

proves difficult. In this case, however, the identifications are fairly clear cut. The fossil material thus attests to the long-standing character of this insect-plant association and also suggests the stability over time of island food chains with sucking/piercing insects as important herbivores.

Literature Cited

- Larew, H.G.** 1992. Fossil galls. *In*: Shorthouse, J.D. (ed.), *Biology of insect-induced galls*. Oxford University.
- Ozawa, A., Tagami, T. & Garcia, M.O.** 2005. Unspiked K-Ar dating of the Honolulu rejuvenated and Ko'olau shield volcanisms on O'ahu, Hawai'i. *Earth and Planetary Science Letters* **232**: 1–11.
- Scott, A.C., Stephenson, J. & Collinson, M.E.** 1994. The fossil record of leaves with galls. *In*: Williams, M.J. (ed.), *Plant galls: organisms, interactions, populations*. Clarendon Press, Oxford.
- Woodcock, D., Manchester, C. & Webb, D.** 1998. Fossil cotton from the Salt Lake Crater area, O'ahu, Hawai'i. *Bishop Museum Occasional Papers* **56**: 17–19.

Additions and notes to the Elateridae (Coleoptera) of the Hawaiian Islands¹

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Coleoptera: Elateridae

Adelocera oblongus (Fleutiaux) **Revised identity**

Brachylacon beardsleyi Ôhira & Becker, 1978: 323. **New synonym**

Adelocera beardsleyi was described in the genus *Brachylacon* from specimens collected in 'Ewa and nearby areas of O'ahu. The authors correctly surmised that this species was not native to Hawai'i, but they were unsure of its origin. Johnson *et al.* (2000) reported the species from the island of Hawai'i.

During a recent visit to Bishop Museum by PJJ, we compared the holotype and additional specimens of *A. beardsleyi* with specimens, images, and notes of other *Adelocera* species and concluded that *A. beardsleyi* is a junior synonym of *A. oblongus* (Fleutiaux). This latter species was described from the Philippines, thus our determination provides the probable provenance for the Hawaiian population and gives support for recognizing the beetle as exotic to Hawai'i.

The Manila specimen in BPBM listed below may well be an unrecognized paralectotype from the original syntype series: 1) it possesses a data label style and content suggesting that it was collected by C.F. Baker; 2) it was taken 2 years prior to the female type reported in Fleutiaux's (1934) description; 3) Fleutiaux received considerable Philippine elaterid material from Baker, some of which was sent to Van Zwaluwenburg who maintained an extensive correspondence and specimen exchange with Fleutiaux (Van Zwaluwenburg 1936); and 4) Fleutiaux typically did not mention the study of multiple spec-

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imens in his early work and dispersed specimens to various collections. The BPBM specimen was not included by Hayek (1973), who designated the lectotype for *A. oblongus*.

Larvae of *Adelocera* species are poorly known but records for the tribe (Agrypinini) generally note larvae as opportunistic predators on and in loose soil, or in dead trees or logs. The O'ahu records were from light traps in xeric and highly disturbed lowland areas where the predominant and naturalized tree is *Prosopis pallida*, or *kiawe*. The Hawai'i specimen was collected on a sticky trap in a montane secondary forest within a wildlife refuge, a decidedly wetter and more botanically diverse environment than the collection sites from O'ahu.

Material examined. **O'AHU:** [type material as reported by Ôhira and Becker]. **HAWAI'I:** Hakalau National Wildlife Refuge, Kona Forest Unit, along southern boundary at 579 m, yellow sticky trap, 11 Apr–17 May 2000, W. Haines, *HVNP003049* (1 ex, HAVO). **PHILIPPINES:** Manila, 17 May, *Brachylacon oblongus* Fleut., det. by RHVZ (1 ex, BPBM).

Melanotus punctosus (Walker)

New state record

Athous punctosus Walker, 1858: 20.

During an arthropod survey of Kahului Airport, Maui (Howarth & Preston 2001), 3 specimens of *Melanotus punctosus* were collected. This species is native to India and Sri Lanka, and represents the first record for this genus in Hawai'i. No other records for this species outside of its natural range are known to us.

The identity of this species was confirmed by PJJ through a comparison of these specimens with the holotype and other material in The Natural History Museum, London. This species is somewhat variable with regard to the relative coarseness of pronotal sculpture but as with most species of *Melanotus*, the aedeagus is diagnostic for species determination.

