```
% this is ../../crops/18r/planning/current pedigrees/primary dominants/les19- w23
% generated Friday, June 01, 2018 at 21:28:50 UTC (=1527888530.898592) by compute pedigrees/1.
% Horizontal pedigrees, generations at same indentation. S: Mo20W; W: W23; M: M14.
% !!! => cross was not by Toni; references to image locations on right.
% W23/Les19-
06R0032:0000000 x 06R0032:0000000
      06R0032:0003203 x 06R0032:0003209
           06N301:W0010502 x 06N1363:0016003
           06N301:W0010505 x 06N1363:0016007
           06N301:W0029910 x 06N1363:0016001
      06R200:S00I1006 x 06R0032:0003206
      06R200:S0I10014 x 06R0032:0003204
      06R200:S0I10016 x 06R0032:0003206
           09R201:S0032801 x 09R1283:0027502
                10R205:S0001410 x 10R1332:0034210
                                                             10R1332:0034210: [10r/gimmel/15.8-[560]]
                     11N205:S0034204 x 11N3210:0019909
                          12N205:S0035504 x 12N3652:0031702
                          12N205:S0036108 x 12N3652:0031708
                              ▶13R205:S0003403 x 13R4176:0028502
                                    14R4267:0014601 x 14R4267:0014611
                                                                                  14R4267:0014611: [14r/bet/22.8-[2259]]
                                    14R4267:0014602 x 14R4267:0014611
                                                                                 14R4267:0014611: [14r/bet/22.8-[2259]]
                                    14R4267:0014604 x 14R4267:0014611
                                                                                  14R4267:0014611: [14r/bet/22.8-[2259]]
                                    14R4267:0014614 x 14R4267:0014611
                                                                                 14R4267:0014611: [14r/bet/22.8-[2259]]
                                    14R4267:0014615 x 14R4267:0014611
                                                                                 14R4267:0014611: [14r/bet/22.8-[2259]]
                                    14R505:B0002111 x 14R4267:0014611
                                                                                 14R4267:0014611: [14r/bet/22.8-[2259]]
                                    14R505:B0002202 x 14R4267:0014611
                                                                                 14R4267:0014611: [14r/bet/22.8-[2259]]
                               13R205:S0003404 x 13R4176:0028502
                               13R205:S0003405 x 13R4176:0028502
                          12N205:S0037305 x 12N3652:0031704
                     11N205:S0034205 x 11N3210:0019901
                     11N205:S0039404 x 11N3210:0019905
           09R201:S0032817 x 09R1283:0027504
           09R201:S0035116 x 09R1283:0027507
           09R401:M0033303 x 09R1283:0027504
                10R405:M0000404 x 10R1004:0011601
                                                             10R1004:0011601: [10r/gimmel/7.8-[632,634]]
                10R405:M0000405 x 10R1004:0011608
                                                             10R1004:0011608: [10r/gimmel/7.8-[642,645]]
                10R405:M0000407 x 10R1004:0011611
                                                             10R1004:0011611: [10r/gimmel/7.8-[649,650]]
                10R405:M0002212 x 10R1004:0011605
                                                             10R1004:0011605: [10r/gimmel/7.8-[638,639,640]]
           09R401:M0033306 x 09R1283:0027502
           09R401:M0034906 x 09R1283:0027507
      06R200:S0I10103 x 06R0032:0003208
      06R200:S0I10113 x 06R0032:0003208
      06R300:W00I8713 x 06R0032:0003204
           06N301:W0008106 x 06N1333:0017902
```

```
2
les19- w23
                 Fri Jun 01 16:28:50 2018
           06N301:W0034602 x 06N1333:0017901
           06N301:W0034608 x 06N1333:0017902
           06N301:W0036206 x 06N1333:0017904
           06N301:W0036207 x 06N1333:0017906
           06N301:W0036303 x 06N1333:0017907
      06R300:W00I8715 x 06R0032:0003206
           06N301:W0005402 x 06N1286:0017801
           06N301:W0005405 x 06N1286:0017805
           06N301:W0007805 x 06N1286:0017806
                09R301:W0042502 x 09R2905:0027601
                                                             09R2905:0027601: [09r/bet/12.9-[470]]
                     10R305:W0005918 x 10R2260:0034306
                                                                  10R2260:0034306: [10r/gimmel/15.8-[561]]
                     10R305:W0010513 x 10R2260:0034308
                                                                  10R2260:0034308: [10r/gimmel/15.8-[562]]
                          11N305:W0032602 x 11N3276:0020005
                               12R305:W0010711 x 12R3653:0031303
                                                                             12R3653:0031303: [12r/bet/6.8-[98],12r/bet/8.8
-[203]]
                                    12N4038:0031803 x 12N4038:0031803
                                    12N4038:0031805 x 12N4038:0031803
                                    12N4038:0031807 x 12N4038:0031807
                                    12N504:B0040510 x 12N4038:0031803
                                    14R4038:0014703 x 14R4038:0014713
                                                                                  14R4038:0014713: [14r/bet/22.8-[2265]]
                                    14R4038:0014704 x 14R4038:0014713
                                                                                 14R4038:0014713: [14r/bet/22.8-[2265]]
                                    14R4038:0014705 x 14R4038:0014713
                                                                                  14R4038:0014713: [14r/bet/22.8-[2265]]
                                    14R4038:0014715 x 14R4038:0014713
                                                                                 14R4038:0014713: [14r/bet/22.8-[2265]]
                                    14R4038:0014717 x 14R4038:0014713
                                                                                 14R4038:0014713: [14r/bet/22.8-[2265]]
                                    14R505:B0002002 x 14R4038:0014713
                                                                                  14R4038:0014713: [14r/bet/22.8-[2265]]
                               12R305:W0010712 x 12R3653:0031314
                                                                             12R3653:0031314: [12r/bet/6.8-[100],12r/bet/8.
