**Didymoplexis micradenia** and **Gastrodia theana** (Orchidaceae), new records for Thailand

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**ABSTRACT.** *Didymoplexis micradenia* and *Gastrodia theana*, new records for Thailand, are described and illustrated.

**KEY WORDS:** Gastrodiinae, holomycotrophic.

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**INTRODUCTION**

*Didymoplexis* Griff. and *Gastrodia* R.Br. are two holomycotrophic orchid genera belong to the subtribe Gastrodiinae, subfamily Epidendroideae. *Didymoplexis*, containing about 20 species, occurs from Tropical and South Africa through India and Southeast Asia to north Australia (Liu & Su, 1978; Pridgeon et al., 2005). Previously, only the type species of *Didymoplexis*, *D. pallens* Griff., was known from Thailand, but recently *D. micradenia* (Rchb.f.) Hemsl. was found at Kui Buri National Park in Prachuap Khiri Khan Province. *Gastrodia*, containing about 30 species, occurs from Sumatra to Japan and also in New Zealand (Seidenfaden, 1978). Previously, four species of *Gastrodia* were known from Thailand, *G. exilis* Hook.f., *G. fimbriata* Suddee, *G. javanica* (Blume) Lindl. and *G. verrucosa* Blume. Recently, a fifth species, *G. theana* Aver. was found at Khao Yai National Park in Nakhon Nayok Province.


Herbs, terrestrial, leafless, holomycotrophic, achlorophyllous. *Flowering shoots* 8–20 cm tall, erect; rhizome tuberous, fusiform or moniliform, usually horizontal, 2–7 cm by 4–8 mm; roots few, wiry, arising from neck at the top of rhizome; aerial stem erect, leafless, slender, with 3–6 scale-like sheaths, glabrous; sheaths 1–2.5 mm long, acute. *Inflorescence* laxly 3–15-flowered, glabrous; rachis elongating in fruit; floral bracts ovate, 1–1.5 by c. 1 mm, acute, caducous. *Flowers* white, narrowly campanulate, 0.6–1 cm long, opening in succession, not opening widely; pedicel and ovary 0.4–1.2 cm long. *Dorsal sepal* and petals connate, free portion shallowly 3-lobed, ovate-oblong, rounded; lateral sepals connate, free portion 2-lobed, broadly ovate, reflexed, rounded.

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Labellum white, obovate, 4–5.5 by 3.5–5 mm, apical margin irregularly denticulate, obtuse to rounded, lateral margins erect or incurved; disc with longitudinal yellowish-brown warty papillae along the middle part. Column clavate, 4.5–5 mm long, slightly curved, 2-winged at apex; column-foot short, indistinct. Capsule cylindric, 1.7–2.5 by 0.4–0.6 cm long.

Thailand.— SOUTHWESTERN: Prachuap Khiri Khan [Kui Buri National Park, Phrack Takrho, Supantee et al. 559 (BKF!)].

Distribution.— Taiwan, Vietnam, West Java, New Guinea, SW Pacific (type: Fiji).

Note.— Closely related to Didymoplexis pallens Griff., which is also known from Thailand. The two species may co-occur in mixed populations and overlap in flowering period. The main characters to separate the two species are found in the expanded labellum. In D. pallens, the expanded labellum is rounded-triangular, more than 6 mm wide, with the apical margin smooth to slightly undulate while in D. micradenia the expanded labellum is obovate, less than 5 mm wide, with the apical margin irregularly denticulate.

Table 1. Comparison of morphological characters of Didymoplexis pallens Griff. and D. micradenia (Rchb.f.) Hemsl.

<table>
<thead>
<tr>
<th>characters</th>
<th>D. pallens</th>
<th>D. micradenia</th>
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</thead>
<tbody>
<tr>
<td>Length of column foot (mm)</td>
<td>more than 2</td>
<td>less than 1</td>
</tr>
<tr>
<td>Shape of labellum</td>
<td>rounded-triangular</td>
<td>obovate</td>
</tr>
<tr>
<td>The width of labellum (mm)</td>
<td>more than 6</td>
<td>less than 5</td>
</tr>
<tr>
<td>The apical margin of labellum</td>
<td>smooth to slightly undulate</td>
<td>irregularly denticulate</td>
</tr>
</tbody>
</table>

2. Gastrodia theana Aver., Rheedea 15: 90. 2005; S.I.Hsleh et al., Taiwania 57(4): 399, fig. 1–3. 2012. Fig. 1D–F.

Herbs, terrestrial, leafless, holomycotrophic, achorophyllous. Flowering shoots 3–10 cm tall, erect; rhizome tuberous, fleshy, 1.5–5 by 0.6–1.5 cm, pubescent; roots 2–4, filiform, to 8 cm long, white, arising from neck at the top of rhizome, glabrous; aerial stem erect, leafless, slender, with 2–4 scale-like sheaths, glabrous; sheaths tubular at base of stem, bract-like above, 1.5–5 mm long, acute. Inflorescence laxly 3–5-flowered, subumbel in appearance, glabrous; floral bracts ovate-lanceolate, to 8 mm long, slightly punctate outside, acute, concave, caducous. Flowers white to whitish-cream, obliquely tubular, 1.5–1.8 cm long, not opening widely, fleshy; pedicel and ovary 2–5 mm long. Sepals connate, forming a tube, 1–1.4 cm by 6–7 mm, slightly striate with obscure irregularly warty ridge-like keels outside; free portion shallowly 3-lobed, ovate, verrucose, acute, hooded, margins subentire, vein obscure; the anterior 2 lobes separated from each other by a deep sinus; tube slightly gibbous at base. Petals attached on the sinus between dorsal and lateral sepals, ovate-oblong, 1.5–2 by c. 1 mm, acute, margins entire, vein obscure. Labellum ovate, 4.5–5 by 2–2.5 mm, apical margin irregularly denticulate, acute to obtuse, lateral margins erect, subentire, base with 2 small subglobose calli; disc with oblong-ellipsoid keels above the middle on either side of mid-vein, 5-veined. Column slender, 4–4.5 mm long, straight, laterally winged towards apex; rostellum lacking; stelidia c. 1.5 mm long. Capsule oblong-ellipsoid, with elongated pedicel.

Thailand.— CENTRAL: Nakhon Nayok [Khao Yai National Park, Tripetch 110465 (BKF!)].

Distribution.— Taiwan, Vietnam (type).

Ecology.— Tropical evergreen forest; c. 700 m alt. Flowering: Recorded in April.
Note.— Closely related to *Gastrodia albida* T.C.Hsu & C.M.Kuo from Taiwan. The two species may be conspecific. The main character to separate the two species is the striations on the tube of the connate sepals. In *G. albida* the tube is not ribbed while in *G. theana* the ribs are slightly straight. The rostellum is lacking in both species. The tube of our collection from Khao Yai National Park is slightly striate. The older name, *G. theana* is adopted here.

**ACKNOWLEDGEMENTS**

The authors would like to thank Petch Tripetch for the high quality illustrations, Somran Suddee for checking type specimens and also thanks to Bob Harwood for helpful suggestions.

**REFERENCES**


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Table 2. Comparison of morphological characters of *Gastrodia albina* T.C.Hsu & C.M.Kuo and *G. theana* Aver.

<table>
<thead>
<tr>
<th>characters</th>
<th><em>G. albida</em></th>
<th><em>G. theana</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of pedicel and ovary (mm)</td>
<td>5–25</td>
<td>2–5</td>
</tr>
<tr>
<td>Ribs on the tube of the connate sepals</td>
<td>not ribbed</td>
<td>distinctly ribbed</td>
</tr>
</tbody>
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