

A REVIEW OF GENUS *ONYCHOLABIS* BATES
(COLEOPTERA: CARABIDAE: PLATYNINI), WITH DESCRIPTION OF A
NEW SPECIES FROM WESTERN YUNNAN, CHINA

HONGBIN LIANG
Institute of Zoology, Chinese Academy of Sciences
Beijing 100080, CHINA
lianghb@ioz.ac.cn

AND

DAVID H. KAVANAUGH
Department of Entomology, California Academy of Sciences
875 Howard Street, San Francisco, CA 94103, U.S.A.
dkavanaugh@calacademy.org

Abstract

Species in the genus *Onycholabis* Bates are briefly reviewed and a new species from western Yunnan Province, China is described: *Onycholabis stenothorax* **new species** (Type locality: Yunnan, Tengchong, Qushi, Xiangyang Bridge, 25°12'38.4"N/98°34'49.4"E, 1,515 m). Nomenclatural changes proposed include the following: *Onycholabis vietnamicus* Kasahara and *Onycholabis uenoi* Paik and Lafer are recognized as junior synonyms of *Onycholabis sinensis* Bates **new synonymies**; *Onycholabis sinensis nakanei* Kasahara is recognized as a distinct species, *O. nakanei* Kasahara **new status**; and two species, *Onycholabis luzonensis* Jedlička and *Onycholabis macrops* Louwerens are removed from *Onycholabis* and tentatively transferred to *Notagonum* Darlington—*Notagonum luzonensis* (Jedlička) **new combination** and *Notagonum macrops* (Louwerens) **new combination**. A key to adults of all six known species of *Onycholabis* is provided.

Onycholabis Bates 1873 is one of the more distinctive genera included in the carabid beetle tribe Platynini. To date, nine species and subspecies have been described in this genus: *O. sinensis* Bates 1873; *O. melitopus* Bates 1892 (= *Cardiamera oberthueri* Maindron 1899); *O. acutangulus* Andrewes 1923; *O. arrowi* Jedlička 1935; *O. luzonensis* Jedlička 1935; *O. macrops* Louwerens 1955; *O. sinensis nakanei* Kasahara 1986, *O. uenoi* Paik and Lafer 1995; *O. vietnamicus* Kasahara 1995; *O. pendulangulus* Liang and Imura 2003 (Lorenz 1998:404; Liang and Imura 2003:688). More than half a century ago, Jedlička removed *O. arrowi* from *Onycholabis* and erected a new genus, *Sternodelus* Jedlička (1953:108), for that species. However, this treatment has been ignored by many subsequent workers (e.g., Louwerens 1955; Liang and Imura 2003), and the most recent catalog of Carabidae of the world (Lorenz 1998) listed *Sternodelus* as a junior synonym of *Onycholabis* and retained *O. arrowi* in the latter genus.

Over the last three years, we have had the opportunity to borrow types and other determined specimens of *Onycholabis* from several museums (see below under Materials and Methods). Careful examination of all available material has revealed that two of the nominal species of *Onycholabis* are junior synonyms, and two other species appear not to be members of this genus. Furthermore, in sorting specimens recently collected in the Gaoligong Mountains of western Yunnan Province, China, we discovered a new species of the genus. The purpose of this paper is to provide a key for identification of adults of all known species of *Onycholabis*, propose appropriate nomenclatural changes, and describe the new species.

Materials and Methods

Body length was measured as the linear distance along the midline from the apex of the longer mandible to the apex of the longer elytron. Other measures, and abbreviations used for them in this report, are as follows: HW = greatest width of head including eyes; PL = length of pronotum, measured along the mid-line; PW = greatest width of pronotum; PAW = width of pronotal apex, measured between the most advanced points on both sides; PBW = width of pronotal base, measured between the tips of hind angles; EW = greatest width of elytra; EL = greatest length of elytra, measured from base of scutellum to elytral apex. Materials studied are deposited in the following collections: CAS = California Academy of Sciences, San Francisco; IMHU = Insect Museum of Hebei University, Baoding; IOZ = Institute of Zoology, Chinese Academy of Sciences, Beijing; KIZ = Kunming Institute of Zoology, Kunming; MCZ = Museum of Comparative Zoology at Harvard University, Cambridge; MNHN = Museum Nationale d'Histoire Naturelle, Paris; NHM = Natural History Museum, London; NSM = National Science Museum, Tokyo. Except as noted, all specimens examined are deposited in IOZ.

Genus *Onycholabis* Bates 1873

Type Species. *Onycholabis sinensis* Bates, 1873:329 (Sze-Chuen = Sichuan), by original monotypy.

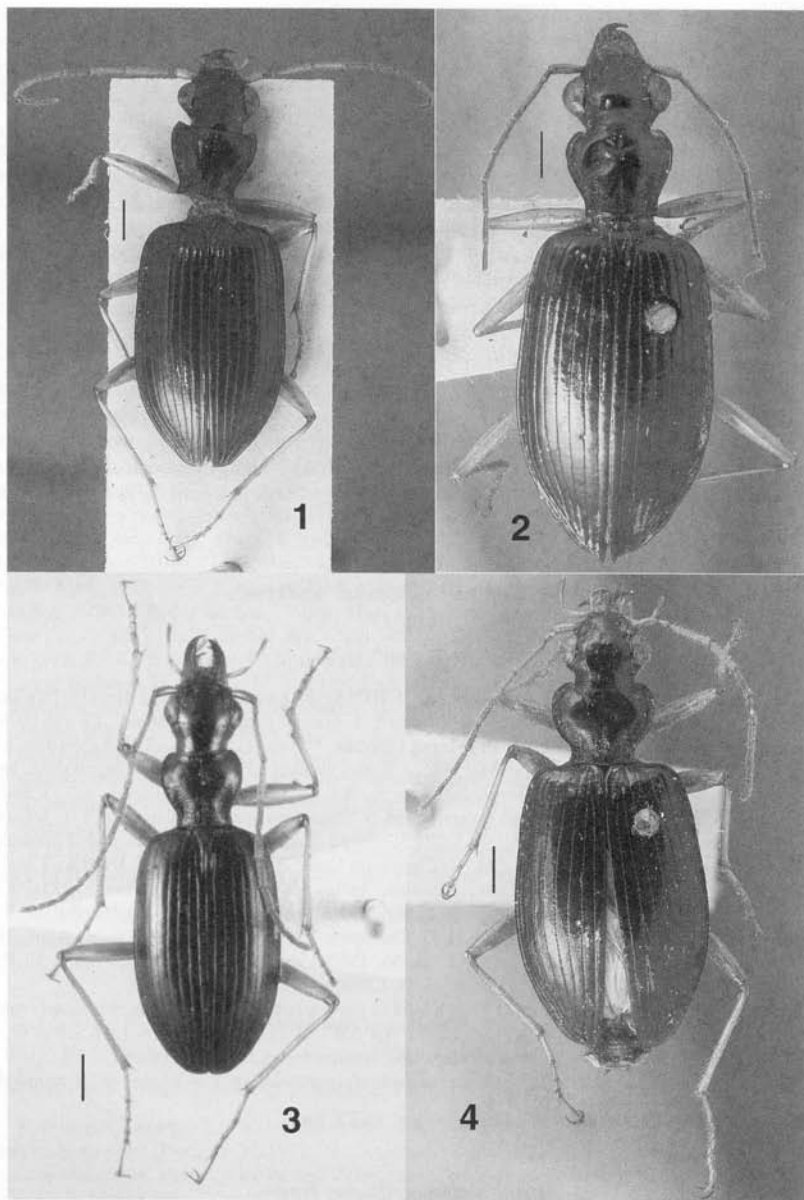
Description. Medium size, body length 9.0–12.5 mm (including mandible). Black, except brown in teneral individuals; mandibles, labrum and mentum red-brown, palpi, legs and antennae pale yellow to brown. Microsculpture on head and base and lateral margins of pronotum formed of isodiametric meshes (less distinct on head), on disc of pronotum and elytra formed of transverse meshes. Mandible long, slightly narrow, and straight, with apex sharply pointed and markedly hooked medially (Fig. 1); antennae long, extended beyond humerus to about middle of elytra, antennomeres III–XI pubescent, antennomere III about 4 times as long as antennomere II, about 1.7–1.8 times as long as scape; eye large, hemispherical; tempora half as long as longitudinal diameter of eye; anterior and posterior supraorbital setae present; frontal fovea deep; vertex slightly convex, glabrous; mentum with prominent, bifid tooth; submentum with 1 long seta and 1 short seta on each side; glossal sclerite with apex slightly rounded, with 2 long setae at subapex; paraglossa membranous, shorter than and fused with glossal sclerite. Pronotum trapezoidal (Fig. 1) or cordate (Fig. 2), glabrous; basal angle nearly rectangular, with 1 or without seta; basal fovea narrow and deep, rugosely punctate; lateral margin with 1 seta before the middle; prosternal process round at apex, unbordered. Elytra glabrous, shining; striae deep, punctate in basal three-fourths; intervals flat or slightly convex, impunctate, interval III with 2 or 3 setiferous pore punctures; scutellar striole long, scutellar pore puncture present. Legs long and slender; tibia slender, not dilated at apex; tarsomeres with both medial and lateral longitudinal sulci dorsally, tarsomere IV bilobed, tarsomere V asetose ventrally; tarsomeres I–III slightly dilated in male, longer than wide, with adhesive setae on ventral side; claws simple.

