

A New Record of the Noctuid Genus *Ugia* Walker (Lepidoptera: Noctuidae) from China

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Abstract: The noctuid genus *Ugia* from China was briefly noted, *Ugia sundana* was recorded in China for the first time. Up to date, three *Ugia* species have been known in China. Male adult and genitalia of *Ugia sundana* and *Ugia purpurea*, as well as venation of *Ugia purpurea*, were illustrated.

Key words: Lepidoptera; Noctuidae; *Ugia*; new record; China

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中国夜蛾科优夜蛾属(鳞翅目:夜蛾科)新记录

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摘要: 记述了中国优夜蛾属 *Ugia* Walker 新增—中国新记录种. 提供了阳优夜蛾 *Ugia sundana*、紫优夜蛾 *Ugia purpurea* 雄性成虫和外生殖器, 以及紫优夜蛾 *Ugia purpurea* 翅脉图.

关键词: 鳞翅目; 夜蛾科; 优夜蛾; 新记录; 中国

Ugia Walker, 1858 was erected with *Ugia disjunctus* Walker, 1858 as the type species. It contains 34 species^[1-2]. Recently, species of the genus were reported from Southeast Asia by Kononenko (Thailand)^[3], Holloway (Borneo)^[2], Park (North Vietnam)^[4], respectively. *Ugia* was firstly reported from China by Galsworthy^[5], with description of two new species in Hongkong: *Ugia unsuspecta* and *Ugia purpurea*. Unfortunately his work was not mentioned in the recent publications in China^[6-9]. During survey on Chinese materials of *Ugia*, one species was firstly found from Hainan Province and reported in this paper.

Ugia Walker, 1858

Type species: *Ugia disjunctus* Walker, 1858 [Singapore]

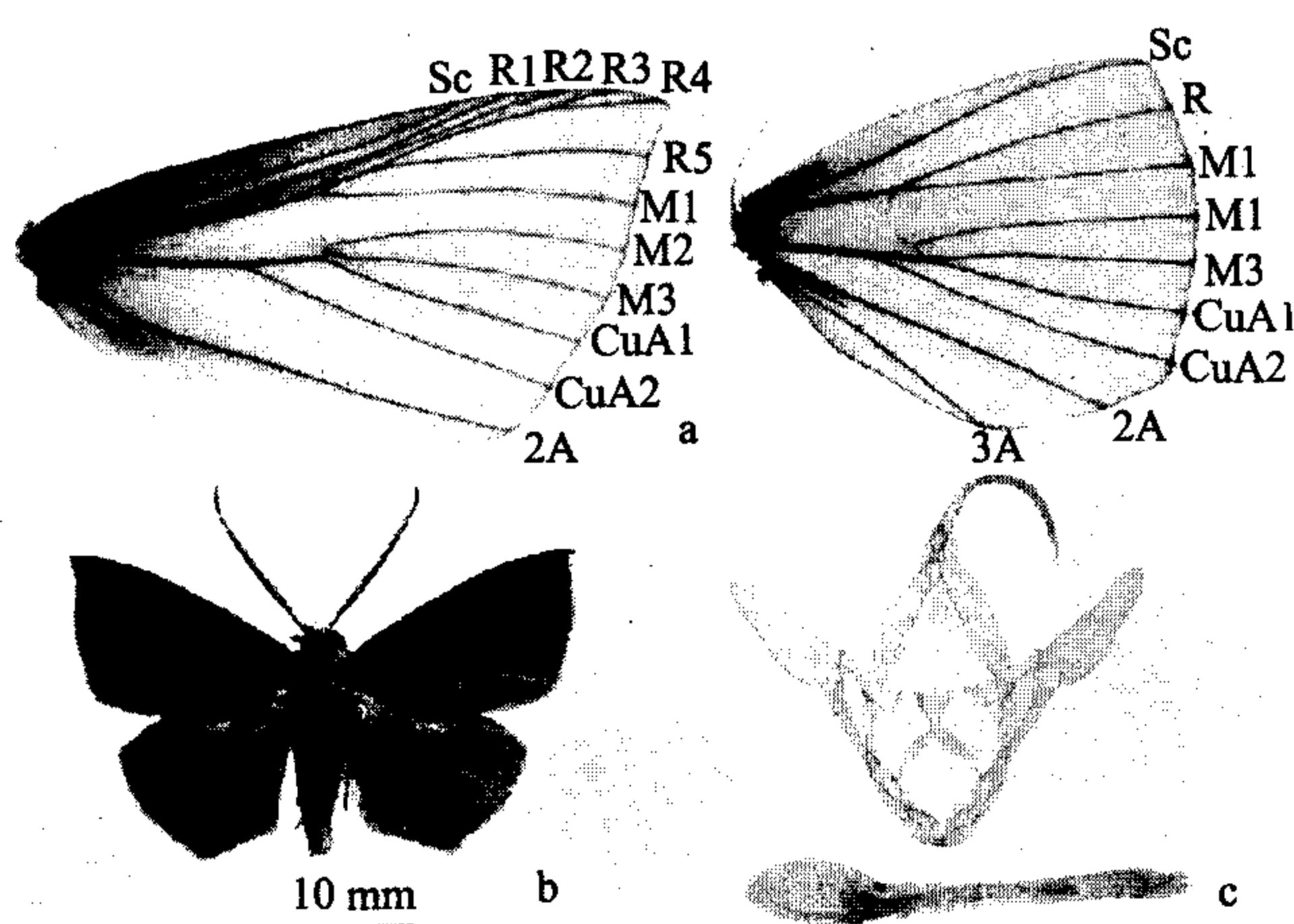
Generic diagnosis. The antennae of male bipecti-

