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**An interim key to the Western Australian species of *Hibbertia*
(Dilleniaceae)**

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Abstract

Wheeler, J.R. An interim key to the Western Australian species of *Hibbertia* (Dilleniaceae). *Nuytsia* 15(2): 311–320 (2004). A key is presented to the Western Australian species of *Hibbertia* following the formal recognition of numerous new species in recent years.

Introduction

Following a series of papers on the taxonomy of the genus *Hibbertia* Andr. and the publication of many new species and infraspecific taxa (Toelken & Wheeler 2002, Wheeler 2000 a–b, 2002 a–e, 2004 a–c), existing keys to the genus by Bentham (1863) and Grieve (1998) have become out of date. An interim key is provided here prior to the ‘Flora of Australia’ treatment of the family that is still some years away.

Several taxa in the key are referred to only by informal phrase names or are annotated as being variants. Other taxa belong to complexes which are as yet unresolved. *Hibbertia exasperata*, *Hibbertia rostellata*, *Hibbertia nutans* and *Hibbertia uncinata* belong to such an unresolved complex and are all referred to in this key as *Hibbertia exasperata* group.

Key to the genus *Hibbertia* in Western Australia

1. Stamens all on one side of 2 carpels (sometimes some staminodes occur opposite the stamens)
 2. Flowers in a several-flowered spike
 3. Sepals, bracts and young leaves glabrous or with minute stellate and hooked hairs **H. spicata**
 3. Sepals, bracts and young leaves with fairly long coarse simple hairs, sometimes also with underlying minute stellate hairs
 4. Hairs white. Stamens few (8–10) in few rows **H. polystachya**
 4. Hairs brownish. Stamens many (28–43) in several rows (Kimberley region only) **H. ledifolia**
 2. Flowers solitary or clustered in the leaf axils
 5. Flowers stalked
 6. Carpels hairy or scaly

- 7. Leaves strongly pungent or gradually tapered and spine-tipped
 - 8. Sepals with scales or scale-like stellate hairs
 - 9. Leaf with recurved spiny tip **H. eatoniae**
 - 9. Leaf with straight spiny tip
 - 10. Flowers 8–15 mm diam. Upper leaf surface smooth **H. lepidocalyx** subsp. **lepidocalyx**
 - 10. Flowers 15–25 mm diam. Upper leaf surface tuberculate **H. lepidocalyx** subsp. **tuberculata**
 - 8. Sepals glabrous or with hairs, not scales
 - 11. Leaf tip recurved. Carpels 4-ovulate **H. ancistrophylla**
 - 11. Leaf tip straight, not recurved. Carpels 2-ovulate
 - 12. Sepals spine-tipped. Plant usually erect
 - 13. Sepals with dense minute stellate hairs (sometimes also hooked hairs). Leaves not usually spreading as far as 90 degrees to the stem
 - 14. Midrib of leaf unusually enlarged on lower surface and protruding beyond leaf surface. Peduncle up to 4 mm long. Outer sepals with mucro to 4 mm long
 - 15. Young branchlets densely woolly. Stamens 5. Sepals without hooked hairs **H. mucronata**
 - 15. Young branchlets with tiny stellate hairs. Stamens 5–8. Sepals with hooked hairs **H. hamulosa**
 - 14. Midrib of leaf not unusually enlarged. Peduncle 6–15 mm long. Sepals with mucro up to 0.5 mm long **H. turleyana**
 - 13. Sepals appearing glabrous but with very sparse and very minute stellate or semi-stellate hairs. Leaves very rigid and usually at 90 degrees to the stem **H. ulicifolia**
 - 12. Sepals obtuse to acute, not or scarcely spine-tipped. Often a small cushion-like plant **H. acerosa**
- 7. Leaves not strongly pungent, but sometimes with a short mucro or a blunt or hair-like point
 - 16. Leaf tip recurved
 - 17. Leaf thick, linear, much longer than wide, erect or spreading with tightly revolute margins
 - 18. Sepals glabrous or almost so, sometimes with sparse minute stellate hairs, midrib of sepal not or only slightly pronounced
 - 19. Leaves with straight hairs or hooked hairs **H. avonensis**
 - 19. Leaves glabrous or almost so, or with occasional stellate hairs
 - 20. Apparent margin of leaf somewhat acute, surface sparsely tuberculate, apex distinctly recurved
 - 21. Leaf 8–25 mm long **H. lineata**
 - 21. Leaf 2.5–12 mm long **H. recurvifolia**
 - 20. Apparent leaf margin rounded, surface very minutely papillose, apex not or only slightly recurved **H. papillata**
 - 18. Sepals densely stellate-hairy and with pronounced midrib **H. verrucosa**
 - 17. Leaf ovate, very thick, almost as wide as long, downturned with tightly revolute margins **H. microphylla**
 - 16. Leaf tip not distinctly recurved
 - 22. Leaves glabrous or the upper surface glabrous or glabrescent