Biology. The adults of all *Onycholabis* species apparently are hygrophilous. They are often found at night walking on the rocky walls of drainage ditches or along the margins of small streams, on river banks, or in the splash zones of waterfalls.

Geographical Distribution. Eastern and southeastern Asia; presently known from India, Sikkim, Bhutan, Assam, Myanmar, Laos, Vietnam, China, South Korea, and Japan.

Key to Adults of the Species of Genus *Onycholabis* Bates

- | | | |
|----|--|---|
| 1 | Pronotum trapezoidal, apex wide (PW/PAW = 1.0–1.1), anterior angles angulate, sharply pointed at tips (Fig. 1) | 2 |
| 1' | Pronotum more or less cordate, apex narrow (PW/PAW = 1.3–1.5), anterior angles round, obtuse at tips (Fig. 2) | 3 |



Figs. 1-4. Dorsal habitus of *Onycholabis* species, scale line = 1.0 mm. 1) *O. acutangulus* (holotype); 2) *O. melitopus* (paratype); 3) *O. nakanei*; 4) *O. sinensis* (holotype).

- 2(1) Pronotum widest at apex, anterior angles protruded forward, then bent ventrad and sharply pointed at the tips *O. pendulanguis* Liang and Imura
 2' Pronotum widest at apical one-fifth, anterior angles protruded forward, sharply pointed at tips, but not bent ventrad *O. acutangulus* Andrewes
 3(1') Pronotum wide (PW/PL = 1.45), with one seta at each basal angle
 *O. sinensis* Bates
 3' Pronotum narrow (PW/PL = 1.0–1.3), without seta at basal angle 4
 4(3) Elytral apex at sutural angle acute and posteriorly projected (Fig. 2); sixth visible sternum with two marginal setae in male, four in female
 *O. melitopus* Bates
 4' Elytral apex at sutural angle rounded, not posteriorly projected (Fig. 3); sixth visible sternum with two or four marginal setae in male, six or eight in female 5
 5(4') Pronotum slightly wider than head (PW/HW = 1.02–1.04); metepisternum impunctate; sixth visible sternum with four marginal setae in male, eight in female *O. nakanei* Kasahara
 5' Pronotum narrower than head (PW/HW = 0.85–0.92); metepisternum coarsely punctate; sixth visible sternum with two marginal setae in male, six in female *O. stenothorax*, new species

Onycholabis acutangulus Andrewes

(Fig. 1)

Onycholabis acutangulus Andrewes, 1923:682 (India)

Specimens Examined. Total 12 specimens: **CHINA: Fujian Province**, 1 female, "Fujian Province, Fuzhou"/"17-X-1988, Yuanhong Chen"; 1 male, "Province, Fuzhou, 13-VII-1978, Yuanhong Chen collector"; **Guangxi Province**, 1 female, "Guangxi, Qinzhou"/"15-IV-1980, by light trap"; **Hong Kong**, 1 male (NHM), "Hong Kong, Walker Coll., 93-58"/"Onycholabis sp. nov."/"Borrowed from B. M."/"Onycholabis sp. n., det. Darlington, nr. *acutangulus*"; 1 male (NHM), "Hong Kong"/"Borrowed from B. M."/"Pronotum process abnormal"; 1 female (NHM), "Hong Kong, Walker coll., 93-58"/"Borrowed from B. M."; 1 male and 2 females (NHM), "Hong Kong, J. J. Walker"/"G. C. Champion Coll., B. M. 1927-409". **INDIA:** 1 male (NHM), "Type, H.T."/"Haldwani Dist., Kumaon, India, H. G. C."/"Brit. Mus., 1923-24"/"Onycholabis *acutangulus* Andr., Type, H. E. Andrewes det."; 1 male (NHM), "India, U. P., Saharanpur Div. Silwalik Hills. 8.iv.1928. H. G. Champion"/"Onycholabis *acutangulus* Andr., H. E. Andrewes det."/"H. G. Champion Coll., B. M. 1953-156"; 1 male (NHM), "India: U. P., Saharanpur Div. Silwalik Hills. 8. iv. 1928. H. G. Champion".

Description. Because Andrewes (1923:682–683) gave a detailed description, we simply add the following: PW/HW = 1.20, PW/PL = 1.24, PW/PAW = 1.11, PAW/PBW = 1.34, EW/PW = 1.79, EL/EW = 1.69; relative lengths of scape and antennomeres II–VI as follows: 1.00 : 0.50 : 2.00 : 1.83 : 1.33 : 1.33; pro- and metepisterna coarsely punctate; apex at sutural angle rounded.

Distribution. Known from India, Assam, and China.

Onycholabis melitopus Bates

(Fig. 2)

Onycholabis melitopus Bates, 1892:371 (Myanmar, India); Kasahara, 1995:31 (Vietnam).

Cardiomeria oberthuri Maindron, 1899:155 (Boutan = Bhutan); Maindron, 1905:94.

