

Figure S1: representative chromatograms of cuticular extracts of an *O. ruginodis* queen, foundress, and worker. Labeled peaks correspond to compound identifications in table S1.

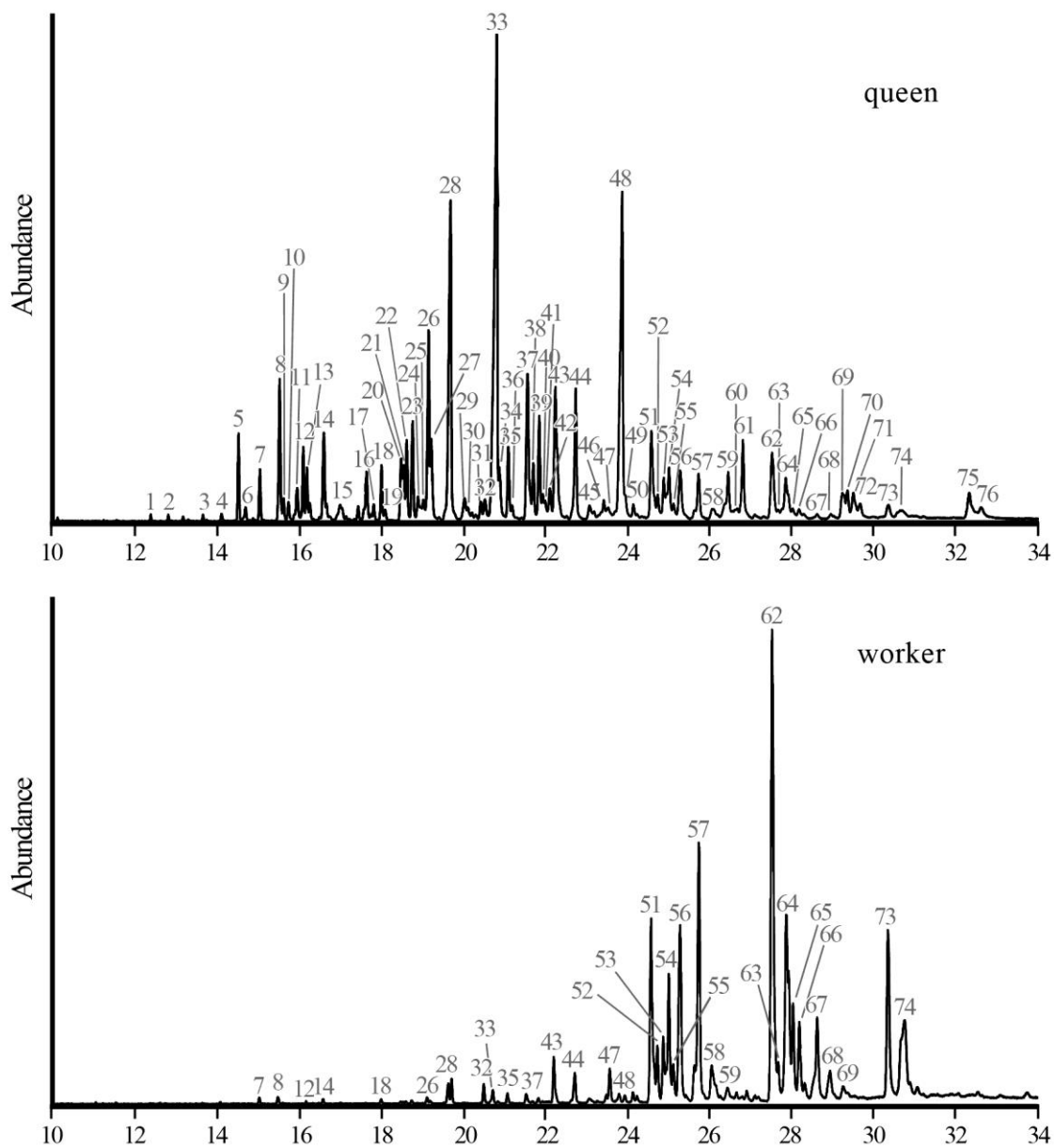


Figure S2: representative chromatograms of cuticular extracts of an *O. relictus* queen and worker. Numbers correspond to table S2.