8-[20711
                               12R305:W0010716 x 12R3653:0031313
                                                                            12R3653:0031313: [12r/bet/6.8-[99],12r/bet/8.8
-[204]]
                               12R3653:0031303 x 12R3653:0031303
                                                                            12R3653:0031303: [12r/bet/6.8-[98],12r/bet/8.8
-[203]] 12R3653:0031303: [12r/bet/6.8-[98],12r/bet/8.8-[203]]
                               12R3653:0031313 x 12R3653:0031313
                                                                             12R3653:0031313: [12r/bet/6.8-[99],12r/bet/8.8
-[204]] 12R3653:0031313: [12r/bet/6.8-[99],12r/bet/8.8-[204]]
                               12R3653:0031314 x 12R3653:0031314
                                                                             12R3653:0031314: [12r/bet/6.8-[100],12r/bet/8.
8-[207]] 12R3653:0031314: [12r/bet/6.8-[100],12r/bet/8.8-[207]]
                               12R503:B0012405 x 12R3653:0031313
                                                                            12R3653:0031313: [12r/bet/6.8-[99],12r/bet/8.8
-[204]]
                               12R503:B0012406 x 12R3653:0031314
                                                                            12R3653:0031314: [12r/bet/6.8-[100],12r/bet/8.
8-[207]]
                               12R503:B0012407 x 12R3653:0031303
                                                                            12R3653:0031303: [12r/bet/6.8-[98],12r/bet/8.8
-[203]]
                          11N305:W0032603 x 11N3276:0020005
                          11N305:W0035002 x 11N3276:0020002
                          11N305:W0035010 x 11N3276:0020002
                     10R405:M0006604 x 10R2260:0034306
                                                                  10R2260:0034306: [10r/gimmel/15.8-[561]]
                                                             09R2905:0027606: [09r/bet/12.9-[472]]
                09R301:W0042510 x 09R2905:0027606
                09R301:W0042812 x 09R2905:0027609
                                                             09R2905:0027609: [09r/bet/12.9-[475]]
```

```
06R300:W00I8904 x 06R0032:0003208
06R400:M00I8508 x 06R0032:0003204
06R400:M00I8510 x 06R0032:0003206
     10R405:M0006902 x 10R1290:0034404
                                                  10R1290:0034404: [10r/gimmel/15.8-[563]]
          13R405:M0033005 x 13R4042:0028602
               14R405:M0001603 x 14R4304:0025007
                                                            14R4304:0025007: [14r/bet/23.8-[2358]]
                    15R405:M0001310 x 15R4401:0014902
                                                                 15R4401:0014902: [15r/bet/15.8-[2756]]
                         17R405:M0004410 x 17R4518:0018408
                                                                      17R4518:0018408: [17r/bet/2.8-[421]]
                        17R405:M0004413 x 17R4518:0018408
                                                                      17R4518:0018408: [17r/bet/2.8-[421]]
                    15R405:M0001413 x 15R4401:0014904
                                                                 15R4401:0014904: [15r/bet/15.8-[2755]]
                    15R405:M0001506 x 15R4401:0014904
                                                                 15R4401:0014904: [15r/bet/15.8-[2755]]
               14R405:M0001604 x 14R4304:0025007
                                                            14R4304:0025007: [14r/bet/23.8-[2358]]
               14R405:M0001605 x 14R4304:0025007
                                                            14R4304:0025007: [14r/bet/23.8-[2358]]
    10R405:M0006905 x 10R1290:0034413
                                                  10R1290:0034413: [10r/gimmel/15.8-[565]]
    10R405:M0006912 x 10R1290:0034406
                                                  10R1290:0034406: [10r/gimmel/15.8-[564]]
          11N405:M0033606 x 11N3202:0020101
          12N405:M0036902 x 12N3202:0032407
          12N405:M0038406 \times 12N3202:0032410
          12N405:M0038704 x 12N3202:0032409
               14R405:M0001405 x 14R4307:0025301
                                                            14R4307:0025301: [14r/bet/23.8-[2377]]
              14R405:M0001602 x 14R4307:0025301
                                                            14R4307:0025301: [14r/bet/23.8-[2377]]
               14R405:M0001612 x 14R4307:0025301
                                                            14R4307:0025301: [14r/bet/23.8-[2377]]
06R400:M00I8511 x 06R0032:0003208
```