Specimens Examined. Total 28 specimens: **ASSAM:** Type, 1 female (MNHN), "Assam"/"Onycholabis *melitopus* Bates". **BHUTAN:** 1 male (MNHN), "British Bootang, Maria Basti, L.

Durel"/"oberthuri, Maind., Bull. S. E. Fr. 1899. 4 types". **CHINA: Guizhou Province**, 1 female (IMHU), "Guizhou Province, Xishui, Dabaitang, 25-29-IX-2000, Guodong Ren"; **Hong Kong**, 1 female (NHM), "Hong Kong, Walker Coll. 93-58"/"Onycholabis sp. (not sinensis B.)"/"H. E. Andrewes Coll., B. M. 1945-97"/"Borrowed from B. M."; **Xizang Province**, 1 male, "Tibet, Lahsa, 950 m"/"18-XI-1982, Yinheng Han"; **Yunnan Province**, 1 male, "Yunnan Province, Xishuangbanna, Damenglong, 650 m, 18-IV-1958"/1 male and 1 female (CAS); "China, Yunnan Province, Tenchong County, Longchuan River at Longkou Village"/"25°16.9'N/98°35.5'E, 1,500 m, 2 November 1998, Stop#98-128, D. H. Kavanaugh, C. E. Griswold, C. L. Long, R. Li, H. X. He collectors"; 2 males and 2 female (IOZ, CAS), "China, Yunnan Province, Tengchong, Jietou Town, Danlongheqiao, riverside, 25°36'17.7"N, 98°40'12.6"E"/"1,768 m, 2003.10.24, Liang H. B., Shi X. C. coll. Institute of Zool., CAS and California Acad. Sciences"; 1 male and 1 female, "China, Yunnan Province, Tengchong, Jietou Town, Maluchong, riverside, 25°34'55.0"N, 98°40'33.4"E"/"1,740 m, 2003.10.24, Liang H. B., Shi X. C. coll. Institute of Zool., CAS and California Acad. Sciences"; 1 male, "China, Yunnan Province, Tengchong, Tietou Town, Zhoujiapo, riverside, 25°33'43.8"N, 98°40'01.6"E"/"1,650 m, 2003.10.24, Liang H. B., Shi X. C. coll. Institute of Zool., CAS and California Acad. Sciences"; 3 females, "China, Yunnan Province, Longling, Longjiang Town, Mengliu, Dashitouhe, 24°48'30.1"N, 98°43'40.6"E"/"1,768 m, 2003.10.31, Liang H. B., Shi X. C. coll. Institute of Zool., CAS and California Acad. Sciences"; 1 male and 2 females (IOZ, CAS), "China, Yunnan Province, Tengchong, Qushi Town, Xiangyangqiao, riverside, 25°12'38.4"N, 98°34'49.4"E"/"1,515 m, 2003.10.23, Liang H. B., Shi X. C. coll. Institute of Zool., CAS and California Acad. Sciences"; 1 female, "China, Yunnan Province, Tengchong, Jietou Town, Dashaba, riverside, 25°23'46.8"N, 98°42'10.6"E"/"1,850 m, 2003.10.23, Liang H. B., Shi X. C. coll. Institute of Zool., CAS and California Acad. Sciences". **LAOS:** 1 male (NHM), "Laos, Ban Na Mon., 12.XII.1919, R. V. de Salvaza"/"Onycholabis sp."/"Brit. Mus. 1921-89"; 1 male (NHM), "Haut Mekong, Nam Tiene, 14.IV.1918, R. V. de Salvaza"/"Onycholabis sp. nov."/"Brit. Mus. 1921-89"; 1 female (NHM), "Haut Mekong, Nam Tiene, 15.IV.1918, R. V. de Salvaza"/"Brit. Mus. 1921-89"; 1 male (NHM), "Laos, Pak Pha, 4.II.1918, R. V. de Salvaza"/"Onycholabis sp. nov."/"Brit. Mus. 1921-89"; 1 female (NHM), "Luang Prabang, Houei Ko. 14.III.1918, R. V. de Salvaza"/"Brit. Mus. 1921-89". **SIKKIM:** 1 female (CAS), "Gopaldhara, Br. Sikkim, H. Stevens."/"Van Dyke Collection"/"Onycholabis melitopus Bates, H. E. Andrewes det.".

Description. Bates (1892:371) gave a brief description and Kasahara (1995:31-32) provided a detailed redescription. We add the following (specimen from Assam): prosternum and proepisternum densely and metepisternum sparsely punctate, metesternum only sparsely punctate at lateral sides; PW/HW = 0.98, PW/PL = 1.25, PW/PAW = 1.34, PW/PBW = 1.45, EW/PW = 1.85, EL/EW = 1.68; interval III with 4 setiferous pore punctures on left elytron (abnormal) and 3 on right elytron; sixth visible sternum with 4 marginal setae in female.

Distribution. Known from India, Sikkim, Bhutan, Assam, Myanmar, Laos, Vietnam, and China.

Onycholabis nakanei Kasahara, new status

(Fig. 3)

Onycholabis sinensis nakanei Kasahara, 1986:76 (Japan).

Specimens Examined. Total 6 specimens: **JAPAN:** 1 male and 1 female (NSM), "Yadorigizawa, Kanagawa Pref., 9-VI-1982, S. Kasahara leg."/"PARATYPE, *Onycholabis sinensis nakanei* Kasahara, 1986"; 2 males and 2 females, "Yadorigizawa, Tanzawa, Kanagawa Pref. 14-VII-82, S. Morita leg."/"*Onycholabis sinensis nakanei* Kasahara, Det. S. Morita, 2004".

Description. Kasahara (1986:76-80) gave a detailed description. We add the following: pro- and metepisterna impunctate, PW/HW = 1.02 or 1.04 (two paratypes).

Remarks. Adults of this taxon, without setae at pronotal basal angles, with pronotum only slightly wider than long (PW/PL = 1.1-1.2), and with relatively small eyes, are clearly different from those of *O. sinensis* Bates; and we recognize this taxon as a distinct species. It is closely related to *O. melitopus*, but adults can be distinguished from those of

the latter by the impunctate pro- and metepisterna, elytral apex at sutural angle rounded, and sixth visible sternum with four marginal setae in males and eight in females.

Distribution. Known only from central Honshu, Japan.

Onycholabis pedulangulus Liang and Imura

(Fig. 5)

Onycholabis pedulangulus Liang and Imura, 2003:688 (China, Vietnam, Laos).

Specimens Examined. Total 83 specimens; for 73 types, refer to Liang and Imura (2003); additional specimens: **CHINA:** Yunnan Province, 5 males and 5 females (IOZ, CAS), "China, Yunnan Province, Tengchong, Wuhe Town, Longjiangqiao, riverside, 24°53'56.0"N, 98°40'36.1"E"/"1,215 m, 2003.10.28, Liang H. B., Shi X. C. coll. Institute of Zool., CAS and California Acad. Sciences".

Description. See Liang and Imura (2003).

Distribution. Known from Laos, Vietnam, and China.

Remarks. Adults of this species have been found on river banks and on the walls of roadside drainage ditches.

