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Evaluating the Diversity of Philippine Slender Skinks of the *Brachymeles bonitae* Complex (Reptilia: Squamata: Scincidae): Redescription of *B. tridactylus* and Descriptions of Two New Species

Drew R. Davis,[1,2] Kathryn D. Feller,[3] Rafe M. Brown,[4] and Cameron D. Siler[5]

[1]*Department of Biology, University of South Dakota, Vermillion, South Dakota 57069 USA*
[3]*Department of Biological Sciences, University of Maryland Baltimore County, Baltimore, Maryland 21250 USA*
[4]*Biodiversity Institute and Department of Ecology and Evolutionary Biology, University of Kansas, Lawrence, Kansas 66045 USA*
[5]*Sam Noble Oklahoma Museum of Natural History and Department of Biology, University of Oklahoma, Norman, Oklahoma 73072 USA*

Abstract.—**We review the species of the *Brachymeles bonitae* Complex (*B. bonitae* and *B. tridactylus*) and describe an additional two new species in this highly specialized, limb-reduced, endemic Philippine clade of fossorial lizards. For more than 4 decades, *B. bonitae* has been recognized as a single "widespread" species, a perception that has persisted as a result of limited sampling and similar overall morphology (body sizes, scale pigmentation) among populations. However, on the basis of new collections we note consistent morphological differences between populations, and our new data build on previous observations, allowing us to utilize newly defined character state differences for the purpose of delimiting unambiguous boundaries between species. Here, we use morphological and molecular data to define species limits in *B. bonitae* and its close relatives. Our data indicate that the "widespread" species *B. bonitae* is actually a complex of four distinct evolutionary lineages, several of which are not each others' closest relatives. The taxa we define possess allopatric geographic ranges (biogeographically supporting our taxonomic conclusions) and differ from their congeners by several diagnostic characters of external morphology. We conclude that each, therefore, should be recognized as full species in accordance with lineage-based species concepts. Species diversity in the genus has doubled in the last 4 yr, with newly described taxa increasing the total number of species of *Brachymeles* to 38.**

The genus *Brachymeles* is a unique radiation of scincid lizards almost entirely endemic to the island archipelago nation of the Philippines. This group exhibits an impressive range of morphological variation among members of the genus from small, externally limbless species to large, slender pentadactyl species (Siler et al., 2012). Additionally, the species diversity of the genus has rapidly increased in the last 5 yr (for review, see Siler et al., 2012). Following several recent targeted surveys throughout much of the range of the radiation, detailed inspections of historical and modern collections, and the incorporation of genetic data into evaluations of species boundaries, alpha diversity has increased from 15 to 36 species (Siler et al., 2012). All but two of these species are endemic to the Philippines: *B. apus* is known from northern Borneo and *B. miriamae* from Thailand (Hikida, 1982; Siler and Brown, 2010; Siler et al., 2011b, 2012). Eighteen species are pentadactyl (*B. bicolor*, *B. boholensis*, *B. boulengeri*, *B. gracilis*, *B. hilong*, *B. kadwa*, *B. makusog*, *B. mindorensis*, *B. orientalis*, *B. samad*, *B. schadenbergi*, *B. suluensis*, *B. talinis*, *B. taylori*, *B. tiboliorum*, *B. tungaoi*, *B. vindumi*, and *B. vulcani*), 13 are nonpentadactyl with incompletely developed limbs and reduced numbers of digits (*B. bicolandia*, *B. bonitae*, *B. brevidactylus*, *B. cebuensis*, *B. cobos*, *B. elerae*, *B. libayani*, *B. muntingkamay*, *B. paeforum*, *B. pathfinderi*, *B. samarensis*, *B. tridactylus*, and *B. wrighti*), and five are entirely limbless (*B. apus*, *B. minimus*, *B. miriamae*, *B. lukbani*, and *B. vermis*).

A remarkable diversity in limb- and digit-reduced states is observed in the nonpentadactyl species, from minute limbs with 0–3 digits (*B. bonitae*, *B. cebuensis*, *B. muntingkamay*, *B. samarensis*, *B. tridactylus*) to moderately developed limbs with 4–5 digits on the hands and feet (*B. elerae*, *B. pathfinderi*, *B. wrighti*: Siler and Brown, 2010; Siler et al., 2011b, 2012). To date, little is known about the ecology and behavior of this unique radiation of lizards; however, all species are recognized to be semifossorial and have been recorded only in habitats consisting of dry, rotting material inside or underneath decaying logs or in loose soil, forest floor detritus, and leaf litter.

Numerous studies have systematically revised both polytypic and widespread species complexes, underscoring how poorly understood species-level diversity within the genus was until recently (Siler and Brown, 2010; Siler et al., 2011b, 2012). Although these studies have stabilized taxonomy greatly, one remaining widespread species complex has yet to be investigated, the *Brachymeles bonitae* Complex. This group, consisting of single island and intra-island allopatric populations, is distributed across much of the northern Philippines. This type of widespread distribution is rare for endemic Philippine reptiles. A growing body of literature (Welton et al., 2010a,b; Siler et al., 2011b, 2012) has demonstrated that many Philippine endemic species possess distributions that are usually circumscribed within one of the archipelago's recognized faunal regions, or Pleistocene Aggregate Island Complexes (PAICs; Brown and Diesmos, 2002; Brown and Guttman, 2002; Brown and Siler, 2014: fig. 1). However, as currenty understood, populations of *B. bonitae* are known from three major PAICs (Luzon, Mindoro, and Visayan [central]) as well as from many small-island groups (Romblon, Babuyan) and isolated, deep-ocean islands (Lubang). Species-level phylogenetic analyses have recovered the species *B. tridactylus* to be nested among populations of *B. bonitae*, with each sampled population of *B. bonitae* inferred to be genetically divergent from its allopatric congener populations (Siler and Brown, 2011; Siler et al., 2011a). These two species (*B. bonitae* and *B. tridactylus*) are the focus of this study.

