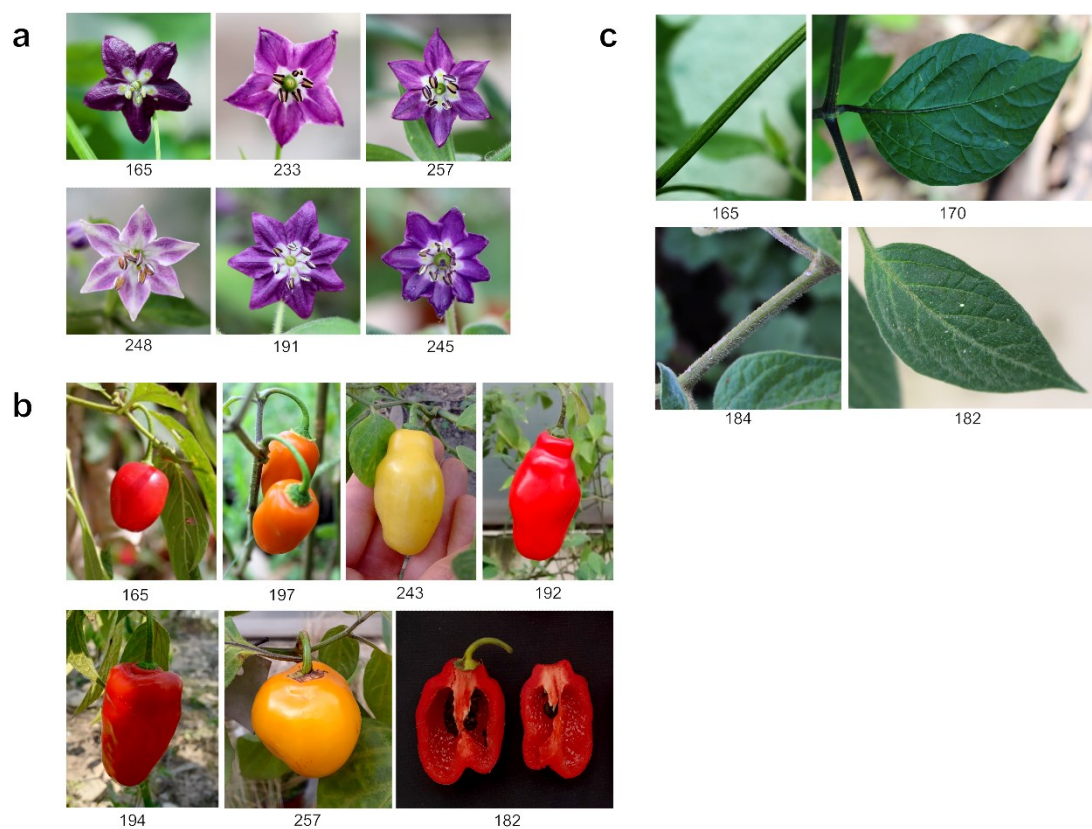
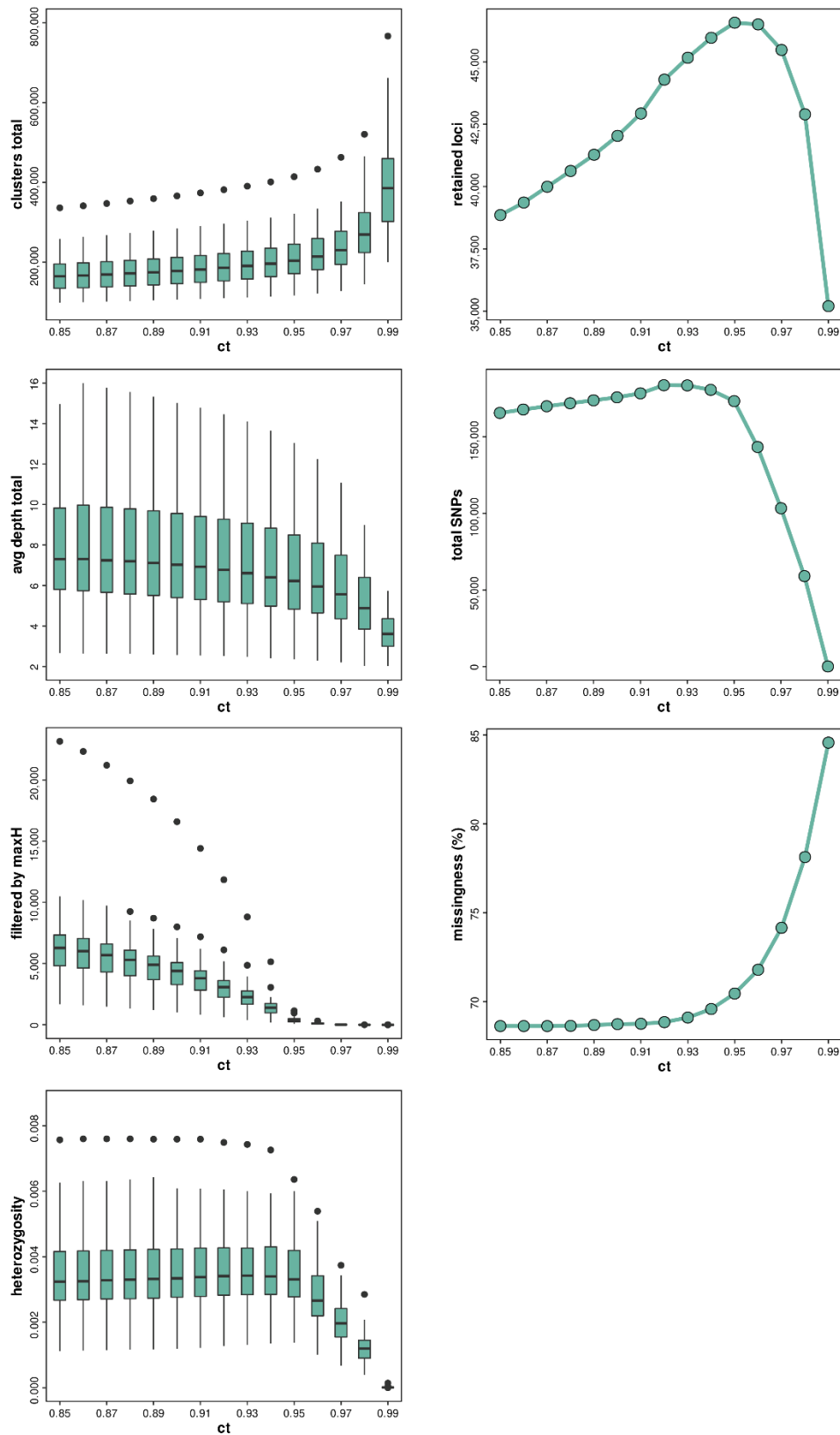


**Figure S1.** Morphological diversity among the studied *C. pubescens* accessions. Representative images showing: **(a)** corolla colour and number of pieces, **(b)** variation in fruit shape and colour, **(c)** variable levels of pubescence. Accessions numbers are indicated.



**Figure S2.** Results of the assessment of the sequence similarity clustering threshold parameter (ct) in ipyrad [61]. Values ranging from 0.85 to 0.99 were assessed. The number of clusters, the average read depth, the number of putatively paralogous loci (filtered by maxH), the allelic variation (heterozygosity), the number of retained loci, the retained sequence variation (number of SNPs), and the missingness percentage were recorded and plotted.