Onycholabis sinensis Bates

(Fig. 4)

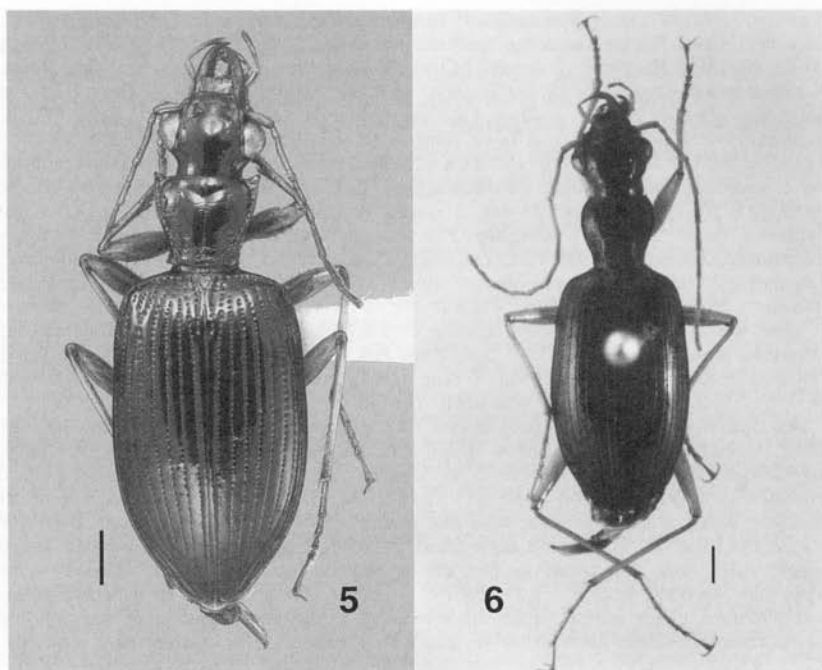
Onycholabis sinensis Bates, 1873:329 (China).

Onycholabis vietnamica Kasahara, 1995:27 (Vietnam), **new synonymy.**

Onycholabis vietnamicus Kasahara; Lorenz, 1998:404.

Onycholabis uenoi Paik and Lafer, 1995:253 (South Korea), **new synonymy.**

Specimens Examined. Total 156 specimens: **CHINA:** **Anhui Province,** 1 female, "Anhui Province, Huangshan"/"1981.IX.16, Linyao Wang collector"; **Fujian Province,** 1 male, "Fujian Province, Jianyang, Huangkeng, Guilin, 270–390 m"/"1960.IX.5, Chenglin Ma collector"; 1 female, "Fujian Province, Tongan"/"1981.IV.29"; 1 male, "Fujian Province, Jiangle, Longqishan"/"2-V-1991, Chunmei Huang collector"; 1 female, "Fujian Province, Shanghang, Gutian, 1996.IX.11, Hong Liu collector"; 1 male (CAS), "Fukien, S. China Shaowu: KuHsienKai, T. C. Maa"/"x.1944"; **Gansu Province,** 1 male, "Gansu Province, Wenxian County, 1,000 m, 1999.VII.20, Jian Yao collector"; **Guizhou Province,** 6 males and 4 females (IMHU), "Guizhou, Xishui, Dabaitang, 2000-IX-25-29, Guodong Ren collector"; 11 males and 10 females (1 pair in NHM), "China, Guizhou Province, Xishui, Dabaitang, 550–600 m"/"IOZ & Guizhou Univ. joint expedition, 2000.IX.25-29, Liang H. B. collector"; 1 male, "China, Guizhou Province, Chishui, Jinsha, 500 m"/"IOZ & Guizhou Univ. joint expedition, 2000.IX.21, Liang H. B. collector"; 1 female, "China, Guizhou Province, Fanjingshan, 1,450 m, 2001.7.27"/"Liang H. B. collector, *Institute of Zoology, Chinese Acad. Sci.*"; 2 males and 1 female, "China, Guizhou Province, Fanjingshan, 750 m, 2001.7.28, Ma Yun collector, Institute of Zoology, Chinese Acad. Sci."; 2 males, "China, Guizhou Province, Fanjingshan, 1,350 m, 2001.8.1"/"Song Qiongzhang collector, Institute of Zoology, Chinese Acad. Sci."; 1 female, "Guizhou, Bijie"/"1978"; **Hebei Province,** 1 male (IMHU), "Hebei Province, Yuxian County, Longquanguan, 1998-8-3-5, Aimin Shi collector"; 1 female (IMHU), "Hebei Province, Fuping County, Longquanshan, 1998-8-5, Shiyu Liu collector"; **Henan Province,** 1 female, "Henan Province, Huixian, 650, 2002.VII.13, Lijie Zhang collector"; **Hubei Province,** 1 male, "Hubei Province, Xingshan, Longmenhe, 1,350 m"/"1993.VII.14, Baowen Sun collector"; 1 male, "Hubei Province, Xingshan, Longmenhe, 1,350 m"/"1993.VII.16, Xingke Yang collector"; 2 males, 1 female, "Hubei Province, Xingshan, Longmenhe, by light trap, 1 300–1,400 m"/"1994.IX.8, Shimei Song collector"; 1 female, "Hubei Province, Zigui, Jiulingtou, 110 m"/"1994.IX.6, Jun Chen collector"; 3 males, "Hubei Province, Junxian County, 167 m"/"1983.VIII.25-27, by light trap"; 2 males and 1 female, "Hubei Province, Enshi"/"1982.VI, Zuoxin Zhu collector"; 1 male and 2 females, "China, Hubei Province, Shennongjia, Honghua, riverside, by light trap, 31°24'20"N, 110°28'40"E"/"835 m,



Figs. 5–6. Dorsal habitus of *Onycholabis* species, scale line = 1.0 mm. 5) *O. pendulangulus*; 6) *O. stenothorax* n. sp. (holotype).

2003.8.10, Liang Hongbin collector"; 1 female, "China, Hubei Province, Shennongjia, Songbai Township, riverside, 31°45'11"N, 110°40'21"E"/"1,025 m, 2003.8.8, Liang Hongbin Collector"; 1 female, "China, Hubei Province, Shennongjia, Songbai Township, riverside, 31°44'39"N, 110°41'7"E"/"910 m, 2003.8.6, Liang Hongbin collector"; **Hunan Province**, 1 male, "Hunan Province, Zhangjiajie"/"1987.VIII.16, Guiyun Deng collector"; 1 male, "Hunan Province, Yongshun, Shanmuhe forest farm, 600 m"/"1988.VIII.8, Xingke Yang collector"; **Shaanxi Province**, 1 female, "Shaanxi Province, Liuba County, Miaotaizi, 1,470 m, 1999.VII.1, Tongli He collector"; 1 male, "Shaanxi Province, Foping County, Yaogou, 870–1,000 m, 1998.VII.25, Jun Chen collector"; 1 female, "Shaanxi Province, Foping, 890 m, 1999.VI.26, Youwei Zhang"; 1 male, "Shaanxi, Foping, 950 m, 1998.VII.23, Jian Yao collector"; 1 male, Shaanxi Province, Ningshan, Huoditang, by light trap, 1,580 m, 1998.VIII.14, Decheng Yuan collector"; 1 male, "Shaanxi Province, Ningshan, Huoditang, 1,580–1,650 m, 1999.VI.26, Decheng Yuan collector"; 1 female, Shaanxi Province, Ningshan, Huodigou, 1,580–2,000 m, 1998.VIII.18, Decheng Yuan collector"; 1 male, "Shaanxi Province, Zhenba"/"1985.VII.19, Shufang Wang collector"; 2 males and 1 female, "Shaanxi, Zhenba"/"1981.IV.16"; 1 male, "Shaanxi Province, Fugu"/"1981.VI.30"; **Shandong Province**, 10 males, 10 females, "Shandong Province, Tsinanfu (Jinan), Longtong, 500–700 m"; **Sichuan Province**, 1 female (MNHM); type: "Sze-chuen"/" *Onycholabis sinensis* Bates"; 1 male, "Sichuan, Yingjing"/"1980.VIII.10"; 1 female, "China, Sichuan, Emei Shan, 1,000 m, 2002.8.31, Liang H. B. collector"; **Yunnan Province**, 1 female, "Yunnan Province, Shilin"/"1982.VII-12, Shimei Song collector"; 20 males and 14 females (IOZ, KIZ, CAS), "China, Yunnan Province, Gongshan County, Cikai, 27°44'43"N, 98°39'53"E"/"1,500 m, Along street, 2002.IV.13-20, Liang H. B. and Ba Weidong collectors"; 2 males (CAS), "China, Gongshan, Caikai Township, 1,505 m, 27.74082°N, 98.66554°E"/"21 September 2002, stop#DHK-2002-023, D. H. Kavanaugh collector"; 1 male and 2 females (CAS), "China, Fugong, Shangpa Town, west bank of Nujiang, 1,185 m, 26.90668°N, 98.86339°E"/"13 October 2003,