The genus *Brachymeles* was first described by Duméril and Bibron (1839) for *B. bonitae*, which at the time was described as a small, limb-reduced species from the capital city of Manila on Luzon Island (Figs. 2, 3). Almost 80 yr later, Taylor (1917) described *Brachymeles burksi* from Mindoro Island, comparing the type series of *B. burksi* to a specimen of *B. bonitae* from the Municipality of Los Baños, central Luzon Island (CAS 62578) and not to the holotype described by Duméril and Bibron (1839). However, in a systematic revision of the genus, Brown

[2]Corresponding author. E-mail: drew.davis@usd.edu
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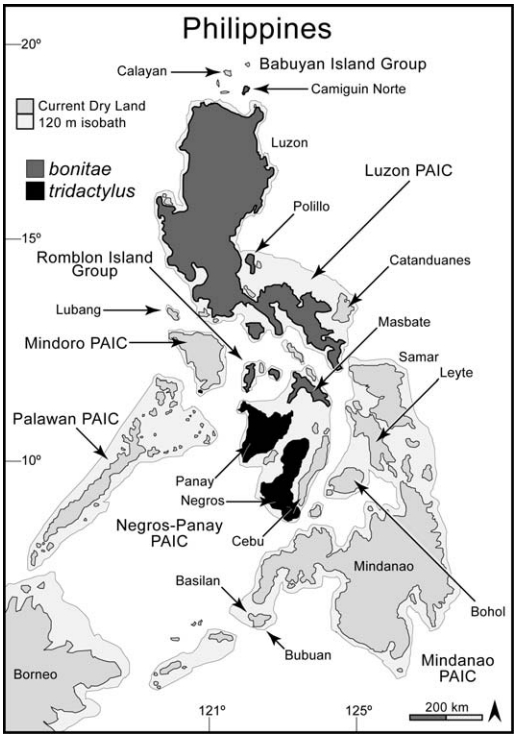

FIG. 1. Map of the Philippine islands with island labels provided for islands with representative samples used for this study. The five recognized major PAICs, major island groups, and additional deep-water islands are labeled for reference. Current islands in the Philippines are shown in medium grey to black; light gray areas enclosed in black, 120-m bathymetric contours indicate the hypothesized maximum extent of land during the mid- to late Pleistocene.

(1956) recognized that the specimen from Los Baños (CAS 62578) that Taylor (1917) used to diagnose *B. burksi* as a new species was quite distinct from the holotype of *B. bonitae* Duméril and Bibron, 1839. This observation was based on Dr. Jean Guibé's reported (Brown, 1956) examinations of the *B. bonitae* holotype and on Brown's (1956) examination of other specimens of *B. bonitae* available at the time. Although large character differences were observed between sampled populations of *B. bonitae* and between *B. bonitae* and *B. burksi*, Brown (1956) synonymized the species *B. burksi* with *B. bonitae* and recognized *B. bonitae* as widely distributed across Luzon, Polillo, Mindoro, and Kalotkot islands. In the same systematic revision, Brown (1956) described the first known tridactyl species in the genus, *B. tridactylus* Brown, 1956, from specimens collected on Southern Negros Island. This small, three-digit species was reported to be most similar morphologically to *B. bonitae* except for the presence of three small, moderately developed, clawed digits on each limb. Since Brown's (1956) redescription of *B. bonitae* and discovery of *B. tridactylus*, the recognized ranges of both species have grown because of the discovery of new populations as a result of extensive fieldwork throughout much of the central and northern Philippines.

Recently collected morphological datasets have documented specimens that exhibit a wide range of morphological variation within the *B. bonitae* Complex. This variation suggests that a closer examination of species boundaries is warranted. We undertook the present study in an effort to stabilize the taxonomy of the species related to *B. bonitae*, with the goal of revising the complex in order that individual units (species) might represent independently evolving, cohesive, monophyletic lineages. Comprehensive examination of nearly all existing museum specimens from throughout the range of *B. bonitae* and *B. tridactylus* results in the reorganization of the group into four distinct evolutionary lineages (species). In this paper we provide a phylogenetic analysis of these taxa, fully describe each taxon, clarify species boundaries, and provide the first illustrations of several of the included species. We also provide information on each species' natural history, ecology, and geographic distribution.

MATERIALS AND METHODS

Field Work, Sample Collection, and Specimen Preservation.—Fieldwork was conducted on Camiguin Norte, Catanduañes, Lubang, Luzon, Marinduque, Masbate, Mindoro, Polillo, Sibuyan, and Tablas islands, all in the Philippines (Fig. 1), between 1991 and 2012. Specimens were collected during the day, euthanized in aqueous chloretone, dissected for tissue samples (liver preserved in 95% ethanol or flash-frozen in liquid nitrogen), fixed in 10% formalin and, eventually (<2 mo), transferred to 70% ethanol. Specimens are deposited in United States and Philippine museum collections (see Acknowledgments and specimens examined); voucher information corresponding to data from GenBank sequences is included (Appendix I). Museum abbreviations for specimens examined follow Sabaj Pérez (2013).

Taxon Sampling and Outgroup Selection for Phylogenetic Analyses.—We focused our efforts on understanding the phylogenetic relationships among the currently available genetic samples of populations of the *B. bonitae* Complex including *B. tridactylus* (Siler and Brown, 2011; Siler et al., 2011a). We sequenced 2–7 individuals per population and included samples of *Lygosoma quadrupes* as outgroups based on relationships presented in recent phylogenetic studies of the genus (Siler and Brown, 2011; Siler et al., 2011a). