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(Insecta: Trichoptera) from Vietnam

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Abstract. Identification of caddisfly specimens from Vietnam collected by scientific field staff of the Royal Ontario Museum and the American Museum of Natural History revealed 19 new country records. All but one species were reported from other Oriental region countries, particularly Thailand and Indonesia. However, *Goera kawamotonis* Kobayashi 1987 was only known from the East Palaearctic region (Japan and Russian Far East). The total number of species now recorded from Vietnam is 400.

Introduction

Until the last quarter of the 20th century, almost all records of caddisflies from Vietnam involved type specimens only known from their type localities. Prior to that time, there was a lack of systematic collecting in Vietnam with relatively few trichopterists who had worked on its fauna, and there was an overall paucity of knowledge concerning caddisflies in most neighboring countries.

Over the last 33 years, various taxonomists have added significant new information about the trichopteran fauna of Southeast Asia in general, and Vietnam in specific. These works were cited in two papers (Armitage et al. 2005; Mey 2005) and in an unpublished dissertation (Hoang, 2005). Since then, additional species have been described and/or recorded (Hoang and Bae 2007, Johanson and Oláh 2008, Malicky 2008, Oláh and Johanson 2008, Oláh et al. 2008, and Arefina-Armitage and Armitage *in press*, among others). The purpose of this paper is to report 19 new country records of caddisflies for Vietnam, which increases the total number of reported species to 400.

The records presented in this paper were based on material collected by field personnel of the Royal Ontario Museum (ROM; 1995-2000) and the American Museum of Natural History (AMNH; 1998-1999). Both museums conducted surveys on multiple taxa groups in Vietnam to establish baseline information about the biodiversity of that country. This information can then be used in the future to evaluate changes with time and upon which to base resource management decisions.

Family Dipseudopsidae

Dipseudopsis knappi Schmid and Denning 1979

Material examined: Dong Nai: Cat Tien National Park, gazebo near park headquarters, field edge of Dong Nai River, 120 m, 11°25'22.9"N, 107°25'41.5"E, MV light, 31 May 1999, B. Hubley, ROM 993045, 1 male.

Distribution: Thailand, Vietnam (Dong Nai).

Family Ecnomidae

Ecnomus aerion Malicky 1999

Material examined: Lao Cai: ca. 4 km W Sapa Village, on tributary of Golden River, 1200 m, 22°18'59"N, 103°49'16"E, Malaise trap, 16-23 May 1999, A. Lathrop, ROM 992020, 1 male; **Quang Nam:** Ngoc Linh: 830 m, 15°10'N, 108°5'E, Malaise trap, 11-18 March 1999, K. Long, C. Johnson, AMNH, 1 male; 950 m, 15°10'N, 108°5'E, Malaise trap, 23 March 1999, K. Long, C. Johnson, AMNH, 1 male; *ibid.* 16 April 1999, 4 males.

Distribution: Thailand, Vietnam (Lao Cai, Quang Nam).

Ecnomus alkestis Malicky and Chantaramongkol 1997

Material examined: Ha Tinh: Huong Son, 200 m, 18°21'N, 105°15'E, Malaise trap, 15 May 1998, J. Carpenter, K. Long, D. Grimaldi, L. Herman, D. Silva, AMNH, 1 male.

Distribution: Thailand, Vietnam (Ha Tinh).

Ecnomus argonautos Luadee and Malicky 1999

Material examined: Cao Bang: Ba Be National Park, mouth of river at village, 22°25'N, 105°37'E, UV light, 8 May 1997, D. Currie, ROM 972504, 1 male, 5 females.

Distribution: Thailand, Vietnam (Cao Bang).

Ecnomus atevalus Malicky and Chantaramongkol 1993a

Material examined: Dac Lac: Yok Don National Park Headquarters, ca. 2 km SE Ban Ban Don, 12°53'N, 107°48'E, UV/MV light, 22-31 May 1997, C. Darling, D. Currie, ROM 974004, 1 male; Yok Don National Park, ca. 2 km SE Ban Don, W of Serepok River, dipterocarp forest, 12°53'N, 107°48'E, UV light, 2 July 1997, B. Hubley, ROM 974122, 1 male, 1 female.

Distribution: Thailand, Vietnam (Dac Lac).

Ecnomus paget Malicky and Chantaramongkol 1997

Material examined: Dac Lac: Yok Don National Park, ca. 2 km SE Ban Don, W bank of Serepok River, 100 m, 12°53'N, 107°48'E, Malaise trap, 28 June - 7 July 1997, B. Hubley, ROM 974114, 2 males 1 female.