stop#DHK-2002-047, D. H. Kavanaugh, P. E. Marek, H. B. Liang, & D. Z. Dong Collectors"; 2 females, "China, Fugong, Lumadeng, road side, near stream, 27°05'27"N, 98°52'24"E"/"1,230 m, 2002.9.20, Liang Hongbin"; 1 female, "China, Yunnan Province, Tengchong, Wuhe Town, Xiaoheshan forest station, 24°49'43.9"N, 98°45'36.3"E"/"2,025 m, 2003.10.29, Liang H. B. and Shi X. C. collectors, Institute of Zool., CAS and California Acad. Sciences"; 1 male, "China, Yunnan Province, Baoshan, Bawan Town, Nankang forest station, 24°49'28.8"N, 98°46'43.6"E"/"2,085 m, 2003.10.27, Liang H. B. and Shi X. C. collectors, Institute of Zool., CAS and California Acad. Sciences"; 1 male, "China, Yunnan, Fugong, Pihe, Jiapiu, Bacunhe, riverside, 26.54816°N, 98.89576°E"/"1,120 m, 2004.4.29 day, Liang H. B. collector, Institute of Zool., CAS and California Acad. Sciences"; **Zhejiang Province**, 1 male, "Zhejiang Province, Western Tianmushan, Zhutuoling, 1998.V.31, Zhiyong Yu collector"; 1 female, "Zhejiang Province, Tianmushan"/"1981.IX.3, Linyao Wang collector"; 1 male, "Zhejiang Province, Qingyuan, Baishanzu, 500 m, 1994-4-19, Hong Wu collector". **SOUTH KOREA**: 2 males and 2 females (1 male with a determination label, reading *Onycholabis uenoi*), "South Korea, Jejudo Is., Donnaeko, stream bank, 27-VII-1995, Jong Choe Paik collector". **VIETNAM**: 1 male (NSM), "Hoang Lien Son Mts., pass N. of Phang Si Pang, 1,700 m. alt."/"Lai Chau Prov. N. Vietnam, 9-X-1994, Y. Nishikawa"/"papatype" [red label]/"*Onycholabis vietnamica* Kasahara, sp. n."

Description (holotype only). Body length 10.2 mm (including mandible), width 3.9 mm. Black, mandible and labrum brown, palpi, antennae and legs pale yellow. Eyes large, longitudinal diameter of eye 3.6 times as long as tempora; relative length of scape and antennomeres II-VI as follows: 1.00 : 0.43 : 1.71 : 1.36 : 1.07 : 1.07. Pronotum cordate, wider than long, widest at apical one-fifth, wider than head, PW/HW = 1.14, PW/PL = 1.45, PW/PAW = 1.52, PW/PBW = 1.55; anterior angle round; basal angle acute and projected laterad; lateral margin with 2 setae, 1 at apical one-fifth and the other at basal angle. Elytra subovate, much wider than pronotum, EL/EW = 1.67, EW/PW = 1.69; stria deep; interval III with 3 setiferous pore punctures; elytral apex at sutural angle rounded. Prosternum, metasternum, and pro- and metepisterna impunctate. Sixth visible sternum with 4 marginal setae in male and 8 in female.

Distribution. Known from Vietnam, China (including Taiwan), and South Korea.

Remarks. We compared the type of *O. vietnamica* Kasahara with that of *O. sinensis* Bates and found no significant differences. Dr. Jong Cheol Paik provided two pairs of *Onycholabis uenoi* Paik and Lafer collected from the type locality and determined by him; and, as with *O. vietnamica*, we were unable to find any important differences from the type *O. sinensis* Bates.

Kasahara (1986:75) indicated that *O. sinensis* adults lacked setae at the basal pronotal angles (based on Taiwanese specimens, but not on the type). This error led him and, subsequently, Paik and Lafer to describe new species (*O. vietnamica* and *O. uenoi*, respectively) which are both junior synonyms of *O. sinensis*. Furthermore, Dr. Ge Siqin kindly helped us by checking all four Taiwanese specimens labeled *O. sinensis* in MNH. She found that all had setae at the basal pronotal angles, except for one in which the seta was broken and missing, but the pore puncture remained.

Onycholabis stenothorax Liang and Kavanaugh, new species

(Figs. 6-11)

Types. Holotype, a male, in IOZ, labelled: "China, Yunnan Province, Tengchong, Qushi Town, Xiangyangqiao, riverside, 25°12'38.4"N, 98°34'49.4"E"/"1,515 m, 2003.10.23, night, Liang H. B., Shi X. C. Coll., Institute of Zool., CAS & California Acad. Sciences"/"HOLOTYPE *Onycholabis stenothorax* Liang & Kavanaugh" [red label]. Paratypes: 6 males and 1 female, same data as holotype; 2 males and 2 females, "China, Yunnan Province, Longling, Zhen'an Town, Bangbie, along a stream, 24°48'47.4"N, 98°49'59.1"E"/"1,540 m, 2003.10.30, day, Liang H. B., Shi X. C. Coll., Institute of Zool., CAS & California Acad. Sciences"; 2 females, "China, Yunnan Province, Tengchong, Wuhe Town, Zhengding, stream side, 24°50'46.2"N, 98°45'14.5"E"/"1,985 m, 2003.10.29, day, Liang H. B., Shi X. C. Coll., Institute of Zool., CAS & California Acad. Sciences". Among the 13 paratypes, five specimens are deposited in CAS, six in IOZ, and two in KIZ.

Type Locality. Qushi, Tengchong County, Baoshan Prefecture, Yunnan Province, China.