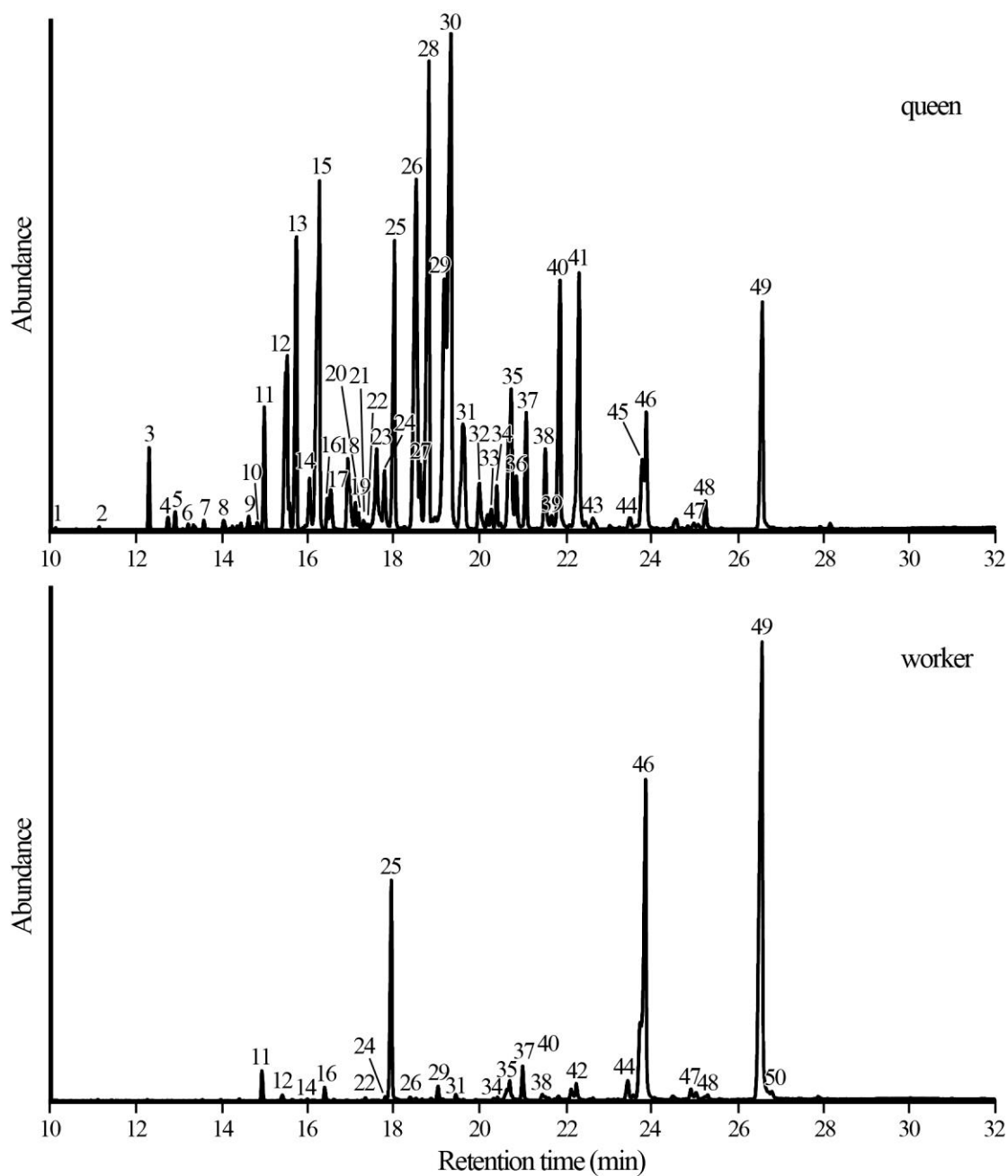


Figure S3: representative chromatograms of cuticular extracts of an *O. haematodus* queen and worker. Numbers correspond to table S3.

Table S1. Compounds in the cuticular extracts of an *O. ruginodis* queens, foundresses, and workers

Number	Identification	RI	Queens	Foundresses	Workers
1	Tricosane	2300	0.18 (0.07, 0.43)	0	0
2	7-Methyltricosane	2339	0.12 (0, 0.36)	0.03 (0, 0.18)	0
3	3-Methyltricosane	2371	0.25 (0.12, 0.44)	0	0
4	Tetracosane	2400	0.45 (0.31, 0.8)	0.1 (0, 0.59)	0
5	3,7-Dimethyltricosane	2406	0.4 (0.22, 0.61)	0	0
6	11-Methyltetracosane	2432	0.31 (0.08, 0.61)	0	0
7	8-Methyltetracosane	2435	0.09 (0, 0.19)	0	0
8	6-Methyltetracosane	2441	0.1 (0, 0.22)	0	0
9	4-Methyltetracosane	2453	0.3 (0.05, 0.67)	0.02 (0, 0.15)	0
10	2-Methyltetracosane	2460	1 (0.14, 3.06)	0	0
11	x,y-Pentacosadiene	2468	1.43 (0.78, 2.71)	0	0.14 (0, 0.85)
12	x-Pentacosene	2472	0.82 (0.44, 2.02)	0	0.02 (0, 0.16)
13	x-Pentacosene	2479	0.27 (0, 1.24)	0	0
14	Pentacosane	2500	7.01 (5.5, 9.15)	0.07 (0, 0.32)	0.49 (0.2, 0.72)
15	11-Methylpentacosane	2535	7.5 (4.29, 11.01)	0.25 (0, 0.73)	0.26 (0, 0.5)
16	7-Methylpentacosane	2539	0.58 (0.41, 0.8)	0	0
17	5-Methylpentacosane	2546	0.15 (0, 0.21)	0	0
18	4-Methylpentacosane	2560	0.18 (0, 0.27)	0.03 (0, 0.18)	0
19	3-Methylpentacosane	2576	6.74 (5.62, 8.18)	0.28 (0.16, 0.56)	0.26 (0, 0.71)
20	Hexacosane	2600	0.53 (0.39, 0.66)	0.14 (0, 0.23)	0.26 (0, 0.56)
21	3,15-Dimethylpentacosane	2608	5.34 (3.42, 7.07)	0.03 (0, 0.16)	0
22	11-Methylhexacosane	2632	1.06 (0.6, 1.47)	0.03 (0, 0.14)	0
23	10-, 9-, 8-Methylhexacosane	2636	0.22 (0.14, 0.31)	0.01 (0, 0.08)	0
24	4-Methylhexacosane	2655	0.11 (0, 0.17)	0.08 (0, 0.19)	0
25	2-Methylhexacosane	2661	0.07 (0, 0.21)	0.19 (0, 0.43)	0
26	x,y-Heptacosadiene	2671	1.3 (0, 2.46)	0	0
27	x-Heptacosene	2676	1.67 (0.59, 2.88)	0.26 (0, 0.51)	0.04 (0, 0.33)
28	Heptacosane	2700	2.55 (1.75, 3.42)	3.97 (2.97, 4.94)	7.89 (4.2, 10.72)
29	11- & 13-Methylheptacosane	2732	2.58 (0.33, 3.38)	1.61 (0.86, 2.66)	1.98 (1.07, 3.77)
30	9-Methylheptacosane	2735	0	1.3 (0.96, 2)	1.49 (0.82, 2.42)
31	7-Methylheptacosane	2739	0.43 (0.25, 0.63)	3.22 (2.33, 3.97)	3 (1.98, 4.44)
32	5-Methylheptacosane	2748	0.15 (0, 0.21)	0.46 (0.38, 0.52)	0.21 (0, 0.39)
33	7,15-Dimethylheptacosane	2769	0	0.37 (0, 2.19)	1.45 (0, 2.31)
34	3-Methylheptacosane	2774	0	12.84 (7.7, 15.65)	12.1 (8.83, 15.68)
35	2-(Oct-7-enyl)-5-pentadecyltetrahydrofuran	2778	14.72 (7.64, 20.52)	0	0
36	2-Octyl-5-pentadecyltetrahydrofuran	2781	1.48 (0.38, 3.47)	0	0
37	Octacosane	2800	0	1.07 (0.72, 1.39)	1.74 (1.17, 2.09)
38	3,15-Dimethylheptacosane	2806	3.44 (2.73, 4.23)	1.16 (0.31, 2.11)	0.48 (0, 1.75)
39	13-Methyloctacosane	2830	0.47 (0.26, 0.62)	0.49 (0.38, 0.66)	0.54 (0.4, 0.74)
40	8-Methyloctacosane	2836	0.04 (0, 0.14)	1.38 (1.17, 1.61)	1.34 (1.12, 1.6)
41	6-Methyloctacosane	2843	0.03 (0, 0.13)	1.05 (0.93, 1.25)	1.02 (0.83, 1.16)
42	4-Methyloctacosane	2863	0.3 (0.09, 0.55)	0.39 (0.31, 0.58)	0.63 (0, 1.79)

