 - 270.00; N = 5)
MW	90.00 (65.00 - 100.00; N = 5)	52.50 (47.20 - 60.00; N = 5)	55.00 (50 - 62.70; N = 7)
LM	65.00 (62.00 - 76.67; N = 5)	95.20 (N = 1)	200.00 (175.00 - 220.00; N = 5)
HMP	20.00 (15.00 - 25.00; N = 5)	35.00 (N = 1)	25.00; 30.00; 30.00 (N = 3)
LHM	6.00 (4.00 - 7.00; N = 5)	12.00 (9.00 - 23.00; N = 8)	29.00 (12.00 - 33.00; N = 6)
LLA	97.00; 105.00 (N = 2)	115.00; 150.00; 190.00 (N = 3)	80.00; 85.00 (N = 2)
LHLA	2.00 (N = 1)	4.91 ± 1.56 (3.00 - 8.00; N = 12)	22.00 (16.00 - 25.00; N = 6)
HG	36.67 (30.00 - 45.00; N = 5)	62.50; 65.00 (N = 2)	70.00 (60.00 - 80.00; N = 4)
HLP	Slight elevation	10.00; 16.00 (N = 2)	30.00; 32.00; 33.00 (N = 3)
HPP	–	–	33.00; 33.00; 34.00 (N = 3)