23. Leaves 13–55 mm long, slender, lacking a terminal point.
Stamens 17–25, staminodes several in a row outside the
fertile stamens.(Kimberley region only) **H. hooglandii**
23. Leaves 1.5–12 mm long, with a blunt terminal point. Stamens about 10,
sometimes with a few staminodes each side of the fertile stamens
24. Sepals glabrous
25. Carpels 3 or 4-ovulate. Bracts broadly ovate and cordate. Leaf
margins revolute to a sunken midrib. Staminodes present **H. stenophylla**
25. Carpels 2-ovulate. Bracts narrowly oblong to linear or subulate.
Leaf margins revolute to a swollen midrib. Staminodes absent **H. gracilipes**
24. Sepals hairy, often minutely so
26. Sepals with minute stellate hairs. Upper leaf surface glabrous.
Carpels 2-ovulate **H. papillata**
26. Sepals with uncinata and often stellate hairs. Upper leaf
surface with very occasional hooked hairs when young.
Carpels 4-ovulate **H. ancistrotricha**
22. Leaves with stellate and/or simple hairs, sometimes with hooked hairs
27. Stellate hairs absent, or if present very few
28. Flower stalks single
29. Carpels 2-ovulate. Staminodes often present, 2 or 3 each side of the
fertile stamens. Sepals glabrous or with simple, straight or uncinata hairs
30. Sepals glabrous or with a few appressed hairs. Bract below
flower ovate to broadly ovate **H. avonensis**
30. Sepals with uncinata and straight hairs. Bract below
flower linear **H. diamesogenos**
29. Carpels 4-ovulate. Staminodes absent. Sepals with
uncinata and stellate hairs **H. ancistrotricha**
28. Flower stalks in a dense cluster arising from a cluster of leaves **H. sp. tathra**
27. Stellate hairs present, dense but often minute and also often
with longer simple hairs
31. Leaves flat, elliptic to obovate
32. Leaves with long simple hairs as well as minute stellate hairs
on undersurface **H. silvestris**
32. Leaves with stellate hairs and scales only **H. hypericoides** (northern variant)
31. Leaves with slightly to strongly recurved margins
appearing linear or narrowly oblong
33. All sepals with prominent midrib **H. verrucosa**
33. Sepals, at least inner ones without a very prominent midrib
34. Leaves 6–25 mm long **H. hypericoides**
34. Leaves 20–50 mm long **H. furfuracea**
6. Carpels glabrous
35. Flower stalks up to 10 mm long, usually straight. Styles 2–3 mm long.
Leaf midrib swollen and protruding on lower surface **H. psilocarpa**
35. Flower stalks 10-25 mm long, greatly recurved, more or less sigmoid.
Styles 4-5 mm long. Leaf midrib not swollen **H. andrewsiana**
5. Flowers sessile or sub-sessile
36. Carpels hairy
37. Leaf apex more or less obtuse