**Table S1.** Metadata for *C. pubescens* accessions analysed, and cluster assignment at  $K=3$ .

| ID  | Locality and voucher number [if available]        | Origin        | Fruit colour, shape      | Raw reads | Filtered reads | Filtered loci at $m=4$ | Filtered loci at $m=34$ | DAPC cluster at $K=3$ | Admixture cluster at ( $K=3$ ) |
|-----|---------------------------------------------------|---------------|--------------------------|-----------|----------------|------------------------|-------------------------|-----------------------|--------------------------------|
| 202 | Argentina: Jujuy, Humahuaca                       | local market  | red, elongated           | 2634423   | 2377950        | 64845                  | 42125                   | cluster 1             | cluster 1                      |
| 268 | Argentina: Jujuy, Maimara                         | local market  | yellow, elongated        | 1403257   | 1283816        | 46699                  | 34903                   | cluster 1             | cluster 1                      |
| 269 | Argentina: Jujuy, Maimara                         | local market  | orange-red, blocky       | 1246268   | 1098685        | 26629                  | 20894                   | cluster 1             | cluster 1                      |
| 64  | Argentina: Salta, Salta                           | local market  | orange-yellow, blocky    | 1375602   | 1298986        | -                      | -                       | -                     | -                              |
| 84  | Argentina: Salta, Salta                           | local market  | red, round               | 543647    | 534428         | 12727                  | 11102                   | cluster 1             | cluster 1                      |
| 85  | Argentina: Salta, Salta [Carrizo García (CG) 28]  | local market  | red, elongated           | 872440    | 858353         | 22245                  | 19222                   | cluster 1             | cluster 1                      |
| 101 | Argentina: Salta, Salta                           | local market  | red, blocky              | 198626    | 192601         | -                      | -                       | -                     | -                              |
| 271 | Argentina: Salta, Salta                           | local market  | red                      | 453973    | 564838         | 13595                  | 11394                   | cluster 2             | admixed                        |
| 270 | Argentina: Tucuman, San Miguel de Tucuman         | seed donor    | red, blocky              | 532181    | 834559         | 27185                  | 21930                   | cluster 2             | admixed                        |
| 272 | Argentina: Tucuman, San Miguel de Tucuman         | seed donor    | yellow, blocky           | 766317    | 916553         | 33543                  | 26367                   | cluster 1             | cluster 1                      |
| 181 | Bolivia: Chuquisaca, Muyupampa                    | local market  | red, elongated           | 1925979   | 1830717        | 58670                  | 39524                   | cluster 1             | cluster 1                      |
| 253 | Bolivia: Chuquisaca, Muyupampa                    | local market  | red, elongated           | 2091852   | 1956892        | 67906                  | 42054                   | cluster 1             | cluster 1                      |
| 211 | Bolivia: Chuquisaca, Campo Redondo [Barboza 4923] | family garden | unknown                  | 2455388   | 2313256        | 64531                  | 41722                   | cluster 1             | admixed                        |
| 190 | Bolivia: Chuquisaca, Villa Serrano                | local market  | orange-yellow, elongated | 2110489   | 1968839        | 61961                  | 40677                   | cluster 2             | cluster 2                      |
| 191 | Bolivia: Chuquisaca, Villa Serrano                | local market  | orange-yellow, elongated | 1991526   | 1893578        | 62189                  | 41161                   | cluster 2             | admixed                        |
| 192 | Bolivia: Chuquisaca, Villa Serrano                | local market  | red, elongated           | 2126767   | 1982643        | 62085                  | 40789                   | cluster 2             | cluster 2                      |
| 193 | Bolivia: Chuquisaca, Villa Serrano                | local market  | red, elongated           | 2458157   | 1736772        | 46424                  | 31032                   | cluster 2             | admixed                        |
| 179 | Bolivia: Cochabamba                               | grocery store | red, blocky              | 1476390   | 1403666        | 51473                  | 35928                   | cluster 1             | cluster 1                      |
| 245 | Bolivia: Cochabamba, Cochabamba                   | grocery store | red, blocky              | 1759136   | 1633033        | 50128                  | 35333                   | cluster 1             | cluster 1                      |
| 88  | Bolivia: Cochabamba, Pojo                         | local market  | red                      | 257306    | 251084         | -                      | -                       | -                     | -                              |
| 198 | Bolivia: Cochabamba, Pojo                         | local market  | red, blocky              | 1627156   | 1556342        | 51309                  | 35496                   | cluster 1             | cluster 1                      |
| 186 | Bolivia: La Paz, La Paz ('yungueños')             | local market  | orange-red, round        | 2469779   | 2373189        | 61423                  | 39414                   | cluster 2             | cluster 2                      |
| 187 | Bolivia: La Paz, La Paz ('yungueños')             | local market  | orange-yellow, round     | 2298623   | 2120662        | 64485                  | 41777                   | cluster 2             | admixed                        |

|     |                                                      |                             |                          |         |         |       |       |           |           |
|-----|------------------------------------------------------|-----------------------------|--------------------------|---------|---------|-------|-------|-----------|-----------|
| 188 | Bolivia: La Paz, La Paz ('yungueños')                | local market                | orange-yellow, round     | 3091143 | 2940865 | 67677 | 42883 | cluster 2 | admixed   |
| 189 | Bolivia: La Paz, La Paz ('yungueños')                | local market                | red, elongated           | 1508887 | 1432400 | 42548 | 31125 | cluster 2 | cluster 2 |
| 243 | Bolivia: La Paz, La Paz ('yungueños')                | local market                | light-yellow, elongated  | 2785501 | 1319629 | 51932 | 36731 | cluster 2 | cluster 2 |
| 259 | Bolivia: La Paz, La Paz ('yungueños')                | local market                | red, elongated           | 956413  | 882998  | 30655 | 22595 | cluster 2 | admixed   |
| 196 | Bolivia: La Paz, La Paz, (Achocalla)                 | local market                | red, round               | 921611  | 870387  | 30475 | 23776 | cluster 2 | admixed   |
| 197 | Bolivia: La Paz, La Paz, (Achocalla)                 | local market                | orange, elongated        | 2362268 | 2041000 | 64059 | 40418 | cluster 2 | admixed   |
| 246 | Bolivia: La Paz, La Paz, (Achocalla)                 | local market                | orange-yellow, elongated | 1223577 | 1159930 | 49539 | 36057 | cluster 2 | admixed   |
| 249 | Bolivia: La Paz, La Paz, (Achocalla)                 | local market                | red, round               | 2365979 | 2261278 | 64921 | 41915 | cluster 2 | admixed   |
| 9   | Bolivia: La Paz, Apa Apa [Barboza et al. 3658]       | growing freely in the field | orange-red, round        | 678175  | 669212  | 16037 | 13900 | cluster 2 | cluster 2 |
| 165 | Bolivia: La Paz, Apa Apa [CG 75]                     | growing freely in the field | orange-red, round        | 1381022 | 1261441 | 41463 | 31495 | cluster 2 | cluster 2 |
| 172 | Bolivia: La Paz, Coroico [Barboza 4890]              | family garden               | orange-yellow, round     | 932760  | 876737  | 35155 | 27487 | cluster 2 | cluster 2 |
| 173 | Bolivia: La Paz, Coroico [Barboza 4890]              | family garden               | orange-yellow, round     | 719330  | 680765  | 11827 | 8948  | cluster 2 | cluster 2 |
| 174 | Bolivia: La Paz, Coroico [Barboza 4890]              | family garden               | orange-yellow, round     | 1899800 | 1817337 | 53307 | 36989 | cluster 2 | cluster 2 |
| 170 | Bolivia: La Paz, Huancane [Barboza 4889]             | growing freely in the field | red, elongated           | 3813128 | 3662664 | 52667 | 34169 | cluster 2 | cluster 2 |
| 171 | Bolivia: La Paz, Huancane [Barboza 4889]             | growing freely in the field | red, round               | 948413  | 885680  | 23293 | 18215 | cluster 2 | cluster 2 |
| 286 | Bolivia: La Paz, Huancane [Barboza 4889]             | growing freely in the field | orange-yellow, round     | 404636  | 366227  | 3290  | 2645  | cluster 2 | cluster 2 |
| 89  | Bolivia: Potosí, Tupiza                              | local market                | red                      | 575756  | 568595  | -     | -     | -         | -         |
| 199 | Bolivia: Potosí, Tupiza                              | local market                | red, elongated           | 1428175 | 1246406 | 44109 | 33081 | cluster 1 | admixed   |
| 184 | Bolivia: Santa Cruz, Camiri                          | local market                | red, blocky              | 2122192 | 1935005 | 57510 | 40230 | cluster 1 | cluster 1 |
| 185 | Bolivia: Santa Cruz, Camiri                          | local market                | red, elongated           | 1572988 | 1470334 | 43790 | 31169 | cluster 1 | admixed   |
| 194 | Bolivia: Santa Cruz, Comarapa                        | local market                | orange-yellow, blocky    | 1168069 | 1124773 | 34464 | 25980 | cluster 1 | cluster 1 |
| 195 | Bolivia: Santa Cruz, Comarapa                        | local market                | red, elongated           | 1630556 | 1503309 | 53022 | 36937 | cluster 1 | cluster 1 |
| 114 | Bolivia: Santa Cruz, Moro Moro [CG et al. 35]        | family garden               | red, elongated           | 2146648 | 2044838 | 23850 | 17938 | cluster 1 | cluster 1 |
| 182 | Bolivia: Santa Cruz, Moro Moro                       | family garden               | red, elongated           | 753672  | 713598  | 19317 | 13334 | cluster 1 | cluster 1 |
| 83  | Bolivia: Santa Cruz, Santa Cruz de la Sierra [CG 27] | local market                | red                      | 966666  | 952663  | 30604 | 24453 | cluster 1 | cluster 1 |
| 200 | Bolivia: Santa Cruz, Santa Cruz de la Sierra         | local market                | red, elongated           | 1220486 | 1158638 | 42251 | 32077 | cluster 1 | cluster 1 |
| 102 | Costa Rica                                           | LP Co. 'Costa Rican Red'    | red, elongated           | 383611  | 379024  | -     | -     | -         | -         |
| 201 | Costa Rica                                           | LP Co. 'Costa Rican Red'    | red, elongated           | 1850043 | 1777304 | 54497 | 37136 | cluster 3 | cluster 3 |

