Supplementary file

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A huge undescribed diversity of the subgenus *Hystricochaetonotus* (Gastrotricha, Chaetonotidae, *Chaetonotus*) in Central Europe

Františka RATAJ KRIŽANOVÁ [1] & Peter VĎAČNÝ [2,*]

[1,2] Department of Zoology, Comenius University in Bratislava, 842 15 Bratislava, Slovakia.

*Corresponding author: peter.vdacny@uniba.sk (Peter Vďačný)

[1] E-mail: krizanova66@uniba.sk

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Supplementary Table S1. List of taxa with GenBank accession numbers of 18S, 28S and COI sequences included in phylogenetic analyses.

Taxon	Specimen	18S rDNA	28S rDNA	COI
Aspidiophorus ophiodermus	TK112	JN185463	JN185510	JN185544
Aspidiophorus sp. n. 1	MOTU35	MN496181	MN496248	MN493689
Aspidiophorus sp. n. 2	MOTU48	MN496168	MN496235	MN493702
Aspidiophorus sp. n. 3	MOTU34	MN496172	MN496239	MN493688
Aspidiophorus sp. n. 3	MOTU63	MN496215	MN496282	MN493716
Aspidiophorus tetrachaetus	TK99	JN185505	JN185540	JN185576
Bifidochaetus arcticus	AMUMK 164	KP713403	KP713404	KP713406
Dasydytes (*Prodasydytes*) *elongatus* 1	TK153	JQ798568	JQ798638	JQ798700
Dasydytes (*Prodasydytes*) *elongatus* 2	TK218	JQ798588	JQ798656	JQ798719
Dasydytes (*Prodasydytes*) *papaveroi* 1	TK157	JQ798571	JQ798640	JQ798703
Dasydytes carvalhoae	TK155	JQ798570	JQ798639	JQ798702
Halichaetonotus aculifer	TK110	JQ798550	JQ798622	JQ798688
Halichaetonotus paradoxus	TK79	JQ798599	JQ798666	JQ798728
Halichaetonotus sp. 2	TK80	JQ798600	JQ798667	JQ798729
Halichaetonotus sp. 4	TK140	JQ798560	JQ798630	JQ798695
Heterolepidoderma acidophilum	TK53	JN185500	JN185535	JN185572
Heterolepidoderma acidophilum	TK111	JN185462	JN185509	JN185543
Heterolepidoderma acidophilum	TK172	JN185480	JN185524	JN185559
Heterolepidoderma acidophilum	TK169	JN185477	JN185521	JN185556
Heterolepidoderma macrops	TK127	JN185469	JN185515	JN185548
Heterolepidoderma ocellatum	TK167	JN185475	JN185519	JN185554
Heterolepidoderma ocellatum	TK168	JN185476	JN185520	JN185555
Heterolepidoderma aff. *ocellatum* 1	TR_9.12	MN496170	MN496237	MN493686
Heterolepidoderma aff. *ocellatum* 2	TR_8.38	MN496227	MN496294	MN493682
Heterolepidoderma sp. 2		JN185485	JQ798644	JN185563
Heterolepidoderma sp. 3	TK164	JQ798572	JQ798641	JQ798704
Chaetonotus (*Chaetonotus*) aff. *bombardus*	GA_2.1	MN496194	MN496261	MN493669
Chaetonotus (*Chaetonotus*) aff. *bombardus*	HA_23.6	MN496175	MN496242	MN493665
Chaetonotus (*Chaetonotus*) aff. *bombardus*	HA_30.44	MN496176	MN496243	MN493666
Chaetonotus (*Chaetonotus*) aff. *bombardus*	HA_22.28	MN496178	MN496245	MN493667
Chaetonotus (*Chaetonotus*) *bombardus*	AMU217.62	MN496193	MN496260	MN493668
Chaetonotus (*Chaetonotus*) cf. *laroides*	TK86	JQ798602	JQ798669	JQ798731
Chaetonotus (*Chaetonotus*) cf. *sphagnophilus*	TK91	JQ798604	JQ798671	JQ798733
Chaetonotus (*Chaetonotus*) *heterocanthus*	TK100	JQ798543	JQ798615	JQ798681
Chaetonotus (*Chaetonotus*) *subtilis*	AMU237.45	MF325918	MF325895	MF374700
Chaetonotus (*Chaetonotus*) *subtilis*	HA_16.5	MN496226	MN496293	MN493710
Chaetonotus (*Chaetonotus*) aff. *subtilis* 1	HA_30.1	MN496228	MN496295	MN493711
Chaetonotus (*Chaetonotus*) aff. *subtilis* 2	TR_8.46	MN496202	MN496269	MN493691
Chaetonotus (*Chaetonotus*) aff. *subtilis* 3	TR_8.13	MN496212	MN496279	MN493712
Chaetonotus (*Hystricochaetonotus*) *aemilianus*	TK132	JQ798556	JQ798626	JQ798693
Chaetonotus (*Hystricochaetonotus*) *arcanus*	STV 67	OM421723	OM421699	OM424078
Chaetonotus (*Hystricochaetonotus*) *avarus*	VP 32	OM421713	OM421689	OM424068
Chaetonotus (*Hystricochaetonotus*) *borealis*	HA_32.2	MN496185	MN496252	MN493657
Chaetonotus (*Hystricochaetonotus*) *borealis*	AMU237.46	MF325913	MF325911	MF374694

Chaetonotus (*Hystricochaetonotus*) aff. *euhystrix*	TR_8.37	MN496214	MN496281	MN493715
Chaetonotus (*Hystricochaetonotus*) aff. *euhystrix*	TR_3.1	MN496174	MN496241	MN493664
Chaetonotus (*Hystricochaetonotus*) *gulosus*	VP 18	OM421721	OM421697	OM424076
Chaetonotus (*Hystricochaetonotus*) *gulosus*	VP 31	OM421722	OM421698	OM424077
Chaetonotus (*Hystricochaetonotus*) cf. *hornsundi*	HA_24.18	MN496186	MN496253	MN49366
Chaetonotus (*Hystricochaetonotus*) *hornsundi*	HA_24.176	MN496187	MN496254	MN493662
Chaetonotus (*Hystricochaetonotus*) *hornsundi*	AMU240.4	MF325915	MF325921	MF374696
Chaetonotus (*Hystricochaetonotus*) cf. *hystrix*	TK90	JQ798603	JQ798670	JQ798732
Chaetonotus (*Hystricochaetonotus*) *iratus*	STV 65	OM421720	OM421696	OM424075
Chaetonotus (*Hystricochaetonotus*) *luxus*	ZPvs 20	OM421714	OM421690	OM424069
Chaetonotus (*Hystricochaetonotus*) *luxus*	ZPvs 22	OM421715	OM421691	OM424070
Chaetonotus (*Hystricochaetonotus*) *luxus*	ZPvs 23	OM421716	OM421692	OM424071
Chaetonotus (*Hystricochaetonotus*) *luxus*	ZPvs 24	OM421717	OM421693	OM424072
Chaetonotus (*Hystricochaetonotus*) *luxus*	ZPvs 25	OM421718	OM421694	OM424073
Chaetonotus (*Hystricochaetonotus*) *luxus*	VP 28	OM421719	OM421695	OM424074
Chaetonotus (*Hystricochaetonotus*) *mirabilis*	BZs 02	OM421704	OM421680	OM424059
Chaetonotus (*Hystricochaetonotus*) *mirabilis*	BZs 15	OM421705	OM421681	OM424060
Chaetonotus (*Hystricochaetonotus*) *mirabilis*	BZs 16	OM421706	OM421682	OM424061
Chaetonotus (*Hystricochaetonotus*) *mirabilis*	BZs 17	OM421707	OM421683	OM424062
Chaetonotus (*Hystricochaetonotus*) *optabilis*	DB 34	OM421710	OM421686	OM424065
Chaetonotus (*Hystricochaetonotus*) *optabilis*	DB 35	OM421711	OM421687	OM424066
Chaetonotus (*Hystricochaetonotus*) *optabilis*	DB 36	OM421712	OM421688	OM424067
Chaetonotus (*Hystricochaetonotus*) aff. *persimilis*	HA_13.34	MN496188	MN496255	MN493658
Chaetonotus (*Hystricochaetonotus*) aff. *persimilis*	HA_30.5	MN496189	MN496256	MN493659
Chaetonotus (*Hystricochaetonotus*) aff. *persimilis*	TR_4.1	MN496184	MN496251	MN493653
Chaetonotus (*Hystricochaetonotus*) aff. *persimilis*	HA_7.6	MN496190	MN496257	MN493652
Chaetonotus (*Hystricochaetonotus*) *persimilis*	GA_15.3	MN496191	MN496258	MN493663
Chaetonotus (*Hystricochaetonotus*) *persimilis*	AMU241.38	MF325917	MF325898	MF374698
Chaetonotus (*Hystricochaetonotus*) *persimilis*	GA_15.9	MN496183	MN496250	MN493655
Chaetonotus (*Hystricochaetonotus*) *persimilis*	GA_13.6	MN496192	MN496259	MN493660
Chaetonotus (*Hystricochaetonotus*) *persimilis*	GA_17.4	MN496182	MN496249	MN493656
Chaetonotus (*Hystricochaetonotus*) *slavicus*	DB 40	OM421724	OM421700	OM424079
Chaetonotus (*Hystricochaetonotus*) *slavicus*	DB 41	OM421725	OM421701	OM424080
Chaetonotus (*Hystricochaetonotus*) *slavicus*	DB 42	OM421726	OM421702	OM424081
Chaetonotus (*Hystricochaetonotus*) *slavicus*	DB 43	OM421727	OM421703	OM424082
Chaetonotus (*Hystricochaetonotus*) *superbus*	ZPvs 55	OM421708	OM421684	OM424063
Chaetonotus (*Hystricochaetonotus*) *superbus*	KCH 61	OM421709	OM421685	OM424064
Chaetonotus (*Primochaetus*) *acanthodes*	TK102	JQ798544	JQ798616	JQ798682
Chaetonotus (*Primochaetus*) *acanthodes*	TR_8.27	MN496213	MN496280	MN493713
Chaetonotus (*Primochaetus*) *heideri* 1	TK105	JQ798547	JQ798619	JQ798685
Chaetonotus (*Primochaetus*) *heideri* 2	TK221	JQ798590	JQ798657	JQ798720
Chaetonotus (*Primochaetus*) aff. *heideri* 1	GA_10.18	MN496209	MN496276	MN493706
Chaetonotus (*Primochaetus*) aff. *heideri* 2	GA_6.1	MN496208	MN496275	MN493704
Chaetonotus (*Primochaetus*) aff. *heideri* 3	GA_19.21	MN496210	MN496277	MN493707
Chaetonotus (*Primochaetus*) aff. *armatus*	IC_43.33	MK310467	MK310433	MK310380
Chaetonotus (*Primochaetus*) aff. *acanthodes*	IC_33.22	MK310458	MK310421	MK310364
Chaetonotus (*Schizochaetonotus*) *schultzei*	TK74	JQ798596	JQ798663	JQ798725
Chaetonotus (*Wolterecka*) *semovitus*	PWS_4_22	MH166749	MH166746	MH211121

Chaetonotus (*Wolterecka*) *semovitus*	PWS_4_5	MH166747	MH166744	MH211119
Chaetonotus (*Wolterecka*) *semovitus*	PWS_4_13	MH166748	MH166745	MH211120
Ichthydium (Fuficulichthys) scandicum	TK182	JQ798573	JQ798645	JQ798705
Ichthydium (Fuficulichthys) scandicum	TR_8.39	MN496211	MN496278	MN493708
Ichthydium (Fuficulichthys) scandicum	TR_9.3	MN496225	MN496292	MN493709
Kijanebalola devestiva	TK-240	KR822112	KR822117	KR822120
Lepidodermella intermedia	TK126	JN185468	JN185514	JN185547
Lepidodermella squamata 1	TK97	JN185504	JN185539	JN185575
Lepidodermella squamata 1	TK174	JN185482	JN185526	JN185561
Lepidodermella squamata 2	TK163	JN185472	JN185518	JN185551
Lepidodermella squamata 3	TK170	JN185478	JN185522	JN185557
Lepidodermella squamata 3	TK171	JN185479	JN185523	JN185558
Lepidodermella squamata 4	TK173	JN185481	JN185525	JN185560
Lepidochaetus brasilensis 2	TK223	JN185495	JQ798658	JN185568
Lepidochaetus tirjakovae	VR 1	MW826075	MW826065	MW824657
Lepidochaetus tirjakovae	VR 4	MW826076	MW826066	MW824658
Lepidochaetus tirjakovae	VR 9	MW826077	MW826067	MW824659
Lepidochaetus zelinkai 1	TK180	JN185486	JN185527	JN185564
Lepidochaetus zelinkai 1	TK181	JN185487	JN185528	JN185565
Lepidochaetus zelinkai 2	TK94	JN185503	JN185538	JN185574
Lepidochaetus zelinkai 3	TK227	JN185497	JN185534	JN185570
Ornamentula paraensis	TK147	JQ798562	JQ798632	JQ798697
Polymerurus nodicaudus 1	MT69	JN185460	JQ798614	JN185542
Polymerurus nodicaudus 2	TK78	JN185502	JN185537	JN185573
Polymerurus nodicaudus 3	TK119	JN185465	JN185512	JQ798689
Polymerurus nodicaudus 4	TK165	JN185473	JQ798642	JN185552
Polymerurus rhomboides 2	TK123	JN185467	JN185513	JN185546
Polymerurus rhomboides 3	TK217	JN185493	JN185533	JN185567
Stylochaeta fusiformis	TK156	JN185471	JN185517	JN185550

Supplementary Table S2. Morphometric characterization of *Cheaetonotus (Hystricochaetonotus) mirabilis* sp. nov. All measurements are given in µm. Ranges include the smallest and the largest structure measurement. N = number of specimens analyzed.

Character	N	Holotype (BZs 02)	Paratypes
Body length	2	107.0	83.8–97.2
Cephalion length	2	9.65	10.74–15.45
Cephalion width	2	–	0.39–0.88
Epiplaeurae length	2	2.7–3.3	5.2–6.3
Hypoplaeurae length	1	–	7.47–8.59
Diameter of mouth ring	3	4.8	5.0–5.5
Number of cuticular teeth	1	–	2
Adhesive tube length	3	9.84	9.40–10.50
Adhesive tube width	3	0.6–1.8	0.2–1.2
Furca length	3	16.68	17.77–19.38
Pharynx intestine ratio (*I*)	3	49.5%	65.5–80.0%
Ratio of *at* to *ph*	3	37.4%	35.2–35.9%
Ocellar granules	1	present	present
Pharynx length	3	26.30	26.15–29.82
Pharynx formula			
a	2	–	14.15–25.16%
n	2	–	19.00–19.12%
m	2	–	21.03–22.45%
p	2	–	22.13–22.45%
l × w of anterior pharynx swellings	2	–	3.72–7.60 × 3.70–7.50
l × w of posterior pharynx swellings	2	–	7.1–7.89 × 6.39–6.6
Width of pharyngeal–intestinal junction	2	–	6.15–7.24
Anterior intestine section size	2	–	6.47–7.70 × 3.32–6.11
Intestine length	2	53.14	32.70–45.53
Number of scales in central longitudinal row	1	–	17
Total number of longitudinal rows of scales	2	–	10–12
Length of head dorsal scales	2	–	3.25–4.13
Width of head dorsal scales	2	–	1.90–3.85
Length of head dorsal spines	2	–	2.73–3.71
Width of neck dorsal scales	2	–	1.98–2.70
Length of neck dorsal scales	2	–	3.20–5.06
Length of neck dorsal spines	2	–	4.50–7.10
Length of ventrolateral oval scales	1	–	2.38–3.00
Width of ventrolateral oval scales	1	–	1.00–1.52
Length of keel of ventrolateral oval scales	1	–	1.02–1.44
Length of trunk dorsal scales	1	–	7.48–8.44
Length of trunk dorsal spines	3	17.71–21.19	20.70–35.91

Length of denticle of trunk dorsal spines	1	–	2.59–5.59
Width of denticle of trunk dorsal spines	1	–	1.56–2.70
Length of terminal dorsal scale	1	–	2.50
Width of terminal dorsal scale	1	–	2.54
Length of terminal dorsal spine	2	14.11–15.17	13.00–18.40
Length of denticle of terminal dorsal spine	1	–	1.84–2.54
Width of denticle of terminal dorsal spine	1	–	0.56–1.22
Length of head lateral scales	2	–	2.90–3.90
Width of head lateral scales	2	–	2.20–2.60
Length of neck dorsolateral scales	2	–	2.40–4.20
Width of neck dorsolateral scales	2	–	2.10–2.62
Length of neck dorsolateral spines	2	–	3.95–6.80
Length of neck lateral scales	2	–	3.15–4.34
Width of neck lateral scales	2	–	1.57–2.12
Length of trunk dorsolateral scales	2	–	3.90–6.20
Width of trunk dorsolateral scales	2	–	2.80–4.10
Length of trunk lateral scales	1	–	5.23–6.80
Width of trunk lateral scales	1	–	4.66–4.80
Length of trunk lateral spines	2	–	6.80–8.80
Length of lateral furcal oval scales	1	–	1.50–3.90
Width of lateral furcal oval scales	1	–	0.70–1.50
Length of lateral furcal three-lobed scales	1	–	5.60
Width of lateral furcal three-lobed scales	1	–	3.04
Length of smaller lateral furcal three-lobed scales	1	–	3.80
Width of smaller lateral furcal three-lobed scales	1	–	2.61

Supplementary Table S3. Morphometric characterization of *Cheaetonotus (Hystricochaetonotus) superbus* sp. nov. All measurements are given in μm. Ranges include the smallest and the largest structure measurement. N = number of specimens analyzed.

Character	N	Holotype (ZPvs 55)	Paratype (KCH 61)
Body length	2	106.80	107.42
Cephalion length	2	10.20	10.61
Epiplaeurae length	1	4.72	–
Epiplaeurae width	1	2.90	–
Hypoplaeurae length	1	9.40–9.70	–
Hypoplaeurae width	1	5.70–6.10	–
Length of sensoric cilia	2	14.20–19.10	10.04–12.26
Diameter of mouth ring	2	4.92	4.48
Number of cuticular teeth	2	absent	absent
Length of rod-like reinforcements	2	3.35	3.10
Adhesive tube length	1	9.38	–
Adhesive tube width	2	1.73	1.17
Furca length	2	12.7	11.80
Pharynx intestine ratio (*I*)	2	56%	65%
d-ratio	2	22.2–33.8%	21.4%-34.7%
Ratio of *at* to *ph*	1	33.4%	–
Ocellar granules	2	absent	absent
Hypostomium length	-	–	–
Hypostomium width	-	–	–
Pharynx length	2	28.10	31.60
Pharynx width	2	7.60–8.30	5.91
Pharynx formula			
a	2	33.8%	27.6%
n	2	25.4%	22.6%
m	2	25.6%	21.5%
p	2	29.6%	31.2%
Width of pharyngeal–intestinal junction	2	3.63	3.24
Anterior intestine section size	2	3.90 × 3.60	9.08 × 7.37
Intestine length	2	50.20	48.21
Number of scales in central longitudinal row	1	–	15
Total number of longitudinal rows of scales	1	10.15	–
Length of head dorsal scales	2	3.17	3.62–3.84
Width of head dorsal scales	2	1.40	1.7–2.3
Length of head dorsal spines	2	4.56	7.00–7.32
Length of head dorsolateral scales	1	3.47	–
Width of head dorsolateral scales	1	1.80	–
Length of head dorsolateral spines	1	8.16	–
Length of head lateral scales	1	3.32	–

Width of head lateral scales	1	2.42	–
Length of head lateral spines	1	5.60–6.80	–
Length of neck dorsal scales	1	5.14–5.60	–
Width of neck dorsal scales	1	3.90–4.75	–
Length of neck dorsal spines	2	8.20–10.70	6.70–8.40
Length of neck dorsolateral scales	2	3.70	3.60–4.80
Width of neck dorsolateral scales	2	2.20	2.30–2.08
Length of neck dorsolateral spines	1	8.60	–
Length of denticle of neck dorsolateral spines	1	1.80	–
Length of neck lateral scales	1	3.80	–
Width of neck lateral scales	1	3.27	–
Length of neck lateral spines	1	6.42	–
Length of trunk dorsal scales	2	5.21	6.36
Width of trunk dorsal scales	2	3.35	4.60
Length of trunk dorsal spines	2	11.20	10.80–12.94
Width of trunk dorsal spines	2	0.70	1
Length of denticle of trunk dorsal spines	1	3.60	–
Length of trunk dorsolateral scales	2	4.25	4.70–5.90
Width of trunk dorsolateral scales	2	2.80	2.60–2.80
Length of trunk dorsolateral spines	1	9.00–11.34	–
Length of denticle of trunk dorsolateral spines	1	2.30	–
Length of trunk lateral scales	2	3.12	3.80–4.00
Width of trunk lateral scales	2	1.60	1.90–2.30
Length of trunk lateral spines	2	5.80	6.10–6.80
Length of trunk ventrolateral scales	1	2.00–2.90	–
Width of trunk ventrolateral scales	1	1.90–2.20	–
Length of trunk ventrolateral spines	1	3.70–4.10	–
Length of trunk ventral scales	1	1.70–2.60	–
Width of trunk ventral scales	1	0.90–1.20	–
Length of terminal dorsal scales	1	6.70–8.30	5.53–6.80
Width of terminal dorsal scales	2	6.32	–
Length of terminal dorsal spines	2	12.30–15.30	12.51–14.94
Length of denticle of terminal dorsal spines	1	0.70–1.50	–
Length of small posteriormost furcal scale	1	1.47–1.72	–
Width of small posteriormost furcal scale	1	0.84–1.20	–
Length of big upper-furcal oval scale	1	4.10	–
Width of big upper-furcal oval scale	1	2.31	–
Length of lateral furcal scale	1	1.12	–
Width of lateral furcal scale	1	2.72	–

Supplementary Table S4. Morphometric characterization of *Cheaetonotus (Hystricochaetonotus) optabilis* sp. nov. All measurements are given in µm. Ranges include the smallest and the largest structure measurement. N = number of specimens analyzed.

Character	N	Holotype (DB 34)	Paratypes (DB 35, DB 36)
Body length	3	108.5	143.0
Cephalion width	3	11.6	15.0
Length of sensoric cilia	1	–	13–19
Diameter of mouth ring	2	6.2	5.18
Adhesive tube length	1	–	8.7–9.2
Adhesive tube width	1	–	1.6–2.6
Furca length	1	–	18.5
Pharynx intestine ratio (*I*)	2	54%	44%
Ratio of *at* to *ph*	1	–	26.9
Ocellar granules	3	present	present
Hypostomium length	1	–	2.9
Hypostomium width	1	–	5
Pharynx length	3	30.5	27.9–33.4
Pharynx width	2	7.3	7.8
Pharynx formula			
a	2	17.7%	24.4%
n	2	21.2%	19.2%
m	2	24.0%	25.0%
p	2	30.0%	31.7%
l × w of anterior pharynx swellings	2	3.6 × 3.7	2.5 × 2.5
l × w of posterior pharynx swellings	1	2.8 × 4.8	–
Width of pharyngeal–intestinal junction	2	2.3	2.4
Anterior intestine section size	1	3.7 × 1.3	–
Intestine length	3	57.40	75.80–84.31
Ogan X length	1	–	4.3
Organ X width	1	–	5.5
Number of scales in central longitudinal row	1	–	34
Total number of longitudinal rows of scales	3	16	18
Length of head dorsal scales	2	3.3–3.9	2.8–3.7
Width of head dorsal scales	2	2.9–3.1	1.5–1.8
Length of head dorsal spines	1	2.6–3.7	–
Length of head dorsolateral scales	1	3.0–3.7	–
Width of head dorsolateral scales	1	1.9–2.3	–
Length of head dorsolateral spines	1	1.9–3.3	–
Length of head lateral scales	1	2.6–3.4	–
Width of head lateral scales	1	1.8–2.2	–
Length of head lateral spines	1	2.0–2.3	–

Length of neck dorsal scales	2	3.4–3.9	2.1–2.8
Width of neck dorsal scales	2	1.7–2.5	1.2–1.4
Length of neck dorsal spines	2	3.7–4.5	2.2–2.5
Length of neck lateral spines	1	2.6–3.6	–
Length of trunk dorsal scales	1	3.9–5.0	–
Width of trunk dorsal scales	1	2.6–3.3	–
Length of trunk dorsal spines	1	3.7–4.5	–
Length of trunk dorsolateral scales	2	4.7–5.1	3.0–3.6
Width of trunk dorsolateral scales	2	2.0–2.6	1.6–2.0
Diameter of round dorsal scales	1	1.0–2.4	–
Length of trunk lateral scales	1	–	4.6–5.2
Width of trunk lateral scales	1	–	2.7–3.8
Length of trunk lateral spines	2	2.8–3.2	10.5–11.2
Length of head ventral scales	1	–	0.7–0.9
Width of head ventral scales	1	–	0.8–1.2
Length of neck ventral scales	1	–	0.8–1.1
Width of neck ventral scales	1	–	0.8–1.3
Length of trunk ventrolateral scales	1	–	3.6–4.9
Width of trunk ventrolateral scales	1	–	2.6–3.6
Length of trunk ventrolateral spines	1	–	6.0–9.0
Length of trunk ventral scales	1	–	1.3–2.0
Width of trunk ventral scales	1	–	1.0–1.5
Length of terminal ventral scales	1	–	1.7–3.4
Width of terminal ventral scales	1	–	1.0–1.5
Length of keel of terminal ventral scales	1	–	1.3–2.4
Length of terminal dorsal scales	1	–	5.8–6.0
Width of terminal dorsal scales	1	–	3.1–3.9
Length of spine of terminal dorsal scales	1	–	4.7–6.0
Length of dorsal posteriormost scale	1	–	5.5–5.6
Width of dorsal posteriormost scale	1	–	3.3–3.5
Length of spine of dorsal posteriormost scale	1	–	8.2–8.6
Length of small ventral furcal scales	1	–	1.0–2.4
Width of small ventral furcal scales	1	–	1.0–1.3
Length of keel of small ventral furcal scales	1	–	1.0–2.1
Length of big ventral furcal scales	1	–	3.5–4.1
Width of big ventral furcal scales	1	–	1.5–1.8
Length of keel of big ventral furcal scales	1	–	2.5–3.1
Length of big upper-furcal oval scale	1	–	7.3–7.6
Width of big upper-furcal oval scale	1	–	2.4–2.6
Length of spine of big upper-furcal oval scale	1	–	7.2–7.5

Supplementary Table S5. Morphometric characterization of *Cheaetonotus (Hystricochaetonotus) avarus* sp. nov. All measurements are given in μm. Ranges include the smallest and the largest structure measurement. N = number of specimens analyzed.

Character	N	Paratype 1	Paratype 2
Body length	1	130	–
Cephalion width	1	10	–
Epiplaeurae length	1	7.7–8.1	–
Hypoplaeurae length	1	4.8–5.7	–
Diameter of mouth ring	1	5.5	–
Number of cuticular teeth	1	3	–
Adhesive tube length	2	6.5	12.2
Adhesive tube width	2	1.2–1.5	1.2–1.3
Furca length	2	16.4	18.4
Pharynx intestine ratio *(I)*	1	50.4%	–
Ratio of *at* to *ph*	1	24.0%	–
Ocellar granules	1	present	–
Hypostomium length	1	1.5	–
Hypostomium width	1	6.6	–
Pharynx length	1	34.9	–
Pharynx width	1	7.35–9.10	–
Pharynx formula			
a	1	25.7%	–
n	1	21.1%	–
m	1	24.6%	–
p	1	26.1%	–
Width of pharyngeal–intestinal junction	1	3.1	–
Anterior intestine section size	1	8.2 × 3.7	–
Intestine length	1	69.2	–
Total number of longitudinal rows of scales	1	14	–
Number of scales in central longitudinal row	1	30–32	–
Length of head dorsal scales	2	3.1–4.1	4.0–5.1
Width of head dorsal scales	2	2.3–3.0	2.9–3.0
Length of head dorsal spines	2	4.1–4.8	4.9–5.1
Length of head dorsolateral scales	2	2.3–2.9	4.1
Width of head dorsolateral scales	2	1.6–1.9	3.0
Length of head dorsolateral spines	2	3.5–5.4	4.6–7.1
Length of neck dorsal scales	2	2.6–3.0	4.9–5.0
Width of neck dorsal scales	2	2.1–2.9	3.3–3.9
Length of neck dorsal spines	1	–	7. 8–8.5
Length of neck dorsolateral scales	2	2.0–3.4	5.1–6.6
Width of neck dorsolateral scales	2	2.2–2.4	3.4–4.6
Length of neck dorsolateral spines	2	4.6–5.1	5.9–6.8
Length of neck lateral scales	1	–	3.6–4.9

Width of neck lateral scales	1	–	2.8–3.3
Length of neck lateral spines	1	5.7–7.5	–
Length of neck ventrolateral scales	2	2.4–3.9	3.7–4.3
Width of neck ventrolateral scales	2	1.2–2.1	2.4–2.8
Length of neck ventrolateral spines	2	2.1–3.0	3.3–3.8
Length of trunk dorsal scales	2	5.3–6.0	5.9–6.6
Width of trunk dorsal scales	2	4.3–4.6	3.1–3.9
Length of trunk dorsal spines	1	–	9.6–10.9
Length of trunk dorsolateral scales	2	5.2–5.8	7.5–9.3
Width of trunk dorsolateral scales	2	4.2–4.9	5.2–6.1
Length of trunk dorsolateral spines	2	6.9–13.0	17.3–20.2
Length of trunk lateral scales	2	4.9–6.0	5.9–6.8
Width of trunk lateral scales	2	3.4–4.1	3.4–4.1
Length of trunk lateral spines	2	8.4–9.9	5.6–7.3
Length of trunk posterior dorsal scales	1	8.1–8.9	–
Width of trunk posterior dorsal scales	1	4.1–4.8	–
Length of trunk posterior dorsal spines	1	10.0–10.8	–
Length of neck ventral scales	1	1.5–1.8	–
Width of neck ventral scales	1	1.3–1.8	–
Length of trunk ventrolateral scales	2	4.8–5.3	4.5–5.2
Width of trunk ventrolateral scales	2	2.2–3.6	2.8–3.2
Length of trunk ventrolateral spines	1	4.5–6.1	–
Length of trunk ventral scales	1	1.9–2.3	–
Width of trunk ventral scales	1	1.4–1.6	–
Length of trunk ventral spines	1	1.6–2.1	
Length of terminal ventral scales	1	3.9–4.4	–
Width of terminal ventral scales	1	1.0–1.5	–
Length of spine of terminal ventral scales	1	3.0–3.5	–
Length of terminal dorsal scales	2	4.5–5.3	7.0–8.4
Width of terminal dorsal scales	2	2.8–3.6	2.7–3.3
Length of spine of terminal dorsal scales	2	3.9–4.3	3.3–4.0
Length of dorsal upper-furcal scales	1	–	5.7–6.0
Width of dorsal upper-furcal scales	1	–	1.7–1.8
Length of spine of dorsal upper-furcal scales	1	–	5.3–5.5
Length of small ventral furcal scales	1	0.7–3.2	–
Width of small ventral furcal scales	1	0.4–1.8	–
Length of spine of small ventral furcal scales	1	0.4–2.9	–
Length of big ventral terminal scales	1	3.2–5.0	–
Width of big ventral terminal scales	1	1.1–2.0	–
Length of spine of big ventral terminal scales	1	3.0–4.4	–
Length of big upper-furcal elongated scales	2	7.75–7.76	6.10–6.90
Width of big upper-furcal elongated scales	2	3.05–3.24	2.04–2.08
Length of spine of big upper-furcal elongated scales	2	6.06–6.08	4.94–5.94

Supplementary Table S6. Morphometric characterization of *Cheaetonotus (Hystricochaetonotus) luxus* sp. nov. All measurements are given in μm. Ranges include the smallest and the largest structure measurement. N = number of specimens analyzed.

Character	N	Paratype 1	Paratype 2
Body length	2	112.1	87.25
Cephalion width	2	11.5	13.1
Epiplaeurae length	1	3.2	–
Epiplaeurae width	1	4.7	–
Hypoplaeurae length	2	6.8	7.1
Hypopleurae width	2	5.12	5.6
Diameter of mouth ring	2	6.0	3.2
Adhesive tube length	2	13.0	11.7
Adhesive tube width	2	1.4–2.1	0.9–1.3
Furca length	2	22.8	17.4
Pharynx intestine ratio (*I*)	2	56.8%	72.0%
Ratio of *at* to *ph*	2	74.0%	43.7%
d-ratio	2	6.8%	5.4%
Ocellar granules	2	absent	absent
Pharynx length	2	30.8	26.8
Pharynx width	2	6.1–8.5	4.7–6.0
Pharynx formula			
a	2	28.2%	26.9%
n	2	20.5%	17.2%
m	2	18.9%	19.7%
p	2	27.2%	22.8%
Width of pharyngeal–intestinal junction	2	2.0	1.5
Anterior intestine section size	1	6.2 × 1.8	–
Intestine length	2	54.3	37.4
Total number of longitudinal rows of scales	1	min. 10	–
Length of head dorsal scales	1	3.2–5.4	3.3–4.0
Width of head dorsal scales	2	2.8–5.2	2.1–3.3
Length of head dorsal spines	2	3.4–6.6	6.1
Length of head dorsolateral scales	1	3.4–5.1	–
Width of head dorsolateral scales	1	2.7–3.5	–
Length of head dorsolateral spines	2	4.2–5.3	5.0–6.0
Length of head lateral scales	1	2.7–2.9	–
Width of head lateral scales	1	1.9–2.5	–
Length of head lateral spines	1	3.1–4.6	–
Length of neck dorsal scales	2	4.3–5.8	3.7–4.9
Width of neck dorsal scales	2	3.3–3.5	2.6–3.4
Length of neck dorsal spines	2	6.3–7.4	8.5–9.0
Length of neck dorsolateral scales	2	2.4–3.1	2.7–3.3

Width of neck dorsolateral scales	2	1.9–2.2	1.9–2.6
Length of neck dorsolateral spines	2	5.7–7.0	6.9–12.3
Length of neck lateral scales	1	3.2–3.8	–
Width of neck lateral scales	1	2.1–3.1	–
Length of neck lateral spines	2	9.1–9.8	5.9–7.7
Length of neck ventrolateral scales	2	3.6–3.7	1.4–2.0
Width of neck ventrolateral scales	2	2.3–2.7	1.4–1.5
Length of neck ventrolateral spines	1	6.6–7.9	–
Length of trunk dorsal scales	2	6.8–7.4	3.8–4.2
Width of trunk dorsal scales	2	3.9–4.2	2.4–2.6
Length of trunk dorsal spines	2	6.7–10.6	3.8–3.9
Length of trunk dorsolateral scales	2	6.4–7.4	3.4–4.2
Width of trunk dorsolateral scales	2	3.9–4.4	2.3–3.0
Length of trunk dorsolateral spines	2	9.1–15.7	10.4–13.5
Length of trunk lateral scales	2	4.4–5.9	3.8–4.3
Width of trunk lateral scales	2	3.6–3.9	2.5–3.1
Length of trunk lateral spines	2	6.5–12.0	8.3–9.6
Length of trunk posterior dorsal scales	2	5.4–5.8	4.3–5.3
Width of trunk posterior dorsal scales	2	2.4–2.9	2.5–3.0
Length of trunk posterior dorsal spines	1	5.2–6.0	–
Length of trunk ventrolateral scales	2	3.1–4.4	1.3–1.7
Width of trunk ventrolateral scales	2	2.3–2.6	1.9–2.8
Length of trunk ventrolateral spines	1	8.0–9.6	–
Length of dorsal furcal scales	2	4.5–5.9	5.6
Width of dorsal furcal scales	2	1.9–2.7	2.0
Length of spine of dorsal furcal scales	2	3.7–4.4	4.1
Length of ventral furcal scales	2	1.9–3.8	2.0–3.1
Width of ventral furcal scales	2	1.7–2.1	1.5–2.3
Length of spine of ventral furcal scales	2	3.7–5.3	5.3–6.1
Length of ventral upper-furcal scales	1	6.8–7.0	–
Width of ventral upper-furcal scales	1	2.8–3.0	–
Length of spine of ventral upper-furcal scales	1	5.2–6.0	–

Supplementary Table S7. Morphometric characterization of *Cheaetonotus (Hystricochaetonotus) iratus* sp. nov. All measurements are given in μm. Ranges include the smallest and the largest structure measurement.

Character	Holotype (STV 65)
Body length	124.0
Cephalion width	15.2
Epiplaeurae length	6.3
Hypoplaeurae length	9.0
Diameter of mouth ring	6.9
Number of cuticular teeth	1
Length of sensoric cilia	6.9–18.8
Hypostomium size	5.4 × 2.0
Adhesive tube length	10.7
Adhesive tube width	1.5
Furca length	19.4
Pharynx intestine ratio (*I*)	48.9%
Ratio of *at* to *ph*	38.2
Ocellar granules	absent
Pharynx length	28.0
Pharynx width	6.2–8.8
Pharynx formula	
a	30.7%
n	23.0%
m	26.0%
p	31.4%
Width of pharyngeal–intestinal junction	3.2
Anterior intestine section size	8.8 × 5.8
Intestine length	57.3
Length of head lateral spines	2.3–3.6
Length of neck dorsolateral spines	5.5–6.5
Length of neck lateral spines	3.2–4.0
Length of trunk lateral scales	3.7–4.2
Width of trunk lateral scales	2.1–2.4
Length of trunk lateral spines	5.6–7.4
Length of trunk ventrolateral scales	3.6–5.3
Width of trunk ventrolateral scales	2.5–3.1
Length of dorsal furcal scales	4.8
Width of dorsal furcal scales	2.4
Length of spine of dorsal furcal scales	3.5
Length of posteriormost dorsal upper-furcal scales	4.3
Width of posteriormost dorsal upper-furcal scales	3.4
Length of spine of posteriormost dorsal upper-furcal scales	3.32

Supplementary Table S8. Morphometric characterization of *Cheaetonotus (Hystricochaetonotus) gulosus* sp. nov. All measurements are given in μm. Ranges include the smallest and the largest structure measurement.

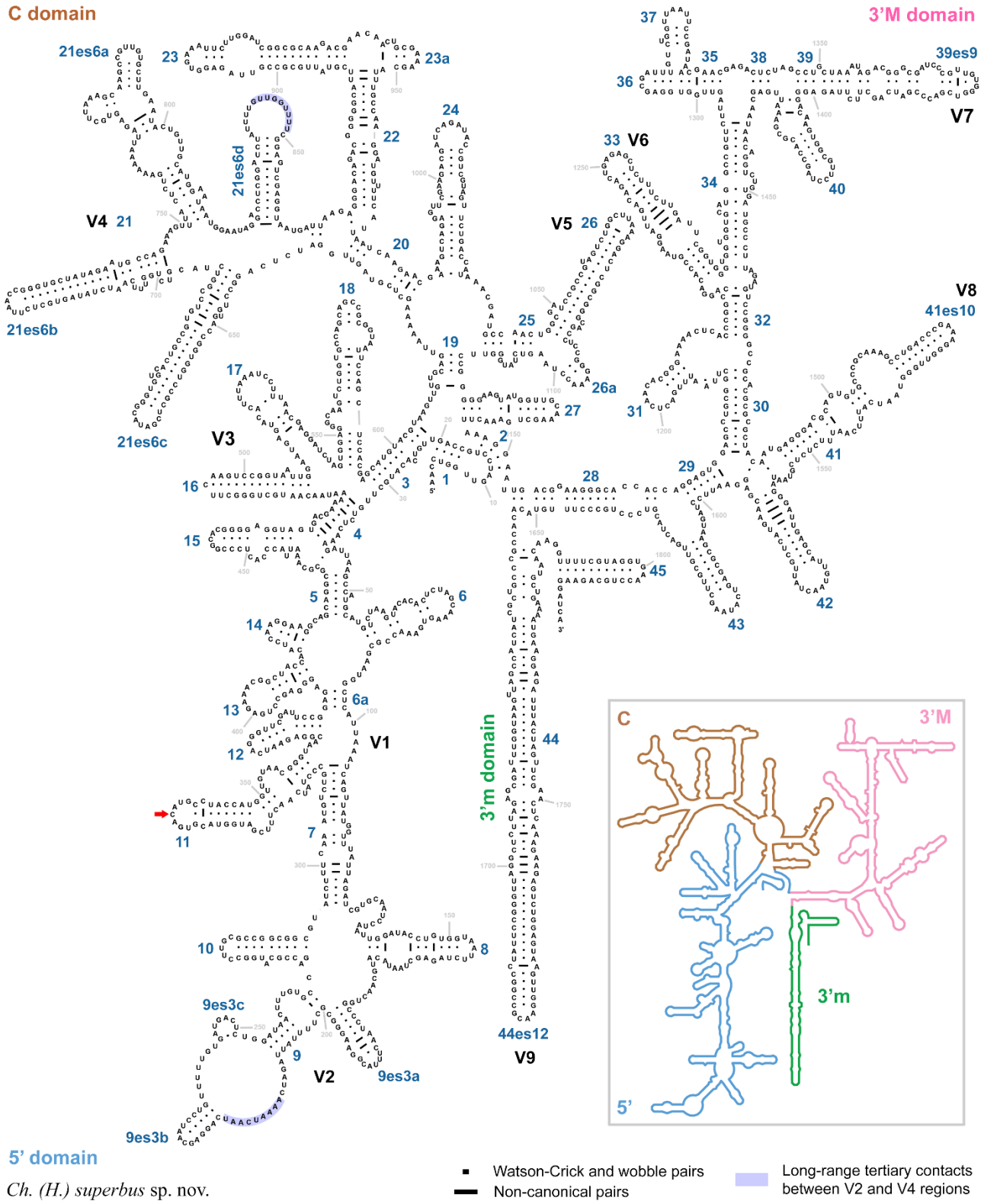
Character	Paratype
Body length	106.9
Cephalion width	8.6
Epiplaeurae length	5.7
Diameter of mouth ring	4.6
Adhesive tube length	8.1
Adhesive tube width	0.7–0.8
Furca length	13.3
Pharynx intestine ratio (*I*)	46.8
Ratio of *at* to *ph*	29.0%
Ocellar granules	present
Hypostomium length	2.7
Hypostomium width	5.2
Pharynx length	27.9
Pharynx width	6.5–8.9
Pharynx formula	
a	31.9%
n	23.3%
m	24.7%
p	30.2%
Width of pharyngeal–intestinal junction	1.6
Anterior intestine section size	8.6 × 3.9
Intestine length	59.4
Total number of longitudinal rows of scales	14
Length of head dorsal scales	3.1–3.5
Width of head dorsal scales	2.0–2.3
Length of head dorsal spines	3.6–5.2
Length of head lateral scales	2.3–2.6
Width of head lateral scales	0.9–1.1
Length of head lateral spines	2.4–3.5
Length of neck dorsal scales	2.7–4.3
Width of neck dorsal scales	2.4–3.1
Length of neck dorsal spines	5.0–7.0
Length of neck lateral scales	3.1–3.8
Length of neck lateral spines	4.3
Length of trunk dorsal scales	6.2–7.1
Width of trunk dorsal scales	4.5–5.4
Length of trunk dorsal spines	9.2–14.0
Length of trunk dorsolateral scales	7.4–8.4
Width of trunk dorsolateral scales	4.0–4.4

Length of trunk dorsolateral spines	11.4–11.7
Length of trunk lateral scales	5.5–5.9
Width of trunk lateral scales	3.7–3.8
Length of trunk lateral spines	8.5–8.6
Length of trunk ventrolateral scales	2.7–4.3
Width of trunk ventrolateral scales	3.1–3.4
Length of trunk ventrolateral spines	3.1–3.6
Length of trunk ventral scales	1.5–4.3
Width of trunk ventral scales	1.8–3.9
Length of ventral furcal scales	1.1–3.2
Width of ventral furcal scales	0.5–1.4
Length of spine of ventral furcal scales	0.3–2.1
Length of central ventral terminal scale	6.5
Width of central ventral terminal scale	2.8
Length of spine of central ventral terminal scale	4.3
Length of lateral ventral terminal scales	4.4–5.1
Width of lateral ventral terminal scales	2.6–2.7
Length of spine of lateral ventral terminal scales	3.1–4.9
Length of big ventral upper-furcal elongated scales	11.8–12.3
Width of big ventral upper-furcal elongated scales	3.2–3.4
Length of spine of big ventral upper-furcal elongated scales	13.5–15.1

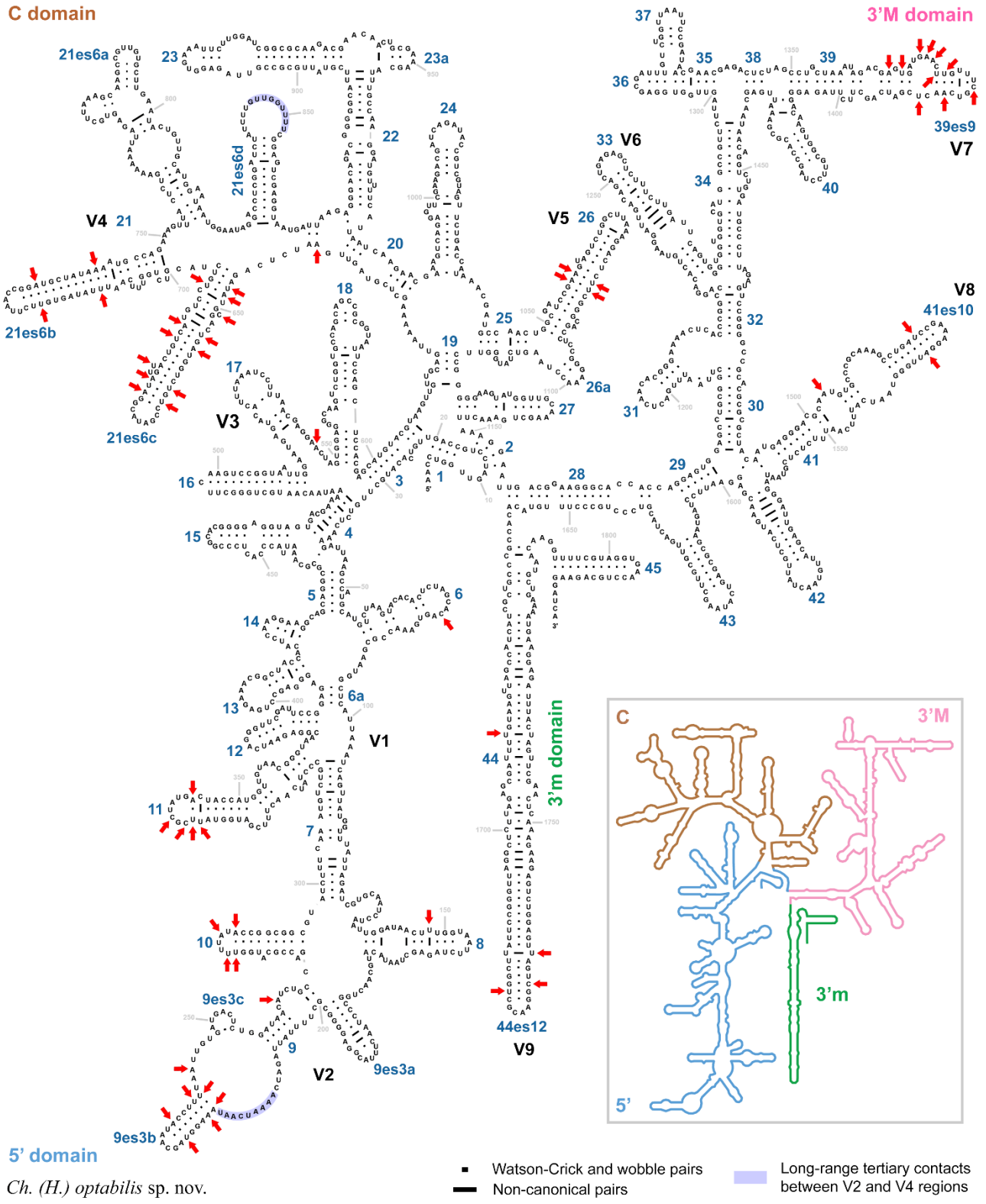
Supplementary Table S9. Morphometric characterization of *Cheaetonotus (Hystricochaetonotus) arcanus* sp. nov. All measurements are given in μm. Ranges include the smallest and the largest structure measurement.

Character	Holotype (STV 67)
Body length	99.6
Cephalion width	10.6
Diameter of mouth ring	5.2
Adhesive tube length	9.4
Adhesive tube width	1.0–1.1
Furca length	16.3
Pharynx intestine ratio (*I*)	65.1%
Ratio of *at* to *ph*	33.2%
d-ratio	18–21%
Ocellar granules	absent
Hypostomium length	1.7
Hypostomium width	3.0
Pharynx length	28.2
Pharynx width	4.6–7.2
Pharynx formula	
a	25.4%
n	20.0%
m	16.5%
p	25.5%
Width of pharyngeal–intestinal junction	2.8
Anterior intestine section size	9.2 × 1.4
Intestine length	45.4
Length of head dorsal scales	3.0–4.5
Width of head dorsal scales	1.9–2.2
Length of head dorsal spines	3.1–4.9
Length of head lateral scales	3.3–3.5
Width of head lateral scales	1.9–2.3
Length of head lateral spines	5.0–5.2
Length of neck dorsal scales	4.3
Width of neck dorsal scales	2.7
Length of neck dorsal spines	5.8
Length of neck lateral scales	3.9–4.2
Width of neck lateral scales	3.6–4.1
Length of neck lateral spines	7.3
Length of trunk dorsal scales	4.9–5.6
Width of trunk dorsal scales	4.1–4.3
Length of trunk dorsal spines	11.3–15.2
Length of trunk dorsolateral scales	5.7
Width of trunk dorsolateral scales	3.9

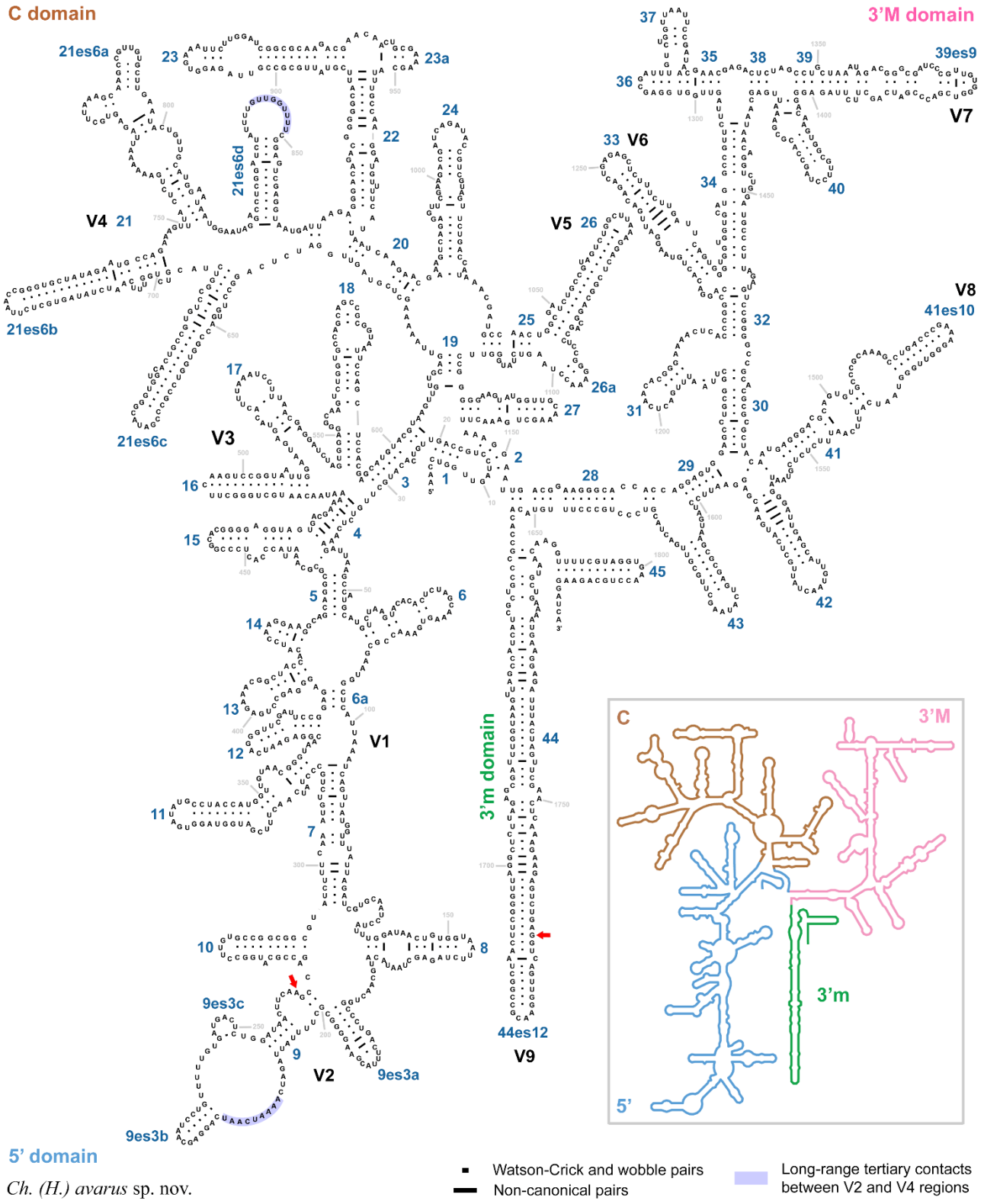
Length of trunk dorsolateral spines	12.8
Length of trunk lateral scales	4.3–6.2
Width of trunk lateral scales	3.6–4.0
Length of trunk lateral spines	11.2–14.4



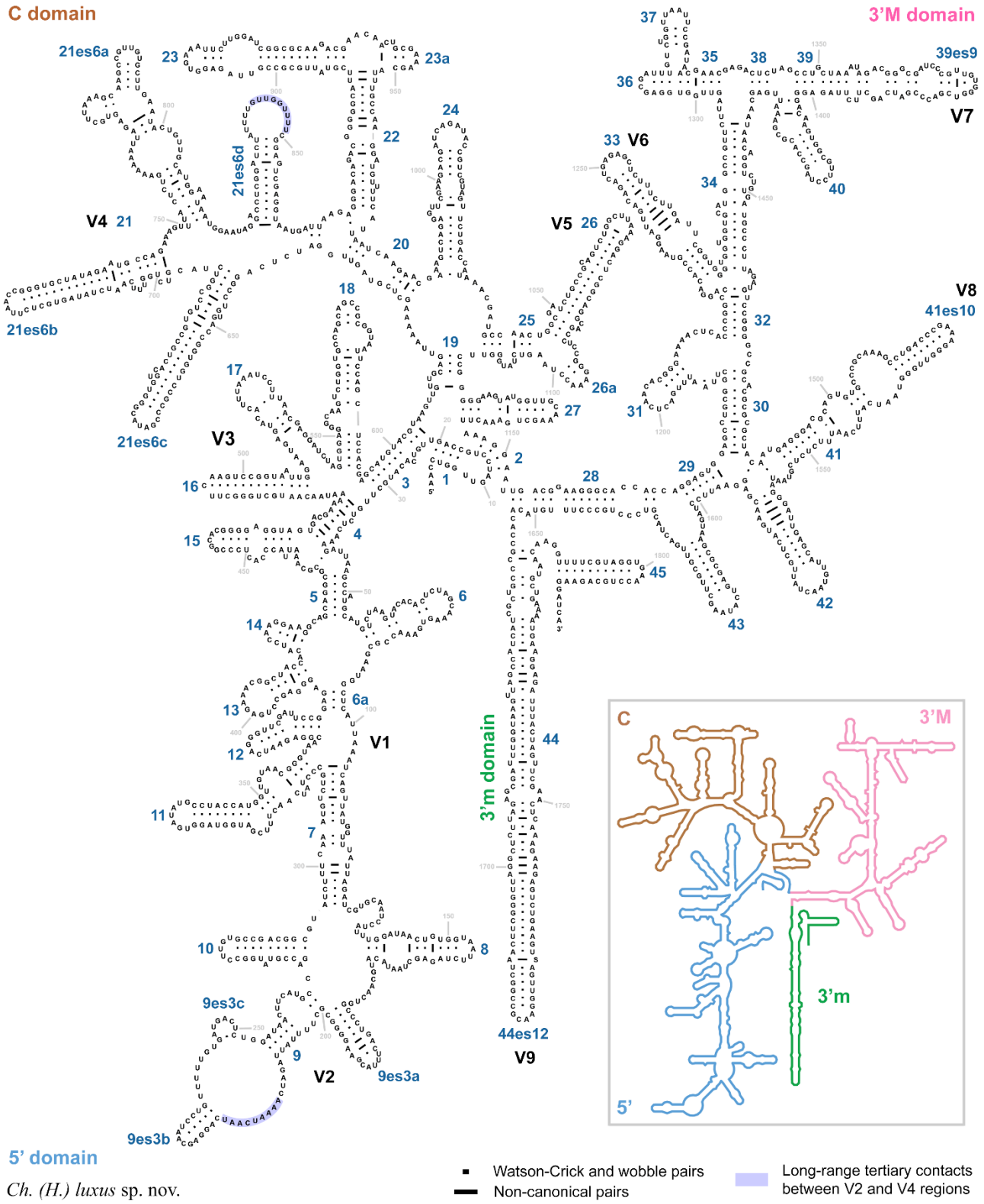
Supplementary Figure S1. Secondary structure of the 18S rRNA molecule of *Chaetonotus (Hystricochaetonotus) superbus* sp. nov. The single diagnostic molecular autapomorphy is situated in the terminal loop of helix 11 (red arrow). The reference 18S secondary structure map of *Saccharomyces cerevisiae* Meyen ex E.C. Hansen (inset) is from http://apollo.chemistry.gatech.edu/ RibosomeGallery (Petrov *et al.* 2014).



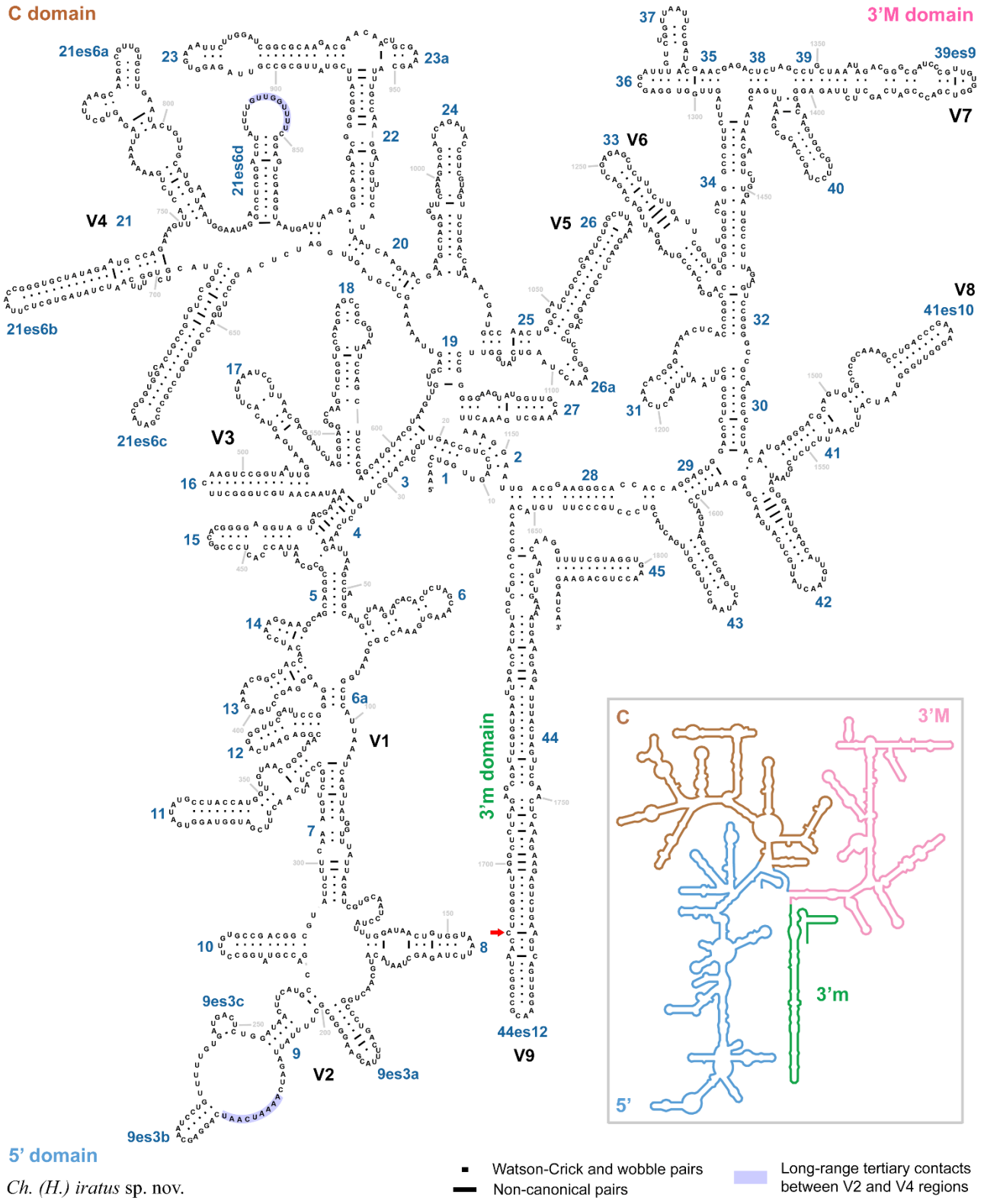
Supplementary Figure S2. Secondary structure of the 18S rRNA molecule of *Chaetonotus (Hystricochaetonotus) optabilis* sp. nov. Diagnostic molecular autapomorphies are marked by red arrows. The reference 18S secondary structure map of *Saccharomyces cerevisiae* Meyen ex E.C. Hansen (inset) is from http://apollo.chemistry.gatech.edu/ RibosomeGallery (Petrov *et al.* 2014).



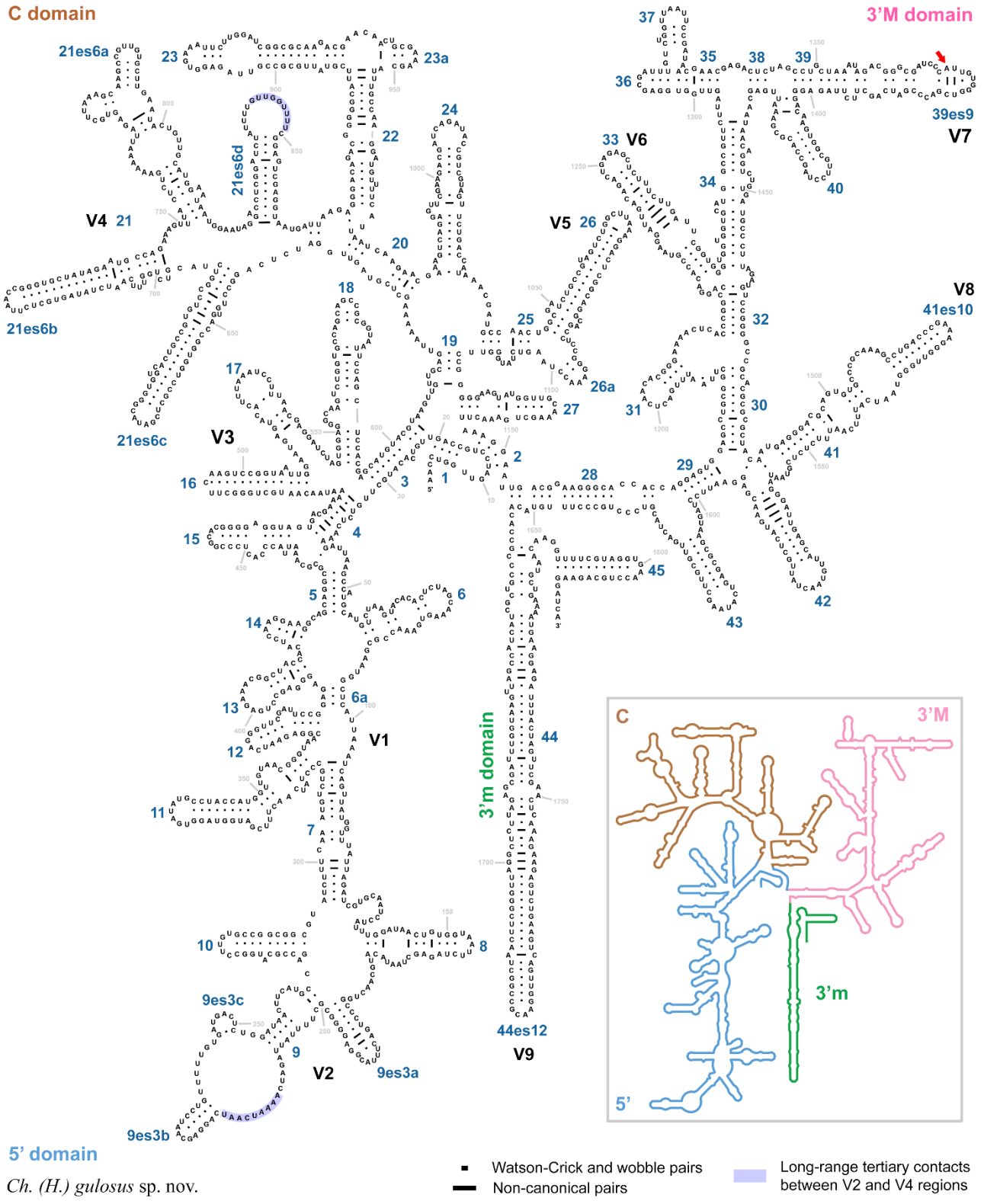
Supplementary Figure S3. Secondary structure of the 18S rRNA molecule of *Chaetonotus (Hystricochaetonotus) avarus* sp. nov. Diagnostic molecular autapomorphies are marked by red arrows. The reference 18S secondary structure map of *Saccharomyces cerevisiae* Meyen ex E.C. Hansen (inset) is from http://apollo.chemistry.gatech.edu/ RibosomeGallery (Petrov *et al.* 2014).



Supplementary Figure S4. Secondary structure of the 18S rRNA molecule of *Chaetonotus (Hystricochaetonotus) luxus* sp. nov. The reference 18S secondary structure map of *Saccharomyces cerevisiae* Meyen ex E.C. Hansen (inset) is from http://apollo.chemistry.gatech.edu/ RibosomeGallery (Petrov *et al.* 2014).

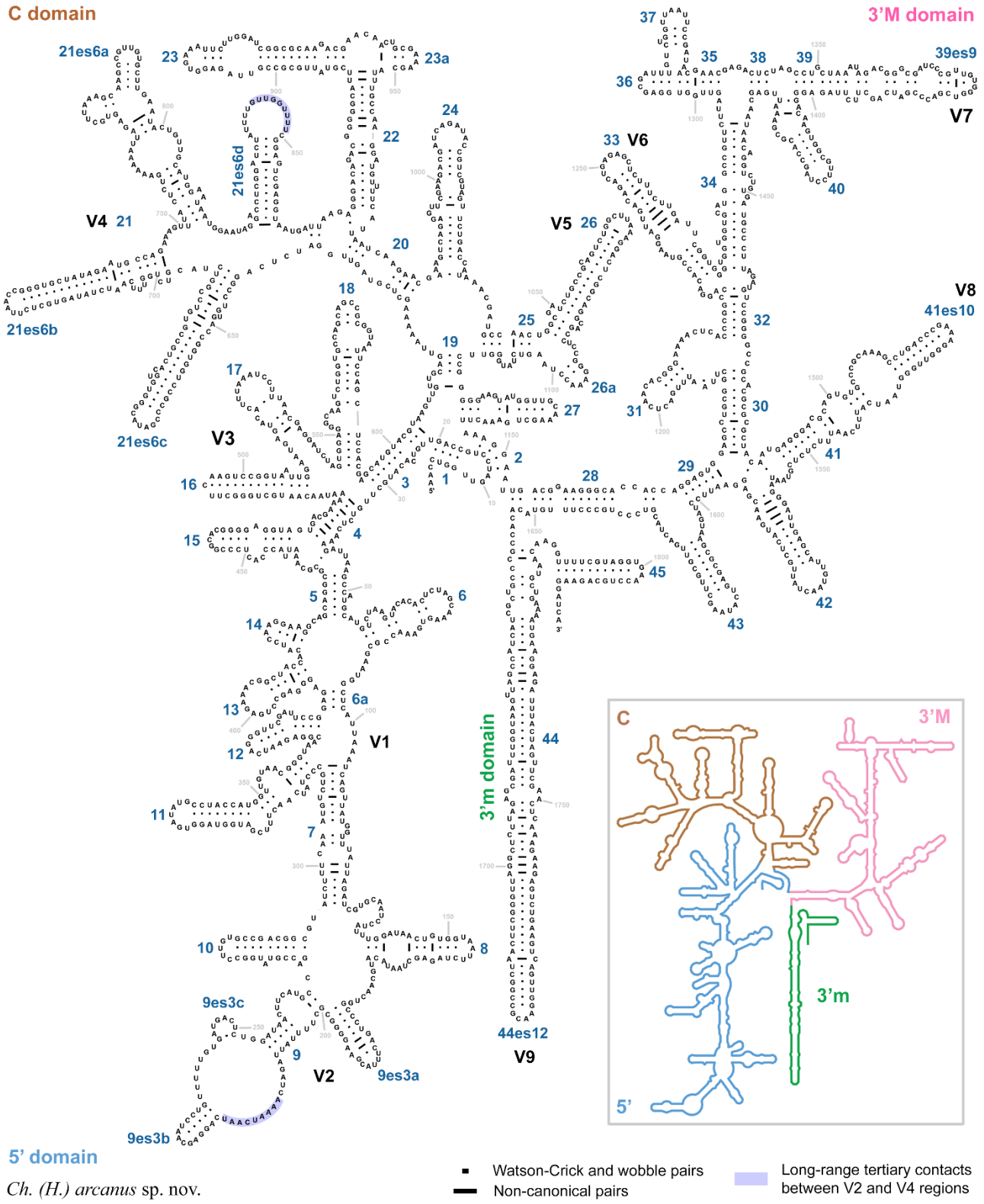


Supplementary Figure S5. Secondary structure of the 18S rRNA molecule of *Chaetonotus (Hystricochaetonotus) iratus* sp. nov. The single diagnostic molecular autapomorphy is situated in helix 44 (red arrow). The reference 18S secondary structure map of *Saccharomyces cerevisiae* Meyen ex E.C. Hansen (inset) is from http://apollo.chemistry.gatech.edu/ RibosomeGallery (Petrov *et al.* 2014).

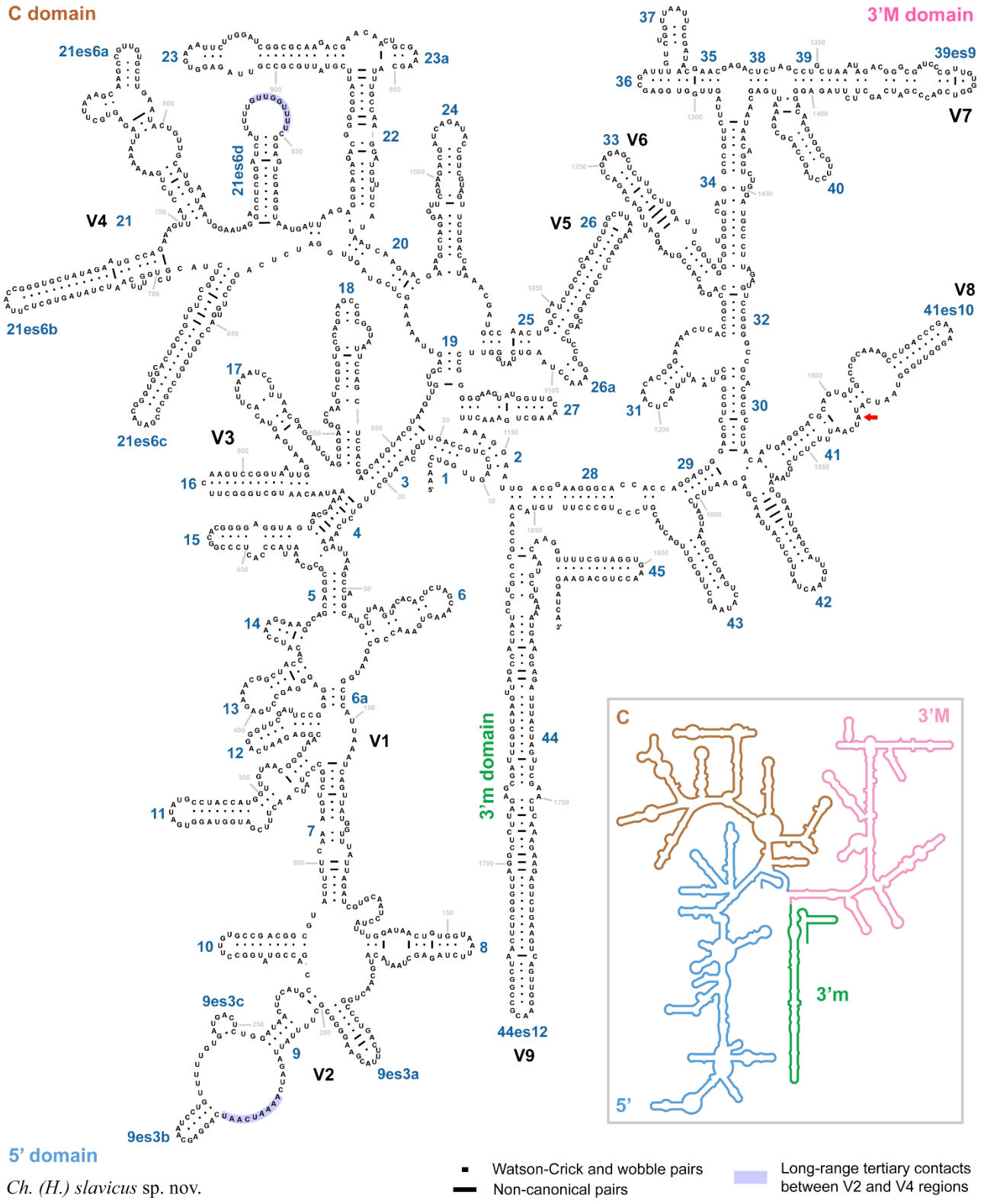


Ch. (H.) gulosus sp. nov.

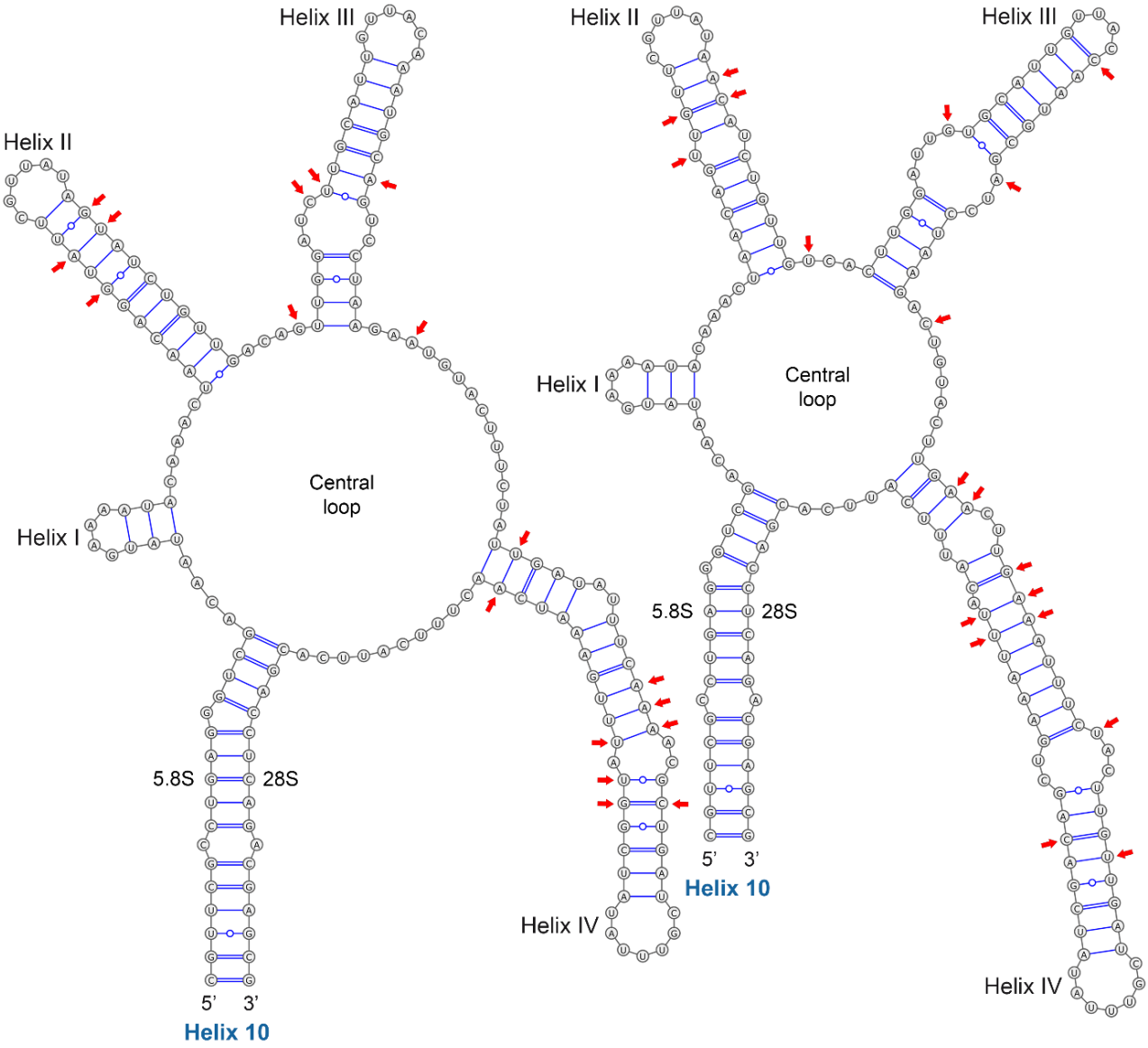
Supplementary Figure S6. Secondary structure of the 18S rRNA molecule of *Chaetonotus (Hystricochaetonotus) gulosus* sp. nov. The single diagnostic molecular autapomorphy is situated in helix 39es9 (red arrow). The reference 18S secondary structure map of *Saccharomyces cerevisiae* Meyen ex E.C. Hansen (inset) is from http://apollo.chemistry.gatech.edu/ RibosomeGallery (Petrov *et al.* 2014).



Supplementary Figure S7. Secondary structure of the 18S rRNA molecule of *Chaetonotus (Hystricochaetonotus) arcanus* sp. nov. The reference 18S secondary structure map of *Saccharomyces cerevisiae* Meyen ex E.C. Hansen (inset) is from http://apollo.chemistry.gatech.edu/ RibosomeGallery (Petrov *et al.* 2014).



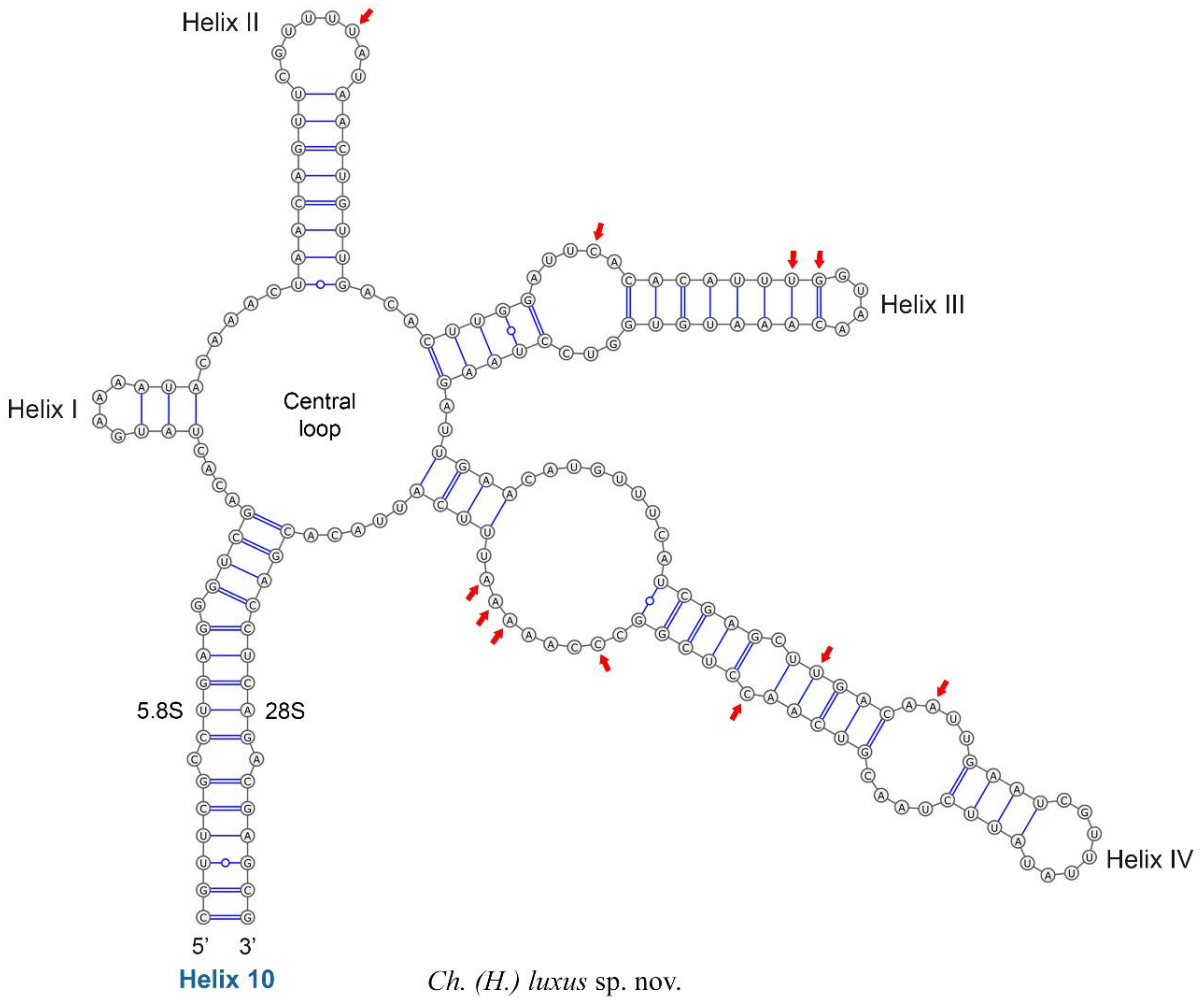
Supplementary Figure S8. Secondary structure of the 18S rRNA molecule of *Chaetonotus (Hystricochaetonotus) slavicus* sp. nov. The single diagnostic molecular autapomorphy is situated in a bulge of helix 41 (red arrow). The reference 18S secondary structure map of *Saccharomyces cerevisiae* Meyen ex E.C. Hansen (inset) is from http://apollo.chemistry.gatech.edu/ RibosomeGallery (Petrov *et al.* 2014).



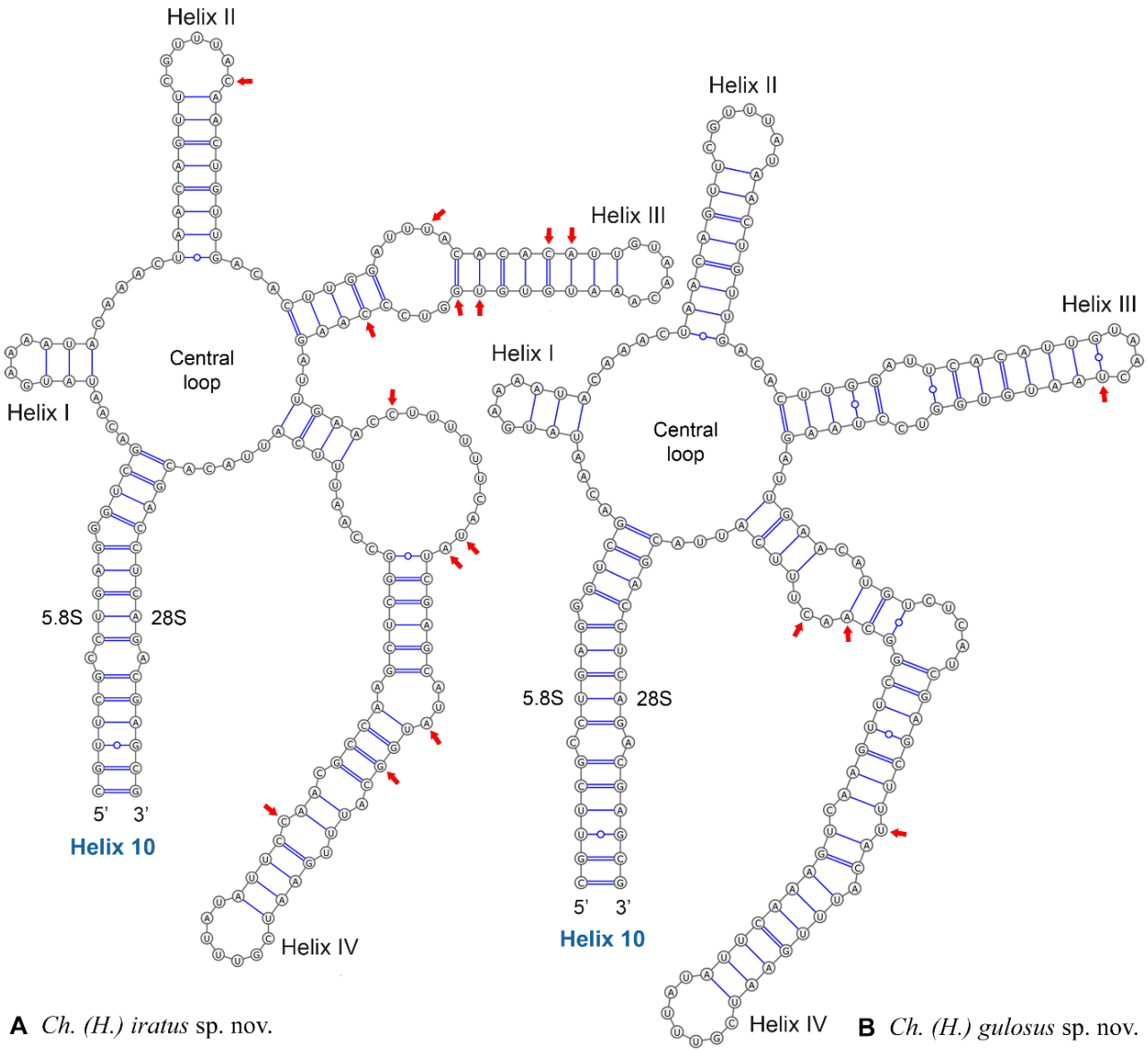
A *Ch. (H.) mirabilis* sp. nov.

B *Ch. (H.) superbus* sp. nov.

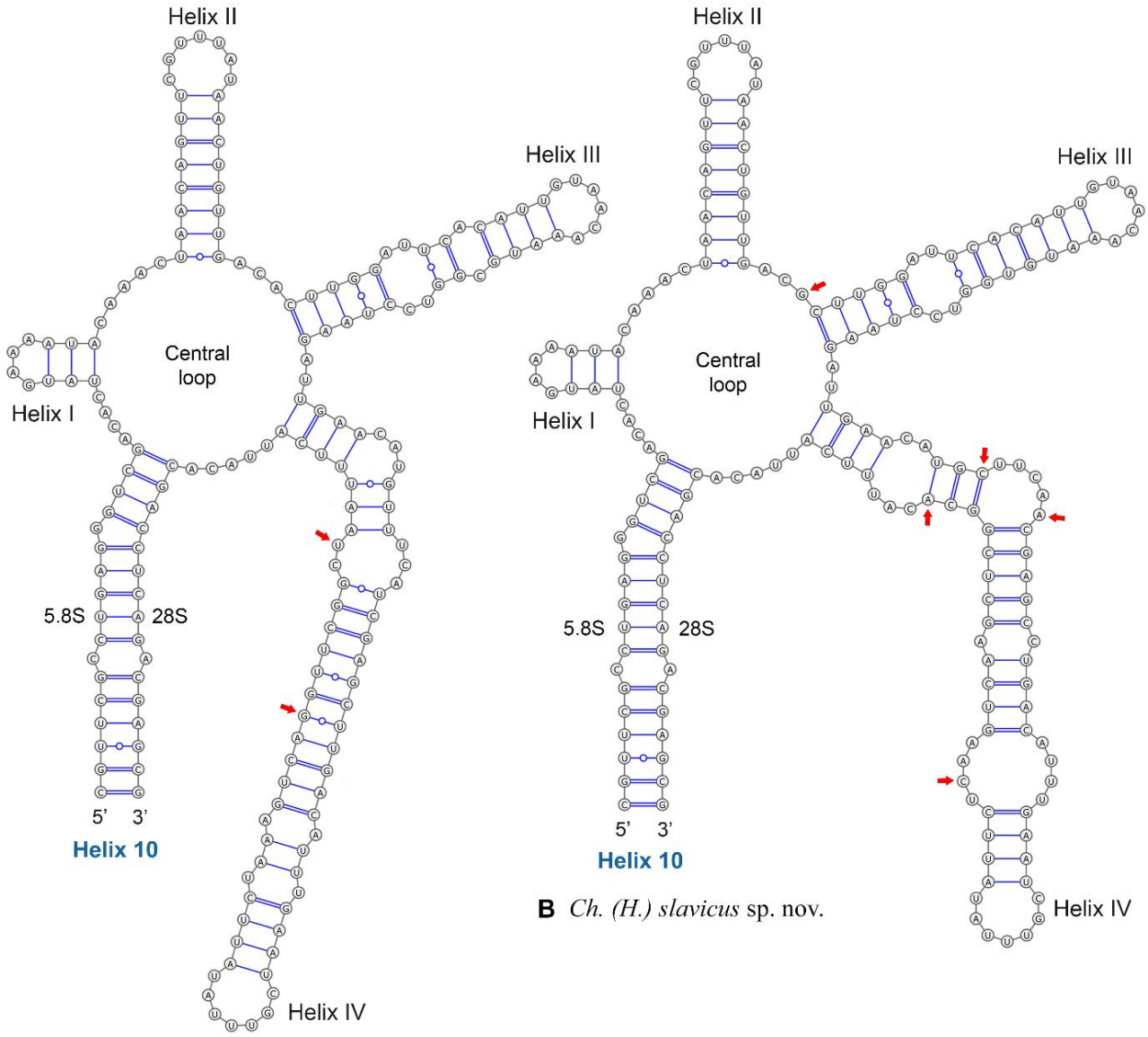
Supplementary Figure S9. Putative secondary structure of ITS2 molecules. **A**. *Chaetonotus (Hystricochaetonotus) mirabilis* sp. nov. **B**. *Chaetonotus (Hystricochaetonotus) superbus* sp. nov. Diagnostic molecular autapomorphies are marked by red arrows.



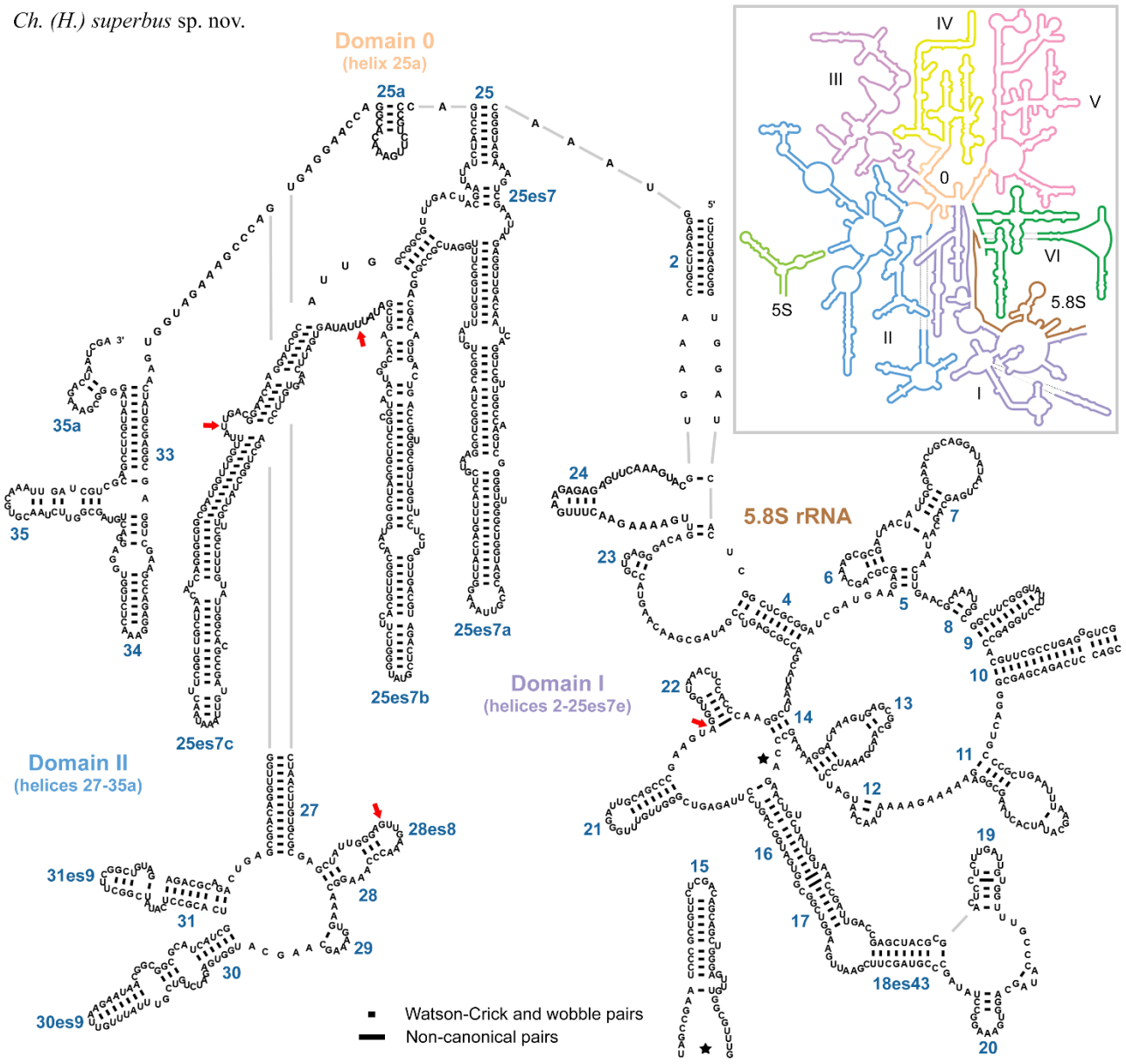
Supplementary Figure S10. Putative secondary structure of ITS2 molecule of *Chaetonotus (Hystricochaetonotus) luxus* sp. nov. Diagnostic molecular autapomorphies are marked by red arrows.



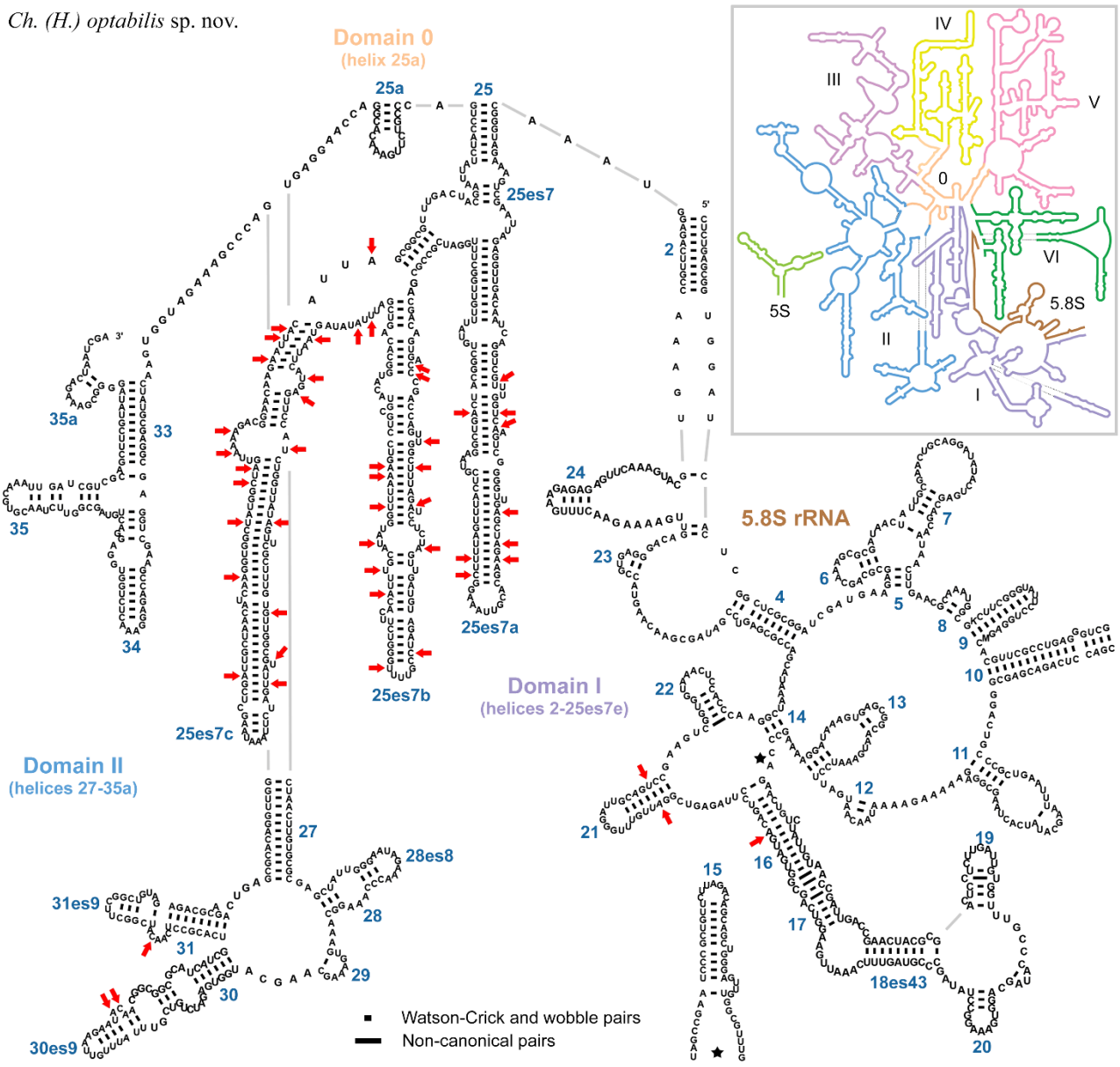
Supplementary Figure S11. Putative secondary structure of ITS2 molecules. **A**. *Chaetonotus (Hystricochaetonotus) iratus* sp. nov. **B**. *Chaetonotus (Hystricochaetonotus) gulosus* sp. nov. Diagnostic molecular autapomorphies are marked by red arrows.



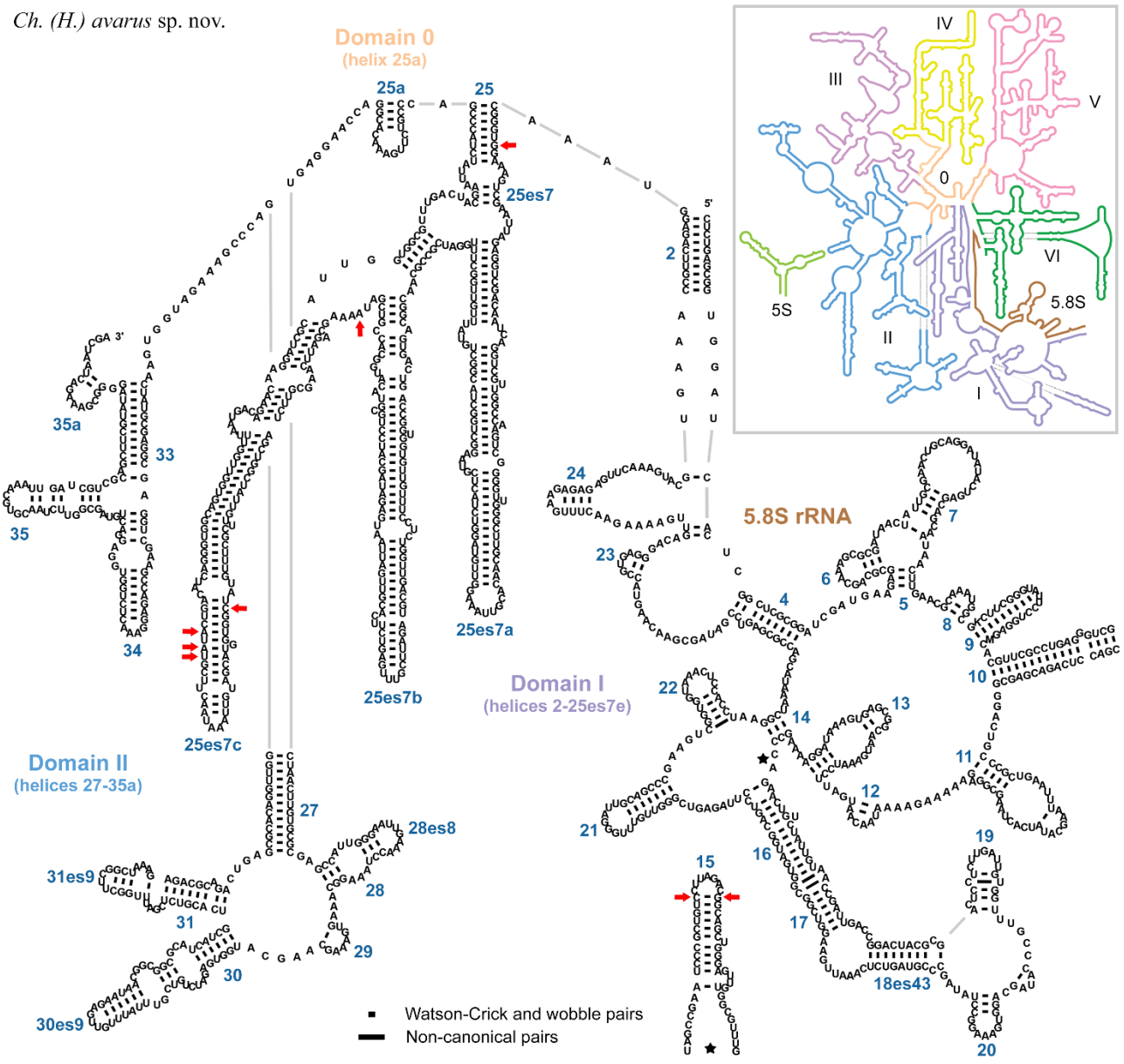
Supplementary Figure S12. Putative secondary structure of ITS2 molecules. **A**. *Chaetonotus (Hystricochaetonotus) arcanus* sp. nov. **B**. *Chaetonotus (Hystricochaetonotus) slavicus* sp. nov. Diagnostic molecular autapomorphies are marked by red arrows.



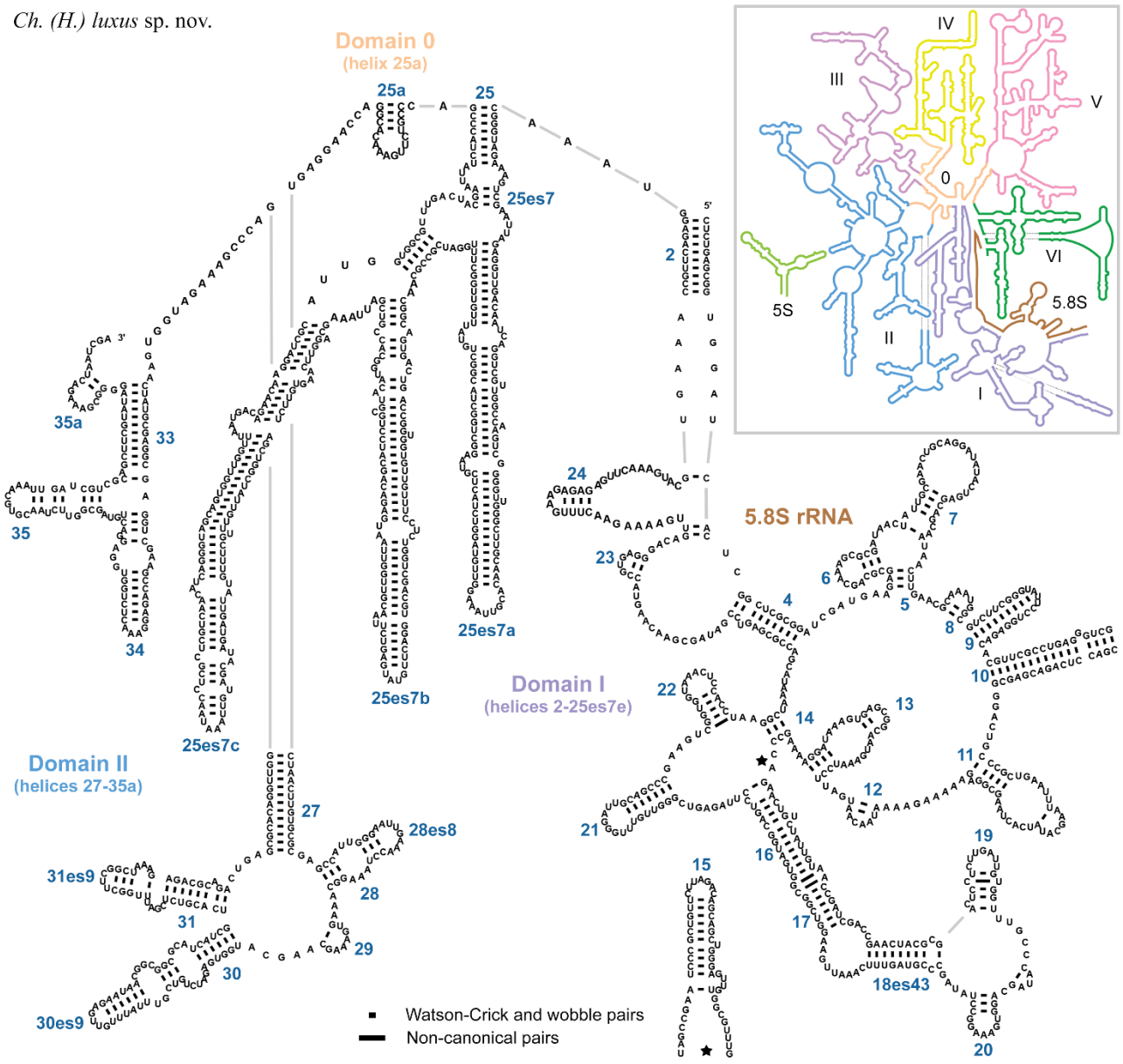
Supplementary Figure S13. Secondary structure of the first two domains of the 28S rRNA molecule of *Chaetonotus (Hystricochaetonotus) superbus* sp. nov. Diagnostic molecular autapomorphies are marked by red arrows. The reference 28S secondary structure map of *Saccharomyces cerevisiae* Meyen ex E.C. Hansen (inset) is from http://apollo.chemistry.gatech.edu/RibosomeGallery (Petrov *et al.* 2014).



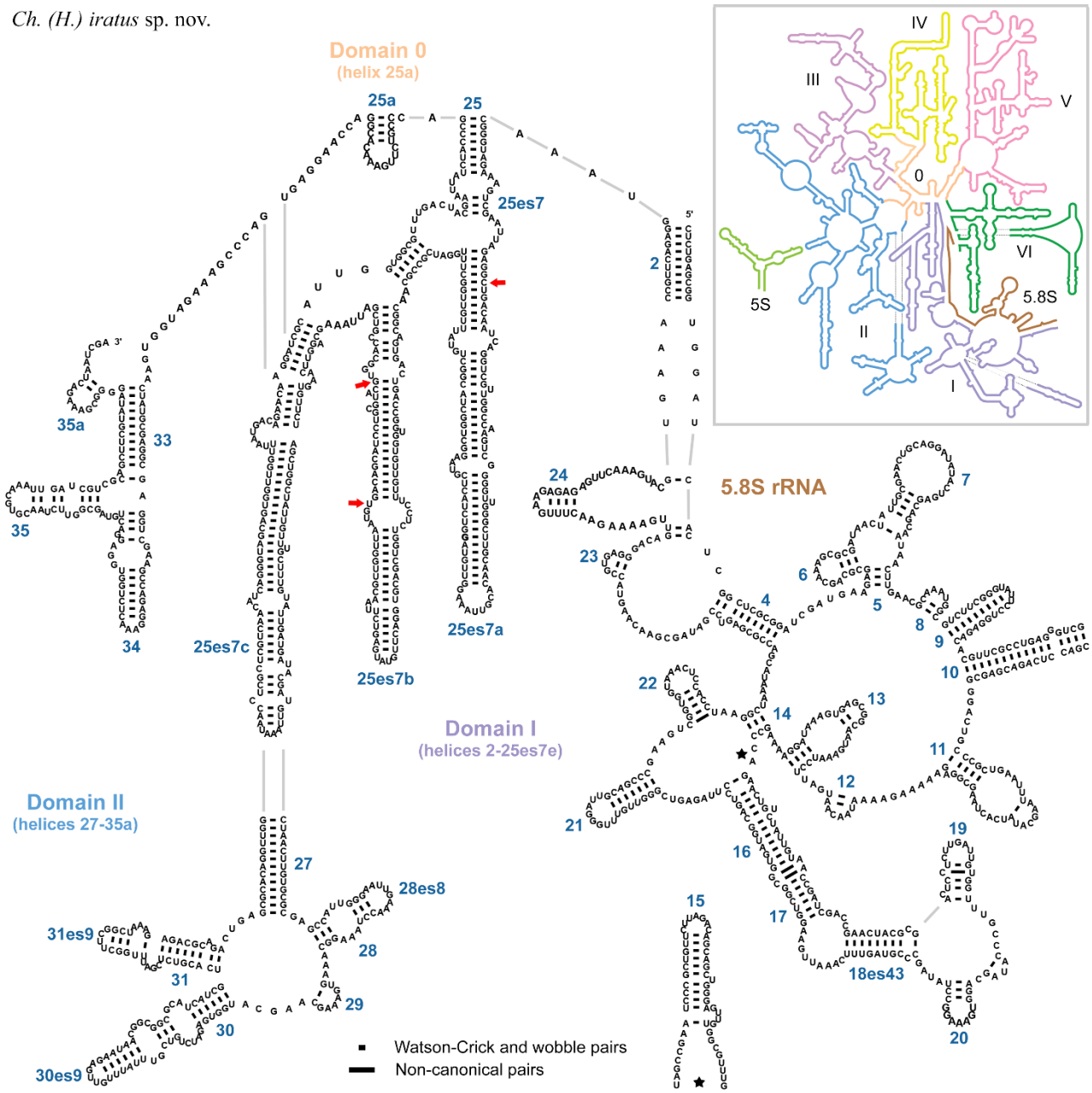
Supplementary Figure S14. Secondary structure of the first two domains of the 28S rRNA molecule of *Chaetonotus (Hystricochaetonotus) optabilis* sp. nov. Diagnostic molecular autapomorphies are marked by red arrows. The reference 28S secondary structure map of *Saccharomyces cerevisiae* Meyen ex E.C. Hansen (inset) is from http://apollo.chemistry.gatech.edu/RibosomeGallery (Petrov *et al.* 2014).



