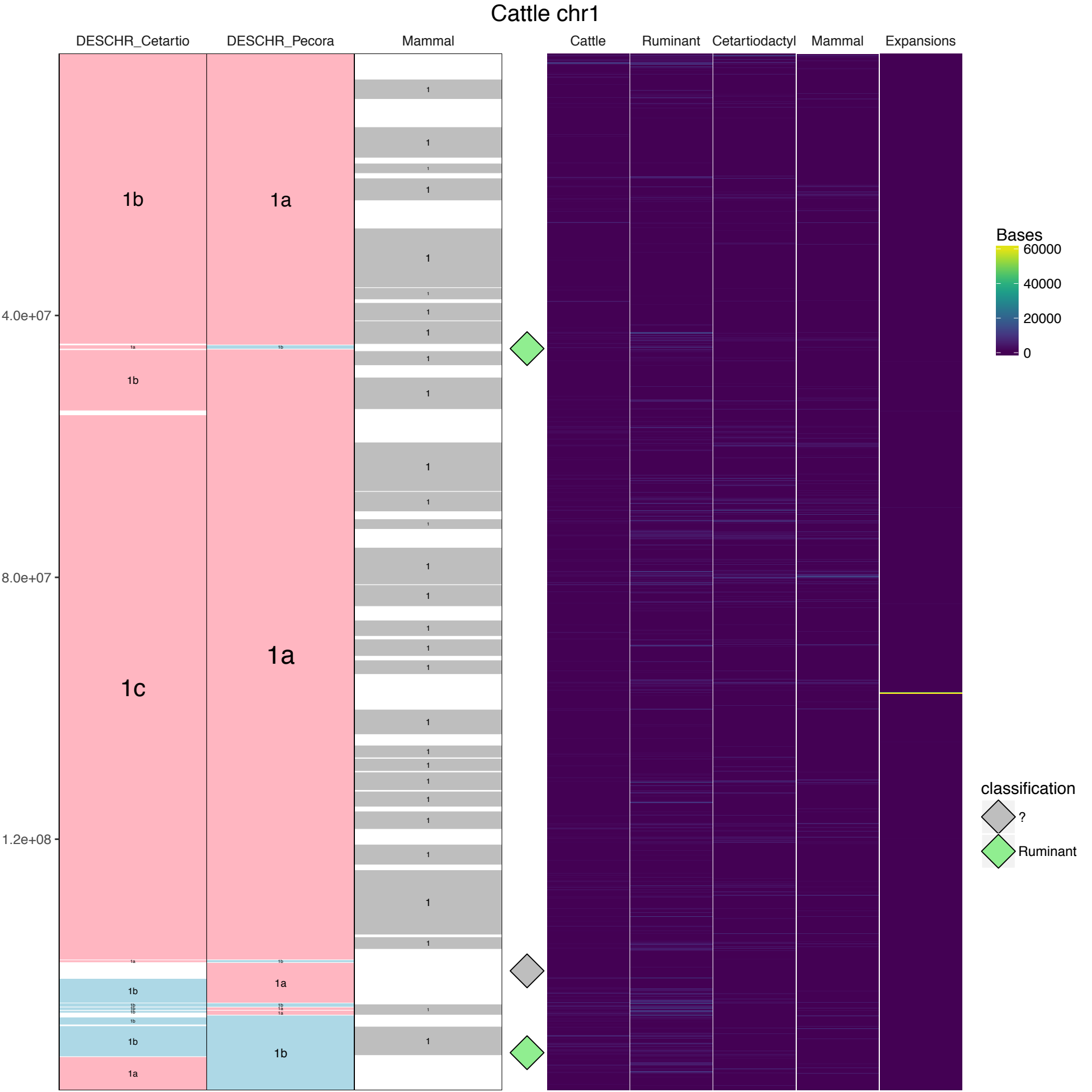
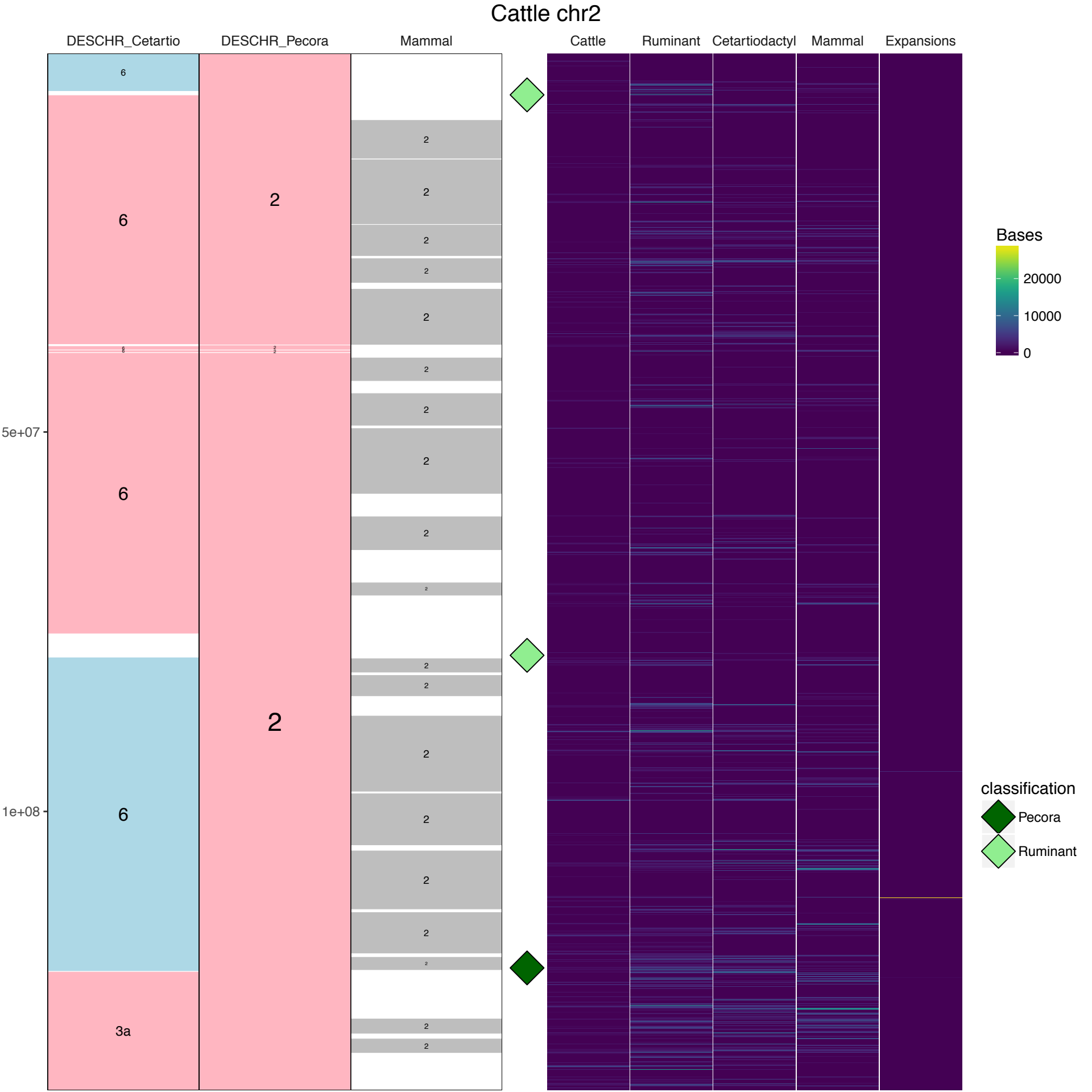
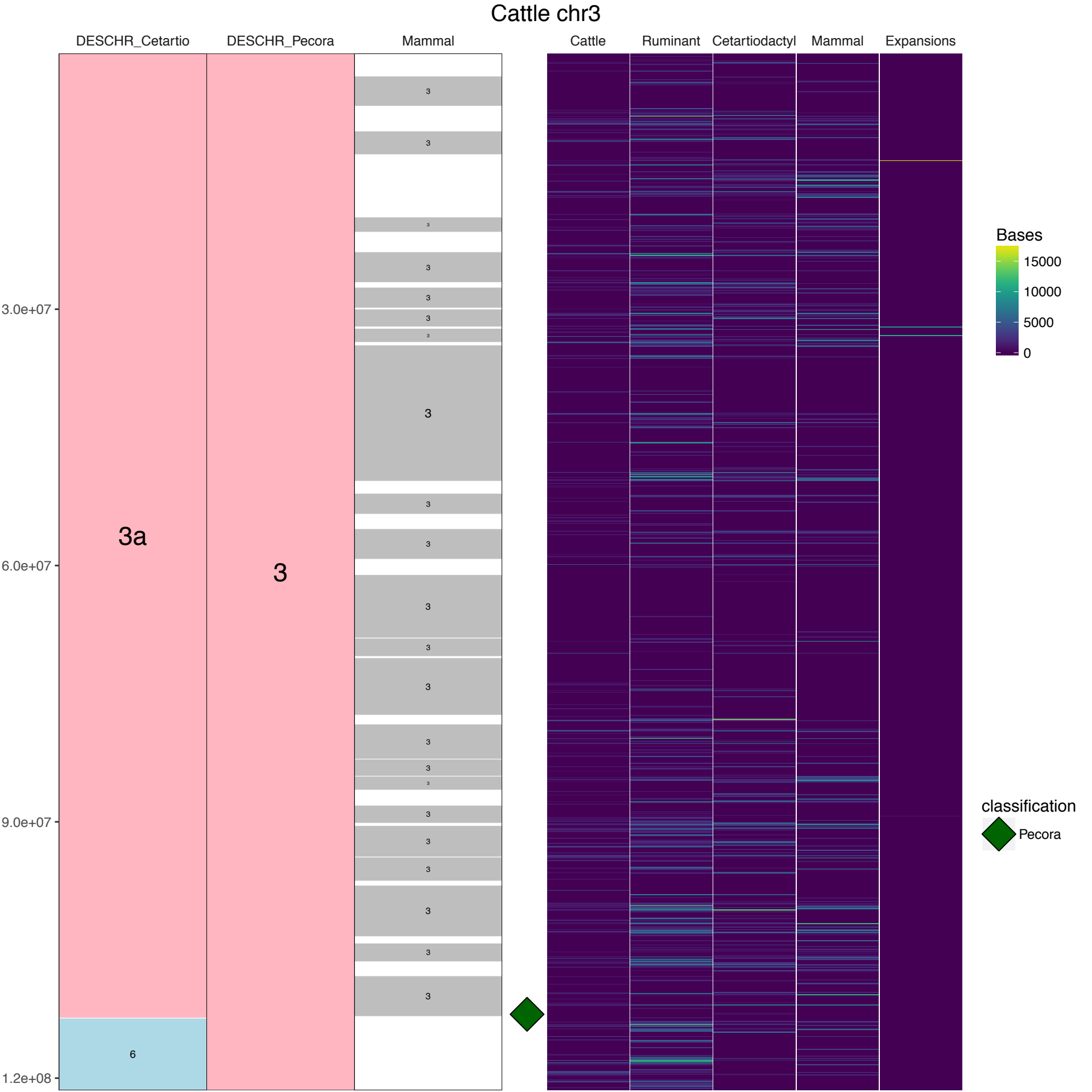
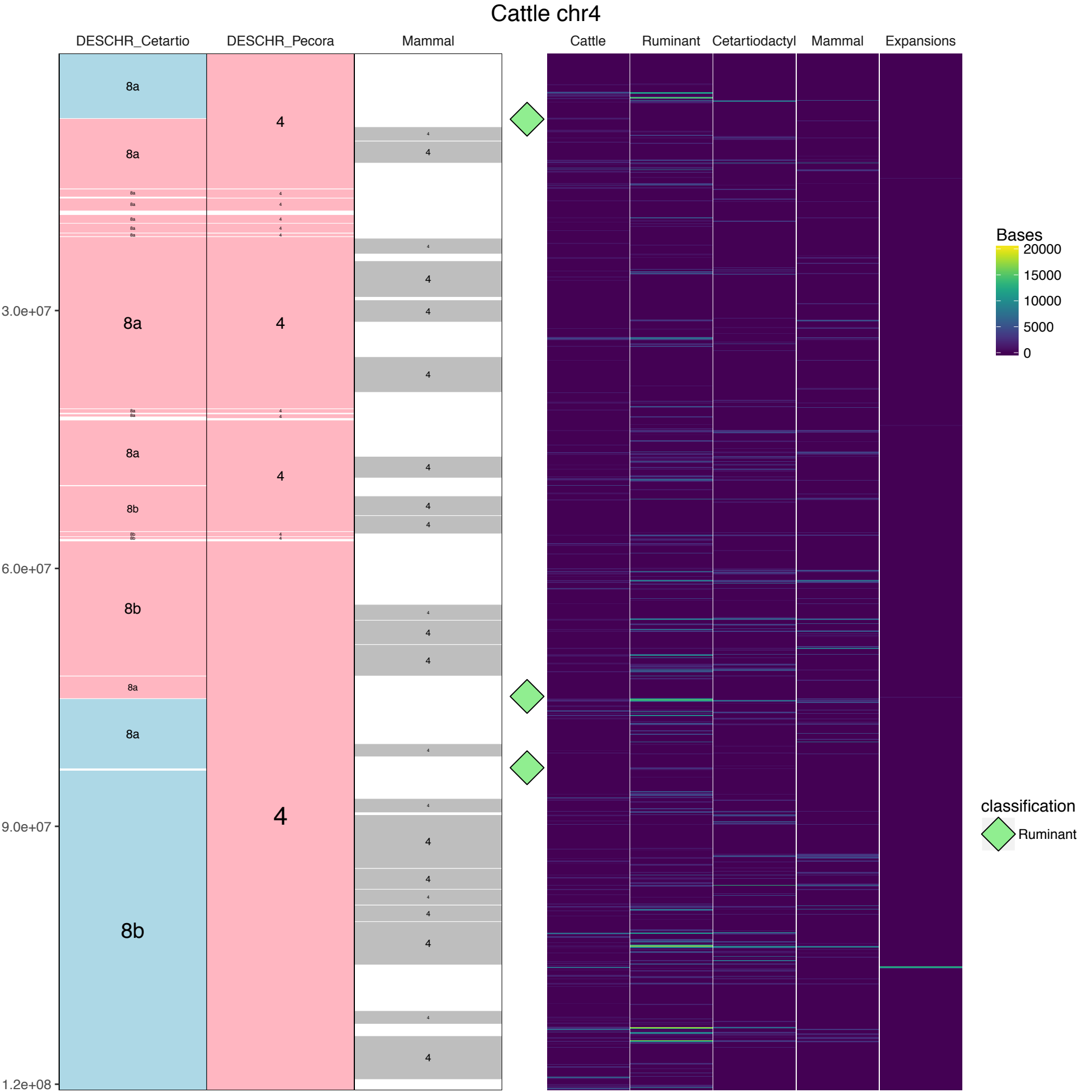
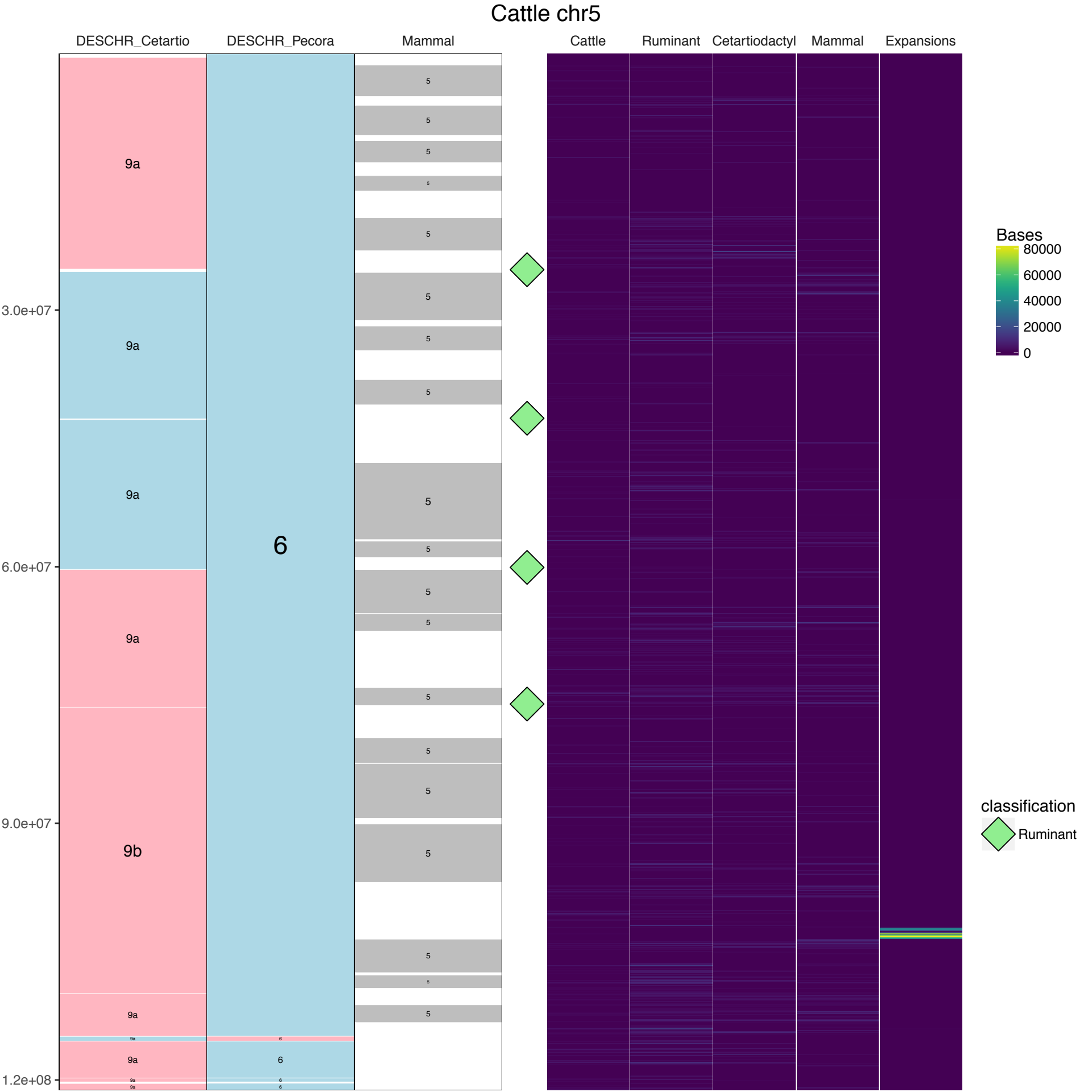
Supplemental Figure 6. Comparative organization of the reconstructed cetartiodactyl and pecoran ancestral chromosomes with the cattle genome as a reference. Order and orientation of syntenic fragments are visualized using the Evolution Highway comparative chromosome browser. Blue and pink colors represent orientation of blocks relative to the reference, with blue indicating the same orientation, and pink indicating the opposite orientation. Pink does not always indicate an inversion because the orientation of RACFs is randomly chosen during the reconstruction. The number within each block represents a chromosome number for a reconstructed ancestor, and a lower-case letter indicates a fragment of the chromosome. Light grey blocks indicate mammalian multispecies homologous synteny blocks (msHSBs). Diamonds indicate the position of EBRs, with light and dark green showing EBRs classified as ruminant or pecoran, respectively, using FISH data. Heatmaps show the density of ruminant, cetartiodactyl, and mammalian enhancers, and ruminant gene family expansions in windows of 100 Kbp along cattle chromosomes.