|     |                                                 |                         |                          |         |         |       |       |           |           |
|-----|-------------------------------------------------|-------------------------|--------------------------|---------|---------|-------|-------|-----------|-----------|
| 91  | Ecuador                                         | LP Co. 'Ecuadorian Red' | red, elongated           | 892609  | 877893  | 29256 | 24227 | cluster 2 | admixed   |
| 256 | Ecuador: Azuay                                  | LP Co. 'Turbo pube'     | orange-yellow, elongated | 2576762 | 2387979 | 69684 | 42287 | cluster 2 | admixed   |
| 266 | Ecuador: Loja                                   | LP Co. 'Aji Largo'      | red, elongated           | 1126367 | 998700  | 32416 | 25100 | cluster 2 | admixed   |
| 263 | Guatemala                                       | WUR 'CGN 22796'         | red, blocky              | 834898  | 700821  | 14748 | 10714 | cluster 2 | cluster 3 |
| 257 | Guatemala: Quiche, Santo Tomas Chichicastenango | LP Co. 'CAP 363'        | orange-yellow, elongated | 2585141 | 2431794 | 70572 | 42782 | cluster 3 | cluster 3 |
| 251 | Mexico                                          | LP Co. 'Manzano rojo'   | red, blocky              | 1010453 | 933189  | 33496 | 25210 | cluster 3 | cluster 3 |
| 178 | Mexico: Mexico City                             | local market            | orange-yellow, blocky    | 1554713 | 1391440 | 47971 | 34231 | cluster 3 | cluster 3 |
| 203 | Mexico: Mexico City                             | local market            | orange-yellow, blocky    | 1272303 | 1210991 | 47019 | 34724 | cluster 3 | cluster 3 |
| 244 | Mexico: Mexico City, Coyoacan                   | local market            | orange-yellow, blocky    | 1133926 | 1085677 | 38233 | 29276 | cluster 3 | cluster 3 |
| 177 | Mexico: Mexico City, Coyoacan                   | local market            | orange-yellow, blocky    | 2586734 | 2299246 | 65751 | 41352 | cluster 3 | cluster 3 |
| 254 | Peru                                            | LP Co. 'CAP 217'        | red, elongated           | 2657624 | 2441653 | 69825 | 42628 | cluster 2 | admixed   |
| 128 | Peru: Cusco                                     | local market            | red, elongated           | 473582  | 466474  | -     | -     | -         | -         |
| 233 | Peru: Cusco                                     | local market            | red, blocky              | 2098880 | 1847495 | 59975 | 39255 | cluster 2 | admixed   |
| 255 | Peru: Cusco                                     | local market            | red, blocky              | 2092730 | 1941007 | 55417 | 37151 | cluster 2 | cluster 2 |
| 265 | Peru: Huanuco                                   | WUR 'CGN 22108'         | red, elongated           | 1693733 | 1573667 | 56821 | 40467 | cluster 2 | admixed   |
| 262 | Peru: Junin                                     | WUR 'CGN 23768'         | yellow, elongated        | 1012055 | 930939  | 35737 | 25589 | cluster 2 | admixed   |
| 90  | Peru: Piura                                     | local market            | red                      | 558605  | 551298  | -     | -     | -         | -         |
| 247 | Peru: Piura                                     | local market            | red, blocky              | 1145483 | 1105495 | 38707 | 30610 | cluster 2 | admixed   |
| 175 | Peru: Trujillo                                  | local market            | orange-yellow, blocky    | 2042003 | 1821689 | 61369 | 40018 | cluster 2 | admixed   |
| 176 | Peru: Trujillo                                  | local market            | orange-yellow, blocky    | 1076414 | 999386  | 30560 | 23990 | cluster 2 | admixed   |
| 248 | Spain: Canarias, LP (San Isidro)                | LP Co. 'San Isidro'     | orange-red, blocky       | 2169006 | 2025608 | 63998 | 41767 | cluster 2 | admixed   |
| 264 | Unknown                                         | seed donor              | unknown                  | 1143439 | 952540  | 21546 | 16535 | cluster 3 | cluster 3 |
| 267 | Unknown                                         | LP Co. 'Canario'        | yellow, round            | 1402337 | 1127357 | 33528 | 25770 | cluster 3 | cluster 3 |

LP Co.: Semillas La Palma Company, Germany

WUR: genebank at the Centre for Genetic Resources, Wageningen University, The Netherlands

**Table S2.** Average Admixture cluster assignment for *C. pubescens* samples for K= 2 (a), 3 (b), 4 (c) and 5 (d) calculated from 1,462 unlinked biallelic SNPs markers.