43	2-(Oct-7-enyl-5-hexadecyltetrahydrofuran	2873	1.13 (0.82, 1.4)	0	0
44	(Z)-9-Nonacosene	2880	2.21 (0.41, 4.71)	4.52 (3.87, 4.98)	3.15 (1.17, 7.5)
45	x-Nonacosene	2886	0.47 (0, 0.84)	4.11 (2.43, 6.4)	0.35 (0, 1.94)
46	Nonacosane	2900	0.74 (0.32, 1.13)	0.97 (0.69, 1.45)	2.25 (1.3, 4.5)
47	11-, 13-, 15-Methylnonacosane	2931	1.38 (0.66, 1.9)	2.69 (2.28, 3.76)	4.42 (2.81, 7.75)
48	7-Methylnonacosane	2940	0.63 (0.13, 1.28)	1.54 (0.63, 4.45)	0
49	5-Methylnonacosane	2950	0.08 (0, 0.26)	9.6 (3.97, 13.55)	12.67 (8.97, 18.15)
50	2-(Oct-7-enyl)-5-heptadecyltetrahydrofuran	2961	0.71 (0, 3.71)	0	0
51	7, 13-Dimethylnonacosane	2969	0	34.85 (31.99, 37.9)	32.04 (24.96, 36.93)
52	3-Methylnonacosane	2974	0	3.4 (2.81, 4.49)	3.5 (2.4, 4.61)
53	2-(Oct-7-enyl)-; 2-Octyl-5-heptadecyltetrahydrofuran	2982	21.39 (15.88, 27.79)	0	0
54	x-Triacontene	2992	0.59 (0.37, 1.01)	0	0
55	3,15-Dimethylnonacosane	3004	2.04 (0.91, 2.96)	0.24 (0, 0.42)	0.04 (0, 0.3)
56	12-, 10-Methyltriacontane	3030	0.34 (0, 0.57)	1.17 (0.84, 1.41)	1.01 (0.04, 2.14)
57	x, y-Dimethyltriacontane	3062	0.14 (0, 0.41)	1.18 (0.99, 1.37)	1.03 (0.5, 1.85)
58	x, y-Dimethyltriacontane	3079	0.58 (0.21, 1.5)	1.33 (0.97, 1.69)	0.78 (0.47, 1.2)
59	x-Hentriacontene	3086	0.22 (0, 0.52)	0.36 (0.18, 0.56)	0.35 (0, 1.94)
60	x-Hentriacontene	3092	1.32 (0.36, 1.86)	0.36 (0.18, 0.56)	0
61	15-, 13-, 11-Methylhentriacontane	3130	0.55 (0, 1.02)	0.24 (0, 0.42)	0.89 (0, 2.23)
62	7,13-Dimethylhentriacontane	3163	0.38 (0, 0.61)	2.97 (1.65, 6.06)	2.19 (0.6, 3.36)
63	2-Octyl-5-nonadecyltetrahydrofuran	3174	0.28 (0, 0.45)	0	0
64	x-Tritriacontene	3278	0.3 (0, 0.57)	0	0

Numbers and identifications correspond to Fig. S1. Relative compound abundances are given as averages, with minimum and maximum values in brackets. RI = Kovat's retention index.

Table S2. Compounds in the cuticular extracts of an *O. relictus* queens and workers