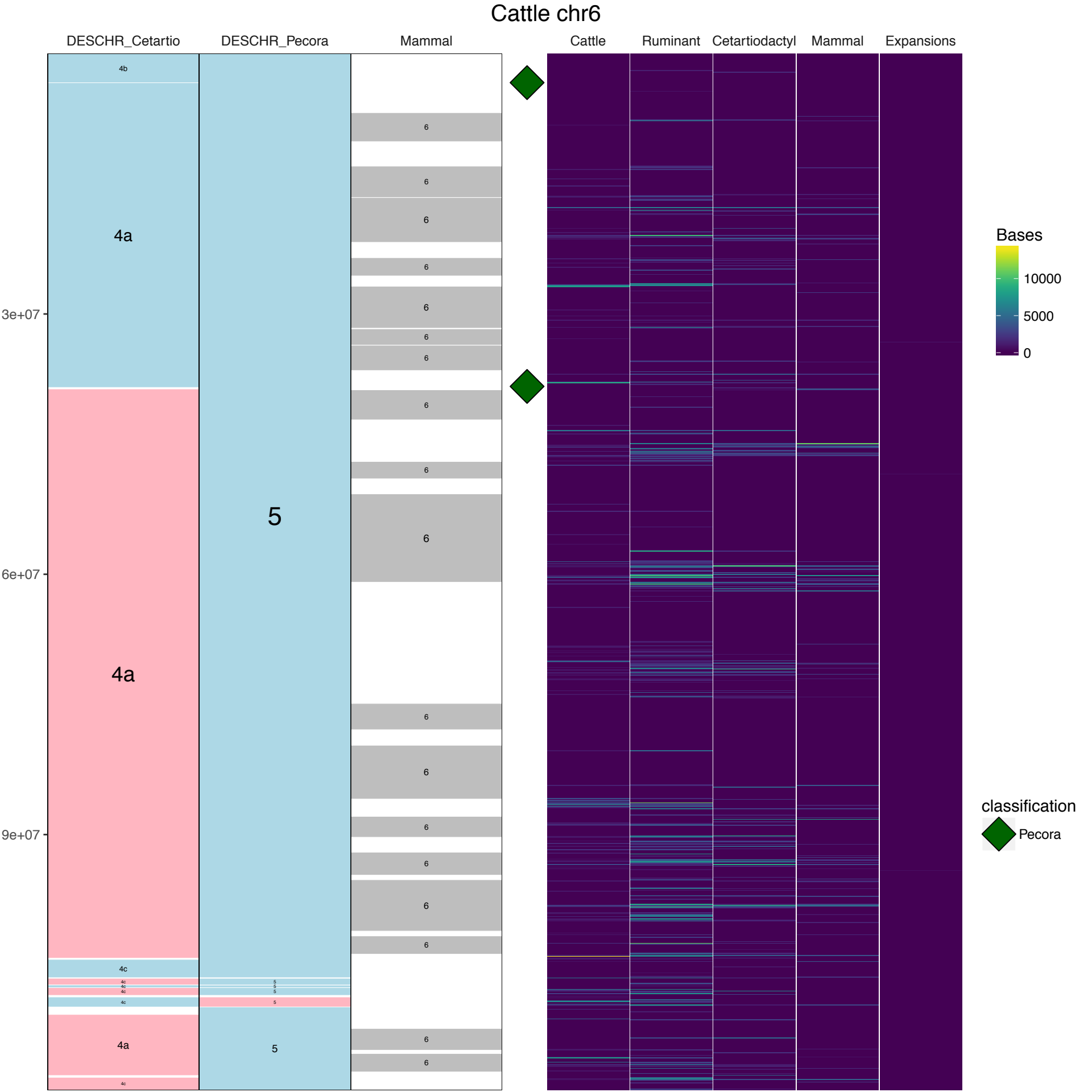

Cattle chr1
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
4.0e+07
8.0e+07
1.2e+08
1b
1a
1c
Bases
60000
40000
20000
0
classification
?
Ruminant

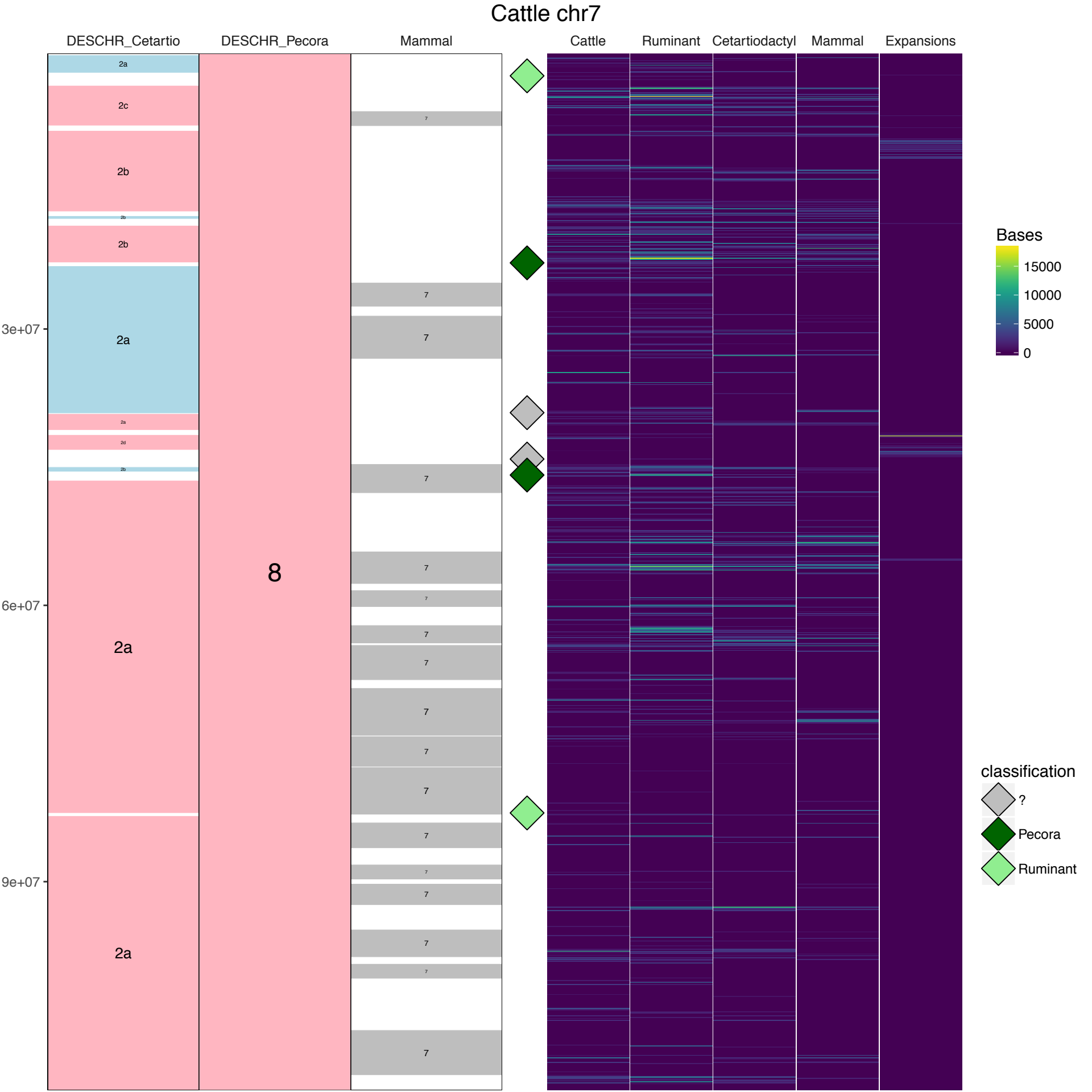

Cattle chr2
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
5e+07
1e+08
Bases
20000
10000
0
classification
Pecora
Ruminant

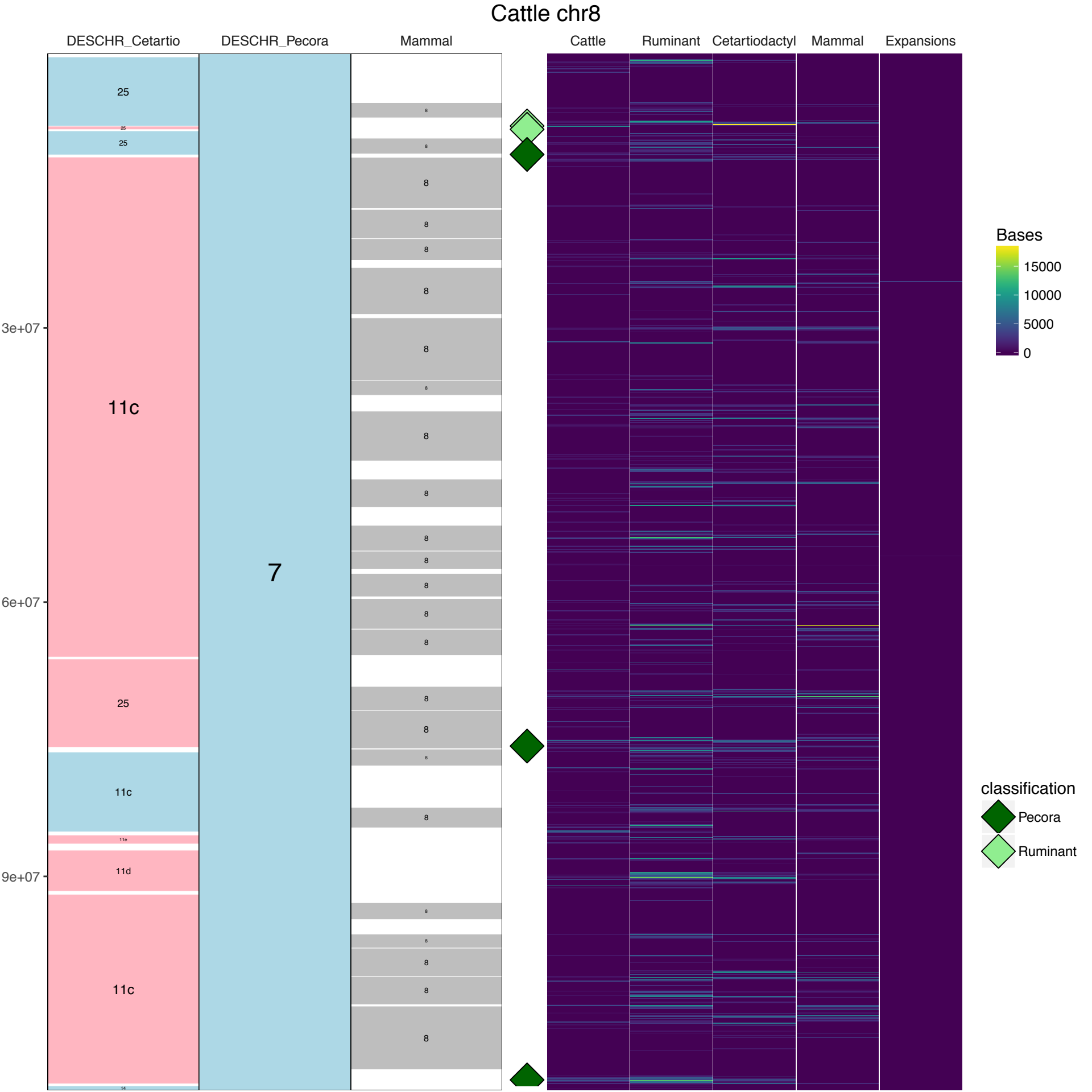

Cattle chr3
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
3a
3
6
3.0e+07
6.0e+07
9.0e+07
1.2e+08
Bases
15000
10000
5000
0
classification
Pecora