Distribution: Thailand, Vietnam (Dac Lac).

Ecnomus promat Malicky and Chantaramongkol 1993b

Material examined: Gia Lai: An Khe District: Azun River, Tram Lap, 3 km NE forestry building, UV light, 21 June 1996, D. Currie, J. Swann, ROM 961076, 1 male; Cha River, 10 km NW Buoenloy, on road to Tram Lap, UV light, 27 June 1996, D. Currie, ROM 961098, 5 males, 14 females; Dacklest River, 5.2 km NE Tram Lap on forestry road, 200 m upstream bridge, 1° rainforest, 900 m, 14°24'N, 108°33'E, UV light, 28 June 1996, D. Currie, J. Swann, ROM 961102, 1 male.

Distribution: Thailand, Vietnam (Gia Lai).

Ecnomus pseudotenellus Ulmer 1930

Material examined: Cao Bang: Ba Be National Park, junction of road to Lake Ba Be and trail to ethnic village, UV light, 18 May 1995, D. Currie, J. Swann, ROM 956068, 1 male.

Distribution: Indonesia (Sumatra), Vietnam (Cao Bang).

Ecnomus puro Malicky and Chantaramongkol 1993a

Material examined: Dac Lac: Yok Don National Park: ca. 2 km SE Ban Don, W bank of Serepok River, 12°53'N, 107°48'E, Malaise trap, 31 May - 12 June 1997, B. Hubley, ROM 974112, 1 male; edge of Dak Ken River, 8 km SW Ban Don, dipterocarp forest, 12°53'N, 107°48'E, UV light, 15 June 1997, B. Hubley, ROM 974101, 5 males, 19 females.

Distribution: Thailand, Vietnam (Dac Lac).

Ecnomus uttu Malicky and Chantaramongkol 1993a

Material examined: Gia Lai: An Khe District, Cha River, 10 km NW Buoenloy, on road to Tram Lap, UV light, 27 June 1996, D. Currie, ROM 961098, 1 male.

Distribution: Thailand, Vietnam (Gia Lai).

Family Polycentropodidae

Pseudoneureclipsis abia Malicky and Chantaramongkol 1993a

Material examined: Dac Lac: Yok Don National Park, edge of Dak Ken River, 8 km SW Ban Don, dipterocarp forest, 12°53'N, 107°48'E, UV light, 15 June 1997, B. Hubley, ROM 974101, 3 males.

Distribution: Thailand, Vietnam (Dac Lac).

Pseudoneureclipsis arimaspos Laudee and Malicky 1999

Material examined: Ha Tinh: Huong Son: 200 m, 18°21'N, 105°15'E, Malaise trap, 13 April 1998, J. Carpenter, K. Long, D. Grimaldi, L. Herman, D. Silva, AMNH, 2 males; *ibid.*, April - May 1998, 1 male; *ibid.*, 11-21 May 1998, 4 males, 1 female.

Distribution: Thailand, Vietnam (Ha Tinh).

Pseudoneureclipsis erechtheus Malicky and Saengpradab in Malicky et al. 2001

Material examined: Dac Lac: Yok Don National Park: ca. 1.5 km SE Ban Don, dry stream bed, 12°53'N, 107°48'E, UV light, 23 May 1997, D. Currie, ROM 974006, 5 males; ca. 2 km SE Ban Don, W bank of Serepok River, near rapids, 12°53'N, 107°48'E, Malaise trap, 31 May - 12 June 1997, B. Hubley, ROM 974112, 2 males, 1 female; *ibid.*, MV light, 31 May 1997, C. Darling, D. Currie, A. Guidotti, ROM 974019, 1 male; *ibid.*, riparian vegetation, Malaise trap, 12-28 June 1997, B. Hubley, ROM 974113, 6 males; *ibid.*, Malaise trap, 28 June - 7 July 1997, B. Hubley, ROM 974114, 7 males; *ibid.*, dipterocarp forest, near ponds, UV light, 2 July 1997, B. Hubley, ROM 974122, 5 males; *ibid.*, near fields, Malaise trap, 30-31 May 1997, C. Darling, ROM 974020, 1 male, 2 females.

Distribution: Thailand, Vietnam (Dac Lac).