Number	Identification	RI	Queens	Workers
1	Tricosane	2300	0.02 (0, 0.08)	0
2	11-Methyltricosane	2333	0.02 (0, 0.08)	0
3	Tetracosane	2400	0.02 (0, 0.07)	0
4	12-, 11-Methyltetracosane	2433	0.04 (0, 0.11)	0
5	2-Methyltetracosane	2462	0.38 (0, 1.23)	0
6	x-Pentacosene	2475	0.09 (0, 0.26)	0
7	Pentacosane	2500	0.26 (0, 0.76)	0.33 (0, 1.28)
8	13-, 11-Methylpentacosane	2533	1.06 (0.04, 2.46)	0.32 (0, 1.22)
9	7-Methylpentacosane	2540	0.43 (0.24, 0.65)	0
10	5-Methylpentacosane	2548	0.17 (0, 0.33)	0
11	2-Methylpentacosane	2562	0.24 (0, 0.72)	0
12	3-Methylpentacosane	2572	0.58 (0.11, 1.18)	0.22 (0, 0.85)
13	5,9-Dimethylpentacosane	2578	0.99 (0, 1.73)	0
14	3,7-Dimethylpentacosane	2607	2.16 (1.3, 3.58)	0.18 (0, 0.58)
15	13-, 12-, 11-, 10-, 9-Methylhexacosane	2633	0.39 (0.28, 0.57)	0
16	x-Heptacosene	2676	1.16 (0.65, 1.83)	0
17	4,8-Dimethylhexacosane	2687	0.43 (0.27, 0.61)	0
18	Heptacosane	2700	0.68 (0.17, 0.99)	0
19	3,7-; 3,9-Dimethylhexacosane	2706	0.37 (0.16, 1.09)	0
20	13-, 11-Methylheptacosane	2731	1.19 (0, 1.84)	0
21	9-Methylheptacosane	2735	1.02 (0.76, 1.4)	0
22	7-Methylheptacosane	2740	1.54 (1.13, 2.05)	0
23	5-Methylheptacosane	2749	1.99 (1.3, 2.55)	0
24	11,15-Dimethylheptacosane	2758	0.55 (0.44, 0.67)	0
25	7,11-Dimethylheptacosane	2767	0.5 (0.39, 0.58)	0
26	3-Methylheptacosane	2775	3.3 (2.47, 4.03)	0.53 (0, 1.69)
27	5,9-Dimethylheptacosane	2779	1.95 (1.45, 2.41)	0
28	3,9-; 3,7-Dimethylheptacosane	2809	10.02 (7.65, 12.79)	0.78 (0, 1.36)
29	14-, 13-, 12-, 11-, 10-Methyloctacosane	2831	0.72 (0.54, 0.89)	0
30	8-Methyloctacosane	2836	0.22 (0, 0.31)	0
31	4-Methyloctacosane	2857	0.44 (0.28, 0.57)	0
32	2-Methyloctacosane	2863	0.31 (0.15, 0.53)	0.08 (0, 0.51)
33	(Z)-9-Nonacosene	2882	18.34 (11.77, 23.78)	1.05 (0.4, 2.27)
34	x-Nonacosene	2886	1.14 (0.79, 1.29)	0
35	Nonacosane	2900	1.37 (1, 1.66)	0.09 (0, 0.53)
36	3,7-Dimethyloctacosane	2906	0.3 (0.25, 0.38)	0
37	15-, 13-Methylnonacosane	2931	2.99 (1.92, 4.06)	0.22 (0, 0.68)
38	7-Methylnonacosane	2940	0.87 (0.72, 1.09)	0.07 (0, 0.45)
39	5-Methylnonacosane	2949	2.25 (1.65, 2.66)	0
40	13,17-; 11,15-Dimethylnonacosane	2955	0.32 (0.19, 0.49)	0
41	9,13-Dimethylnonacosane	2959	0.3 (0.23, 0.42)	0.58 (0, 1.97)
42	7,11-; 7,13-Dimethylnonacosane	2967	0.41 (0.23, 0.76)	0
43	3-Methylnonacosane	2975	2.94 (1.94, 4.37)	1.5 (0.95, 2.18)