nate, very long, almost the length of the forewings. Venation of wings (Fig. 1a): Forewings Sc isolated; R1 arising from the middle of distal cell; R2 from apex of the areole, curved to costa basally; R5 stalked with R3, R4, arising from apex of the areole; M1 arising from upper angle of distal cell; M2, M3 and CuA1 nearly arising from lower angle of distal cell; CuA2 from distal cell 1/3 apically; the hindwings margin is slightly angled at vein CuA2; M3 and CuA1 shortly stalked arising from lower angle of distal cell. The male legs are not conspicuously tufted. Forewings with a strong, oblique postmedial fascia extending from the apex to the centre of the dorsum, and being continued on the hindwings medially^[2].

Generic distribution. The genus is diverse in the African and Oriental tropics^[2].

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a: Right forewing and hindwing; b: Male adult; c: Male genitalia

Fig. 1 *Ugia purpurea* Galsworthy, 1997

Ugia sundana Hampson, 1924, New record to China (Fig. 2)

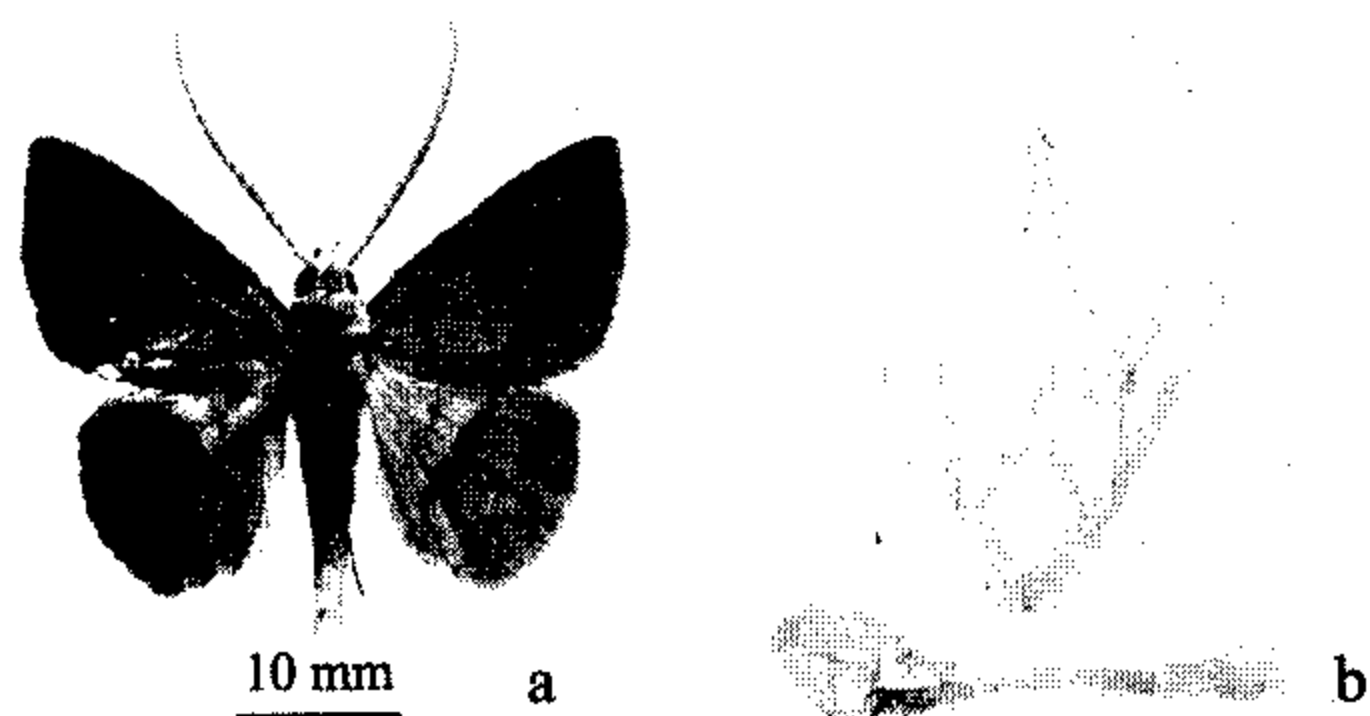
Ugia sundana Hampson, 1924: 253; Holloway, 2005: 185; Kononenko, 2005: 54; Park, 2007: 28.