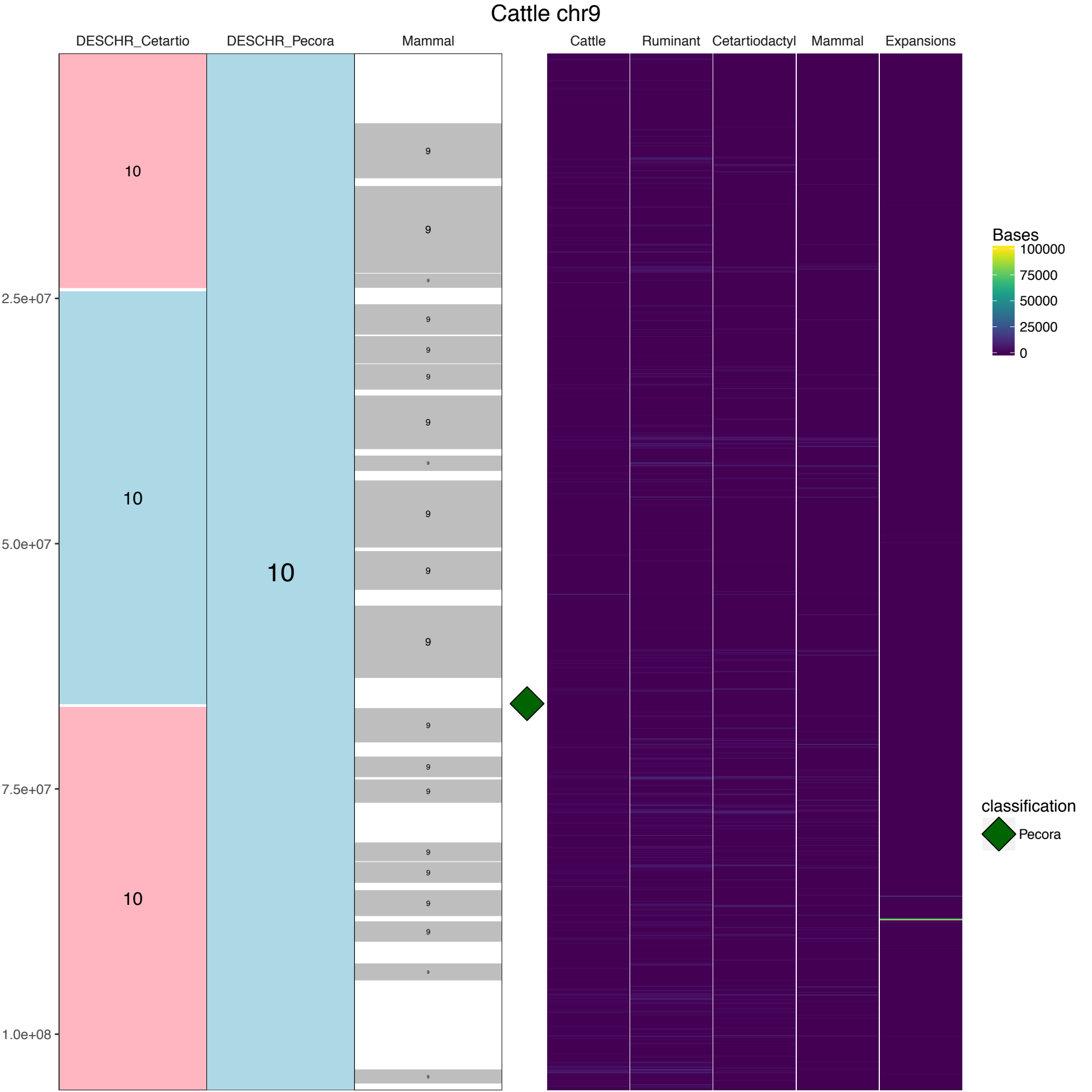

Cattle chr4
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
3.0e+07
6.0e+07
9.0e+07
1.2e+08
Bases
20000
15000
10000
5000
0
classification
Ruminant


Cattle chr5
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
9a
9a
9a
9a
9a
9a
9b
9a
9a
6
6
6
6
5
3.0e+07
6.0e+07
9.0e+07
1.2e+08
Bases
80000
60000
40000
20000
0
classification
Ruminant


Cattle chr6
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
4b
4a
4a
4c
4a
4c
5
5
6
3e+07
6e+07
9e+07
Bases
10000
5000
0
classification
Pecora


Cattle chr7
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
2a
2c
2b
2b
2b
2a
2a
2d
2b
2a
2a
8
7
3e+07
6e+07
9e+07
Bases
15000
10000
5000
0
classification
?
Pecora
Ruminant


Cattle chr8
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
3e+07
6e+07
9e+07
25
11c
7
11d
Bases
15000
10000
5000
0
classification
Pecora
Ruminant