44	3,7-; 3,9-Dimethylnonacosane	3008	2.99 (2.09, 4.05)	0.69 (0, 1.34)
45	15-, 14-, 13-, 12-, 11-Methyltriacontane	3030	0.45 (0.24, 0.72)	0
46	x,y-Hentriacontadiene	3053	0.93 (0.55, 1.3)	0
47	x,y-Hentriacontadiene	3059	0.46 (0.3, 0.54)	0.28 (0, 0.96)
48	x-Hentriacontene	3082	9.79 (7.41, 12.19)	0.44 (0, 1.41)
49	x-Hentriacontene	3088	0.46 (0, 0.81)	0
50	Hentriacontane	3100	0.33 (0.18, 0.43)	0.07 (0, 0.42)
51	15-, 13-Methylhentriacontane	3130	1.9 (0.76, 3.7)	6.79 (5.38, 8.15)
52	7-Methylhentriacontane	3140	0.41 (0.17, 0.92)	1.95 (1.65, 2.19)
53	5-Methylhentriacontane	3150	1 (0.84, 1.19)	2.26 (1.57, 2.89)
54	9,13-Dimethylhentriacontane	3158	0.88 (0.14, 2.52)	4.47 (3.44, 5.24)
55	7,11-; 7,13-Dimethylhentriacontane	3166	0.18 (0, 0.65)	1.16 (0.9, 1.44)
56	5,9-; 5,11-Dimethylhentriacontane	3177	1.24 (0.63, 2.73)	7.12 (5.74, 8.17)
57	3,7-; 3,9-Dimethylhentriacontane	3207	0.91 (0.27, 2.21)	8.72 (6.75, 10.11)
58	16-, 15-, 14-, 13-, 12-, 11-, 10-Methyldotriacontane	3230	0.43 (0.14, 0.98)	2.15 (1.87, 2.37)
59	x-,y-Tritriacontadiene	3256	1.52 (1.17, 2.38)	0.1 (0, 0.59)
60	x-Tritriacontene	3271	0.42 (0.28, 0.61)	0
61	x-Tritriacontene; x-,y-Tritriacontadiene	3280	2.21 (1.34, 2.91)	0
62	17-, 15-, 13-, 11-Methyltritriacontane	3329	1.48 (0.53, 2.87)	22.16 (19.1, 25.99)
63	7-Methyltritriacontane	3339	0.13 (0, 0.25)	1.77 (1.2, 2.4)
64	11,15-Dimethyltritriacontane	3352	1.12 (0.41, 2.56)	9.55 (6.04, 11.91)
65	7,11-Dimethyltritriacontane	3363	0.11 (0, 0.45)	3.16 (2.76, 3.42)
66	5,9-Dimethyltritriacontane	3374	0.16 (0, 0.35)	2.7 (2.18, 3.33)
67	3,7-; 3,9-Dimethyltritriacontane	3405	0.05 (0, 0.22)	3.31 (2.84, 4.2)
68	unknown	3427	0.1 (0, 0.22)	1.83 (1.25, 3.27)
69	x,y-Pentatriacontadiene	3446	0.62 (0, 0.95)	0.12 (0, 0.74)
70	x,y-Pentatriacontadiene; x-Pentatriacontene	3454	0.8 (0.6, 1.19)	0
71	x-Pentatriacontene	3464	1.05 (0.92, 1.17)	0
72	x-Pentatriacontene; x,y-Pentatriacontadiene	3475	0.59 (0.32, 0.83)	0
73	17-, 15-, 13-Methylpentatriacontane	3522	0.31 (0.11, 0.46)	7.69 (6.42, 9.29)
74	11,13-; 11,23-Dimethylpentatriacontane	3545	0.18 (0, 0.46)	5.54 (4.59, 6.88)
75	x,y-Heptatriacontadiene	3657	1.46 (1.18, 1.78)	0
76	x-Heptatriacontene	3676	0.83 (0.53, 1.63)	0

Numbers and identifications correspond to Fig. S2. Relative compound abundances are given as averages, with minimum and maximum values in brackets. RI = Kovat's retention index.

Table S3. Compounds in the cuticular extracts of an *O. haematodus* queens and workers.

