

A NEW LOCALITY RECORD FOR
SCAPHINOTUS LONGICEPS VAN DYKE
(COLEOPTERA: CARABIDAE), WITH
NOTES ABOUT HABITAT

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ABSTRACT

Scaphinotus longiceps Van Dyke has been known from only two localities (Orick and Arcata, Humboldt County, CA), in old-growth coast redwood forest. Both sites have been extensively clearcut since the last collections in these areas 60 years ago. A new record for this species is from a collection-site in old-growth Douglas-fir in Mendocino County, about 125 km south of the previous localities. Habitat at the new site is described and other associated carabid species are reported.

The subgenus *Neocychnus* Roeschke is one of the most distinctive subgenera of *Scaphinotus*, both morphologically and in terms of its rarity within a very restricted geographic distribution (Van Dyke 1944). The three known species are confined to the temperate rainforests of the Pacific Northwest, from Vancouver Island, British Columbia, to Sonoma County, California. Most recently described and least studied of these is *Scaphinotus longiceps* Van Dyke (1924). Prior to this report, only three specimens have been recorded, all from old-growth coast redwood (*Sequoia sempervirens* (D. Don) Endlicher) forest in Humboldt County, California. Although one more specimen may have been collected (Van Dyke 1944), we have been unable to locate it.

We report here on the collection of a fourth individual in an old-growth Douglas-fir (*Pseudotsuga menziesii* (Mirbel) Franco) forest approximately 125 km south of the type locality, along the South Fork of the Eel River in Mendocino County. Fortunately, this habitat is protected as part of The Nature Conservancy's 3,500-hectare Northern California Coast Range Preserve, which is surrounded by additional undeveloped Bureau of Land Management holdings. Forests around the original collection localities for *S. longiceps*, near Orick and Arcata, have been clearcut extensively, and searches over the past few decades in these areas have not yielded additional specimens. It is possible that the species is now extinct in these areas.

The Mendocino County specimen, a female, has been deposited in the California Academy of Sciences collection. It was captured in an unbaited pitfall trap filled with ethylene glycol, sometime between October 23 and December 6, 1982. The pitfall trap was one of a matrix of 16 similar traps spaced in a

Table 1. Pitfall trap collections during the year July 18, 1982 through July 15, 1983, in area of collection of *Scaphinotus longiceps* in Mendocino County.

Species	Total number captured	Mean total per trap ^a	Percent of collection dates	Approximate peak of captures
<i>Promecognathus laevisissimus</i> Dejean	114	26.3	28%	MAR
<i>Metrius contractus</i> Eschscholtz	206	20.8	79%	MAY
<i>Pterostichus (Hytherpes)</i> sp.	111	12.4	100%	NOV
<i>Scaphinotus cristatus</i> (Harris)	55	8.2	14%	NOV
<i>Omus californicus</i> Eschscholtz	9	4.1	43%	MAY
<i>Pterostichus lama</i> Ménétrié	25	3.4	79%	MAY
<i>Scaphinotus interruptus</i> (Ménétrié)	3	0.4	14%	MAR
<i>Scaphinotus longiceps</i> Van Dyke	1	0.1	7%	NOV

^a Differences in species rank between total and mean numbers per trap result from number of traps being reduced during winter months from 16 to 9.

10-meter grid as part of a macroinvertebrate survey project. Each trap consisted of a 10 cm diameter plastic cup, nested in another identical cup, and sheltered at a height of about 5 cm with a 12 × 12 cm square of 1 cm thick plywood supported by nails at its corners. The habitat is an old-growth Douglas-fir forest on a steep (mean slope 65%) southeast-facing slope. The site is approximately 150 m west of the Eel River South Fork, about 1.5 km north of the Elder Creek tributary, and 10 km north of the town of Branscomb. Woody vegetation is dominated by Douglas-fir. Several large Douglas-fir were cored to determine age, which exceeded 100 yr in all seven trees > 35 cm diameter-at-breast-height (dbh). The age of the largest two trees cored exceeded 250 yr. Litter and duff layers were thick (8.7 cm and 9.9 cm, respectively, mean of 48 sample points), as is typical of these mature forests. Ground cover was sparse; leaves and twig litter covered 62.6% of 16 sample plots (each 10 m²); moss 8.2%, branches < 10 cm in diameter 12.3%, and all herb-layer vegetation 3.8%, dominated by *Carex* sp. Large logs (> 10 cm diameter) covered only 0.4% of area sampled. Canopy cover averaged 89.1% (mean of 36 readings). Although the *S. longiceps* specimen was trapped in this forest, scattered coast redwood grows about 200 m from the trap site, and a larger grove is approximately 700 m south across a grassy meadow. Such distances are well within the ambulatory dispersal range of these large, brachypterous beetles, and it is possible that either of these coast redwood areas could have served as the true source of the specimen trapped.

Pitfall trap collections from the trap matrix during the year July 18, 1982 through July 15, 1983, yielded the carabids listed in Table 1. Also collected in the same trap grid was the relict silverfish *Tricholepidion gertschi* Wygodzinsky 1961 (Thysanura: Lepidotrichidae), and several undescribed species of millipedes (R. L. Hoffman, pers. comm.).

Specimens of *S. longiceps*, all in the California Academy of Sciences collection, were measured to determine morphological similarities between the new specimen and those previously collected (Table 2). The new specimen is 14 to 26% larger in the measured dimensions than the two females from Orick. The pronotal hind, front and lateral angles are somewhat less acute than those of all three Humboldt specimens. Also, the arrangement of setae on the penultimate labial palpomere is different. The significance, if any, of these observed differences in size, pronotal form, and labial palpal vestiture between the Men-

Table 2. Measurements (mm) of *Scaphinotus longiceps* specimens at California Academy of Sciences.

Sex, site, date	Head						
	Head length	width at eyes	Pro-notal length	Pro-notal width	Over-all length	Over-all width	Elytral length ^a
♂, Aracata (type), 15 May 1901	6.9	2.2	3.6	3.6	21.8	7.4	11.3
♀, Orick, 3 July 1931	6.8	2.1	3.9	3.9	24.1	7.9	13.4
♀, Orick, 3 July 1931	6.8	2.3	3.9	3.8	24.3	8.2	13.7
♀, Mendocino Co., 6 Dec. 1982	8.1	2.9	4.6	4.7	28.2	9.4	15.6

^a Elytral width equals overall width, since body is widest at elytra.

docino County specimen and those from Humboldt County, is difficult to assess with so little comparative material available. At present, we consider all four specimens studied to be conspecific, and refrain from drawing any other conclusions about the taxonomic status of the Mendocino population, pending acquisition of additional specimens from that area.

The occurrence of *S. longiceps* as well as several other relict and endemic species in the Northern California Coast Range Preserve highlights the importance of protection of large natural areas on the basis of ecosystem characteristics. If areas are preserved strictly on the basis of known threatened or endangered species, populations and taxa not yet discovered may receive scant protection.

ACKNOWLEDGMENTS

Special thanks to The Nature Conservancy for providing lodging and allowing collection, and to preserve managers Kate and Cameron Barrows for their gracious assistance. Supported in part by a Sigma Xi Grant-in-Aid, and by the Division of Biological Control, Department of Entomology, University of California, Berkeley, CA 94720. Thanks to Donald Dahlsten and Kenneth Hagen for encouragement and guidance. Christine Reid provided valuable field assistance.

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(Received 13 June 1991; accepted 1 August 1991)