(a) K= 2

| Sample ID | Cluster 1 | Cluster 2 |
|-----------|-----------|-----------|
| 114       | 1.0000    | 0.0000    |
| 165       | 0.8292    | 0.1708    |
| 170       | 0.6730    | 0.3270    |
| 171       | 0.6992    | 0.3008    |
| 172       | 0.5678    | 0.4322    |
| 173       | 0.6120    | 0.3880    |
| 174       | 0.6577    | 0.3423    |
| 175       | 0.0000    | 1.0000    |
| 176       | 0.0277    | 0.9723    |
| 177       | 0.0000    | 1.0000    |
| 178       | 0.0000    | 1.0000    |
| 179       | 0.8738    | 0.1262    |
| 181       | 1.0000    | 0.0000    |
| 182       | 1.0000    | 0.0000    |
| 184       | 1.0000    | 0.0000    |
| 185       | 1.0000    | 0.0000    |
| 186       | 0.3968    | 0.6032    |
| 187       | 0.3531    | 0.6469    |
| 188       | 0.4547    | 0.5453    |
| 189       | 0.5883    | 0.4117    |
| 190       | 0.7336    | 0.2664    |
| 191       | 0.8349    | 0.1651    |
| 192       | 0.7506    | 0.2494    |
| 193       | 0.7448    | 0.2552    |
| 194       | 1.0000    | 0.0000    |
| 195       | 1.0000    | 0.0000    |
| 196       | 0.6104    | 0.3896    |
| 197       | 0.4253    | 0.5747    |
| 198       | 1.0000    | 0.0000    |
| 199       | 0.7965    | 0.2035    |
| 200       | 1.0000    | 0.0000    |
| 201       | 0.0000    | 1.0000    |
| 202       | 1.0000    | 0.0000    |
| 203       | 0.0000    | 1.0000    |
| 211       | 0.9993    | 0.0007    |
| 233       | 0.0245    | 0.9755    |
| 243       | 0.2962    | 0.7038    |
| 244       | 0.0000    | 1.0000    |
| 245       | 0.8702    | 0.1298    |
| 246       | 0.5131    | 0.4869    |
| 247       | 0.0708    | 0.9292    |
| 248       | 0.0000    | 1.0000    |
| 249       | 0.4619    | 0.5381    |
| 251       | 0.0000    | 1.0000    |

|     |        |        |
|-----|--------|--------|
| 253 | 1.0000 | 0.0000 |
| 254 | 0.0000 | 1.0000 |
| 255 | 0.1231 | 0.8769 |
| 256 | 0.0000 | 1.0000 |
| 257 | 0.0000 | 1.0000 |
| 259 | 0.5764 | 0.4236 |
| 262 | 0.0000 | 1.0000 |
| 263 | 0.0000 | 1.0000 |
| 264 | 0.0000 | 1.0000 |
| 265 | 0.0000 | 1.0000 |
| 266 | 0.0000 | 1.0000 |
| 267 | 0.0000 | 1.0000 |
| 268 | 0.8918 | 0.1082 |
| 269 | 0.8889 | 0.1111 |
| 270 | 0.0000 | 1.0000 |
| 271 | 0.0000 | 1.0000 |
| 272 | 1.0000 | 0.0000 |
| 286 | 0.5747 | 0.4253 |
| 83  | 1.0000 | 0.0000 |
| 84  | 1.0000 | 0.0000 |
| 85  | 1.0000 | 0.0000 |
| 9   | 0.6432 | 0.3568 |
| 91  | 0.0706 | 0.9294 |

**(b)**  $K=3$

| Sample ID | Cluster 1 | Cluster 2 | Cluster 3 |
|-----------|-----------|-----------|-----------|
| 114       | 1.0000    | 0.0000    | 0.0000    |
| 165       | 0.3361    | 0.6639    | 0.0000    |
| 170       | 0.1973    | 0.7957    | 0.0070    |
| 171       | 0.1754    | 0.8246    | 0.0000    |
| 172       | 0.0000    | 0.9492    | 0.0507    |
| 173       | 0.0000    | 1.0000    | 0.0000    |
| 174       | 0.0608    | 0.9392    | 0.0000    |
| 175       | 0.0000    | 0.4492    | 0.5508    |
| 176       | 0.0000    | 0.6209    | 0.3791    |
| 177       | 0.0000    | 0.0000    | 1.0000    |
| 178       | 0.0000    | 0.0000    | 1.0000    |
| 179       | 0.9055    | 0.0092    | 0.0853    |
| 181       | 0.9197    | 0.0803    | 0.0000    |
| 182       | 1.0000    | 0.0000    | 0.0000    |
| 184       | 1.0000    | 0.0000    | 0.0000    |
| 185       | 0.6852    | 0.3148    | 0.0000    |
| 186       | 0.0000    | 0.8712    | 0.1288    |
| 187       | 0.1748    | 0.4998    | 0.3254    |
| 188       | 0.2588    | 0.5465    | 0.1947    |
| 189       | 0.0988    | 0.8836    | 0.0177    |
| 190       | 0.1755    | 0.8245    | 0.0000    |
| 191       | 0.3362    | 0.6546    | 0.0091    |
| 192       | 0.1485    | 0.8515    | 0.0000    |

|     |        |        |        |
|-----|--------|--------|--------|
| 193 | 0.3258 | 0.6742 | 0.0000 |
| 194 | 1.0000 | 0.0000 | 0.0000 |
| 195 | 0.9940 | 0.0000 | 0.0060 |
| 196 | 0.2319 | 0.7348 | 0.0333 |
| 197 | 0.2998 | 0.3901 | 0.3101 |
| 198 | 1.0000 | 0.0000 | 0.0000 |
| 199 | 0.6091 | 0.3909 | 0.0000 |
| 200 | 1.0000 | 0.0000 | 0.0000 |
| 201 | 0.0000 | 0.1121 | 0.8879 |
| 202 | 1.0000 | 0.0000 | 0.0000 |
| 203 | 0.0000 | 0.0000 | 1.0000 |
| 211 | 0.6641 | 0.3359 | 0.0000 |
| 233 | 0.0015 | 0.6269 | 0.3716 |
| 243 | 0.0000 | 0.8769 | 0.1231 |
| 244 | 0.0000 | 0.0000 | 1.0000 |
| 245 | 0.7559 | 0.2169 | 0.0273 |
| 246 | 0.3924 | 0.4523 | 0.1554 |
| 247 | 0.0070 | 0.5030 | 0.4900 |
| 248 | 0.0000 | 0.6028 | 0.3972 |
| 249 | 0.3405 | 0.4759 | 0.1836 |
| 251 | 0.0000 | 0.0000 | 1.0000 |
| 253 | 1.0000 | 0.0000 | 0.0000 |
| 254 | 0.0000 | 0.5419 | 0.4581 |
| 255 | 0.0000 | 0.7409 | 0.2591 |
| 256 | 0.0000 | 0.3710 | 0.6290 |
| 257 | 0.0000 | 0.0000 | 1.0000 |
| 259 | 0.3911 | 0.5017 | 0.1072 |
| 262 | 0.0000 | 0.3583 | 0.6417 |
| 263 | 0.0000 | 0.0452 | 0.9548 |
| 264 | 0.0000 | 0.0000 | 1.0000 |
| 265 | 0.0000 | 0.4635 | 0.5365 |
| 266 | 0.0000 | 0.5189 | 0.4811 |
| 267 | 0.0000 | 0.0000 | 1.0000 |
| 268 | 0.9704 | 0.0000 | 0.0296 |
| 269 | 0.9503 | 0.0000 | 0.0497 |
| 270 | 0.0000 | 0.4920 | 0.5080 |
| 271 | 0.0000 | 0.6599 | 0.3400 |
| 272 | 1.0000 | 0.0000 | 0.0000 |
| 286 | 0.0098 | 0.9295 | 0.0608 |
| 83  | 1.0000 | 0.0000 | 0.0000 |
| 84  | 1.0000 | 0.0000 | 0.0000 |
| 85  | 1.0000 | 0.0000 | 0.0000 |
| 9   | 0.2007 | 0.6917 | 0.1076 |
| 91  | 0.0825 | 0.3351 | 0.5824 |