Number	Identification	RI	Queens	Workers
1	Heneicosane	2100	0.12 (0, 0.39)	0
2	Docosane	2200	0.05 (0, 0.12)	0
3	Tricosane	2300	1.16 (0.4, 1.93)	0.01 (0, 0.17)
4	11-, 13-Methyltricosane	2334	0.19 (0, 0.34)	0
5	5-Methyltricosane	2348	0.26 (0.07, 0.4)	0
6	3-Methyltricosane	2372	0.1 (0, 0.23)	0
7	Tetracosane	2400	0.13 (0.06, 0.26)	0
8	11-Methyltetracosane	2433	0.15 (0, 0.23)	0.02 (0, 0.19)
9	x-Pentacosene	2475	0.34 (0, 2.04)	0
10	x,y-Dimethyltetracosane	2489	0.12 (0, 0.23)	0
11	Pentacosane	2500	2.09 (0.91, 4.89)	1.37 (0.61, 2.87)
12	13-, 11-, 9-Methylpentacosane	2535	4.18 (1.52, 6.26)	0.82 (0, 1.78)
13	5-Methylpentacosane	2549	4.96 (2.52, 8.02)	0.51 (0, 1.79)
14	3-Methylpentacosane	2572	0.85 (0.06, 1.46)	0.09 (0, 0.52)
15	x,y-Dimethylpentacosane	2585	8.65 (4.41, 12.2)	0.89 (0, 3.18)
16	Hexacosane	2600	0.47 (0.23, 1.03)	0.97 (0, 1.86)
17	3,9-; 3,7-Dimethylpentacosane	2605	0.7 (0.53, 1)	0
18	13-, 11-Methylhexacosane	2631	1.45 (1.05, 1.95)	0
19	6-Methylhexacosane	2643	0.34 (0.18, 0.53)	0
20	5-Methylhexacosane	2648	0.18 (0.14, 0.21)	0
21	2-Methylhexacosane	2655	0.09 (0, 0.14)	0.08 (0, 0.54)
22	x,y-Dimethylhexacosane	2674	0.51 (0, 3.06)	0
23	x-Hexacosene	2674	1.32 (0, 3.58)	0.07 (0, 0.65)
24	x,y-Dimethylhexacosane	2686	0.68 (0, 1.04)	0.28 (0, 0.68)
25	Heptacosane	2700	5.66 (3.03, 11.05)	13.76 (10.96, 19.29)
26	13-, 11-Methylheptacosane	2730	8 (4.75, 12.13)	1.21 (0.18, 2.82)
27	7-Methylheptacosane	2737	0.65 (0, 0.99)	0.06 (0, 0.3)
28	5-Methylheptacosane	2747	7.83 (5.41, 9.45)	0.96 (0, 2.68)
29	3-Methylheptacosane; 2-Octyl-5-pentadecyltetrahydrofuran	2770	4.19 (0, 6.46)	3.04 (0.67, 6.6)
30	5,19-Dimethylheptacosane	2778	12.58 (10.08, 16.29)	1.42 (0, 4.19)
31	Octacosane	2800	2.71 (1.37, 3.24)	0.89 (0.33, 1.56)
32	11-, 12-, 13-, 14-Methyloctacosane	2827	0.76 (0.42, 1.04)	0
33	5-Methyloctacosane	2854	0.34 (0.16, 0.72)	0
34	4-Methyloctacosane	2859	0.4 (0, 0.67)	0.74 (0, 1.95)
35	(Z)-9-Nonacosene	2876	3.25 (1.38, 6.51)	2.4 (0, 6.91)
36	x,y-Dimethyloctacosane	2885	0.84 (0.52, 1.23)	1.16 (0, 3.25)
37	Nonacosane	2900	2.3 (1.15, 5.37)	2.74 (1.57, 4.73)
38	15-, 13-, 11-Methylnonacosane	2928	1.22 (0.51, 1.95)	1.01 (0.52, 1.48)
39	7-Methylnonacosane	2938	0.2 (0, 0.31)	0.02 (0, 0.22)
40	5-Methylnonacosane	2947	4.2 (1.98, 6.37)	0.88 (0.24, 2.08)
41	x,y-Dimethylnonacosane	2975	4.94 (3.52, 6.28)	0
42	x-Triacontene	2978	0 (0, 0)	1.93 (0.57, 5.22)
43	Triacontane	3000	0.27 (0, 0.53)	0.04 (0, 0.53)

44	x,y-Hentriacontadiene	3053	0.32 (0.1, 0.77)	2.66 (0.99, 8.59)
45	x,y-Hentriacontadiene	3071	1.72 (0.58, 3.33)	0
46	x-Hentriacontene	3076	2.82 (1.15, 6.52)	28.93 (24.39, 38.5)
47	x,y-Dotriacontadiene	3145	0.19 (0, 0.84)	2.17 (0.42, 5.49)
48	x,y-Dotriacontadiene	3162	0.54 (0.23, 1.34)	0.48 (0, 1.1)
49	x,y-Tritriacontadiene	3244	4.96 (1.67, 13.23)	45.92 (35.87, 61.54)
50	x,y-Tritriacontadiene	3262	0.01 (0, 0.16)	0.96 (0, 1.71)

Numbers and identifications correspond to Fig. S3. Relative compound abundances are given as averages, with minimum and maximum values in brackets. RI = Kovat's retention index.