Hedyotis koana R. J. Wang, a new species of Rubiaceae from China

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Abstract  Hedyotis koana R. J. Wang is described as a new species from Guangdong, Hunan, Jiangxi, Guangxi, Fujian, and Hainan provinces of China. It is most similar to H. herbacea L. and H. pinifolia Wall. ex G. Don. because they all have narrow leaves and their capsules are loculicidally dehiscent at the top, but it differs from H. herbacea by having terminal or upper axillary cyme and narrow leaves, and it can be distinguished from H. pinifolia by having long flowering pedicles, sparse inflorescence, and adaxially glabrous corolla.

Key words  Hedyotis, Hedyotis koana R. J. Wang, Rubiaceae, new species, China.

The genus Hedyotis L. s.l. contains about 699 species in the tropical and subtropical regions of the world (Wang & Zhao, 2001) and is one of the largest genera in Rubiaceae (Verdcourt, 1976). In China, the genus is represented by ca. 60 species (Ko, 1999). The inflorescence of this genus is variable, ranging from terminal or axillary simple, paniculate, umbellate to condensed capitate cymes, usually with 4-merous flowers. Its capsules range from globose, ovoid, or ellipsoid. Seeds are very small, angled, embedded in the central placenta (Dutta & Deb, 2004). While examining the Hedyotis specimens at the herbarium (IBSC), I found that some specimens previously misidentified as H. herbacea L. was representing a species new to science. Hedyotis koana R. J. Wang, sp. nov.  Fig. 1

Species nova similes H. herbaceae L., a qua cymis terminalibus et supra axillaribus (non nisi axillis), foliis perangustis (0.8–1.5 mm) differt.

Herbs, ca. 17–40 cm tall, erect, glabrous, branched or unbranched. Stem gracile, diffuse, ca. 1 mm in diam. at base, 4-angular while young and terete with growing, glabrous. Leaves sessile, 1.4–2.5(–4.0) cm × 0.8–1.5 mm, linear, acute at apex, subcoriaceous, revolute at margin, glabrous; midrib depressed adaxially, prominent abaxially; stipules triangular, ca.1.8 × 2.2–3.5 mm, with 1–3 bristles. Inflorescence terminal and upper axillary, 4–12 flowered, composed by solitary flower or 2–3 flowered cyme, lax panicles or cymes. Flowers 4.5–5 mm long; pedicel slender, 1.5–2 cm long; calyx tube 1–1.5 mm long; calyx lobes 4, triangular, 1.2–1.7 mm long, ca. 0.6 mm wide at base, with bristles at margin. Corolla white, glabrous in both sides; corolla tube cylindric, 1.8–2.3 mm long, ca. 1.2 mm in diam., corolla lobes 4, triangular, 0.9–1.2 mm long, ca. 0.5 mm wide. Stamens 4, exserted; filaments ca. 0.6 mm long, adnate to sinus of corolla lobes; anthers oblong, ca. 0.4 mm long; style slender, capillary, 2.4–3 mm long, stigma bilobed, ca. 1 mm long, papillose. Ovary ca. 1 mm long; ovules many, embedded on ovoid placenta. Capsule subcrustaceous, ovate or subglobose, 2.5–3 mm in diam., with 1.2–1.8 mm long persistent calyx limbs, glabrous, dehiscent loculicidally at top when mature. Seeds many, angular, ca. 0.5 mm long, brownish or black, exotesta reticulate. Fl. & Fr. Jun.–Sept. (Fig. 2: A–G).
Fig. 1. *Hedyotis koana* R. J. Wang. Drawn by H. P. Yu from *B. H. Chen 524*, holotype, IBSC.
Fig. 2. Morphological characters of Hedyotis koana (A–G), H. herbacea (H), and H. pinifolia (I).  
A, B, Leaf stipules.  
C, Corolla (adaxial side).  
D, Style and stigma.  
E, Flowering calyx (abaxial side).  
F, Seeds (left: adaxial side; right: abaxial side).  
G, Capsule.  
H, Flower (from B. H. Chen 392, IBSC).  
I, Corolla (adaxial side), showing the hairs adnate at the middle (from C. Wang 42069, IBSC).  
Scale bars: A, B, C, D, F=0.5 mm; E=0.2 mm; G, I=1 mm; H=1.5 mm.
China. Guangdong (广东): Huidong (惠东), Gangkou (港口), Pingshizhou Island (坪仕洲岛), seashore, in weeds, 1990-08-12, B. H. Chen (陈炳辉) 524 (holotype, IBSC).

Additional specimens examined:
China. Fujian (福建): Without precise locality, 1943-08-20, R. Lin (林镕) 2451 (fl. & fr.) (IBSC).

Hainan (海南): road from Xinglong to reservoir, Taiyang River (太阳河), in valley, common, 1960-06-18, Hainan Working Station (海南工作站) 712 (fr.) (IBSC).
Hunan (湖南): Yizhang (宜章), alt. 100 m, 1942-06-04, S. H. Chun (陈少卿) 1218 (fl. & fr.) (IBSC).
Jiangxi (江西): Nanchang (南昌), Liantang (莲塘), 1951-09-28, X. X. Yang (杨祥学) 11066 (fr.) (IBSC); Chongren (崇仁), in forest, 1932-07-06, Y. Jiang (蒋英) 10178 (fr.) (IBSC).

This species belongs to the sect. Oldenlandia because its capsules dehisce only loculicidally at top. The sessile and narrow leaves and slender flowering pedicels resemble H. herbacea L., but the new species is characterized by having terminal and upper axillary cyme and linear leaves. It differs from H. pinifolia Wall. ex. G. Don by having obvious long pedicels, sparse inflorescence and adaxially hairy corolla tubes (Table 1). From the geographical distribution map of these three taxa in Asia (Fig. 3), we can find that H. koana is distributed in south and southern East China; however, the other two broadly grows in tropical and subtropical Asia. Moreover, H. herbacea also grows in tropical Africa.

### Table 1: Diagnostic characters of Hedyotis koana, H. herbacea and H. pinifolia

<table>
<thead>
<tr>
<th>Characters</th>
<th>H. koana</th>
<th>H. herbacea</th>
<th>H. pinifolia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaf width (mm)</td>
<td>0.8–1.5</td>
<td>1–3(–5)</td>
<td>2–3</td>
</tr>
<tr>
<td>Inflorescence position</td>
<td>terminal or upper axillary</td>
<td>axillary</td>
<td>terminal or upper axillary</td>
</tr>
<tr>
<td>Flower no. per inflorescence</td>
<td>1–3</td>
<td>1</td>
<td>3–10</td>
</tr>
<tr>
<td>Pedicel length (mm)</td>
<td>15–20</td>
<td>6–22(–30)</td>
<td>0.5–1</td>
</tr>
<tr>
<td>Corolla (adaxial side)</td>
<td>glabrous</td>
<td>glabrous</td>
<td>pubescent near base of filaments</td>
</tr>
<tr>
<td>Capsule indumentum</td>
<td>glabrous</td>
<td>glabrous</td>
<td>hispid</td>
</tr>
</tbody>
</table>

![Fig. 3. Geographical distribution of Hedyotis koana, H. herbacea and H. pinifolia in Asia.](image-url)
This species is named after KO Wan-Chang (GAO Yun-Zhang), who has done much taxonomic research on Chinese Hedyotis.

References


国产耳草属（茜草科）——新种——蕴璋耳草

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H. herbacea L.

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