Diagnosis. This new species seems to be most closely related to *O. melitopus* Bates and *O. nakanei* Kasahara, based on chaetotaxy of the pronotum; but adults are readily distinguishable from those of *O. melitopus* by the rounded elytral apices at the sutural angles, and from those of *O. nakanei* by the narrow pronotum and reduced number (2 in males and 6 in females) of marginal setae on the sixth visible sternum.

Description. Body length 10.7–12.0 mm (including mandibles). Width: 3.4–3.9 mm. Body black, shiny dorsally; mandibles, labrum and mentum red-brown; antennae, palpi and legs light brown.

Head with large and markedly prominent eyes and markedly constricted neck; vertex slightly convex above with surface very smooth and shiny, microsculpture partly and sparsely visible and formed of isodiametric meshes; frontal furrows deeply concave, almost parallel anteriorly and slightly divergent posteriorly, surface laterad of frontal furrows longitudinally rugose; anterior supraorbital seta inserted anterior to mid-eye level, posterior supraorbital seta inserted slightly anterior to post-eye level; mandibles long, slender, gently curved inwards and gradually tapered towards tips [which are not as sharply pointed as in other species]; terminal maxillary palpomeres slender, almost as long as penultimate palpomeres, cylindrical in median portion and truncate at apices; terminal labial palpomere shorter than penultimate; penultimate palpomeres bisetose; median tooth of mentum bifid, with each apex sharply pointed; submentum quadrisetose; antennae filiform, extended to middle of elytra; relative lengths of scape and antennomeres II–VI as follows: 1.0 : 0.44 : 1.65 : 1.51 : 1.14 : 1.14.

Pronotum cordate, longer than wide, widest at about apical one-third, narrower than head, PW/HW = 0.89 (0.85–0.92), PW/PL = 1.05 (0.98–1.10), PW/PAW = 1.34 (1.29–1.39), PW/PBW = 1.47 (1.41–1.55); apical margin widely and rather shallowly emarginate throughout; front angles rounded, obtuse at tips; lateral margins finely reflexed, arcuate before widest parts, rather gradually convergent to basal one-sixth, then slightly sinuate anterior to rectangular, pointed hind angles; 1 pair of marginal setae inserted slightly before widest part; basal margin distinctly bisinuate and unbordered throughout; disc moderately convex above, with surface smooth, except for sparse and scattered large punctures along basal and lateral portions, microsculpture evident as transverse meshes; median longitudinal furrow narrow but distinctly impressed throughout, basal foveae deep.

Elytra subovate, moderately convex above, widest slightly behind middle, much wider than pronotum, EL/EW = 1.73 (1.64–1.77), EW/PW = 1.89 (1.83–1.92); basal margin short and slightly curved; basal margins wide, oblique and extended to humeri, which are distinct but rounded; lateral margins almost parallel-sided in basal portions, moderately convergent towards apices, slightly but distinctly produced just before apices which are conjointly rounded; scutellar striae long, extended onto interval I and punctate; striae between intervals deeply impressed, with regularly spaced punctures except indistinctly punctate in apical portion; intervals smooth, with microsculpture evident as transverse meshes, slightly convex in apical half and flatter towards apex; interval III with 1 setiferous pore puncture at basal one-fifth near stria III and a second just behind middle and near stria II (2 specimens with 3 pore punctures on one elytron).

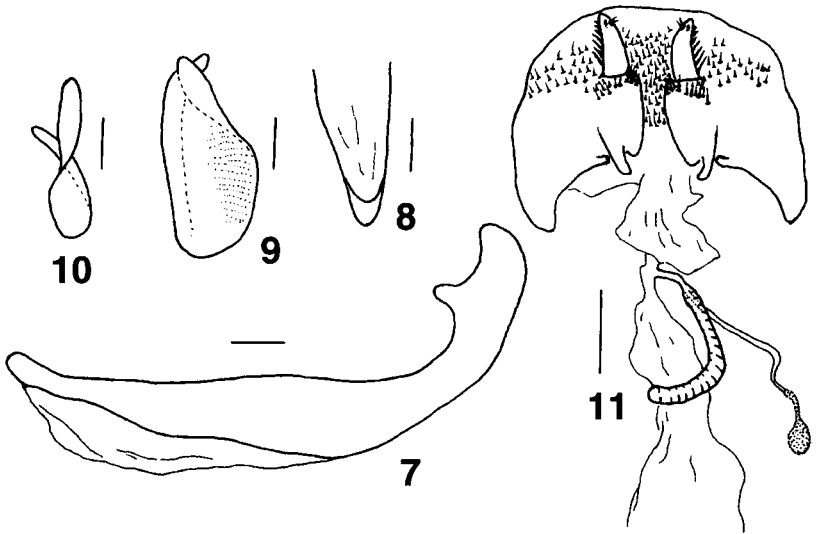
Prosternum, lateral portions of metaternum and pro- and metepisterna coarsely punctate. Sixth visible sternum with 2 marginal seta in male, 6 in female.

Legs long and slender; protarsomeres I–III slightly dilated in male, with two rows of adhesive hairs on ventral side; tarsomere IV bilobed apically.

Male genitalia with aedeagus long and slender, slightly arcuate at basal one-third in lateral view, then almost straight toward rounded apex (Fig. 7); in dorsal view, apical lamella slightly tapered towards apex, nearly as long as wide (Fig. 8); left paramere broadly subovate and rounded at apex (Fig. 9); right paramere small and narrow, with rounded apex (Fig. 10).

Female reproductive tract as in Figure 11; basal gonocoxite I with apical fringe of 13 setae; apical gonocoxite II with 7 dorsolateral and 1 dorsomedial ensiform setae; bursa copulatrix without microtrichia, spermatheca slightly arcuate, spermathecal gland with spherical apex.

Distribution. Presently known from Tengchong, Baoshan and Longling counties, on both western and eastern slopes of the Gaoligong Mountains in western Yunnan Province, China.



Figs. 7–11. *Onycholabis stenothorax* n. sp. 7) aedeagus, left lateral aspect; 8) apex of aedeagus, dorsal aspect; 9) left paramere, lateral aspect; 10) right paramere, lateral aspect; 11) female reproductive tract, ventral aspect; scale lines for Figures 7–10 = 0.2 mm, for Figure 11 = 0.5 mm.

Etymology. This new species is named for its narrow pronotum.

Species Removed from *Onycholabis*

Our concept of genus *Onycholabis* comprises only those species in which adults have antennomere III exceptionally elongate and pubescent. This concept delimits a small group of similar and certainly closely related species, but it also excludes three species previously included in this genus, namely, *O. arrowi* Jedlička, *O. luzonensis* Jedlička, and *O. macrops* Louwerens. To what other genus or genera do these three species properly belong? Because relationships among, and even the delimitations of, platynine genera of the Oriental Region remain unclear (Liebherr 1998), this question is difficult to answer at present.