(c)  $K=4$

| Sample ID | Cluster 1 | Cluster 2 | Cluster 3 | Cluster 4 |
|-----------|-----------|-----------|-----------|-----------|
| 114       | 0.9494    | 0.0427    | 0.0079    | 0.0000    |
| 165       | 0.2095    | 0.7537    | 0.0368    | 0.0000    |



|     |        |        |        |        |
|-----|--------|--------|--------|--------|
| 170 | 0.0089 | 0.9574 | 0.0337 | 0.0000 |
| 171 | 0.0000 | 1.0000 | 0.0000 | 0.0000 |
| 172 | 0.0000 | 0.7582 | 0.2418 | 0.0000 |
| 173 | 0.0000 | 0.8642 | 0.1357 | 0.0000 |
| 174 | 0.0000 | 0.8216 | 0.1783 | 0.0000 |
| 175 | 0.0000 | 0.0000 | 0.8418 | 0.1582 |
| 176 | 0.0000 | 0.1466 | 0.7097 | 0.1437 |
| 177 | 0.0000 | 0.0000 | 0.0000 | 1.0000 |
| 178 | 0.0000 | 0.0000 | 0.0000 | 1.0000 |
| 179 | 0.8724 | 0.0000 | 0.1130 | 0.0147 |
| 181 | 0.8595 | 0.1382 | 0.0023 | 0.0000 |
| 182 | 1.0000 | 0.0000 | 0.0000 | 0.0000 |
| 184 | 1.0000 | 0.0000 | 0.0000 | 0.0000 |
| 185 | 0.5490 | 0.3528 | 0.0982 | 0.0000 |
| 186 | 0.0000 | 0.4501 | 0.4775 | 0.0725 |
| 187 | 0.1517 | 0.1895 | 0.4735 | 0.1853 |
| 188 | 0.2269 | 0.2143 | 0.4916 | 0.0671 |
| 189 | 0.0783 | 0.5545 | 0.3672 | 0.0000 |
| 190 | 0.0000 | 0.6000 | 0.4000 | 0.0000 |
| 191 | 0.0978 | 0.6019 | 0.2998 | 0.0005 |
| 192 | 0.0000 | 0.6000 | 0.4000 | 0.0000 |
| 193 | 0.1113 | 0.5558 | 0.3329 | 0.0000 |
| 194 | 0.8627 | 0.1373 | 0.0000 | 0.0000 |
| 195 | 0.9853 | 0.0000 | 0.0000 | 0.0146 |
| 196 | 0.2017 | 0.4100 | 0.3818 | 0.0065 |
| 197 | 0.2840 | 0.1275 | 0.4030 | 0.1855 |
| 198 | 0.9271 | 0.0729 | 0.0000 | 0.0000 |
| 199 | 0.5469 | 0.2987 | 0.1544 | 0.0000 |
| 200 | 1.0000 | 0.0000 | 0.0000 | 0.0000 |
| 201 | 0.0000 | 0.0147 | 0.2364 | 0.7488 |
| 202 | 1.0000 | 0.0000 | 0.0000 | 0.0000 |
| 203 | 0.0000 | 0.0000 | 0.0000 | 1.0000 |
| 211 | 0.5889 | 0.2963 | 0.1147 | 0.0000 |
| 233 | 0.0000 | 0.0379 | 0.9000 | 0.0621 |
| 243 | 0.0000 | 0.4285 | 0.5174 | 0.0541 |
| 244 | 0.0000 | 0.0000 | 0.0000 | 1.0000 |
| 245 | 0.7333 | 0.1617 | 0.0835 | 0.0214 |
| 246 | 0.3826 | 0.0940 | 0.4905 | 0.0328 |
| 247 | 0.0013 | 0.0269 | 0.7433 | 0.2285 |
| 248 | 0.0000 | 0.0981 | 0.6939 | 0.2079 |
| 249 | 0.3288 | 0.0562 | 0.5819 | 0.0331 |
| 251 | 0.0000 | 0.0000 | 0.0000 | 1.0000 |
| 253 | 1.0000 | 0.0000 | 0.0000 | 0.0000 |
| 254 | 0.0000 | 0.0972 | 0.6825 | 0.2203 |
| 255 | 0.0000 | 0.0503 | 0.9000 | 0.0497 |
| 256 | 0.0000 | 0.0000 | 0.6667 | 0.3333 |
| 257 | 0.0000 | 0.0000 | 0.0000 | 1.0000 |
| 259 | 0.3380 | 0.2560 | 0.3847 | 0.0212 |
| 262 | 0.0000 | 0.0556 | 0.5678 | 0.3766 |

|     |        |        |        |        |
|-----|--------|--------|--------|--------|
| 263 | 0.0000 | 0.0000 | 0.2605 | 0.7395 |
| 264 | 0.0000 | 0.0000 | 0.0000 | 1.0000 |
| 265 | 0.0000 | 0.0000 | 0.8387 | 0.1613 |
| 266 | 0.0000 | 0.0779 | 0.6643 | 0.2578 |
| 267 | 0.0000 | 0.0000 | 0.0000 | 1.0000 |
| 268 | 0.9990 | 0.0000 | 0.0000 | 0.0010 |
| 269 | 0.9902 | 0.0000 | 0.0000 | 0.0097 |
| 270 | 0.0000 | 0.0298 | 0.6966 | 0.2736 |
| 271 | 0.0000 | 0.0440 | 0.9000 | 0.0561 |
| 272 | 0.9863 | 0.0137 | 0.0000 | 0.0000 |
| 286 | 0.0000 | 0.8009 | 0.1848 | 0.0143 |
| 83  | 1.0000 | 0.0000 | 0.0000 | 0.0000 |
| 84  | 0.9352 | 0.0520 | 0.0128 | 0.0000 |
| 85  | 0.9991 | 0.0000 | 0.0009 | 0.0000 |
| 9   | 0.0556 | 0.7624 | 0.0534 | 0.1286 |
| 91  | 0.0160 | 0.0000 | 0.6940 | 0.2900 |

(d) K= 5

| Sample ID | Cluster 1 | Cluster 2 | Cluster 3 | Cluster 4 | Cluster 5 |
|-----------|-----------|-----------|-----------|-----------|-----------|
| 114       | 0.9314    | 0.0685    | 0.0000    | 0.0000    | 0.0000    |
| 165       | 0.1599    | 0.3660    | 0.4741    | 0.0000    | 0.0000    |
| 170       | 0.0112    | 0.3409    | 0.6479    | 0.0000    | 0.0000    |
| 171       | 0.0000    | 0.1810    | 0.8190    | 0.0000    | 0.0000    |
| 172       | 0.0000    | 0.0891    | 0.8558    | 0.0449    | 0.0102    |
| 173       | 0.0000    | 0.2671    | 0.6137    | 0.1178    | 0.0014    |
| 174       | 0.0000    | 0.0852    | 0.9147    | 0.0000    | 0.0000    |
| 175       | 0.0000    | 0.0000    | 0.0000    | 1.0000    | 0.0000    |
| 176       | 0.0000    | 0.0213    | 0.2039    | 0.7346    | 0.0402    |
| 177       | 0.0000    | 0.0000    | 0.0000    | 0.0000    | 1.0000    |
| 178       | 0.0000    | 0.0000    | 0.0000    | 0.0000    | 1.0000    |
| 179       | 0.8511    | 0.0000    | 0.0000    | 0.1488    | 0.0000    |
| 181       | 0.7922    | 0.0306    | 0.1772    | 0.0000    | 0.0000    |
| 182       | 1.0000    | 0.0000    | 0.0000    | 0.0000    | 0.0000    |
| 184       | 1.0000    | 0.0000    | 0.0000    | 0.0000    | 0.0000    |
| 185       | 0.3767    | 0.0583    | 0.5650    | 0.0000    | 0.0000    |
| 186       | 0.0000    | 0.0531    | 0.7166    | 0.1767    | 0.0536    |
| 187       | 0.1527    | 0.0867    | 0.1102    | 0.5376    | 0.1129    |
| 188       | 0.2302    | 0.0404    | 0.1618    | 0.5590    | 0.0086    |
| 189       | 0.0000    | 0.0498    | 0.8358    | 0.1143    | 0.0000    |
| 190       | 0.0000    | 1.0000    | 0.0000    | 0.0000    | 0.0000    |
| 191       | 0.0000    | 1.0000    | 0.0000    | 0.0000    | 0.0000    |
| 192       | 0.0000    | 1.0000    | 0.0000    | 0.0000    | 0.0000    |
| 193       | 0.0000    | 1.0000    | 0.0000    | 0.0000    | 0.0000    |
| 194       | 0.8061    | 0.0205    | 0.1734    | 0.0000    | 0.0000    |
| 195       | 0.9696    | 0.0000    | 0.0000    | 0.0000    | 0.0303    |
| 196       | 0.1712    | 0.0342    | 0.5248    | 0.2699    | 0.0000    |
| 197       | 0.2773    | 0.0641    | 0.0715    | 0.4566    | 0.1306    |
| 198       | 0.8386    | 0.0175    | 0.1439    | 0.0000    | 0.0000    |
| 199       | 0.5348    | 0.1913    | 0.1499    | 0.1239    | 0.0000    |