Cattle chr9
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
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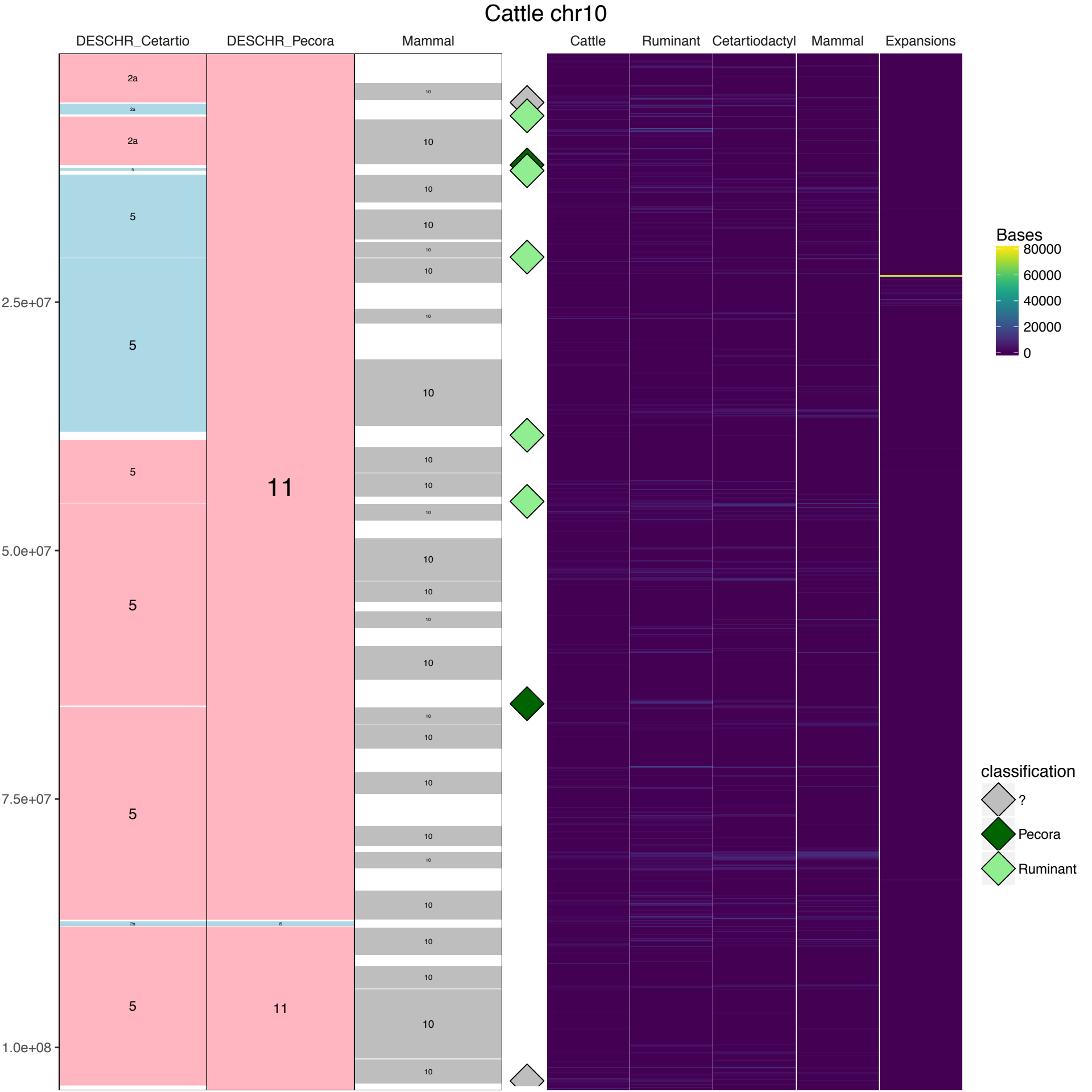
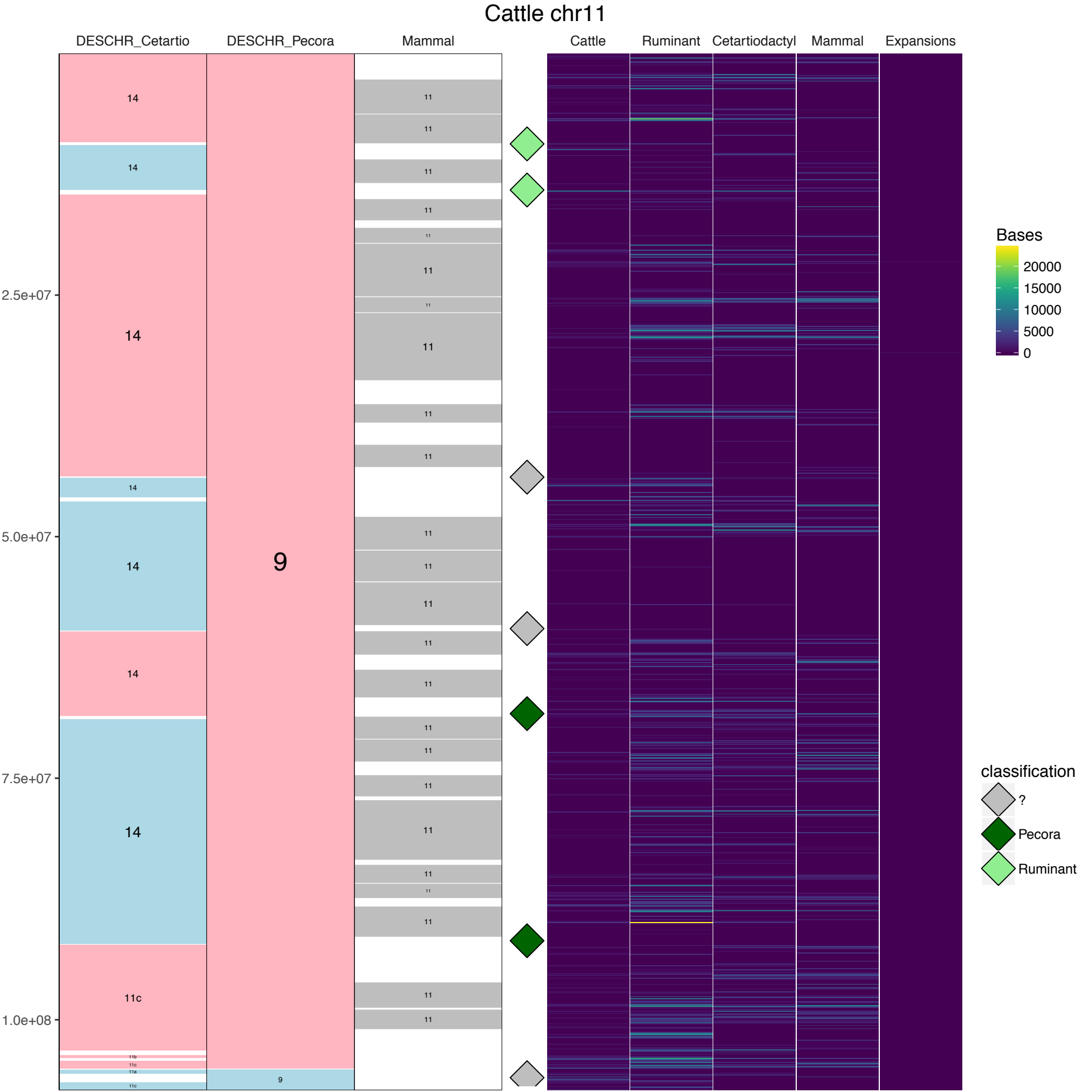
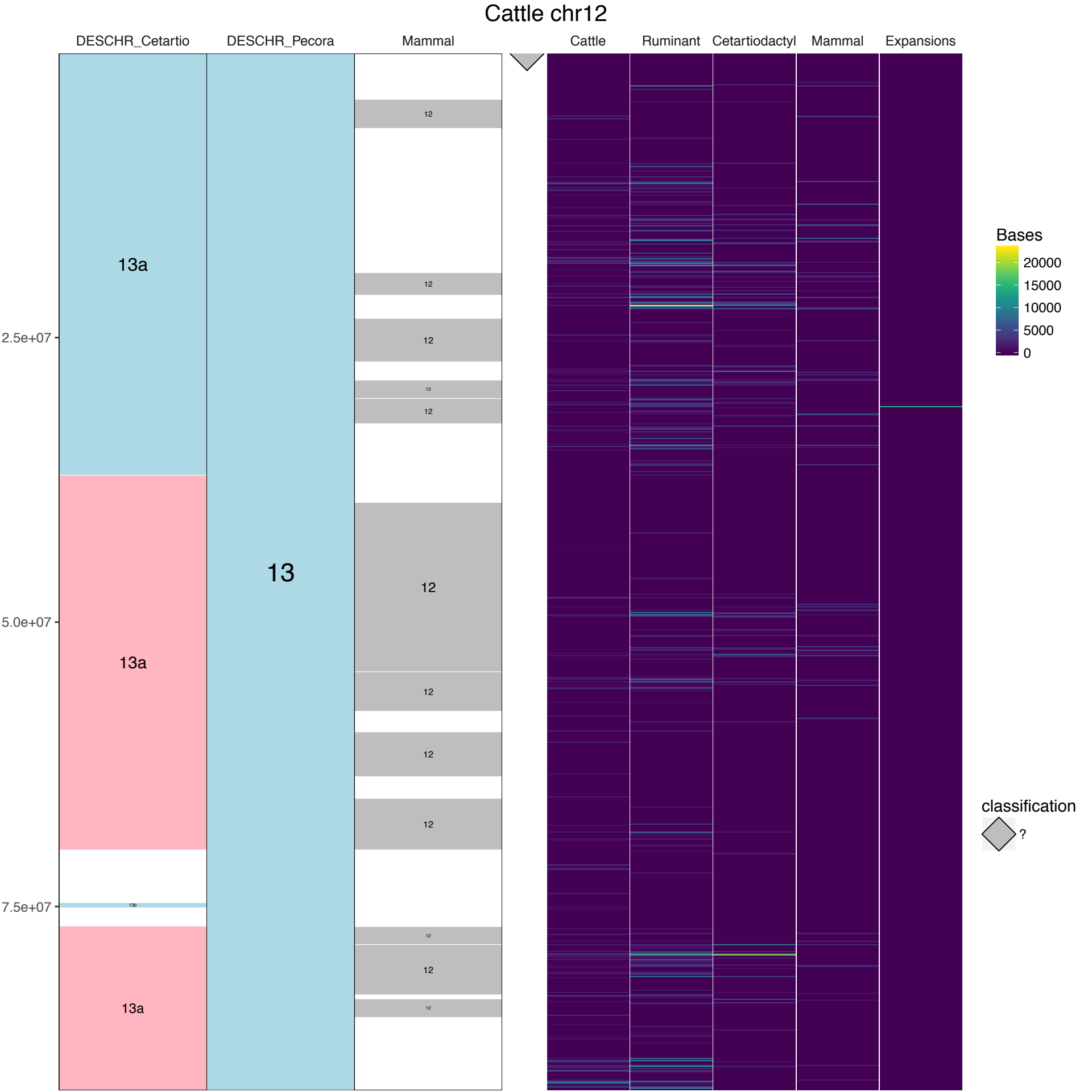
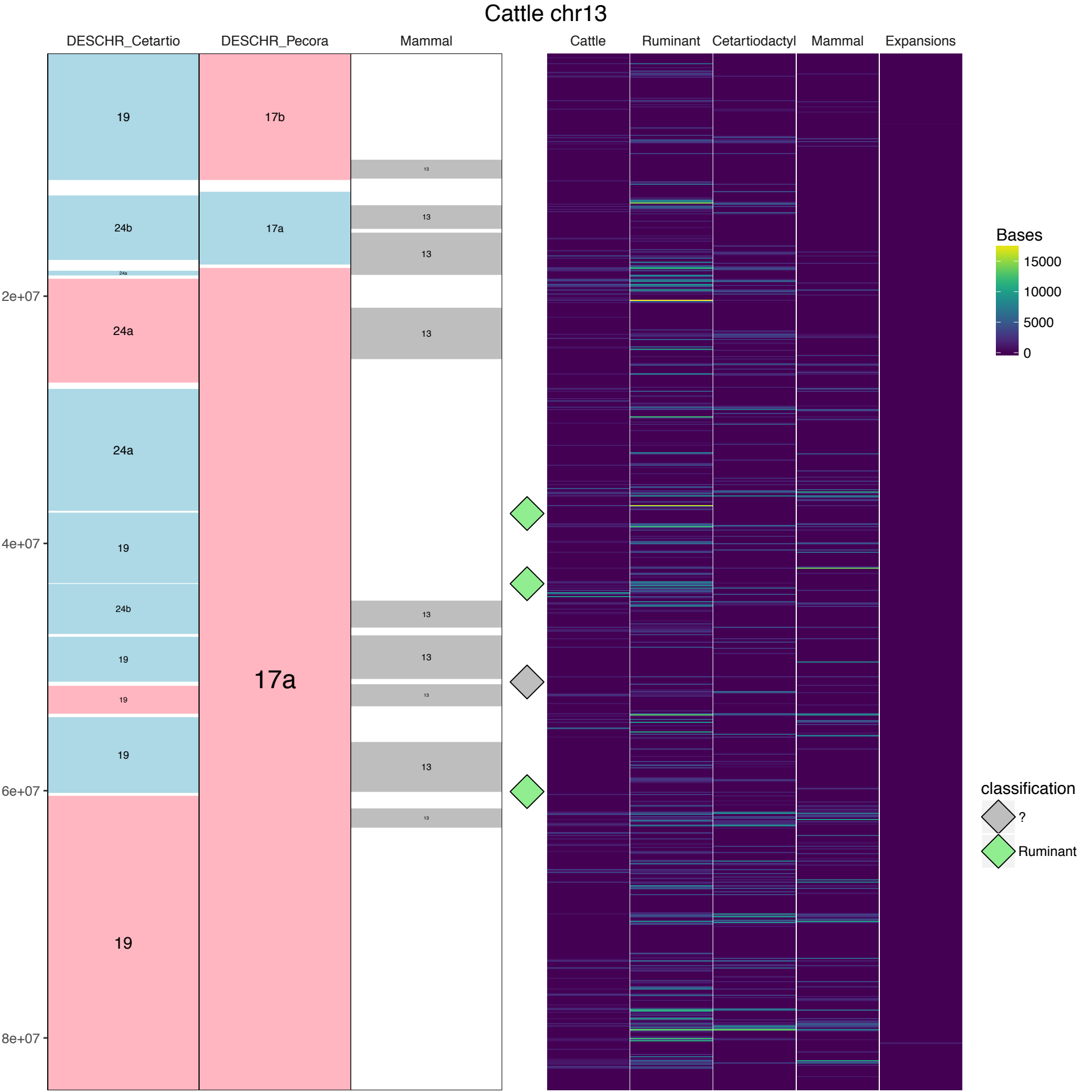
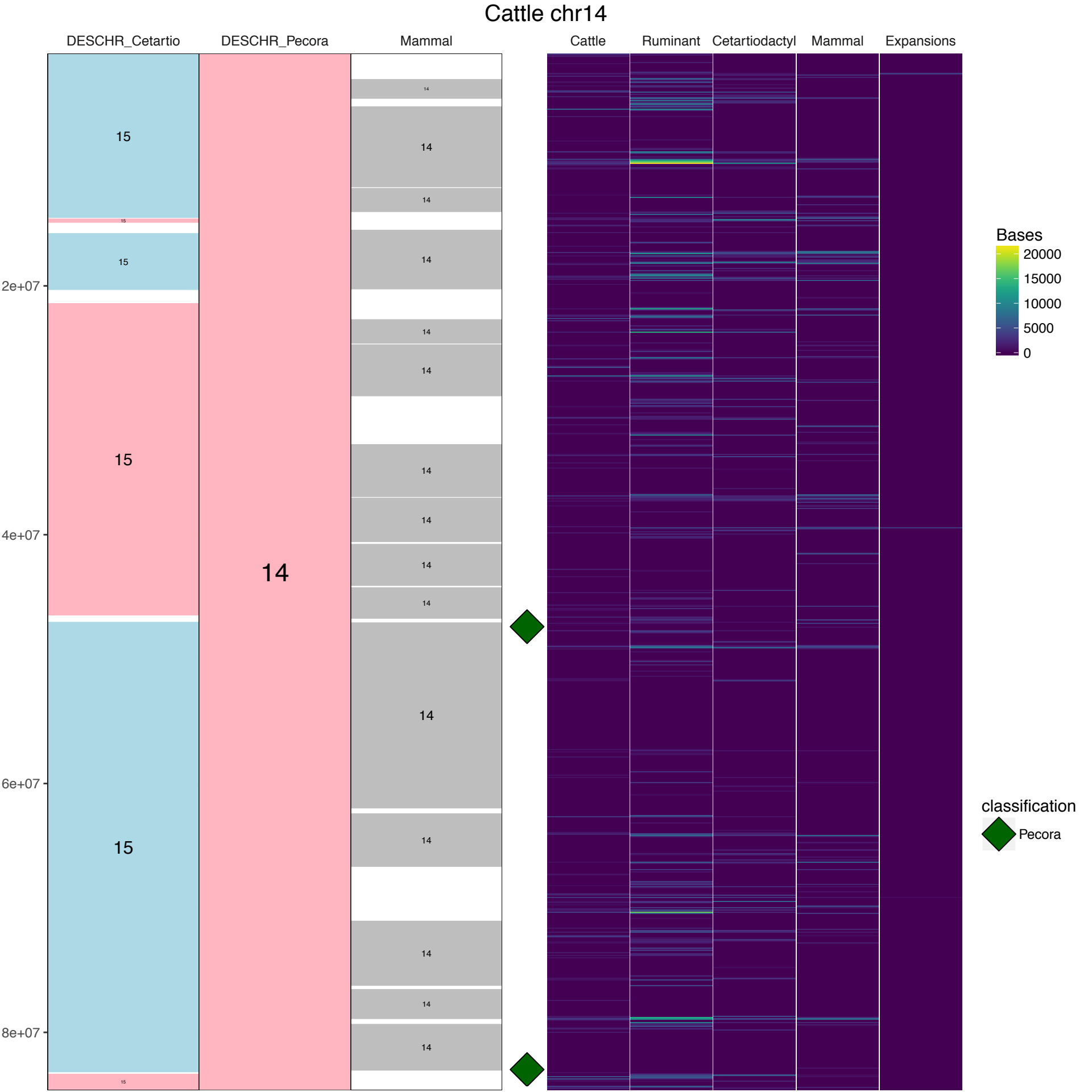
10
10
10
9
2.5e+07
5.0e+07
7.5e+07
1.0e+08
Bases
100000
75000
50000
25000
0
classification
Pecora

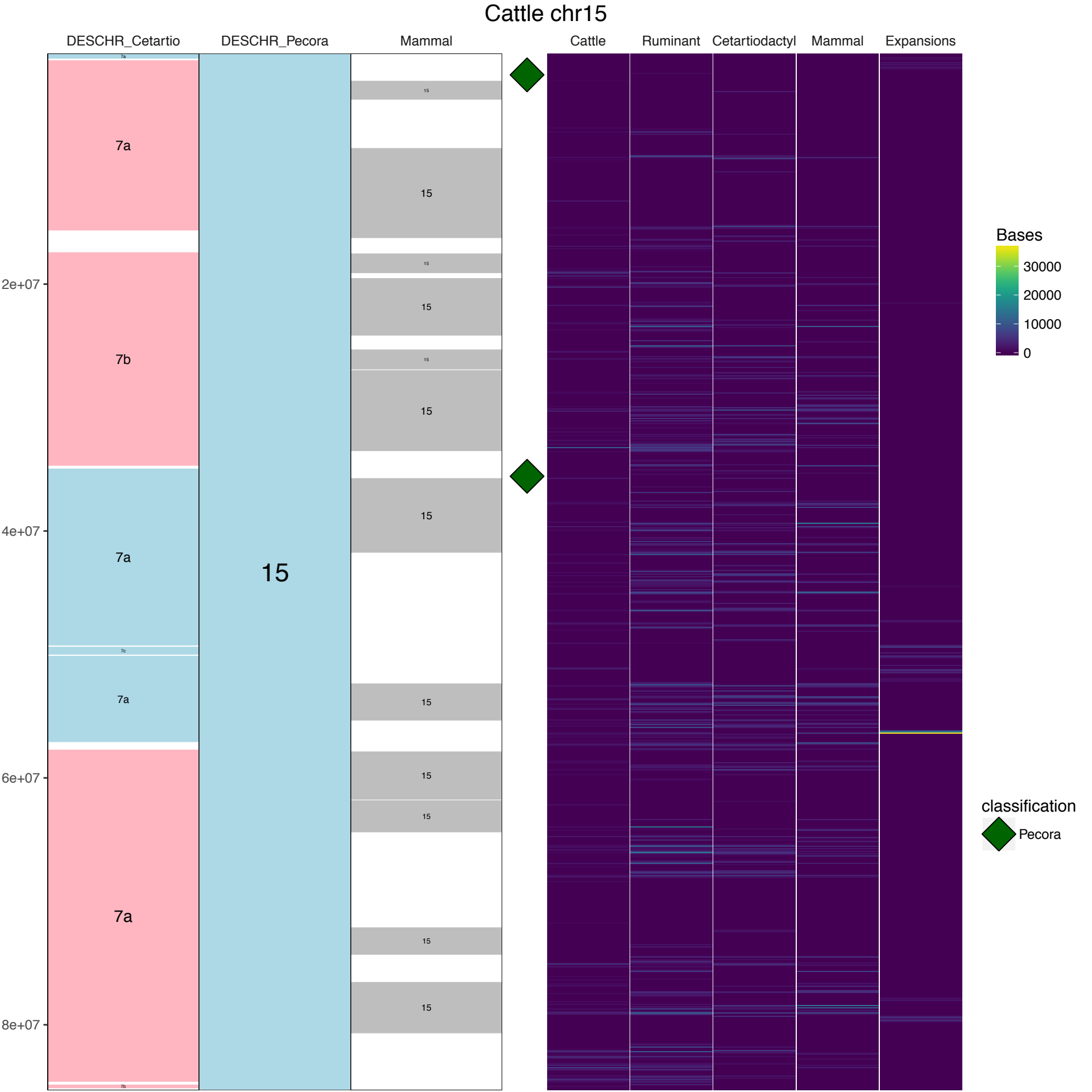

Cattle chr10
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
2a
5
11
10
2.5e+07
5.0e+07
7.5e+07
1.0e+08
Bases
80000
60000
40000
20000
0
classification
?
Pecora
Ruminant