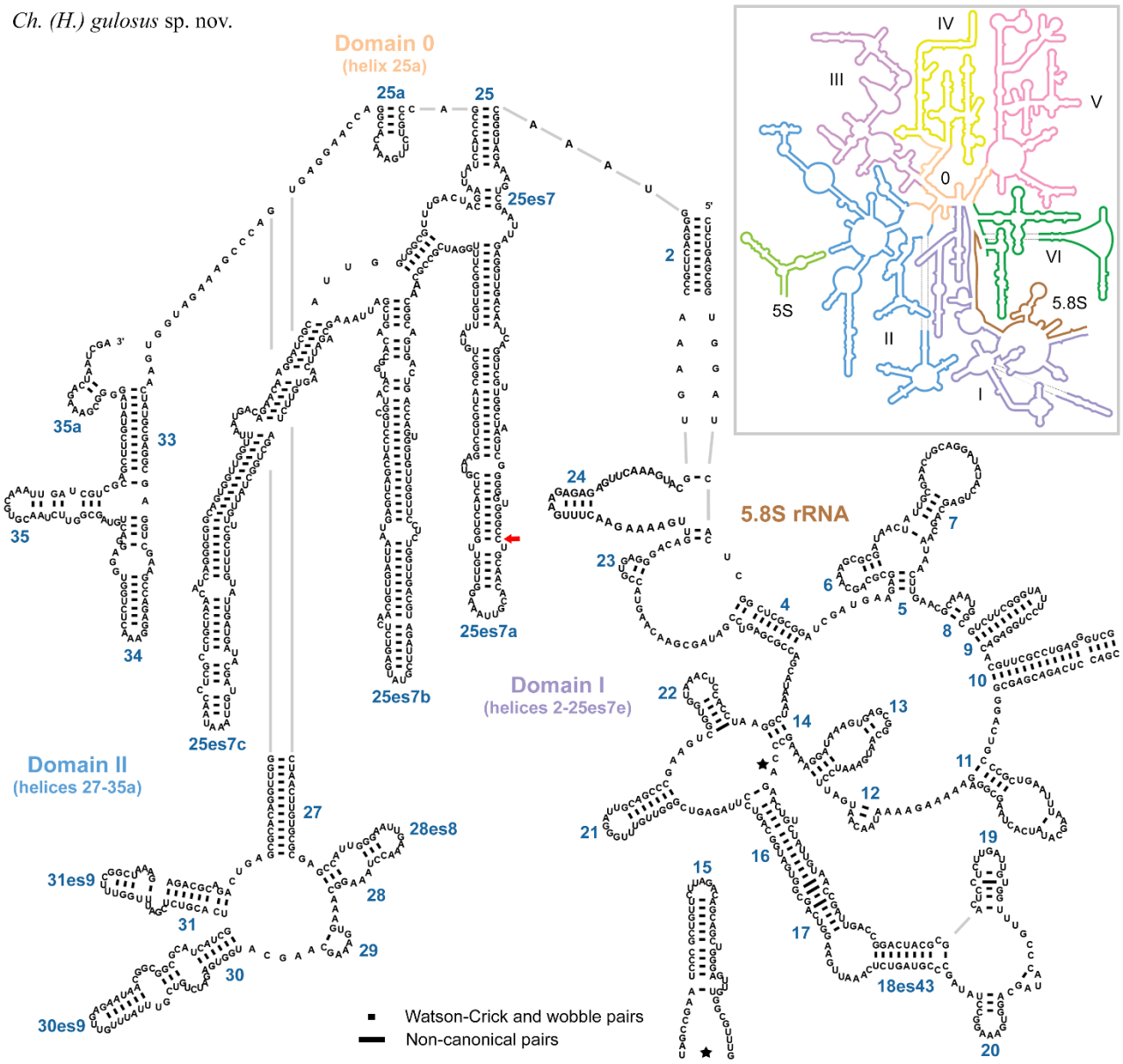
Supplementary Figure S15. Secondary structure of the first two domains of the 28S rRNA molecule of *Chaetonotus (Hystricochaetonotus) avarus* sp. nov. Diagnostic molecular autapomorphies are marked by red arrows. The reference 28S secondary structure map of *Saccharomyces cerevisiae* Meyen ex E.C. Hansen (inset) is from http://apollo.chemistry.gatech.edu/RibosomeGallery (Petrov *et al.* 2014).



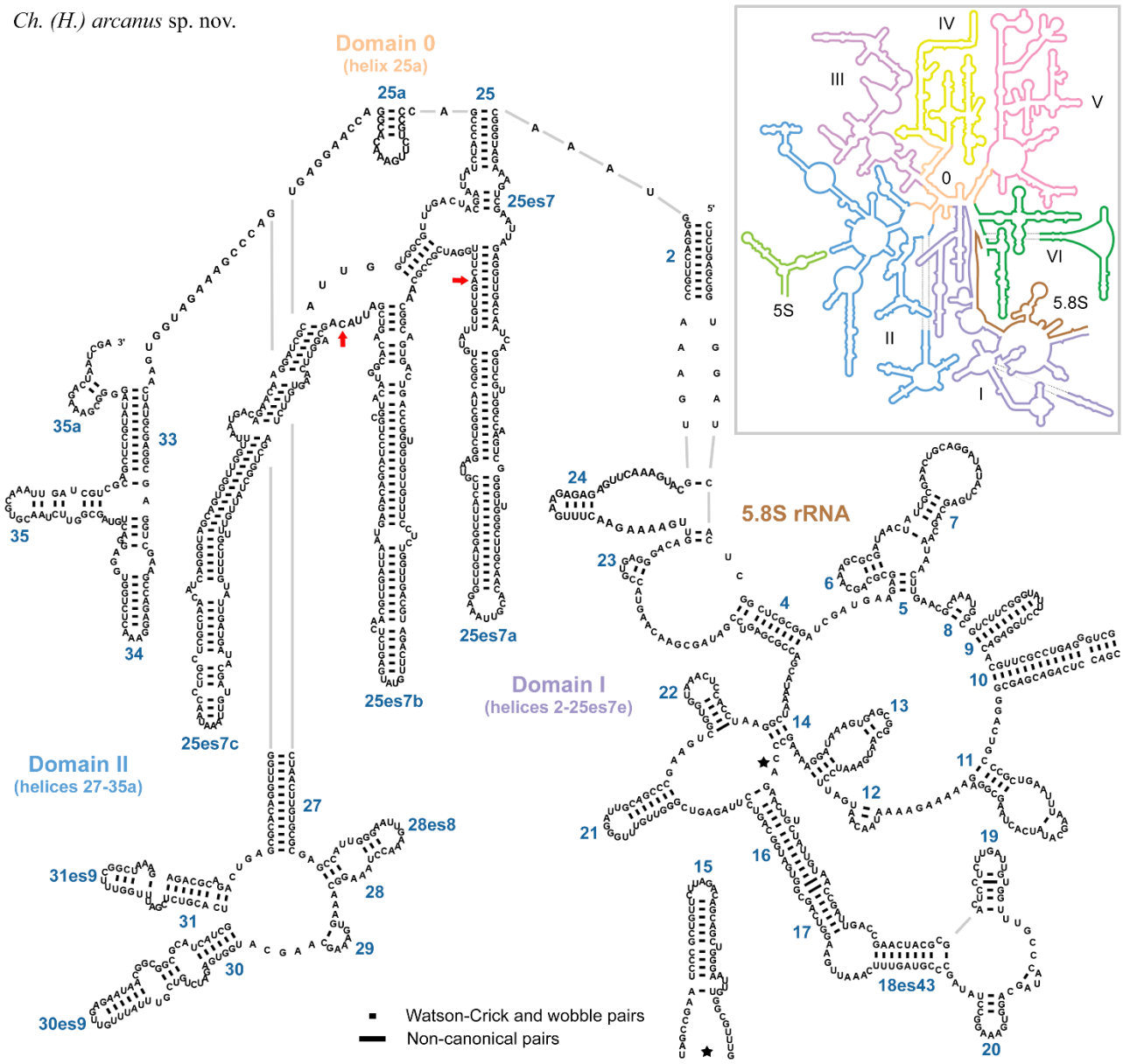
Supplementary Figure S16. Secondary structure of the first two domains of the 28S rRNA molecule of *Chaetonotus (Hystricochaetonotus) luxus* sp. nov. The reference 28S secondary structure map of *Saccharomyces cerevisiae* Meyen ex E.C. Hansen (inset) is from http://apollo.chemistry.gatech.edu/RibosomeGallery (Petrov *et al.* 2014).



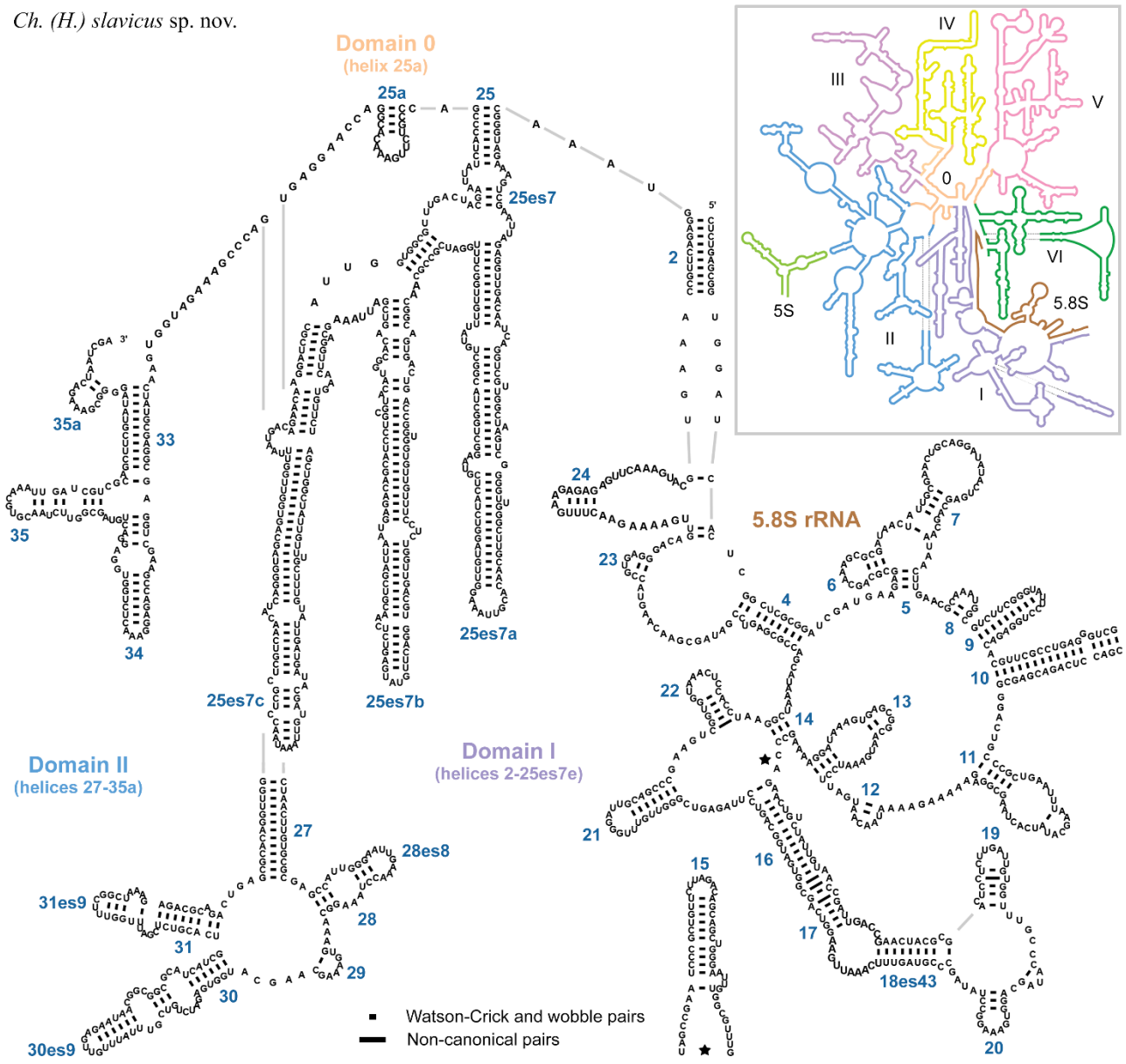
Supplementary Figure S17. Secondary structure of the first two domains of the 28S rRNA molecule of *Chaetonotus (Hystricochaetonotus) iratus* sp. nov. Diagnostic molecular autapomorphies are marked by red arrows. The reference 28S secondary structure map of *Saccharomyces cerevisiae* Meyen ex E.C. Hansen (inset) is from http://apollo.chemistry.gatech.edu/RibosomeGallery (Petrov *et al.* 2014).



Supplementary Figure S18. Secondary structure of the first two domains of the 28S rRNA molecule of *Chaetonotus (Hystricochaetonotus) gulosus* sp. nov. The single diagnostic molecular autapomorphy is situated in helix 25es7a (red arrow). The reference 28S secondary structure map of *Saccharomyces cerevisiae* Meyen ex E.C. Hansen (inset) is from http://apollo.chemistry.gatech.edu/RibosomeGallery (Petrov *et al.* 2014).



Supplementary Figure S19. Secondary structure of the first two domains of the 28S rRNA molecule of *Chaetonotus (Hystricochaetonotus) arcanus* sp. nov. Diagnostic molecular autapomorphies are marked by red arrows. The reference 28S secondary structure map of *Saccharomyces cerevisiae* Meyen ex E.C. Hansen (inset) is from http://apollo.chemistry.gatech.edu/RibosomeGallery (Petrov *et al.* 2014).



Supplementary Figure S20. Secondary structure of the first two domains of the 28S rRNA molecule of *Chaetonotus (Hystricochaetonotus) slavicus* sp. nov. The reference 28S secondary structure map of *Saccharomyces cerevisiae* Meyen ex E.C. Hansen (inset) is from http://apollo.chemistry.gatech.edu/RibosomeGallery (Petrov *et al.* 2014).

Alignment 1. 18S rRNA gene

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Alignment 2. ITS2 molecule

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Alignment 3. First two domains of the 28S rRNA gene

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