|     |        |        |        |        |        |
|-----|--------|--------|--------|--------|--------|
| 200 | 1.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 201 | 0.0000 | 0.0000 | 0.0350 | 0.3020 | 0.6630 |
| 202 | 1.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 203 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1.0000 |
| 211 | 0.5756 | 0.3354 | 0.0889 | 0.0000 | 0.0000 |
| 233 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 0.0000 |
| 243 | 0.0000 | 0.0359 | 0.6716 | 0.2829 | 0.0096 |
| 244 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1.0000 |
| 245 | 0.6928 | 0.0253 | 0.2207 | 0.0372 | 0.0240 |
| 246 | 0.3819 | 0.0533 | 0.0260 | 0.5388 | 0.0000 |
| 247 | 0.0000 | 0.0000 | 0.0000 | 0.9072 | 0.0928 |
| 248 | 0.0000 | 0.0101 | 0.1230 | 0.7210 | 0.1459 |
| 249 | 0.3382 | 0.0009 | 0.0000 | 0.6609 | 0.0000 |
| 251 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1.0000 |
| 253 | 1.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 254 | 0.0000 | 0.0000 | 0.0599 | 0.8466 | 0.0935 |
| 255 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 0.0000 |
| 256 | 0.0000 | 0.0000 | 0.0000 | 0.7812 | 0.2188 |
| 257 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1.0000 |
| 259 | 0.3316 | 0.0968 | 0.1606 | 0.4110 | 0.0000 |
| 262 | 0.0000 | 0.0000 | 0.0238 | 0.7034 | 0.2728 |
| 263 | 0.0000 | 0.0000 | 0.0000 | 0.3186 | 0.6814 |
| 264 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1.0000 |
| 265 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 0.0000 |
| 266 | 0.0000 | 0.0000 | 0.0659 | 0.7707 | 0.1634 |
| 267 | 0.0000 | 0.0000 | 0.0000 | 0.0000 | 1.0000 |
| 268 | 0.9992 | 0.0000 | 0.0000 | 0.0007 | 0.0000 |
| 269 | 0.9995 | 0.0000 | 0.0000 | 0.0000 | 0.0004 |
| 270 | 0.0000 | 0.0000 | 0.0000 | 0.8535 | 0.1465 |
| 271 | 0.0000 | 0.0000 | 0.0000 | 1.0000 | 0.0000 |
| 272 | 0.9170 | 0.0000 | 0.0830 | 0.0000 | 0.0000 |
| 286 | 0.0000 | 0.4398 | 0.4603 | 0.0999 | 0.0000 |
| 83  | 1.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 84  | 0.8461 | 0.0924 | 0.0615 | 0.0000 | 0.0000 |
| 85  | 1.0000 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| 9   | 0.0447 | 0.3750 | 0.4548 | 0.0000 | 0.1255 |
| 91  | 0.0000 | 0.0000 | 0.0000 | 0.8546 | 0.1454 |

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**Table S3.** Common measures of genetic diversity for 67 *C. pubescens* samples from the inferred clusters at  $K=2,4,5$  calculated from 1,462 unlinked biallelic SNPs markers following (a) Admixture and (b) DAPC assignments, and also (c) Admixture n-balanced calculations. Samples origin/Clusters are named according to phylogenetic network grouping (Figure 2a) (see Table footers).

N = number of individuals; %P = percentage of polymorphic SNPs; A = total number of alleles;  $A_R$  = allelic richness,  $A_P$  = private allelic richness;  $H_O$  = observed heterozygosity;  $H_E$  = expected heterozygosity;  $F_{IS}$  = inbreeding coefficient;  $F_{IS}$  (95% CI) = lower and upper 95% confidence intervals of inbreeding coefficients.

**(a) Admixture assignment**

| K-value | Cluster | N  | %P    | A    | $A_R$  | $A_P$  | $H_O$  | $H_E$  | $F_{IS}$ | $F_{IS}$ (95% CI) |
|---------|---------|----|-------|------|--------|--------|--------|--------|----------|-------------------|
| 2       | 1       | 27 | 96.54 | 2819 | 1.7110 | 0.2840 | 0.2168 | 0.2106 | 0.0044   | -0.0217, 0.0066   |
|         | 2       | 25 | 87.57 | 2557 | 1.5842 | 0.1573 | 0.1265 | 0.1647 | 0.1856   | 0.1480, 0.2518    |
| 4       | 1       | 18 | 90.31 | 2619 | 1.1971 | 0.1172 | 0.2025 | 0.1905 | -0.0178  | -0.0460, -0.0111  |
|         | 2       | 8  | 84.07 | 2438 | 1.2281 | 0.1329 | 0.2374 | 0.2053 | -0.0478  | -0.0728, -0.0221  |
|         | 3       | 10 | 80.31 | 2329 | 1.1767 | 0.0800 | 0.1448 | 0.1661 | 0.1383   | 0.1006, 0.2037    |
|         | 4       | 10 | 70.31 | 2039 | 1.1155 | 0.0642 | 0.1020 | 0.1084 | 0.1011   | 0.0816, 0.1698    |
| 5       | 1       | 17 | 89.18 | 2604 | 1.1944 | 0.0912 | 0.1996 | 0.1874 | -0.0181  | -0.0452, -0.0088  |
|         | 2       | 4  | 73.15 | 2136 | 1.1941 | 0.0912 | 0.2331 | 0.1671 | -0.2141  | -0.2778, -0.2172  |
|         | 3       | 5  | 84.73 | 2474 | 1.2603 | 0.1245 | 0.2873 | 0.2278 | -0.1111  | -0.1514, -0.0997  |
|         | 4       | 14 | 83.63 | 2442 | 1.1782 | 0.0586 | 0.1373 | 0.1707 | 0.1793   | 0.1488, 0.2279    |
|         | 5       | 8  | 66.51 | 1942 | 1.1019 | 0.0451 | 0.0955 | 0.0943 | 0.0511   | 0.0156, 0.1231    |

Samples origin/Clusters:  $K=2$ - Cluster 1: C-S Bolivia-Argentina, Villa Serrano (Bolivia), C-W Bolivia; Cluster 2: Peru-Ecuador, Central America-Mexico.  $K=4$ - Cluster 1: C-S Bolivia-Argentina; Cluster 2: C-W Bolivia (La Paz surroundings); Cluster 3: Peru-Ecuador; Cluster 4: Central America-Mexico.  $K=5$ - Cluster 1: C-S Bolivia-Argentina, Cluster 2: Villa Serrano (Bolivia); Cluster 3: C-W Bolivia (La Paz surroundings); Cluster 4: Peru-Ecuador; Cluster 5: Central America-Mexico.