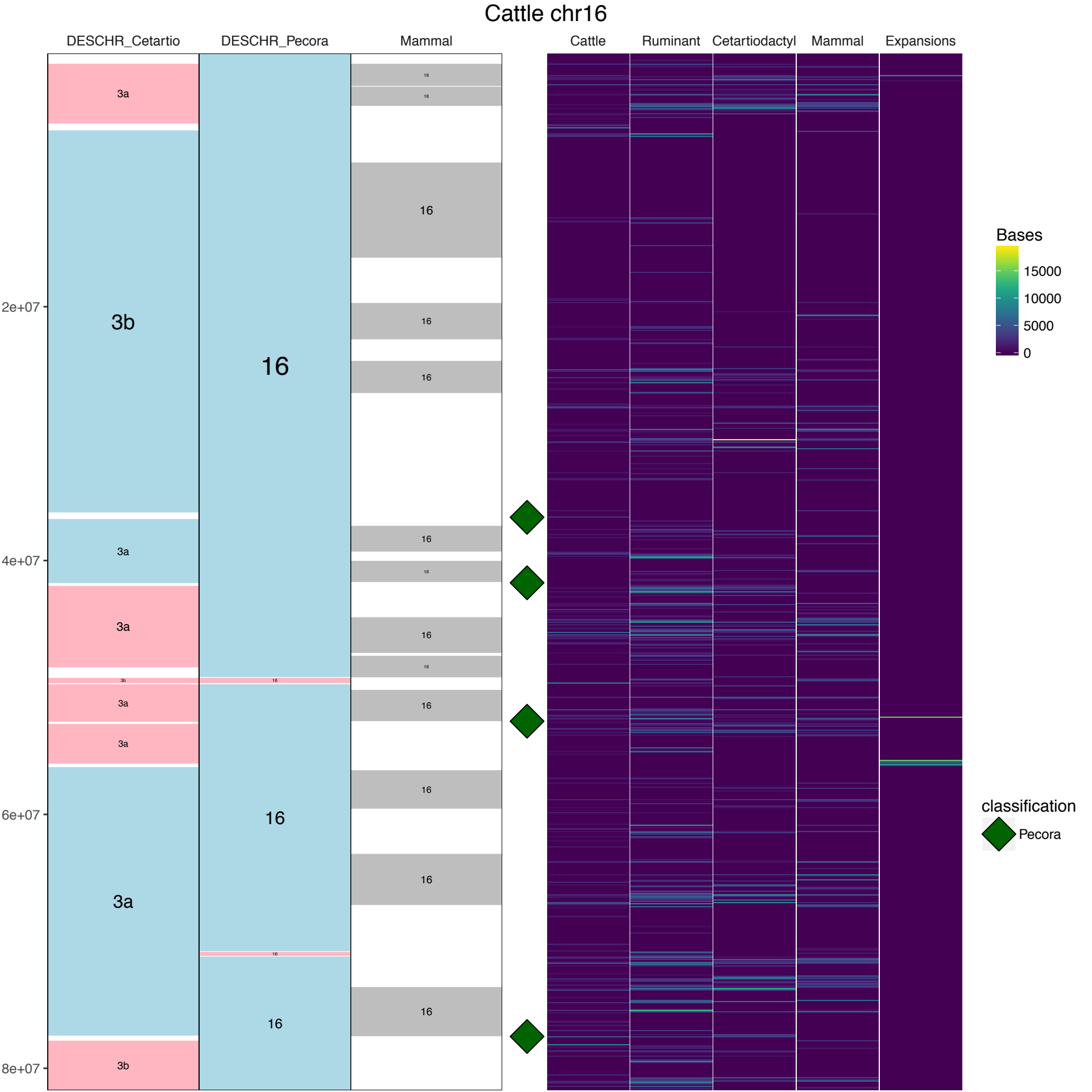

Cattle chr11
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
2.5e+07
5.0e+07
7.5e+07
1.0e+08
14
11c
11b
11a
9
11
Bases
20000
15000
10000
5000
0
classification
?
Pecora
Ruminant

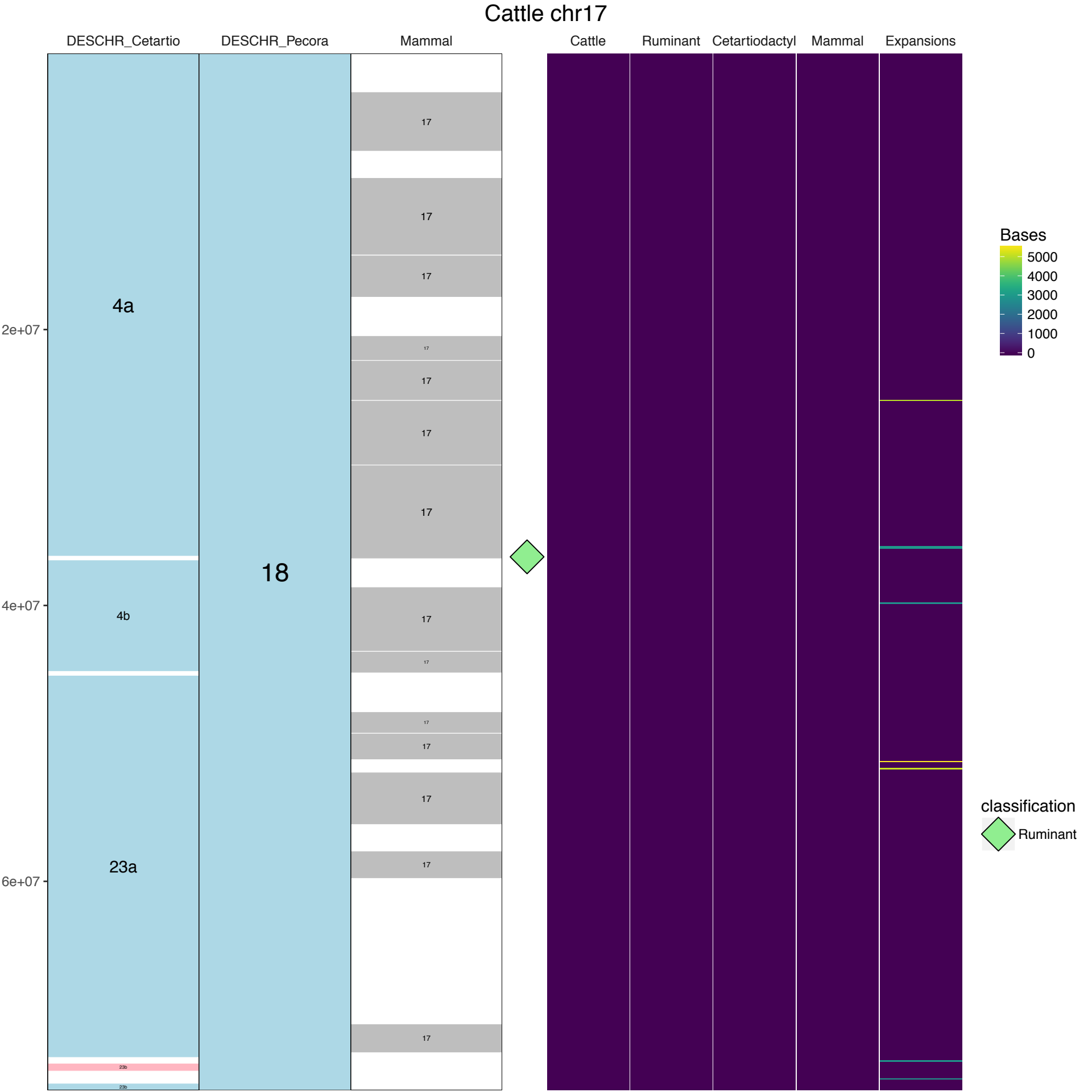

Cattle chr12
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
13a
13
12
2.5e+07
5.0e+07
7.5e+07
13b
Bases
20000
15000
10000
5000
0
classification
?

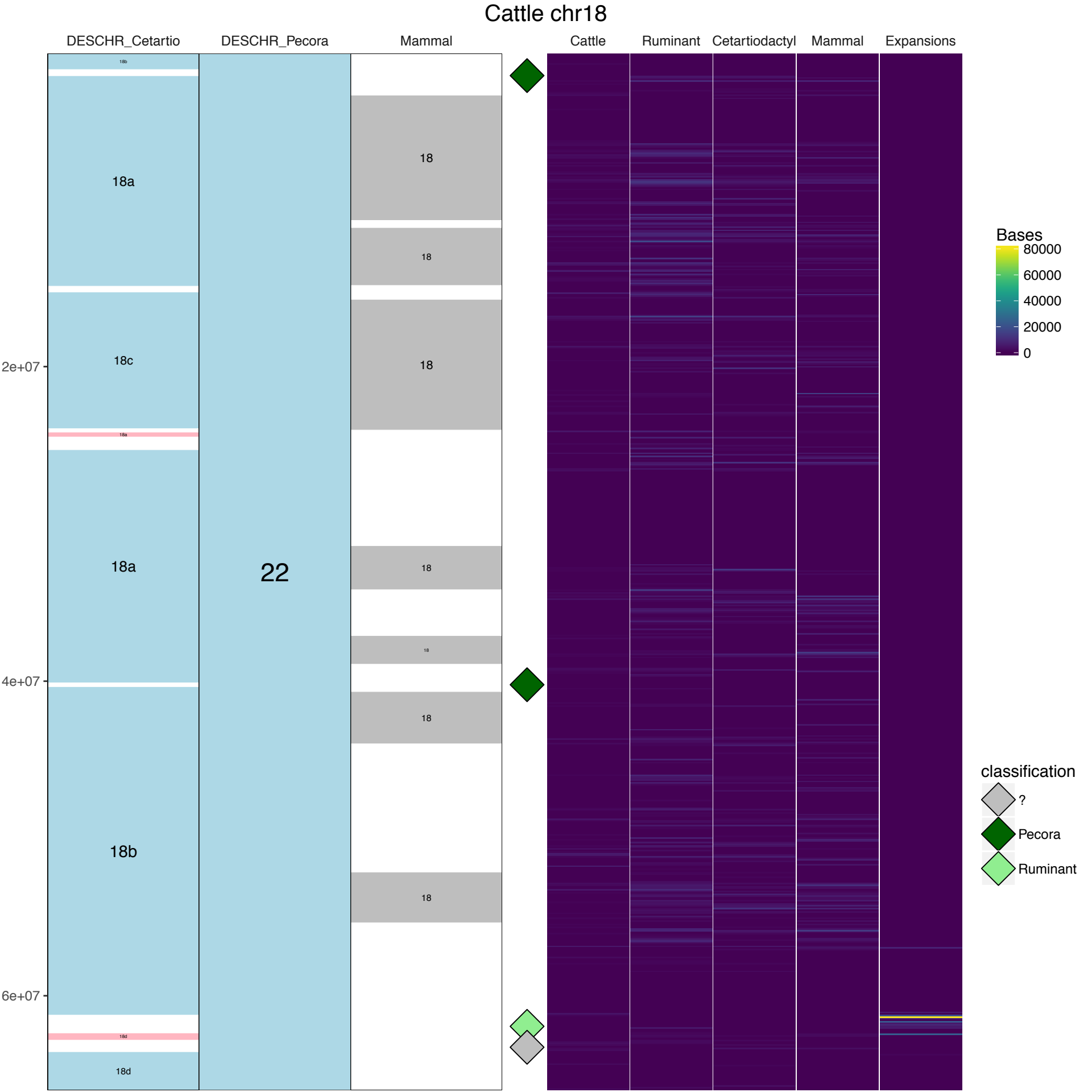

Cattle chr13
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
19
24b
24a
24a
19
24b
19
19
19
19
17b
17a
17a
13
13
13
13
13
13
13
13
2e+07
4e+07
6e+07
8e+07
Bases
15000
10000
5000
0
classification
?
Ruminant

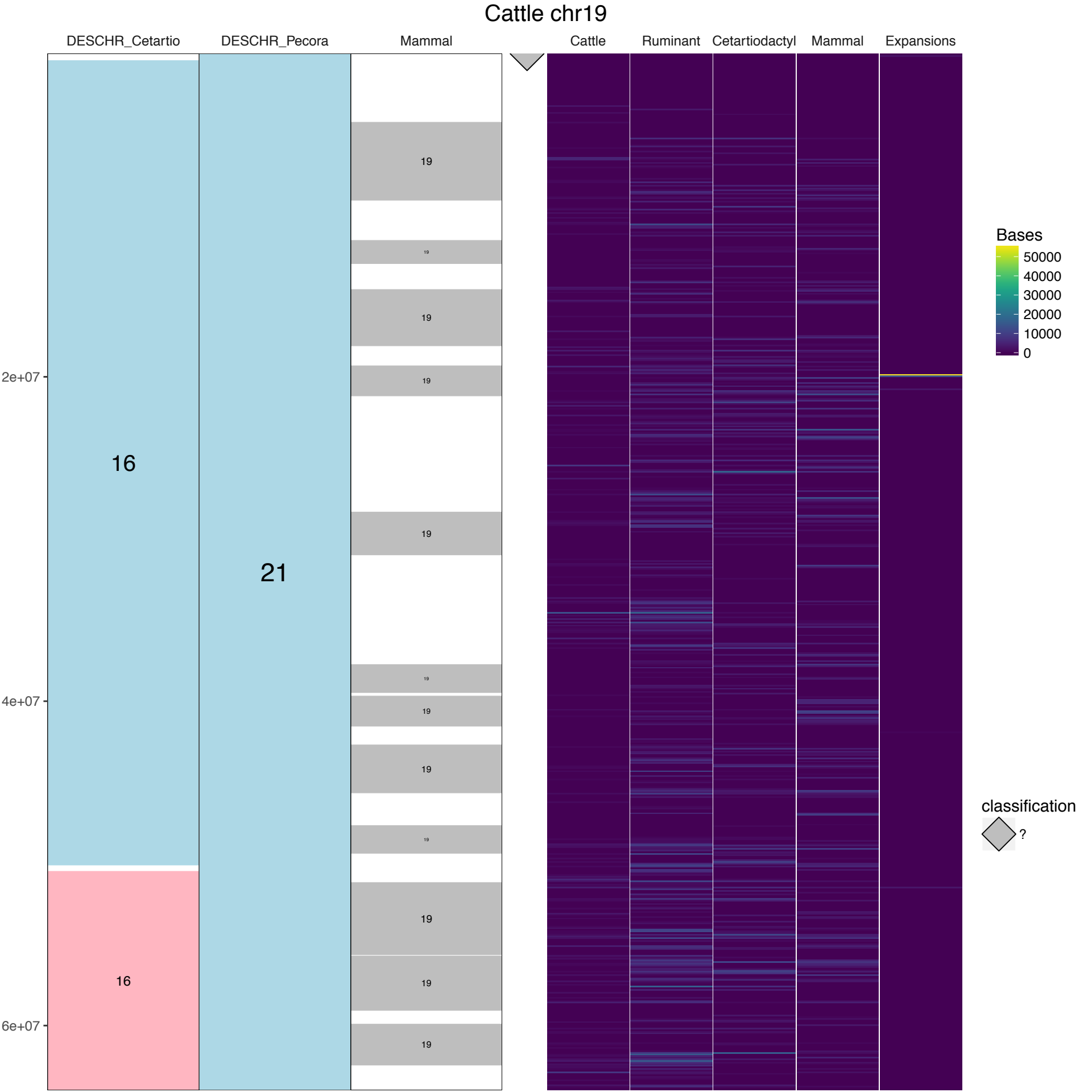

Cattle chr14
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
15
14
2e+07
4e+07
6e+07
8e+07
Bases
20000
15000
10000
5000
0
classification
Pecora