Ugia albertii Kobes, 1989: 160.

Diagnosis. Forewings reddish brown, postmedial fasciae doubled, inner sides wider than outer sides; with a small dark spot at areole and a big one between R2 and R5 near the apex of areole, which differs from two dark spots at the same place in *Ugia insuspecta*^[5], while absent in some specimen only a pale vestige.

Materials examined: 3 males, Jianfengling National Nature Reserve, Hainan, 12-17-VII-2006, XIONG Wei and WANG Jing collected. 1 male, Bawangling National Nature Reserve, Hainan, 7-11-VII-2006, XIONG Wei and WANG Jing collected.

Geographical range. China (Hainan); Vietnam; Thailand;; Indonesia (Sumatra; Java and Borneo).



a: Male adult; b: Male genitalia

Fig. 2 *Ugia sundana* Hampson, 1924

Ugia purpurea Galsworthy, 1997 (Fig. 1)

Ugia purpurea Galsworthy, 1997: 137^[5].

Diagnosis. Both wings brownish, postmedial fasciae doubled, outer sides with livid scales, forewings with a conspicuous dark spot at the apex of areole; hindwings with big dark kidney-shaped spots near the distal cell upper.

Materials examined: 2 male, Bawangling National Nature Reserve, Hainan, 7-11-VII-2006; 2 males, Jianfengling National Nature Reserve, Hainan, 12-17-VII-2006; 1 male, Jianfengling National Nature Reserve, Hainan, 14-IX-2003.

Geographical range. China (Hongkong, Hainan)

Ugia insuspecta Galsworthy, 1997

Ugia insuspecta Galsworthy, 1997: 136^[5].

Diagnosis. Male genitalia with bifurcate projection of sacculus, which quite differ with that of other species digitiform and slightly curved apically.

Geographical range. China (Hongkong)

Discussion: The species of *Ugia* have very similar structure of male genitalia: slender uncus with sharp apex; valvae narrow, saccular process taper-shaped, hooked apically (Hongkong species *Ugia insuspecta* with bifurcate projection of sacculus); aedeagus very narrow. To identify them mostly depends on the coloration and maculation of wings. In order to distinguish the species of *Ugia* exactly, the biological and molecular characters should be used in the further study.

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3 结论

生长最适 pH 在 3.0 以下,中性条件不能生长的微生物称为嗜酸微生物。能耐受 pH3.5 ~ 6.0,但最适 pH 接近中性的微生物则称为耐酸微生物。极端嗜盐菌的生长最适 NaCl 质量浓度为 146.3 ~ 304.0 g/L,而耐盐菌则是指那些生长不需要 NaCl,但是可以在 NaCl 存在甚至是高浓度的情况下生长的微生物。我们分离的青霉菌株 Huanghu3 具有很强的耐酸耐盐性,在 pH 2.8 以及含 NaCl 质量浓度达到 200.0 g · L⁻¹ 的极端环境中亦能生长,因为菌株 Huanghu3 来源于韶关市大宝山矿区酸性和重金属污染土壤,因此,菌株也很可能具有较强的耐重金属能力。

产酶优化培养条件试验结果表明,以玉米秸秆粉作为固体培养基碳源优于稻草粉或稻草粉和玉米秸秆粉的混合物;pH 7.0、培养 72 h 最为适宜;无机氮源下的酶活力优于有机氮,氨态氮优于硝态氮,另外,(NH₄)₂SO₄ 为氮源时,3 种纤维素酶活性最高,(NH₄)₃PO₄ 次之,尿素最低。

酶学特性研究发现:滤纸酶、C_x 酶和 C₁ 酶作用的最适温度分别在 50 ~ 60、50 ~ 55 和 45 ~ 55 ℃。纤维素酶系最适反应在 pH 4.5 ~ 5.5。

由于从自然环境中分离筛选的产纤维素酶原始菌株产酶活力一般较低,所以下一步将着重研究如何提高该菌的产酶量,以达到生产上应用的要求。

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