38. Leaves with sparse but conspicuously long spreading hairs.
 Sepals more or less glabrous **H. sp. Mt. Lesueur**
38. Leaves glabrous or with short more or less appressed hairs.
 Sepals glabrous or with short appressed hairs
39. Leaves and also sometimes sepals with short hairs **H. crassifolia**
39. Leaves and sepals glabrous or with minute stellate to semi-stellate hairs
40. Bracts narrowly ovate. Carpels 2-ovulate **H. aurea**
40. Bracts broadly ovate and cordate. Carpels 3 or 4-ovulate **H. stenophylla**
37. Leaf apex prominently acute or pungent
41. Young branchlets woolly. Fertile stamens 5, staminodes absent
 or 5-20 outside the stamens
42. Stamens 5, staminodes absent **H. mucronata**
42. Fertile stamens 5, staminodes 5–20 outside the stamens **H. charlesii**
41. Young branchlets not woolly. Fertile stamens 8–11, staminodes
 absent or a few each side of the stamens
43. Midrib of lower leaf surface enlarged, prominent and protruding
 beyond level of the revolute leaf margins
44. Leaf apex straight or almost so. Carpels 4(5)-ovulate **H. carinata**
44. Leaf apex strongly recurved. Carpels usually 2-ovulate **H. ancistrophylla**
43. Midrib of lower leaf surface not unusually enlarged, level with
 or sunken below the level of the revolute leaf margins
45. Sepals with simple hairs
46. Sepals pilose with long hairs **H. axillibarba**
46. Sepals very densely hairy with silky hairs **H. pachyphylla**
45. Sepals almost glabrous, sometimes with minute stellate hairs
47. Leaves very thick, almost cylindrical 4–12 mm long, tip rounded
 but with a short hard spine. Sepals 4–7 mm long **H. stowardii**
47. Leaves flat or compressed with recurved margins, mostly
 10–25 mm long and gradually tapered at the tip, acute to
 mucronate. Sepals 6–9 mm long **H. aurea**
36. Carpels glabrous
48. Midrib of leaf not or scarcely enlarged. Bract linear. Carpels 2-ovulate **H. oligantha**
48. Midrib of leaf distinctly enlarged. Bract ovate. Carpels 3–8-ovulate **H. psilocarpa**
1. Stamens all around the (2)3-5(15) carpels
49. Inflorescence branched and apparently leafless **H. conspicua**
49. Flowers solitary or clustered in the leaf axils
50. Stamens apparently free or almost so, sometimes fused into a ring at the very base
51. Flowers stalked
52. Carpels 2 or 3
53. Carpels 3, glabrous. (South-west and Pilbara regions)
54. Leaves and sepals softly hairy **H. inconspicua**
54. Leaves and sepals glabrous
55. Leaves slender, 0.5–5 mm wide and tapered at base, not surrounding the stem
56. Flowers orange or yellow. Stamens 10–15. Leaves linear,
 15–25 mm long **H. stellaris**
56. Flowers yellow. Stamens very numerous. Leaves very narrowly
 elliptic, 40–70 mm long **H. glaberrima**
55. Leaves 5–15 mm wide, oblong, not tapered at base but
 surrounding the stem. **H. nymphaea**

53. Carpels 2 or 3, covered with tiny scales. (Kimberley region)
57. Carpels 3. Sepals scaly, the margin fringed with pale or dark hairs **H. echiifolia**
57. Carpels 2. Sepals scaly, sometimes fringed
58. Leaves folded lengthwise **H. lepidota**
58. Leaves flat
59. Low shrub with indumentum of fringed scales **H. sp. A (Kimberley Flora)**
59. Shrub to 2m with indumentum of soft stellate hairs **H. oblongata**
52. Carpels (4)5, or 10–15
60. Carpels glabrous
61. Leaves thin, flat, not spine-tipped
62. Leaves silky, silvery, narrow, tapered towards the base.
Flowers often clustered **H. potentilliflora**
62. Leaves glabrous, green, broad, or if narrow then stem-clasping
at base. Flowers usually single
63. Leaves perfoliate (ie leaf completely surrounding stem) **H. perfoliata**
63. Leaves amplexicaul (stem-clasping at their base)
64. Leaves broadly elliptic to circular **H. porongurupensis**
64. Leaves ovate or very narrowly ovate to linear
65. Leaves very narrowly ovate to linear **H. cunninghamii**
65. Leaves ovate to narrowly ovate **H. amplexicaulis**
61. Leaves thick with recurved margins, spine-tipped **H. exasperata** group
60. Carpels hairy
66. Carpels 5–15 (usually 10). Leaves with 5–10 pairs of teeth.
Bract one, narrow **H. grossulariifolia**
66. Carpels (4)5. Leaves entire or with 1–3 pairs of teeth. Bracts
several, dark, broad and papery
67. Erect to sprawling plant. Leaves narrowly oblong, densely
hairy with spreading hairs, margin entire or with very occasional
teeth. Flowers 20–35 mm in diameter **H. montana**
67. Sprawling plant. Leaves obovate to elliptic, with dense tiny
erect hairs and a few longer spreading hairs, margin with 1–3 pairs
of teeth. Flowers 40–65 mm in diameter long-stalked **H. lasiopus**
51. Flowers sessile or almost so
68. Carpels glabrous
69. Carpels 5
70. Leaf tip pungent **H. exasperata** group
70. Leaf not pungent **H. lividula**
69. Carpels (2)3
71. Sepals glabrous or almost so, but sometimes margin ciliolate
72. Stamens numerous, more than 30. Leaves with long straight hairs **H. mylnei**
72. Stamens 10–20. Leaves glabrous or with short curled hairs
73. Leaves with curled white hairs **H. inclusa**
73. Leaves glabrous
74. Leaves thin, flat, ovate to elliptic, narrowly obovate or
narrowly oblong, 6–15 mm long. Flowers sessile
75. Leaves dimorphic, basal leaves much longer
and narrower than the ovate to elliptic
floral leaves **H. glomerata** subsp. **glomerata**
75. Leaves all similar in size and shape, narrowly obovate to narrowly oblong