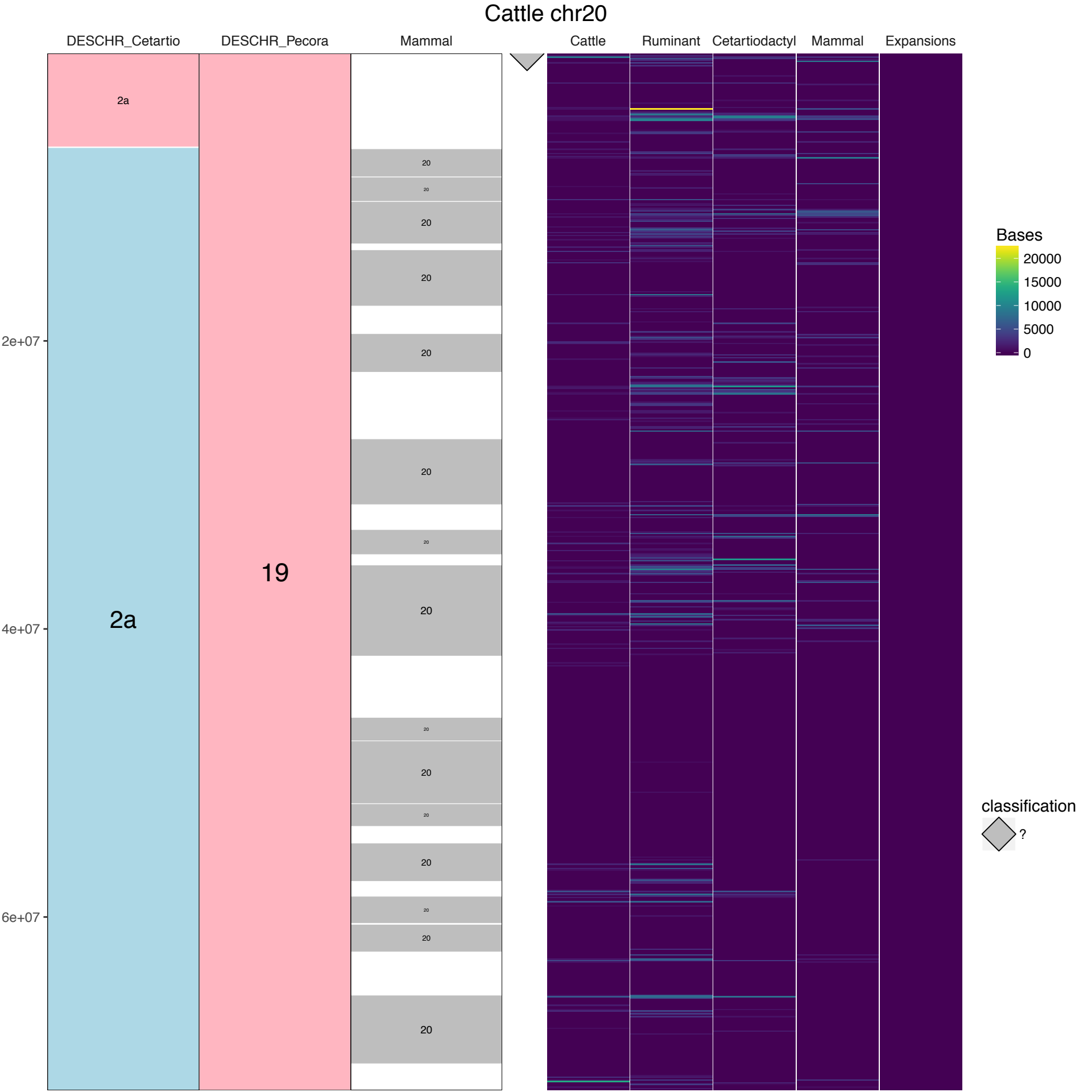

Cattle chr15
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
7a
7b
7c
15
2e+07
4e+07
6e+07
8e+07
Bases
30000
20000
10000
0
classification
Pecora


Cattle chr16
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
2e+07
4e+07
6e+07
8e+07
3a
3b
16
Bases
15000
10000
5000
0
classification
Pecora


Cattle chr17
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
4a
4b
23a
18
17
2e+07
4e+07
6e+07
Bases
5000
4000
3000
2000
1000
0
classification
Ruminant


Cattle chr18
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
18b
18a
18c
18a
18a
18b
18d
18d
22
18
18
18
18
18
18
2e+07
4e+07
6e+07
Bases
80000
60000
40000
20000
0
classification
?
Pecora
Ruminant


Cattle chr19
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
16
21
19
16
2e+07
4e+07
6e+07
Bases
50000
40000
30000
20000
10000
0
classification
?


Cattle chr20
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
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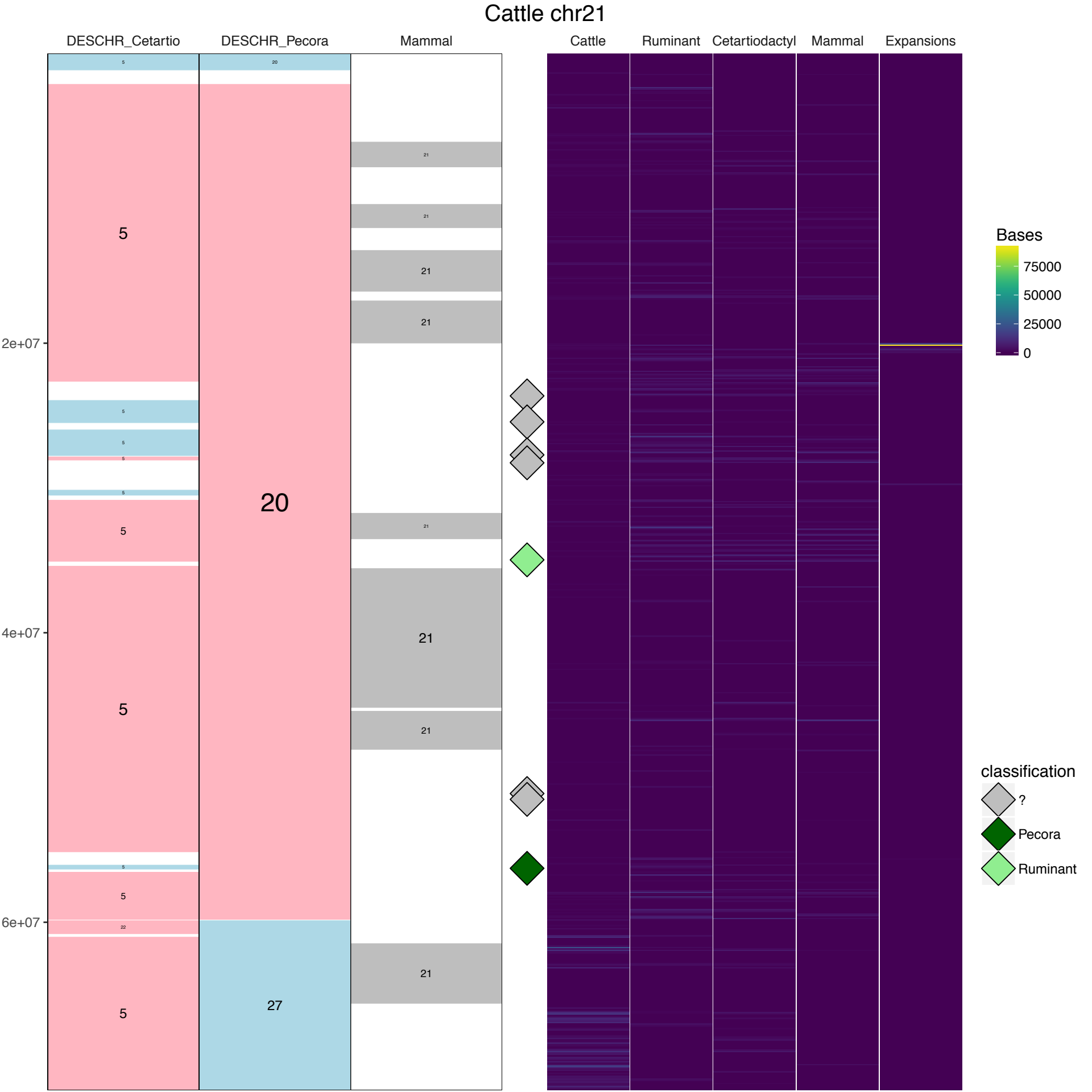
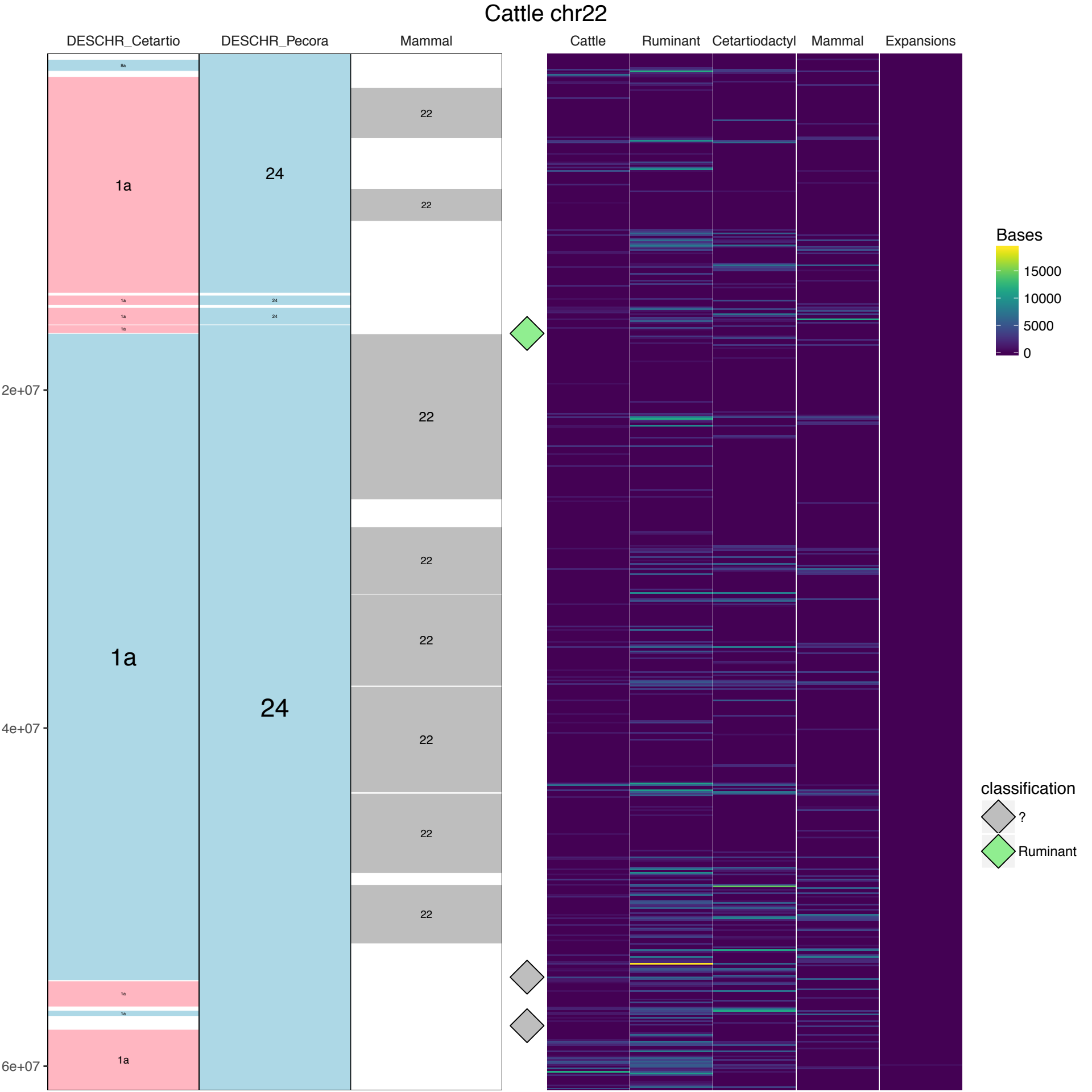
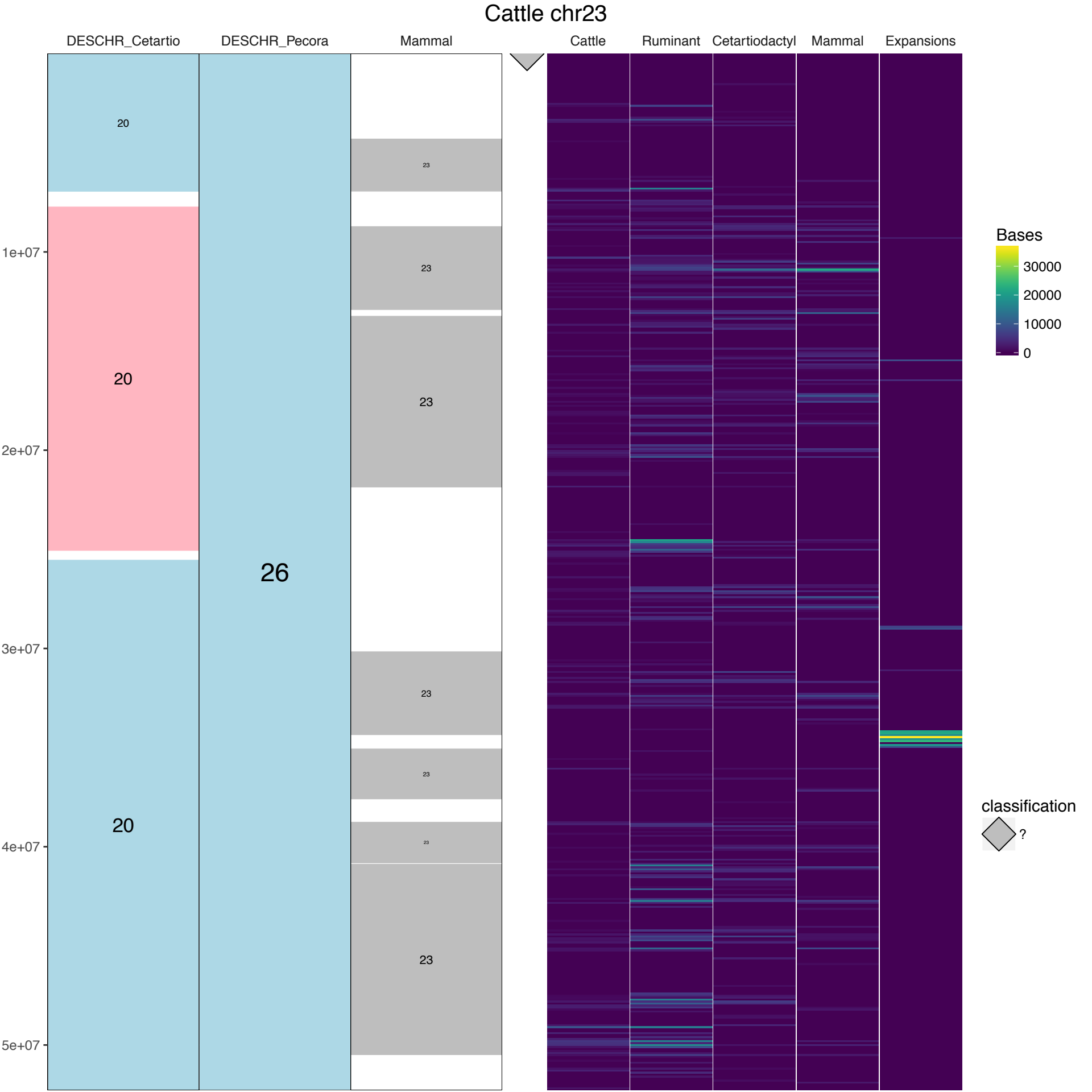
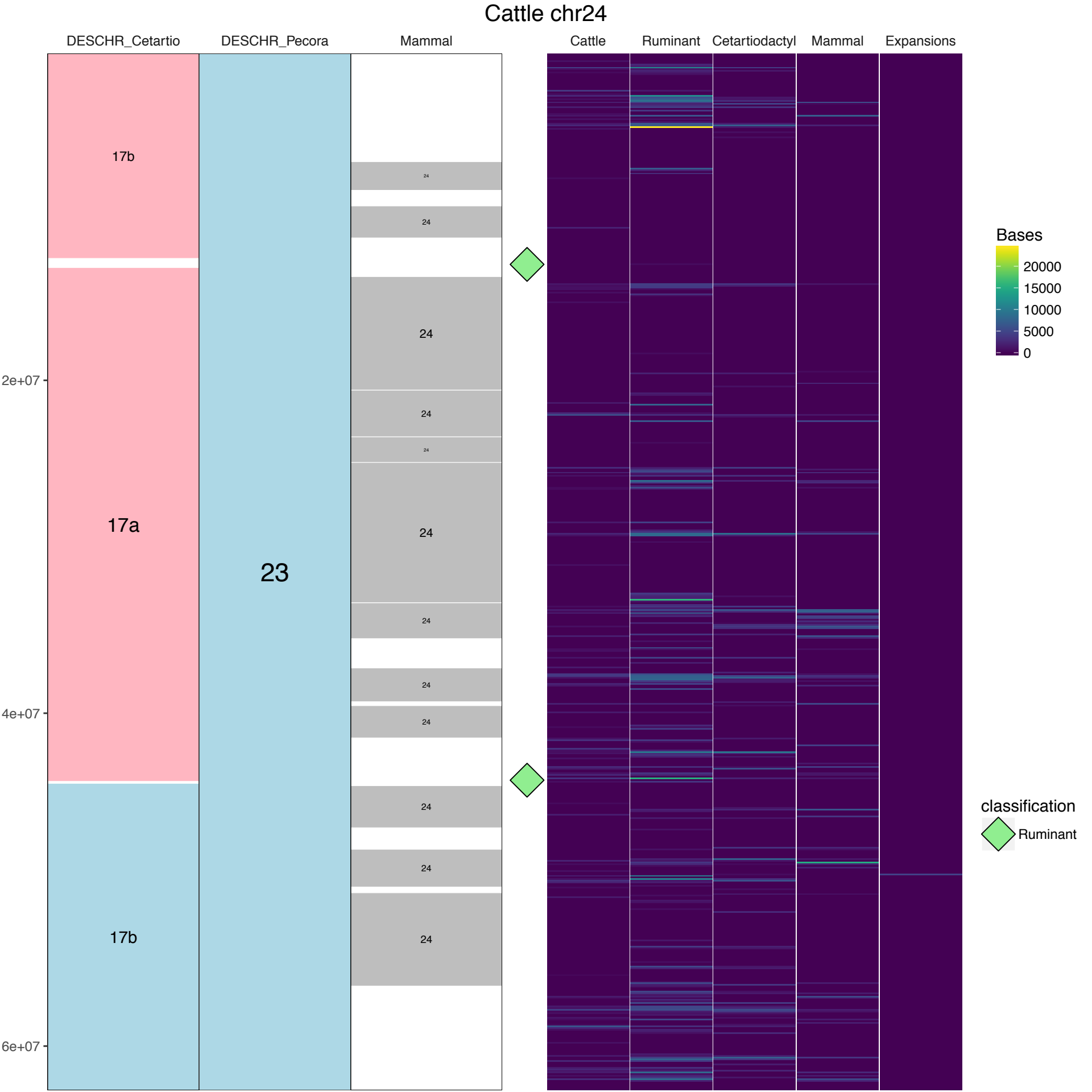
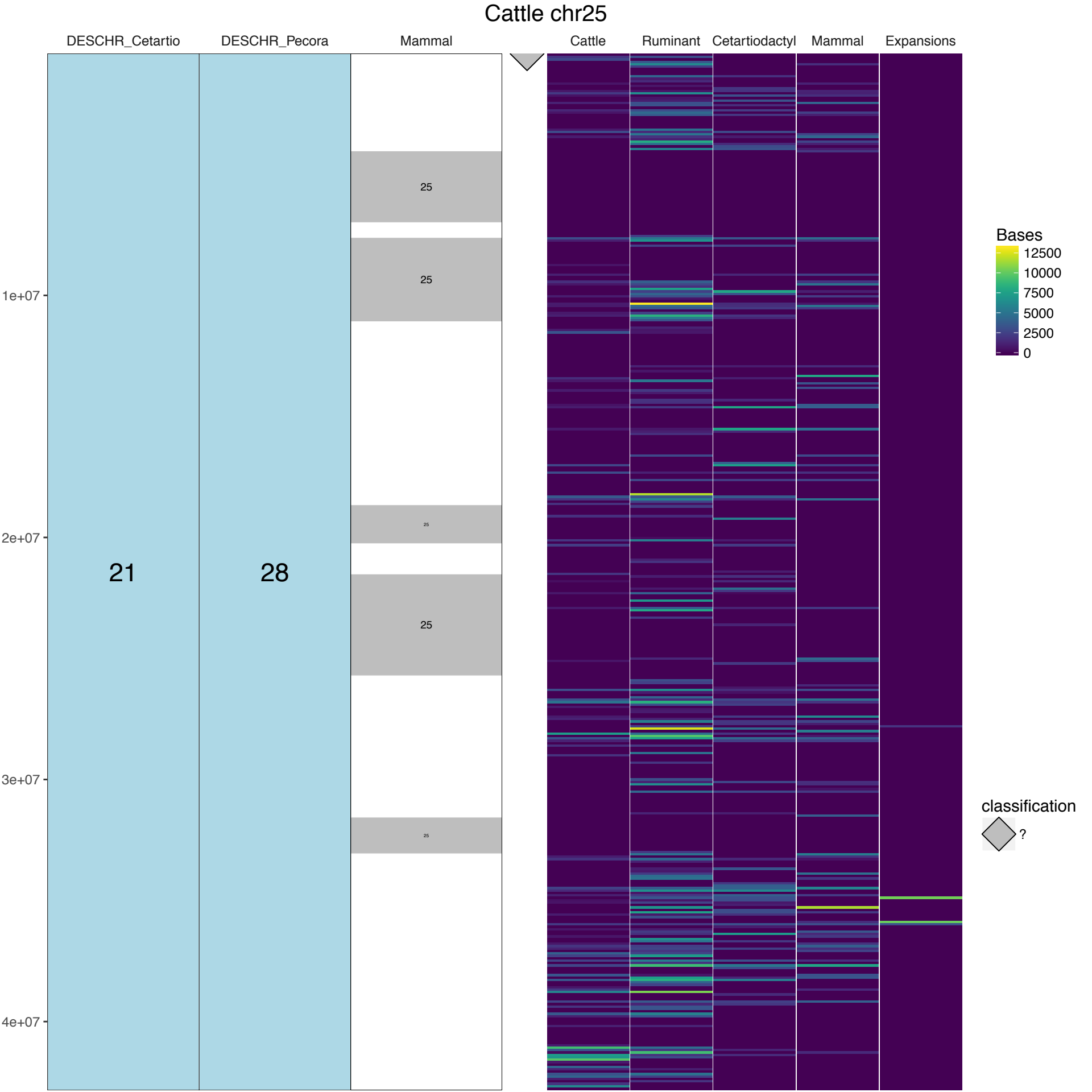
19
2a
20
2e+07
4e+07
6e+07
Bases
20000
15000
10000
5000
0
classification
?