Pseudoneureclipsis philemon Malicky and Prommi in Malicky et al. 2000

Material examined: Gia Lai: An Khe District: tributary of Azun River, NE Tram Lap, UV light, 20 June 1996, B. Hubley, D. Currie, ROM 961073, 3 males, 1 female; Tram Lap, Azun River, 2 km NW on trail from forestry building, 14°27'N, 108°33'E, 23 June 1996, D. Currie, J. Swann, ROM 961084, 1 male; Cha River, 10 km NW Buoenloy, on road to Tram Lap, UV light, 27 June 1996, D. Currie, ROM 961098, 2 males. **Ha Tinh:** Huong Son: 200 m, 18°21'N, 105°15'E, Malaise trap, 13 April 1998, J. Carpenter, K. Long, D. Grimaldi, L. Herman, D. Silva, AMNH, 1 male; 300 m, 18°21'N, 105°15'E, Malaise trap, 11-21 May 1998, J. Carpenter, K. Long, D. Grimaldi, L. Herman, D. Silva, AMNH, 2 males, 3 females. **Nghe An:** ca. 25 km SW of Con Cuong: Khe Moi River Forestry Camp: tropical forest, riparian, 308 m, 3 June 1995, Hubley, J. Swann, ROM 956150, 3 males, 3 females; tributary of Khe Moi River, tropical forest edge, 18°56'N, 104°49'E, 4 June 1995, B. Hubley, J. Swann, ROM 956158, 1 male, 2 females.

Distribution: Thailand, Vietnam (Gia Lai, Ha Tinh, Nghe An).

Family Goeridae

Gastrocentrides sumatranus Ulmer 1930

Material examined: Dac Lac: Yok Don National Park, edge of Dak Ken River, 8 km SW Ban Don, dipterocarp forest, 12°53'N, 107°48'E, UV light, 15 June 1997, B. Hubley, ROM 974101, 2 males, 3 females. **Gia Lai:** ca. 3 km N An Khe along road to Kannack, 438 m, 13°59'14.9"N, 108°41'02.2"E, UV light, 8 June 2001, C. Darling, N. Tataranic, B. Hubley, ROM 2001596, 2 males, 2 females. **Nghe An:** Con Cuong, Con River, edge of plowed field, UV light, 2 June 1995, B. Hubley, J. Swann, ROM 956148, 1 male, 1 female.

Distribution: Indonesia (Sumatra), Vietnam (Dac Lac, Gia Lai, Nghe An).

Goera kawamotonis Kobayashi 1987

Material examined: Quang Nam: Ngoc Linh, 950 m, 15°11.2'N, 108°2.3'E, Malaise trap, 16 April 1999, D. Grimaldi, L. Herman, C. Johnson, K. Long, E. Sterling, AMNH, 1 male.

Distribution: Japan (Honshu, Shikoku, Kyushu), Russia (Far East: south of Khabarovsk krai, Primorye), Vietnam (Quang Nam).

Goera tarumana Malicky 1978

Material examined: Gia Lai: An Khe District, Azun River, Tram Lap, 3 km NE forestry building, UV light, 21 June 1996, D. Currie, J. Swann, ROM 961076, 1 male.

Distribution: Indonesia (Sumatra), Vietnam (Gia Lai).

Family Lepidostomatidae

Lepidostoma montatan Malicky and Chantaramongkol 1994

Material examined: Nghe An: W of Con Cuong, Khe Moi Forestry Camp, margin of 3 m tributary of Khe Moi River, Malaise trap, 24-29 October 1994, D. Currie, ROM 946105, 1 male. **Thua Thien-Hue:**

Nam Dong District, Huong Loc commune, ca. 9 km SE Khe Tre, Malaise trap, 26 May - 1 June 2002, C. Darling, ROM 2002508, 1 male.

Distribution: Thailand, Vietnam (Nghe An, Thua Thien-Hue).

Lepidostoma pseudabruptum Malicky and Chantaramongkol 1994

Material examined: **Gia Lai:** An Khe District, Azun River, Tram Lap, 3 km NE forestry building, UV light, 21 June 1996, D. Currie, J. Swann, ROM 961076, 1 male. **Quang Nam:** Ngoc Linh: 950m, 15°10'N, 108°5'E, Malaise trap, 16 April 1999, K. Long, C. Johnson, AMNH, 30 males. **Thua Thien-Hue:** Bach Ma National Park, edge of stream, ca. 1 km along Five Lakes trail, 1200m, 16°11'20.1"N, 107°51'08.5"E, Malaise trap, 4-16 June 2000, B. Hubley, ROM 2000506, 1 male.

Distribution: Thailand, Vietnam (Gia Lai, Quang Nam, Thua Thien-Hue).

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