In the introductory section of his treatment of the platynines of Madagascar, Jeannel (1948:515–516) provided a key to some but not all of the Oriental platynine genera, and *Onycholabis* was among those not included. Using this key, the types of all three species in question can be identified as members of *Platynus* Bonelli, but they do not have all the character states cited for members of that genus. In Darlington's key to the platynines of New Guinea (1952, with additions in 1971), *O. arrowi* and *O. luzonensis* can be identified easily as species of *Notagonum* Darlington. The holotype of *O. macrops*, which lacks seta at the basal pronotal angles, keys out to genus *Lithagonum* Darlington in this key; however it resembles members of *Lithagonum* species in few other features and is certainly not closely related to them. Using Jedlička's (1953) key, the holotypes of *O. arrowi*, *O. luzonensis*, and *O. macrops* all key to *Sternodelus* Jedlička, based on the shape of their mandibles. Habu's (1978) key to the Japanese genera did not include *Onycholabis*, which was not discovered in that country until 1981 (see Kasahara 1986). Using that key, *O. macrops* can be identified as a *Platynus*

species (submentum with only a single pair of lateral setae), and *O. arrowi* and *O. luzonensis* as species of *Agonum* Bonelli.

As is clear from the discussion above, we are faced with several options, none of them simple, in trying to assign these three species to genera in the absence of any comprehensive, phylogenetically based treatment of the Oriental platynine genera. It is unclear why Jedlička (1953) assigned *O. arrowi* to *Sternodelus* but left *O. luzonensis* in *Onycholabis*, when the types of both species share the features that he used to distinguish *Sternodelus* from *Onycholabis* species. Furthermore, we find no features of *Sternodelus* members that are not shared with those of *Notagonum* Darlington (1952); but while we suspect that *Sternodelus* may be a junior synonym of *Notagonum* as presently conceived, we are not prepared to suggest this synonymy formally. As even its author admitted (Darlington 1971:275), *Notagonum* is really just a "genus of convenience" as presently defined, largely on the basis of symplesiomorphic features (see also Liebherr and Zimmerman 1998); so it may be that *Sternodelus* is a valid name for some subset of species presently assigned to *Notagonum*. Hence, we are content at present to follow Jedlička in assigning *O. arrowi* to *Sternodelus* and to transfer *O. luzonensis* tentatively to *Notagonum*.

The type specimen of the remaining species, *O. macrops*, is, in all features except for the absence of setae at the pronotal hind angles, also referable to *Notagonum*; and we here tentatively assign this species to that genus. We recognize that including a species in which adults have the basolateral pronotal setae absent expands Darlington's concept of that genus slightly; but we view this change in delimitation of *Notagonum*, already a genus of doubtful monophyly, as preferable to proposing yet another new, monotypic genus to accommodate *O. macrops* at this time.

Sternodelus arrowi (Jedlička)

(Fig. 12)

Onycholabis arrowi Jedlička, 1935:32 (Philippines).

Sternodelus arrowi (Jedlička). Jedlička, 1953:108.

Specimens Examined. Holotype, a male (NHM), "Type"/"Philippine Is., Coll. Bottcher, B. M. 1929-201"/"Philippine Islands, Les Banes, 3:III:1914, Coll. Bottcher"/"Onycholabis arrowi sp. n., type, det. ING. JEDLICKA".

Description. Jedlička's description is brief. We add the following: microsculpture on head formed of indistinct isodiametric meshes; antennomeres IV–XI pubescent; PW : HW = 1.13; PW : PL = 1.38; PW : PAW = 1.51; PW : PBW = 1.29; EW : PW = 1.45; EL : EW = 1.73; relative lengths of scape and antennomeres II–VI as follows: 1.00 : 0.52 : 1.11 : 1.19 : 1.11 : 1.11; submentum with 1 pair of long setae and 1 pair of short setae laterally; basal fovea of pronotum deep, sparsely punctate; elytra with basal setiferous pore puncture present; elytral apex rounded; tibia slightly sulcate; tarsomeres I–II sulcate on outer dorsal side (others and claw missing on type); sixth visible sternum with 2 marginal setae in male.

Remarks. Although *O. arrowi* was transferred to *Sternodelus* by Jedlička in 1953, subsequent authors have not followed him.

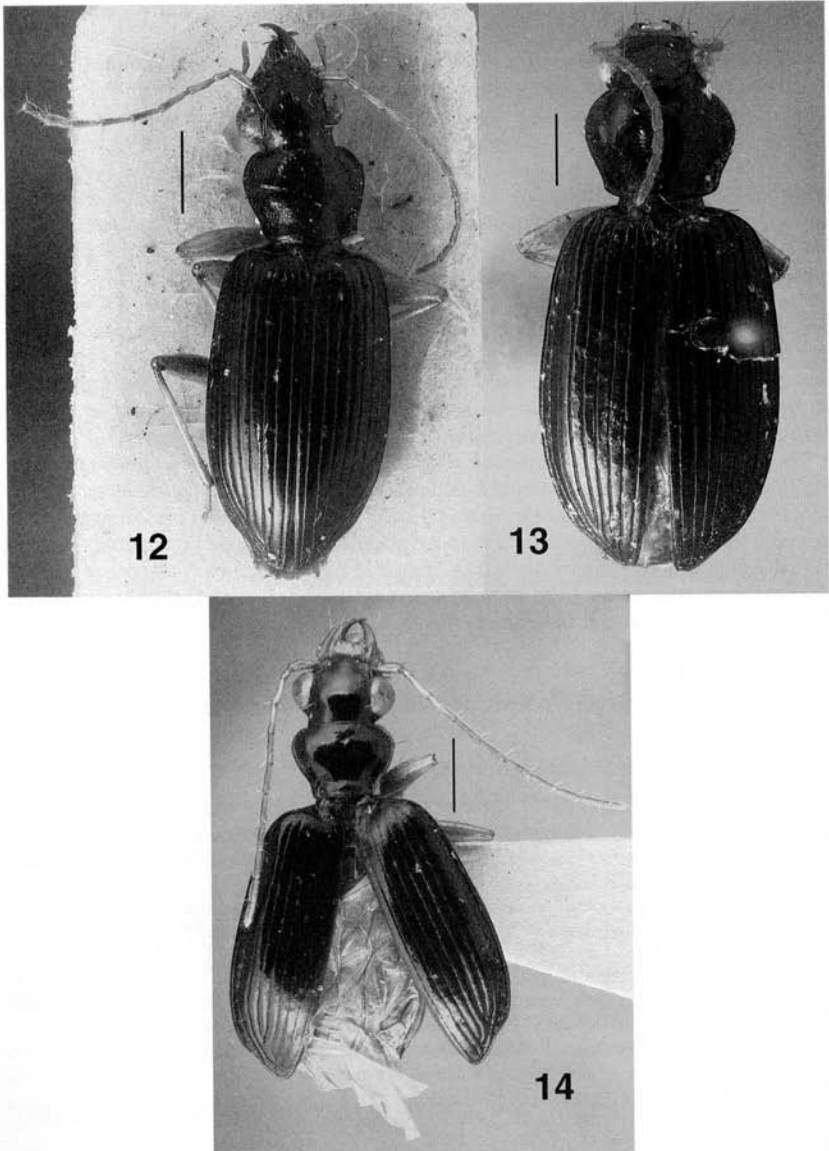
Notagonum luzonensis (Jedlička), new combination

(Fig. 13)

Onycholabis luzonensis Jedlička, 1935:31 (Philippines).

Specimens Examined. Holotype, a male (NHM), "Typus"/"Mt. Makling, Luzon, Baker"/"Onycholabis luzoensis sp. n., type, det. ING. JEDLICKA".