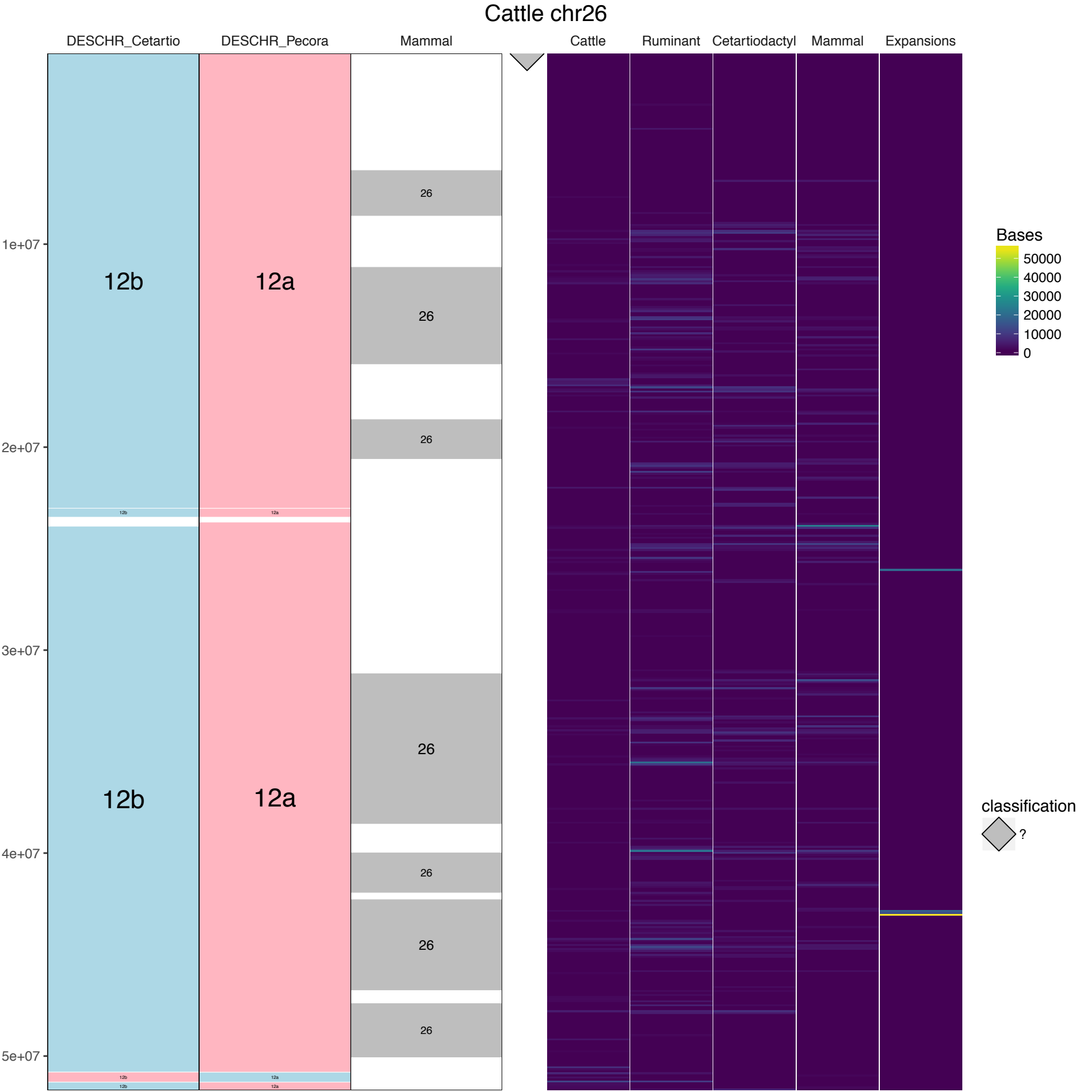

Cattle chr21
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
2e+07
4e+07
6e+07
Bases
75000
50000
25000
0
classification
?
Pecora
Ruminant