76. Sepals apiculate. Leaves narrowly obovate **H. glomerata** subsp. **wandoo**
 76. Sepals obtuse. Leaves narrowly oblong **H. glomerata** subsp. **darlingensis**
74. Leaves thick with margin revolute to the midrib, narrowly oblong. Flowers on very short stalks **H. glabriuscula**
71. Sepals hairy
77. Hairs on calyx golden brown **H. drummondii**
 77. Hairs on calyx white to grey
78. Leaves 2–6 mm long, thick, with margin revolute to the midrib **H. glabriuscula**
 78. Leaves 5–50 mm long, thin, flat
79. Leaves entire
80. Leaves silvery **H. argentea**
 80. Leaves green to bluish green or grey-green
81. Hairs on sepals dense, appressed **H. commutata**
 81. Hairs on sepals few and strong, spreading, conspicuous **H. pilosa**
79. Leaves toothed
82. Leaves with only 1–3 teeth each side **H. pilosa**
 82. Leaves with several teeth each side
83. Teeth of leaves serrate **H. serrata**
 83. Teeth of leaves crenate **H. serrata** (Darling Range variant)
68. Carpels hairy
84. Leaves spine-tipped. Carpels stellate-hairy, 6–10-ovulate. Bracts inconspicuous, leaf-like
85. Leaves straight, 10–20 mm long. Sepals 12–16 mm long. Carpels (2)3 with (8)10 ovules **H. graniticola**
85. Leaves curved, 4–8 mm long. Sepals 5–9 mm long. Carpels 2 with 6–8 ovules **H. arcuata**
84. Leaves obtuse to acute, not spine-tipped. Carpels with simple hairs, 2-ovulate. Bracts conspicuous, black and papery
86. Flowers orange
87. Petals broad. Anthers yellow or black, obovate, more than 0.5 mm wide. Carpels 5 **H. miniata**
 87. Petals distinctly narrowed at base. Anthers yellow, linear, less than 0.5 mm wide. Carpels 3 **H. selkii**
86. Flowers yellow
88. Flowers sessile. Leaves obovate to elliptic, sometimes narrowly so. Carpels 3-5
89. Carpels 3 or 4. Sepals with very closely appressed hairs. Flowers 15–25 mm across **H. ovata**
 89. Carpels 5. Sepals with more or less appressed hairs. Flowers 30–65 mm across
90. Leaves narrowly elliptic to elliptic **H. miniata**
 90. Leaves obovate-elliptic **H. quadricolor**
88. Some flowers at least shortly stalked particularly in fruit. Leaves oblong. Carpels 4 or 5 **H. montana**
50. Stamens fused into fascicles, occasionally also with a few single stamens
91. Carpels 3
92. Flowers on slender stalks
93. Leaves flat or with somewhat recurved margins
94. Erect or weeping shrub 0.5–1.5 m high. Leaves with short curled hairs **H. racemosa** (Dongara variant)
 94. Prostrate or sprawling shrub. Leaves glabrous or with straight hairs **H. racemosa**