Melanotus is a widespread genus and some species within their natural ranges in Europe and North America are minor crop pests. Besides *M. punctosus*, reported here, there are 2 additional adventive species reported for the United States.

Material examined. **MAUI:** Kahului Airport, 20°54'22"N 156°25'56"W, Malaise trap #1, *Leucaena* shrubland, 16 Nov 1999, F.G. Howarth, D.J. Preston, J. Dockall (1 ex, BPBM); Kahului Airport, Kanaha Pond drainage canal area, 20°53'25"N 156°26'53"W, 4 Jun 2000, blacklight, *Pluchea*, *Chenopodium*/kiawe shrubland, Howarth, Preston, Dockall, & G.A. Samuelson (1 ex, BPBM); Kahului Airport, Malaise trap #2, 26 Apr 2000, Howarth, Preston, Dockall, K. Martz & F. Starr (1 ex, BPBM).

Rismethus

One species of *Rismethus* Fleutiaux is reported here for the Hawaiian Islands and another is noted as a quarantine record. Each is based on only a single specimen. Members of *Rismethus* tend to be associated with riparian and mesic ruderal habitats and are attracted to lights. Future use of light traps in favored habitats may confirm the naturalized status of these species.

Presently, there are 15 species of *Rismethus* described from Asia and the Pacific, with 2 species in the Neotropical Region (Hayek 1973).

Rismethus pistrinarius (Candèze)

Quarantine note

Meristhus pistrinarius Candèze, 1857: 164.

Rismethus pistrinarius normally ranges from India and Myanmar across Indochina to the Philippines and is distinguished from other Pacific and SE Asian species by its relatively short and broad bristle-like integumental setae. The Hawaii Clipper was one of 3 Martin

C-130s operated by Pan American Airways over the Pacific. This particular clipper flew a standard route from San Francisco to Manila via Honolulu and the islands of Midway, Wake, and Guam. *Rismethus pistrinarius* did not appear in collections from an intensive Bishop Museum survey of Midway; also, we did not see this species in smaller collections from Wake or Guam in BPBM.

Material examined. O'AHU: Honolulu, T.H., 8-6-37 [6 Aug 1937], ex Hawaii Clipper from Orient, *Meristhus scobinula* Cand. det. by RHVZ [!] (BPBM).

***Rismethus scobinula* (Candèze)**

New state record

Meristhus scobinula Candèze, 1857: 164, pl.2, fig. 26.

This species appears to be widespread, being distributed in both the Neotropical and Oriental regions. The Maui specimen most closely resembles examples from Costa Rica and Surinam by having a slightly more depressed aspect to the dorsal elytral surfaces, and slightly shorter and stouter bristle-like setae. The single specimen cited by Van Zwaluwenburg (1957) from Saipan appears to be a different species.

Material examined. MAUI: W Maui, Honakohau, 900 m, 19 Mar 1972, Malaise trap, J.L. Gressitt (BPBM).

Literature Cited

- Candèze, M.E.** 1857. Monographie des elatérides [part]. *Mémoires de la Société Royal des Sciences de Liège* **12**, viii + 400 p.
- Fleutiaux, E.** 1934. Eucnemididae et Elateridae nouveaux. *Bulletin et Annales de la Société Entomologique de Belgique* **74**: 364–370.
- Hayek, C.M.F.** 1973. A reclassification for the subfamily Agrypninae (Coleoptera: Elateridae). *Bulletin of the British Museum (Natural History), Entomology, Supplement* **20**, 309 p.
- Howarth, F.G. & Preston, D.J.** 2001. Kahului Airport arthropod baseline survey. Report prepared for Edward K. Noda and Associates, Inc.
- Johnson, P.J., Haines, W. & Foote, D.** 2002. A new generic combination and Hawaiian Island record for *Adelocera beardleyi* (Ôhira & Becker) (Coleoptera: Elateridae). *Bishop Museum Occasional Papers* **69**: 29–31.
- Ôhira, H. & Becker, E.C.** 1978. A new species of *Brachylacon* from Hawaii (Coleoptera: Elateridae). *Coleopterists Bulletin* **32**(4): 323–325.
- Van Zwaluwenburg, R.H.** 1936. The elaterid beetles of the Philippine Islands. *Philippine Journal of Science* **59**(3): 393–432.
- . 1957. Elateridae. *Insects of Micronesia* **16**(1): 10–11, fig. 4.
- Walker, F.** 1858. Characters of some apparently undescribed Ceylon insects. *Annals & Magazine of Natural History* (3) **2**: 280–286.