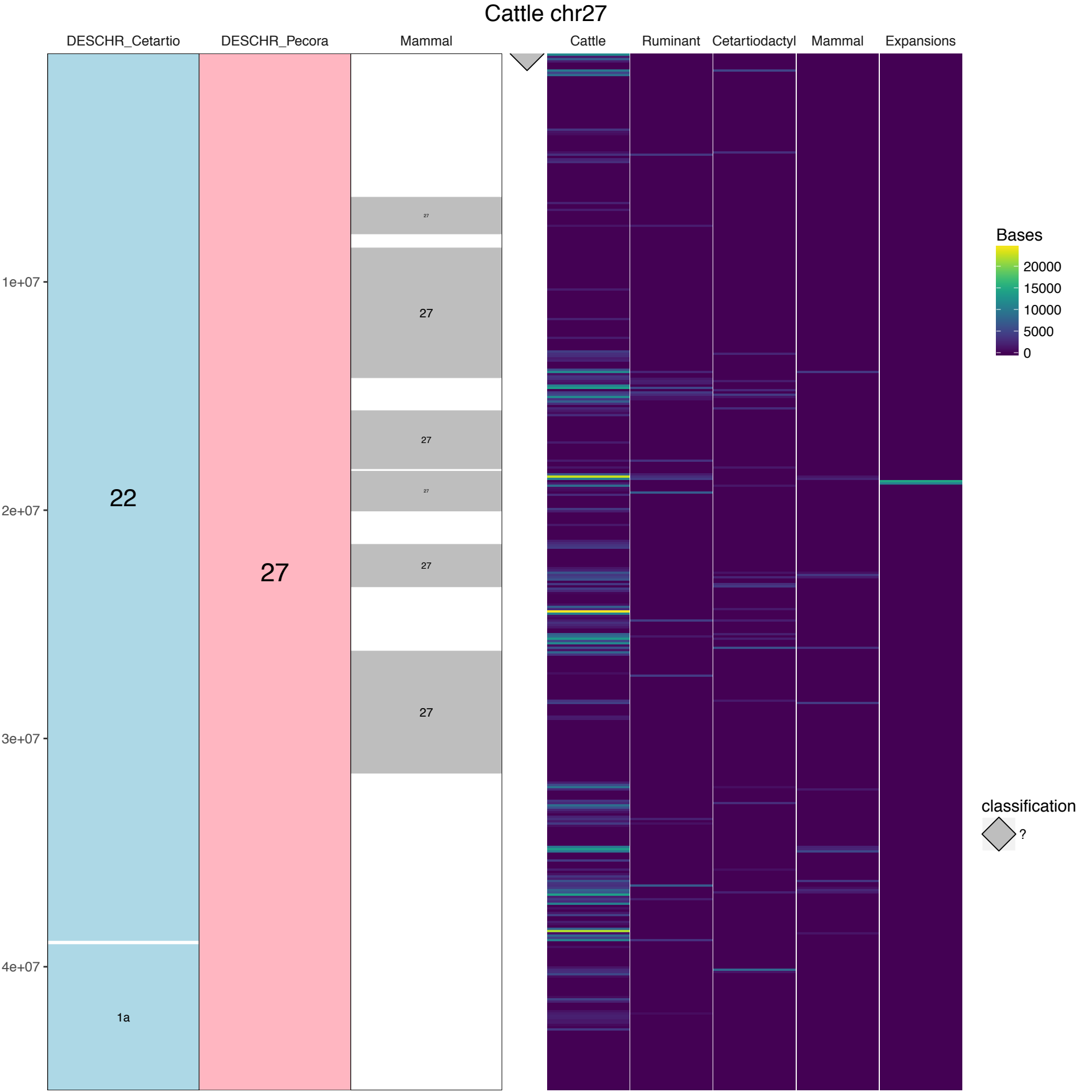

Cattle chr22
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
8a
1a
24
22
2e+07
4e+07
6e+07
Bases
15000
10000
5000
0
classification
?
Ruminant

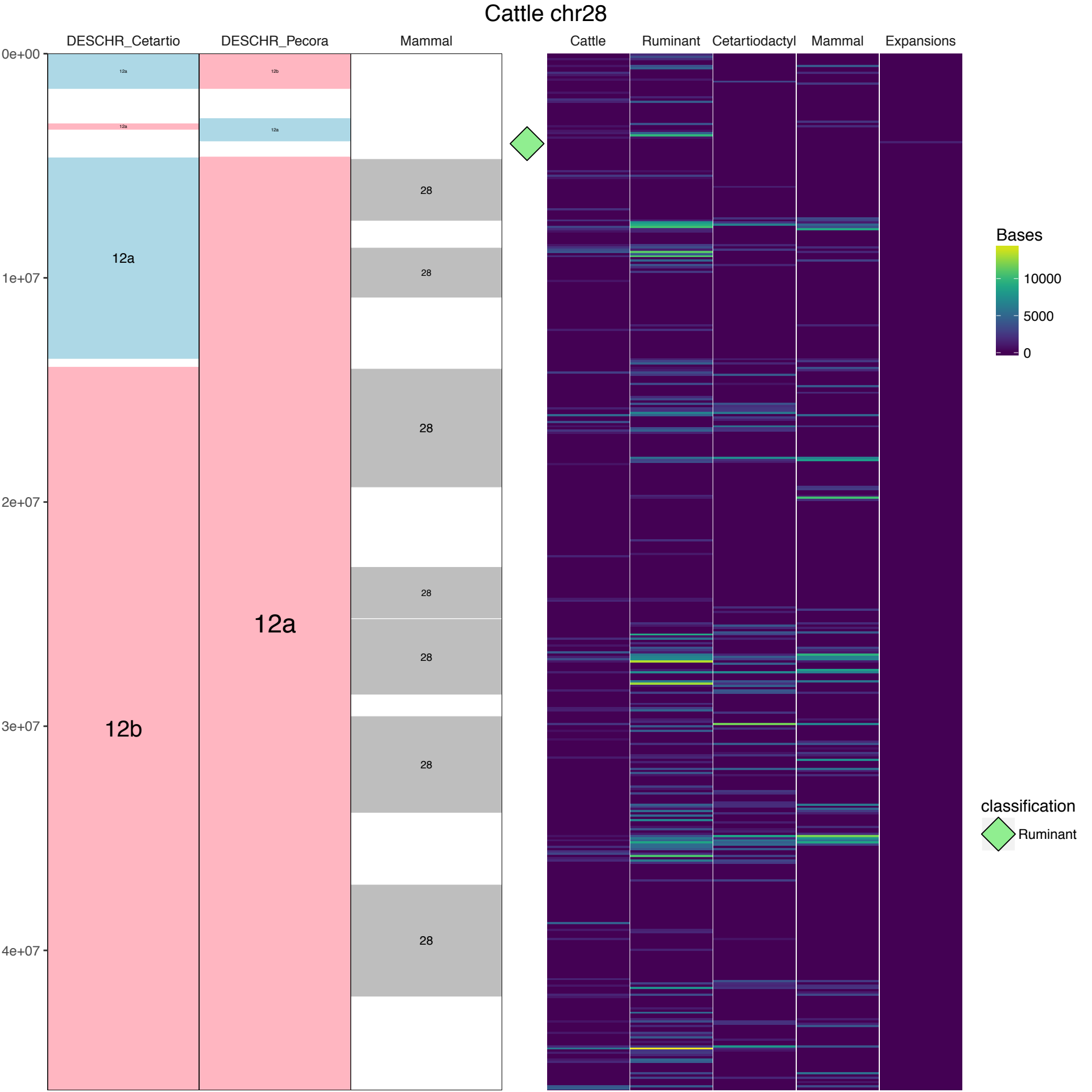

Cattle chr23
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
20
20
20
26
23
23
23
23
23
23
1e+07
2e+07
3e+07
4e+07
5e+07
Bases
30000
20000
10000
0
classification
?

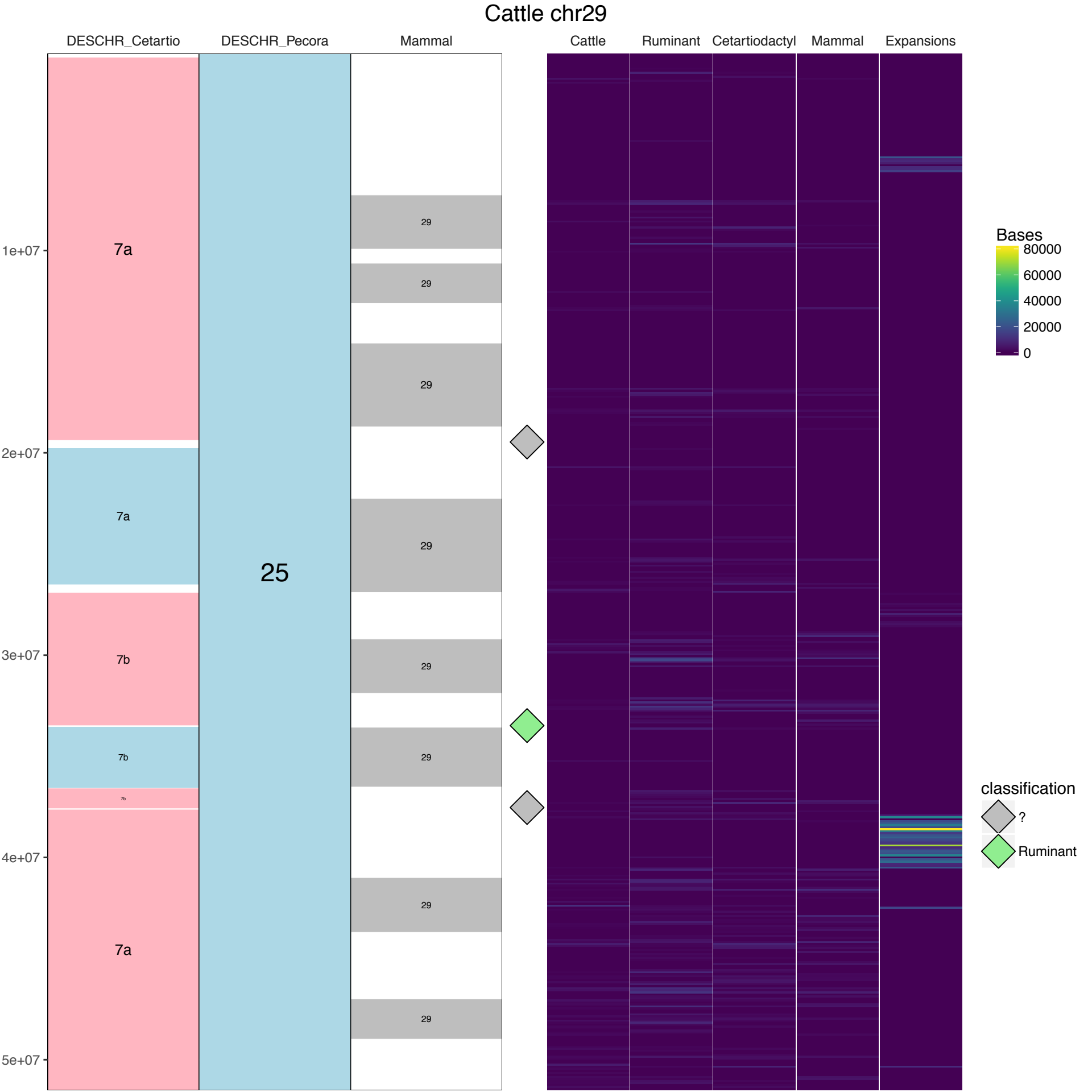

Cattle chr24
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
17b
17a
23
17b
24
2e+07
4e+07
6e+07
Bases
20000
15000
10000
5000
0
classification
Ruminant


Cattle chr25
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
21
28
25
25
25
25
1e+07
2e+07
3e+07
4e+07
Bases
12500
10000
7500
5000
2500
0
classification
?


Cattle chr26
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
1e+07
2e+07
3e+07
4e+07
5e+07
12b
12a
26
Bases
50000
40000
30000
20000
10000
0
classification
?


Cattle chr27
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
1e+07
2e+07
3e+07
4e+07
22
1a
27
27
27
27
27
27
Bases
20000
15000
10000
5000
0
classification
?


Cattle chr28
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
0e+00
1e+07
2e+07
3e+07
4e+07
12a
12b
28
Bases
10000
5000
0
classification
Ruminant


Cattle chr29
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
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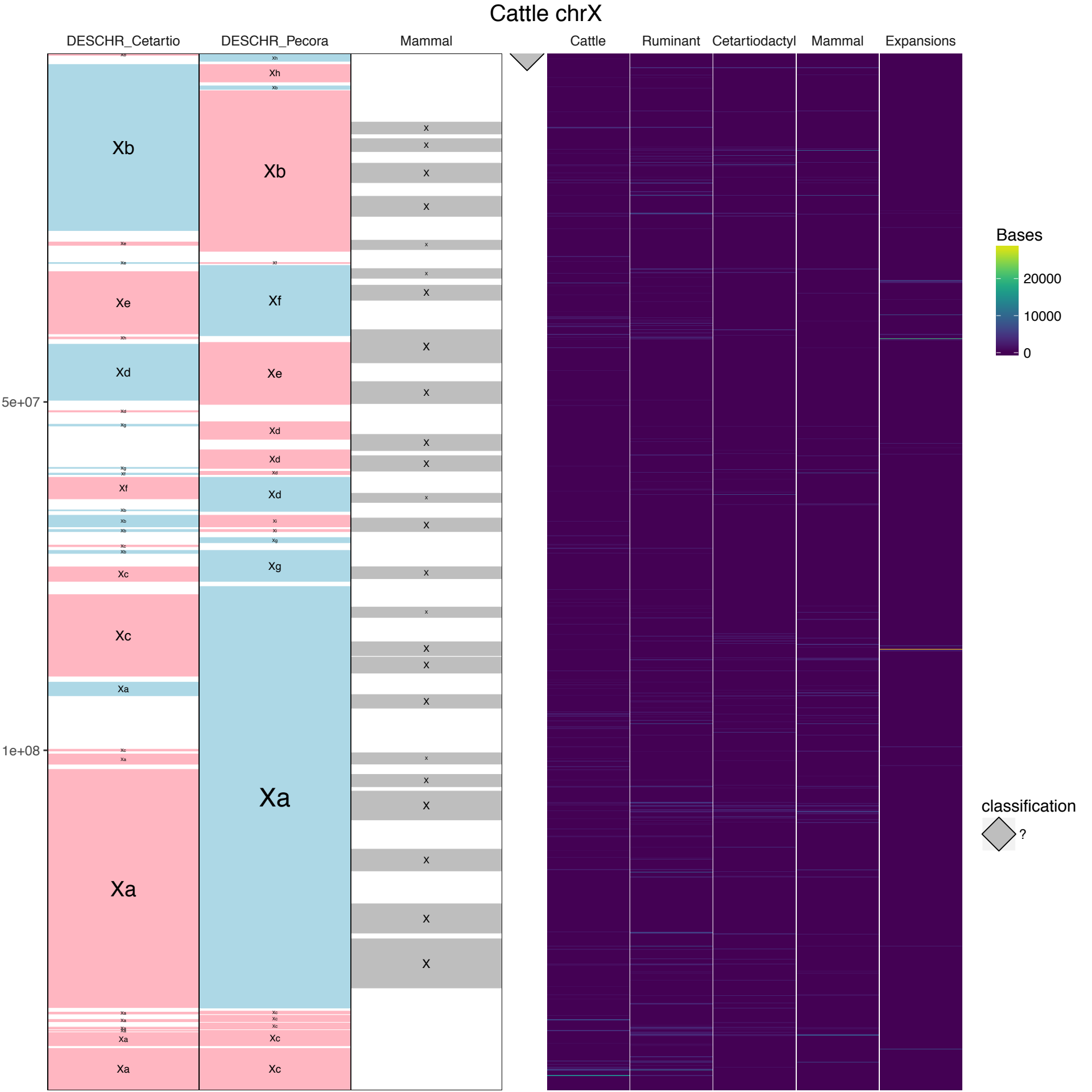
2e+07
3e+07
4e+07
5e+07
7a
7a
7b
7b
7b
7a
25
29
29
29
29
29
29
29
Bases
80000
60000
40000
20000
0
classification
?
Ruminant


Cattle chrX
DESCHR_Cetartio
DESCHR_Pecora
Mammal
Cattle
Ruminant
Cetartiodactyl
Mammal
Expansions
Xb
Xe
Xd
Xf
Xc
Xa
Xh
Xg
5e+07
1e+08
Bases
20000
10000
0
classification
?