93. Leaves sub-terete, glabrous **H. hibbertioides** var. **pedunculata**
92. Flowers sessile or almost so
95. Leaf surface glabrous or almost so, margins conspicuously fringed in *H. vaginata*
96. Bracts conspicuous, broad, often fairly rigid or chartaceous
97. Apex of sepals acute **H. notibractea**
97. Apex of sepals obtuse to emarginate
98. Leaves terete to semi-terete, tipped by tiny curled hairs **H. acrotrichion**
98. Leaves flat, glabrous
99. Stamens 2.5–4 mm long, anthers oblong to elliptic and apiculate **H. chartacea**
99. Stamens 1.5–2.5 mm long, anthers oblong to obovate and obtuse to truncate
100. Bracts more or less circular, 2–3 mm wide, obtuse or apiculate **H. pulchra** var. **pulchra**
100. Bracts ovate to elliptic, 1–1.3 mm wide, more or less acute **H. pulchra** var. **acutibractea**
96. Bracts inconspicuous, not rigid or chartaceous
101. Leaf margins closely revolute to midrib so that lower leaf surface appears 2-grooved, the leaf tip recurved
102. Leaves linear and straight **H. rupicola**
102. Leaves very narrowly triangular, and somewhat sigmoid **H. hamata**
101. Leaves terete, thick with somewhat recurved margins or flat, but not with margins revolute to midrib
103. Leaves flat or flattened, not terete
104. Floral and stem leaves different, stem leaves narrow; floral leaves broader ovate to elliptic
105. Leaf margins long-fringed. Floral leaves 15–20 mm long. Flowers 15–30 mm in diameter **H. vaginata**
105. Leaf margins entire or very minutely ciliolate. Floral leaves 3.5–10 mm long. Flowers 8–15 mm in diameter **H. glomerata** subsp. **ginginensis**
104. Floral and stem leaves all similar, narrow
106. Stamens 15–20. Sepals and leaf bases usually conspicuously fringed **H. sp. Warradage**
106. Stamens 8–12. Sepals and leaf bases glabrous
107. Leaves dilated and somewhat stem-clasping at base, narrowly oblong to linear **H. subvaginata**
107. Leaves not dilated at base not or scarcely stem-clasping, oblong to narrowly oblong
108. Leaves oblong to elliptic, thin, truncate, often with minutely recurved centre, midrib not enlarged and blade broad
109. Leaves oblong to oblong-elliptic **H. glomerata** subsp. **darlingensis**
109. Leaves ovate to elliptic, occasionally with elongated basal leaves **H. glomerata** subsp. **ginginensis**
108. Leaves linear, thick, apex obtuse, lower surface with much enlarged midrib and with very narrow blade **H. pulchra** var. **crassinervia**
103. Leaves slender, more or less terete, usually tapered towards tip
110. Sepals obtuse or with very small soft point
111. Leaves 3–12 mm long. Staminal filaments of fascicles, fused for two-thirds their length **H. hemignosta**

111. Leaves 10–22 mm long. Staminal filaments fused for up to half their length **H. hibbertioides** var. **meridionalis**
110. Sepals with conspicuous soft awn-like tip **H. hibbertioides** var. **hibbertioides**
95. Leaves hairy, at least towards the base, not glabrous with a conspicuously fringed margin
112. Sepals glabrous or with sparse hairs only
113. Bracts inconspicuous. Sepals obtuse to subacute
114. Leaves alternate, not clustered, oblong-elliptic **H. priceana**
114. Leaves clustered, linear
115. Anthers narrowly oblong, 1–2 mm long. Sepals obtuse **H. desmophylla**
115. Anthers narrowly obovate, 0.7–0.8 mm long. Sepals obtuse to sub-acute **H. helianthemoides**
113. Bracts conspicuous. Sepals acute
116. Leaves with a short blunt mucro. Bracts narrowly triangular **H. fitzgeraldensis**
116. Leaves obtuse. Bracts broadly elliptic, rigid **H. notibractea**
112. Sepals with dense silky hairs
117. Leaves flat or only very slightly recurved margins. Stamens 11 in 3 fascicles each of 3 stamens and 2 single stamens **H. trichocalyx**
117. Leaves with recurved margins. Stamens 25–30 in 5 fascicles each of 4–6 stamens **H. sp. Gnangara**
91. Carpels 5
118. Leaves spine-tipped **H. exasperata** group
118. Leaves not spine-tipped, sometimes with a soft point
119. Leaves flat or with slightly recurved margins
120. Sepals glabrous
121. Leaves broad, obovate to elliptic, 20–30 mm long, entire or distantly and shallowly toothed. Stamens 15–25. Bracts absent or inconspicuous **H. cuneiformis**
121. Leaves narrowly oblong, entire, 15–20 mm long. Stamens 15. Flowers surrounded by 2 or 3 conspicuous bracts **H. glabrisepala**
120. Sepals with dense long hairs
122. Leaves more or less glabrous. Sepals with long pilose hairs only **H. glomerosa** var. **glomerosa**
122. Leaves shortly felted. Sepals with short and long hairs .. **H. glomerosa** var. **bistrata**
119. Leaves with strongly recurved margins
123. Sepals silky-hairy with brownish hairs. Bracts conspicuous **H. ferruginea**
123. Sepals glabrous or thinly hairy with white to grey hairs. Bracts inconspicuous
124. Leaves with terminal tuft of hairs. Sepals 3.5–6 mm long, shortly acute **H. depressa**
124. Leaves lacking terminal hair tuft. Sepals 6–17 mm long, long-acute
125. Leaves glabrous. Sepals 10–17 mm long **H. huegelii**
125. Leaves densely hairy. Sepals 6–12 mm long **H. pachyrrhiza**

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