

Appendix 1. Annotated list of 48 morphological characters used in the phenetic analyses of *Homoranthus*

Characters and their states are in DELTA format ([Dallwitz *et al.* 1993](#))

- #1. Plants <growth habit>/
 1. decumbent/
 2. ascending/
 3. erect/
 Growth habit was usually observed in the field but could sometimes be determined by observing the branching pattern on herbarium specimens.
- #2. Branchlets <density>/
 on last 20 cm of primary branch/
 Single count only. Only mature branches used for counts.
- #3. Leaves <whether papillate>/
 1. papillate/
 2. epapillate/
- #4. Leaves <blade shape in side view>/
 1. linear/
 2. axe-shaped/
 3. oblanceolate/
 4. elliptic/
 Shape was only determined when viewing leaves from side. All leaves were linear when viewing from above.
- #5. Leaves <density>/
 per 1.5 cm in middle of closest branchlet 20 cm below primary branch apex/
 Single count only
- #6. Leaves <length excluding mucro>/
 mm long/
 Mean of 5 measurements. Each measurement was rounded to nearest 1 mm. Only adult leaves were measured #i.e. elongated, juvenile leaves at end of branchlets were avoided.
- #7. Leaves <maximum thickness>/
 mm thick/
 Mean of 5 measurements. Each measurement rounded to nearest 0.1 mm.
- #8. Leaves <degree of glaucousness of mature leaves>/
 1. strongly glaucous when mature/
 2. slightly glaucous when mature/
 3. never glaucous when mature/
- #9. Leaves <whether shiny or dull>/
 1. dull/
 2. shiny/
 Leaves examined were mature leaves that had not begun to discolour with age. Any bloom was wiped off to reveal the surface underneath.
- #10. Flowering branchlets <whether having a modified internode>/
 1. with a modified internode that resembles a peduncle/
 2. without a modified internode that resembles a peduncle/
- #11. Flowering branchlets <whether with a reduced number of leaves>/
 1. with a similar number of leaves to non-flowering branchlets/
 2. with significantly fewer leaves than non-flowering branchlets/
- #12. Flowering branchlets <whether aggregated into a pseudoflorescence>/
 1. aggregated into a pseudoflorescence/
 2. not aggregated into a pseudoflorescence/
- #13. Peduncle <length>/
 mm long/
 Mean of 5 measurements. Each measurement rounded to nearest 0.1 mm.
- #14. Bracteoles <whether caducous>/
 1. caducous/
 2. persistent during flowering/
 Occasionally bracteoles had broken off herbarium specimens of otherwise 'persistent-bracteoled

species' so at least 5 mature flowers were examined per specimen.

- #15. Bracteoles <whether keeled or rounded on the outer surface>/
1. keeled/
2. not keeled/
- #16. Bracteoles <whether awned on the outer surface>/
1. awned/
2. awnless/
- #17. Bracteole apex <shape>/
1. acute/
2. obtuse/
3. retuse/
- #18. Flowers <orientation>/
1. erect/
2. pendent/
3. divergent/
- #19. Flowers <number per flowering branchlet>/
per flowering branchlet/
Mean of 3 counts. Peduncle scars where a flower has fallen off was counted as a flower.
- #20. Hypanthium <whether distally constricted>/
1. distally constricted/
2. not distally constricted/
- #21. Hypanthium <whether medianly constricted>/
1. medianly constricted/
2. not medianly constricted/
- #22. Hypanthium <length>/
mm long/
Mean of 5 measurements. Each measurement rounded to nearest 0.1 mm.
- #23. Hypanthium <whether thin, unicellular trichomes present between costae>/
1. with thin, unicellular trichomes present between costae/
2. without thin, unicellular trichomes between costae/
- #24. Hypanthium <whether tuberculate, multicellular trichomes present between costae>/
1. with tuberculate, multicellular trichomes between the costae/
2. without tuberculate, multicellular trichomes between the costae/
- #25. Hypanthium costae <whether variable or fixed in number>/
1. variable in number/
2. always five/
- #26. Hypanthium costae <whether longitudinally grooved>/
1. longitudinally grooved/
2. not longitudinally grooved/
- #27. Sepals <length>/
mm long/
Mean of 5 measurements, each on different flowers. Each measurement rounded to nearest 0.1 mm.
- #28. Sepals <colour>/
1. creamy white/
2. yellow/
3. orange/
4. red/
All colours were determined on sepals of mature flowers before they had begun to discolour with age.
- #29. Sepal apex <colour relative to the rest of the sepal>/
1. with a darker coloured fringe/
2. concolourous with the rest of the sepal/
- #30. Sepal apex <shape>/
1. truncate/
2. acute/
3. acuminate/
4. laciniate/
5. obtuse/
- #31. Sepal lacinae <number excluding any secondary divisions>/
per sepal/
Mean of 5 counts, each taken on different flowers.

- #32. Sepal laciniae <presence of secondary divisions>/
 1. divided/
 2. entire/
- #33. Sepal laciniae midvein <whether conspicuous>/
 1. conspicuous/
 2. absent or inconspicuous/
- #34. Petals <length excluding any laciniae>/
 mm long/
 Mean of 5 measurements, each on different flowers. Each measurement rounded to nearest 0.1 mm.
- #35. Petals <colour before any discolouration>/
 1. creamy white/
 2. yellow/
 3. red/
 4. dark purple to black/
 All colours determined on petals of mature flowers before they discoloured with age.
- #36. Anthers <colour>/
 1. red/
 2. yellow-brown/
- #37. Staminodes <whether adnate to the adjacent antepetalous stamen>/
 1. distinctly adnate to the adjacent antepetalous stamen/
 2. not (or obscurely) adnate to the adjacent antepetalous stamen/
- #38. Staminodes <spacing within the androecium>/
 1. arranged in groups within the androecium/
 2. spaced evenly within the androecium/
- #39. Staminode apex <whether discolorous>/
 1. with a red tip/
 2. concolorous with the rest of the staminode/
- #40. Style <length>/
 mm long/
 Mean of five measurements. Each measurement rounded to nearest 0.1 mm.
- #41. Style <whether straight or curved>/
 1. distally curved/
 2. straight/
- #42. Style <colour before any discolouration>/
 1. creamy white to pale yellow/
 2. pink/
 3. black/
 Creamy includes creamy white to pale yellow.
- #43. Simple style hairs <whether present>/
 1. present/
 2. absent/
- #44. Branched style hairs <whether present>/
 1. present/
 2. absent/
- #45. Glandular style hairs <whether present>/
 1. present/
 2. absent/
- #46. Ovary summit <colour>/
 1. green/
 2. red/
- #47. Ovules <arrangement on placenta>/
 1. arranged in vertical rows/
 2. arranged in sub-horizontal rows/
- #48. Ovules <number per ovary>/
 per ovary/
 Mean of five counts