Description. Jedlička's description of this species is also brief. We add the following: microsculpture on head formed of distinct isodiametric meshes; antennomeres IV–XI pubescent;



Figs. 12–14. Dorsal habitus; scale lines = 1.0 mm. **12** *Sternodelus arrowi* (Jedlička) (holotype); **13** *Notagonum luzonensis* (Jedlička) (holotype); **14** *Notagonum macrops* (Louwerens) (holotype).

PW : HW = 1.31; PW : PL = 1.27; PW : PAW = 1.75; PW : PBW = 1.40; EW : PW = 1.48; EL : EW = 1.58; relative lengths of scape and antennomeres II–VI as follows: 1.00 : 0.56 : 1.19 : 1.31 : 1.19 : 1.13; mentum with tooth simple; submentum with 1 pair of long setae and 1 pair of short setae laterally; basal fovea of pronotum long and deep, sparsely punctate; elytra with basal

setiferous pore puncture present; elytral apex slightly truncate near suture; tibia longitudinally sulcate; tarsomeres longitudinally sulcate both medially and laterally on dorsum, tarsomere IV not bilobed, tarsomere V without seta on ventral side; sixth visible sternum with 2 marginal setae in male.

Remarks. When Jedlička (1953:108) described genus *Sternodelus* for *O. arrowi*, he correctly recognized that species as different from *Onycholabis* in having antennomere III glabrous. Curiously, he did not mention his other species, *O. luzonensis* Jedlička, adults of which also have antennomere III glabrous.

Notagonum macrops (Louwerens), new combination

(Fig. 14)

Onycholabis macrops Louwerens, 1955:55 (Borneo = Pulau Kalimantan).

Specimens Examined. Holotype, a male (MCZ), "Borang R. Borneo Is."/"Museum of Comparative Zoology"/"M. C. Z. Type, L9206"/"*Onycholabis macrops*, Louw. Type, det. C. J. Louwerens".

Description. Louwerens (1955:55–56) provided a good description. We add the following: PW : HW = 1.00; PW : PL = 1.40; PW : PAW = 1.40; PW : PBW = 1.56; EW : PW = 1.79; EL : EW = 1.60; relative lengths of scape and antennomeres II–VI as follows: 1.00 : 0.53 : 1.20 : 1.33 : 1.27 : 1.13; elytra with basal setiferous pore puncture present; elytral interval III with 2 discal setae (first near stria III at basal one-quarter, second near stria II at apical one-third).

Remarks. Louwerens (1955:56) noticed that the type of this species was different from *O. acutangulus*, *O. melitopus*, and *O. sinensis* members in antennal pubescence. He simply assigned it to *Onycholabis* based on similarity with *O. arrowi* and *O. luzonensis*.

Acknowledgments

We thank Dr. Jong Choe Paik and Dr. Seiji Morita for providing *Onycholabis* specimens. Thanks are also due to the Museum Nationale d'Histoire Naturelle in Paris (Dr. Thierry Deuve), Natural History Museum in London (Ms. Christine Taylor, Dr. Martin Brendell), National Science Museum in Tokyo (Dr. Shuheji Nomura), and Museum of Comparative Zoology at Harvard University (Dr. Philip Perkins) for loans of types. Mr. Xiaochun Shi, of the Gaoligongshan Nature Reserve Management Bureau in Baoshan, provided excellent assistance in collecting specimens for this study. This work was supported by the National Natural Science Foundation of China, through grant No. 30000026, and by the U. S. National Science Foundation, through grant No. 0103795.

Literature Cited

- Andrewes, H. E. 1923.** Papers on the Oriental Carabidae-XII. Annals and Magazine of Natural History (Series 9) 12:682–683.
- Bates, H. W. 1873.** Descriptions of new genera and species of Geodephagous Coleoptera, from China. Transactions of the Entomological Society of London 1873:323–334.
- Bates, H. W. 1892.** Viaggio di Leonardo FEA in Birmania e regioni vicine. XLIV. List of Carabidae. Annali del Museo Civico di Storia Naturale di Genova (Serie 2) 12:267–428.
- Darlington, P. J., Jr. 1952.** The carabid beetles of New Guinea. Part 2. The Agonini. Bulletin of the Museum of Comparative Zoology 107:87–252 + Plates 1–4.
- Darlington, P. J., Jr. 1971.** The carabid beetles of New Guinea. Part IV. General considerations; analysis and history of fauna; taxonomic supplement. Bulletin of the Museum of Comparative Zoology 142:129–337.

- Habu, A. 1978.** Fauna Japonica. Carabidae: Platynini (Insecta: Coleoptera). Keigaku Publishing Co., Tokyo. viii + 447 pp. + 36 plates.
- Jeannel, R. 1948.** Faune de l'empire Français X. Coléoptères Carabiques de la région Malagache (Deuxième partie). Muséum National d'Histoire Naturelle, Paris. pp. 373–765.
- Jedlička, A. 1935.** Neue Carabiden aus Ostasien. (8. Teil). Časopis Československé Společnosti Entomologické 32:31–36.
- Jedlička, A. 1953.** Revise tribu Pterostichini. Ročenka Československé Společnosti Entomologické 50:85–112.
- Kasahara, S. 1986.** Occurrence of *Onycholabis* (Coleoptera: Carabidae) in Japan. Special Bulletin of Japanese Society of Coleopterology 2:75–80.
- Kasahara, S. 1995.** Occurrence of *Onycholabis* (Coleoptera: Carabidae) in Northern Vietnam. Bulletin of National Science Museum, Tokyo (Series A) 21:27–32.
- Liang, H. B., and Y. Imura. 2003.** A new species of the genus *Onycholabis* (Coleoptera, Carabidae) from China, Vietnam and Laos. Acta Zootaxonomica Sinica, 28(4):688–691.
- Liebherr, J. K. 1998.** On *Rembus (Colpodes) brunneus* MacLeay (Coleoptera: Carabidae, Platynini): redescription and relationships. Journal of Natural History 32:987–1000.
- Liebherr, J. K., and E. C. Zimmerman. 1998.** Cladistic analysis, phylogeny and biogeography of the Hawaiian Platynini (Coleoptera: Carabidae). Systematic Entomology 23:137–172.
- Lorenz, W. 1998.** Systematic List of Extant Ground Beetles of the World (Insecta Coeloptera "Geadephaga": Trachypachidae and Carabidae incl. Paussinae, Cicindelinae, Rhysodinae). Private edition, Tutzing. 502 pp.
- Louwerens, C. J. 1955.** New Oriental Agonini (Coleoptera: Carabidae). Tijdschrift voor Entomologie 98:43–56.
- Maindron, M. 1899.** Description d'une espèce de *Cardiomeria* [Col. Carab.]. Bulletin de la Société Entomologique de France 1899:155–156.
- Maindron, M. 1905.** Notes synonymiques sur quelques Coléoptères de la famille Carabidae. Bulletin de la Société Entomologique de France 1905:94–95.
- Paik, J. C., and G. Sh. Lafer. 1995.** A new species of *Onycholabis* (Coleoptera, Carabidae) from Jeju, South Korea. Special Bulletin of Japanese Society of Coleopterology 4:253–257.

(Received 20 April 2005; accepted 9 July 2005. Publication date 17 January 2006.)