**(b) DAPC assignment**

| K-value | Cluster | N  | %P    | A    | $A_R$  | $A_P$  | $H_O$  | $H_E$  | $F_{IS}$ | $F_{IS}$ (95% CI) |
|---------|---------|----|-------|------|--------|--------|--------|--------|----------|-------------------|
| 2       | 1       | 40 | 99.18 | 2900 | 1.7662 | 0.2805 | 0.2203 | 0.2196 | 0.0197   | 0.0010, 0.0245    |
|         | 2       | 27 | 90.46 | 2645 | 1.6071 | 0.1273 | 0.1389 | 0.1721 | 0.1486   | 0.1366, 0.1893    |
| 4       | 1       | 21 | 93.43 | 2732 | 1.2052 | 0.1160 | 0.2122 | 0.1993 | -0.0151  | -0.0616, -0.0162  |
|         | 2       | 4  | 73.12 | 2138 | 1.1939 | 0.1129 | 0.2328 | 0.1669 | -0.2141  | -0.3000, -0.2119  |
|         | 3       | 33 | 97.57 | 2853 | 1.2104 | 0.1009 | 0.1896 | 0.2065 | 0.0807   | 0.0266, 0.1592    |
|         | 4       | 9  | 69.46 | 2031 | 1.1118 | 0.0662 | 0.1008 | 0.1044 | 0.0843   | 0.0729, 0.1204    |
| 5       | 1       | 21 | 93.43 | 2732 | 1.2052 | 0.0943 | 0.2122 | 0.1993 | -0.0151  | -0.0500, -0.0198  |
|         | 2       | 4  | 73.12 | 2138 | 1.1939 | 0.0917 | 0.2328 | 0.1669 | -0.2141  | -0.2800, -0.2180  |
|         | 3       | 17 | 95.69 | 2798 | 1.2325 | 0.0951 | 0.2388 | 0.2238 | -0.0239  | -0.0433, -0.0133  |
|         | 4       | 16 | 86.11 | 2518 | 1.1794 | 0.0593 | 0.1417 | 0.1727 | 0.1625   | 0.1506, 0.2038    |
|         | 5       | 9  | 69.46 | 2031 | 1.1118 | 0.0491 | 0.1008 | 0.1044 | 0.0843   | 0.0549, 0.1535    |

Samples origin/Clusters:  $K=2$ - Cluster 1: C-S Bolivia-Argentina, Villa Serrano (Bolivia), C-W Bolivia; Cluster 2: Peru-Ecuador, Central America-Mexico.  $K=4$ - Cluster 1: C-S Bolivia-Argentina; Cluster 2: Villa Serrano (Bolivia); Cluster 3: Peru-Ecuador, C-W Bolivia; Cluster 4: Central America-Mexico.  $K=5$ - Cluster 1: C-S Bolivia-Argentina, Cluster 2: Villa Serrano (Bolivia); Cluster 3: C-W Bolivia; Cluster 4: Peru-Ecuador, C-W Bolivia (La Paz markets); Cluster 5: Central America-Mexico.

(c) Admixture n-balanced

| K-value | Cluster | N  | %P    | A    | A <sub>R</sub> | A <sub>P</sub> | H <sub>O</sub> | H <sub>E</sub> | F <sub>IS</sub> | F <sub>IS</sub> (95% CI) |
|---------|---------|----|-------|------|----------------|----------------|----------------|----------------|-----------------|--------------------------|
| 2       | 1       | 27 | 96.54 | 2819 | 1.7110         | 0.2840         | 0.2168         | 0.2106         | 0.0044          | -0.0217, 0.0066          |
|         | 2       | 25 | 87.57 | 2557 | 1.5842         | 0.1573         | 0.1265         | 0.1647         | 0.1856          | 0.1480, 0.2518           |
| 3       | 1       | 10 | 85.07 | 2455 | 1.3987         | 0.1594         | 0.2075         | 0.1887         | -0.0268         | -0.0594, -0.0144         |
|         | 2       | 10 | 92.76 | 2677 | 1.5105         | 0.2253         | 0.2630         | 0.2388         | -0.0324         | -0.0554, -0.0161         |
|         | 3       | 10 | 70.76 | 2042 | 1.2349         | 0.0749         | 0.1065         | 0.1113         | 0.0880          | 0.0661, 0.1550           |
| 4       | 1       | 21 | 93.43 | 2732 | 1.2052         | 0.1160         | 0.2122         | 0.1993         | -0.0151         | -0.0616, -0.0162         |
|         | 2       | 4  | 73.12 | 2138 | 1.1939         | 0.1129         | 0.2328         | 0.1669         | -0.2141         | -0.3000, -0.2119         |
|         | 3       | 33 | 97.57 | 2853 | 1.2104         | 0.1009         | 0.1896         | 0.2065         | 0.0807          | 0.0266, 0.1592           |
|         | 4       | 9  | 69.46 | 2031 | 1.1118         | 0.0662         | 0.1008         | 0.1044         | 0.0843          | 0.0729, 0.1204           |
| 5       | 1       | 8  | 81.40 | 2364 | 1.1931         | 0.0913         | 0.2046         | 0.1790         | -0.0478         | -0.0875, -0.0429         |
|         | 2       | 4  | 73.24 | 2127 | 1.1935         | 0.0886         | 0.2315         | 0.1664         | -0.2088         | -0.1743, -0.2253         |
|         | 3       | 8  | 83.71 | 2431 | 1.2268         | 0.1017         | 0.2364         | 0.2041         | -0.0498         | -0.0733, -0.0246         |
|         | 4       | 8  | 78.37 | 2276 | 1.1743         | 0.0619         | 0.1247         | 0.1620         | 0.2277          | 0.1658, 0.2676           |
|         | 5       | 8  | 66.87 | 1942 | 1.1049         | 0.0500         | 0.0979         | 0.0971         | 0.0538          | 0.0207, 0.1262           |

Samples origin/Clusters: K= 2- Cluster 1: C-S Bolivia-Argentina, Villa Serrano (Bolivia), C-W Bolivia; Cluster 2: Peru-Ecuador, Central America-Mexico. K= 3- Cluster 1: C-S Bolivia-Argentina; Cluster 2: Villa Serrano (Bolivia), C-W Bolivia, Peru-Ecuador; Cluster 3: Central America-Mexico; K= 4- Cluster 1: C-S Bolivia-Argentina; Cluster 2: C-W Bolivia (La Paz surroundings); Cluster 3: Peru-Ecuador; Cluster 4: Central America-Mexico. K= 5- Cluster 1: C-S Bolivia-Argentina, Cluster 2: Villa Serrano (Bolivia); Cluster 3: C-W Bolivia (La Paz surroundings); Cluster 4: Peru-Ecuador; Cluster 5: Central America-Mexico.

**Table S4.** Pairwise genetic differentiation ( $F_{ST}$ ) among the inferred clusters of *C. pubescens* at  $K=2,4,5$  calculated from 1,462 unlinked biallelic SNPs markers following (a) Admixture and (b) DAPC assignments, and also (c) Admixture n-balanced calculations. Samples origin/Clusters are named according to phylogenetic network grouping (Figure 2a) (see Table footers).

(a) Admixture assignment

| $K=2$     | Cluster 1 | Cluster 2       |
|-----------|-----------|-----------------|
| Cluster 1 | -         | 0.0776 - 0.0908 |
| Cluster 2 | 0.0840    | -               |

Cluster 1: C-S Bolivia-Argentina, Villa Serrano (Bolivia), C-W Bolivia; Cluster 2: Peru-Ecuador, Central

| $K=4$     | Cluster 1 | Cluster 2       | Cluster 3       | Cluster 4       |
|-----------|-----------|-----------------|-----------------|-----------------|
| Cluster 1 | -         | 0.1364 – 0.1738 | 0.0739 – 0.0907 | 0.2202 – 0.2614 |
| Cluster 2 | 0.1553    | -               | 0.1043 – 0.1417 | 0.3096 – 0.3605 |
| Cluster 3 | 0.0817    | 0.1233          | -               | 0.1158 – 0.1479 |
| Cluster 4 | 0.2404    | 0.3368          | 0.1322          | -               |

Cluster 1: C-S Bolivia-Argentina; Cluster 2: C-W Bolivia (La Paz surroundings); Cluster 3: Peru-Ecuador; Cluster 4: Central America-Mexico

| $K=5$     | Cluster 1 | Cluster 2       | Cluster 3       | Cluster 4       | Cluster 5       |
|-----------|-----------|-----------------|-----------------|-----------------|-----------------|
| Cluster 1 | -         | 0.1396 – 0.1711 | 0.0644 – 0.0780 | 0.1084 – 0.1282 | 0.2231 – 0.2573 |
| Cluster 2 | 0.1553    | -               | 0.1044 – 0.1334 | 0.1479 – 0.1840 | 0.3141 – 0.3583 |
| Cluster 3 | 0.0711    | 0.1189          | -               | 0.0381 – 0.0507 | 0.1554 – 0.1836 |
| Cluster 4 | 0.1183    | 0.1651          | 0.0441          | -               | 0.1300 – 0.1612 |
| Cluster 5 | 0.2404    | 0.3368          | 0.1692          | 0.1460          | -               |

Cluster 1: C-S Bolivia-Argentina, Cluster 2: Villa Serrano (Bolivia); Cluster 3: C-W Bolivia (La Paz surroundings); Cluster 4: Peru-Ecuador; Cluster 5: Central America-Mexico.

(b) DAPC assignment

| $K=2$ | 1      | 2               |
|-------|--------|-----------------|
| 1     | -      | 0.0776 - 0.0908 |
| 2     | 0.0840 | -               |

Cluster 1: C-S Bolivia-Argentina, Villa Serrano (Bolivia), C-W Bolivia; Cluster 2: Peru-Ecuador, Central America-Mexico.

| $K=4$     | Cluster 1 | Cluster 2       | Cluster 3       | Cluster 4       |
|-----------|-----------|-----------------|-----------------|-----------------|
| Cluster 1 | -         | 0.1364 – 0.1738 | 0.0739 – 0.0907 | 0.2202 – 0.2614 |
| Cluster 2 | 0.1553    | -               | 0.1043 – 0.1417 | 0.3096 – 0.3605 |
| Cluster 3 | 0.0817    | 0.1233          | -               | 0.1158 – 0.1479 |
| Cluster 4 | 0.2404    | 0.3368          | 0.1322          | -               |

Cluster 1: C-S Bolivia-Argentina; Cluster 2: Villa Serrano (Bolivia); Cluster 3: Peru-Ecuador, C-W Bolivia; Cluster 4: Central America-Mexico.

| $K=5$     | Cluster 1 | Cluster 2       | Cluster 3       | Cluster 4       | Cluster 5       |
|-----------|-----------|-----------------|-----------------|-----------------|-----------------|
| Cluster 1 | -         | 0.1396 – 0.1711 | 0.0644 – 0.0780 | 0.1084 – 0.1282 | 0.2231 – 0.2573 |
| Cluster 2 | 0.1553    | -               | 0.1044 – 0.1334 | 0.1479 – 0.1840 | 0.3141 – 0.3583 |
| Cluster 3 | 0.0711    | 0.1189          | -               | 0.0381 – 0.0507 | 0.1554 – 0.1836 |
| Cluster 4 | 0.1183    | 0.1651          | 0.0441          | -               | 0.1300 – 0.1612 |
| Cluster 5 | 0.2404    | 0.3368          | 0.1692          | 0.1460          | -               |

Cluster 1: C-S Bolivia-Argentina, Cluster 2: Villa Serrano (Bolivia); Cluster 3: C-W Bolivia; Cluster 4: Peru-Ecuador, C-W Bolivia (La Paz markets); Cluster 5: Central America-Mexico.

(c) Admixture n-balanced

| <b>K= 2</b>      | <b>Cluster 1</b> | <b>Cluster 2</b> |
|------------------|------------------|------------------|
| <b>Cluster 1</b> | -                | 0.1105 – 0.1273  |
| <b>Cluster 2</b> | 0.1189           | -                |

Cluster 1: C-S Bolivia-Argentina, Villa Serrano (Bolivia), C-W Bolivia; Cluster 2: Peru-Ecuador, Central America-Mexico.

| <b>K= 2</b>      | <b>Cluster 1</b> | <b>Cluster 2</b> | <b>Cluster 3</b> |
|------------------|------------------|------------------|------------------|
| <b>Cluster 1</b> | -                | 0.0855 – 0.1001  | 0.2330 – 0.2672  |
| <b>Cluster 2</b> | 0.0933           | -                | 0.1578 – 0.1860  |
| <b>Cluster 3</b> | 0.2501           | 0.1718           | -                |

Cluster 1: C-S Bolivia-Argentina; Cluster 2: Villa Serrano (Bolivia), C-W Bolivia, Peru-Ecuador; Cluster 3: Central America-Mexico.

| <b>K= 4</b>      | <b>Cluster 1</b> | <b>Cluster 2</b> | <b>Cluster 3</b> | <b>Cluster 4</b> |
|------------------|------------------|------------------|------------------|------------------|
| <b>Cluster 1</b> | -                | 0.1074 - 0.1464  | 0.1240 – 0.1464  | 0.2324 – 0.2674  |
| <b>Cluster 2</b> | 0.1181           | -                | 0.1010 – 0.1274  | 0.2390 – 0.2742  |
| <b>Cluster 3</b> | 0.1351           | 0.1708           | -                | 0.1527 – 0.1878  |
| <b>Cluster 4</b> | 0.2501           | 0.2569           | 0.1708           | -                |

Cluster 1: C-S Bolivia-Argentina; Cluster 2: C-W Bolivia (La Paz surroundings); Cluster 3: Peru-Ecuador; Cluster 4: Central America-Mexico.

| <b>K= 5</b>      | <b>Cluster 1</b> | <b>Cluster 2</b> | <b>Cluster 3</b> | <b>Cluster 4</b> | <b>Cluster 5</b> |
|------------------|------------------|------------------|------------------|------------------|------------------|
| <b>Cluster 1</b> | -                | 0.1597 - 0.1923  | 0.1267 - 0.1497  | 0.1220 - 0.1434  | 0.2519 - 0.2902  |
| <b>Cluster 2</b> | 0.1761           | -                | 0.1501 - 0.1848  | 0.2421 - 0.2776  | 0.3350 - 0.3791  |
| <b>Cluster 3</b> | 0.1377           | 0.1662           | -                | 0.0709 - 0.0938  | 0.1501 - 0.1871  |
| <b>Cluster 4</b> | 0.1321           | 0.2595           | 0.0826           | -                | 0.1452 - 0.1769  |
| <b>Cluster 5</b> | 0.2711           | 0.3569           | 0.1681           | 0.1616           | -                |

Cluster 1: C-S Bolivia-Argentina, Cluster 2: Villa Serrano (Bolivia); Cluster 3: C-W Bolivia (La Paz surroundings); Cluster 4: Peru-Ecuador; Cluster 5: Central America-Mexico.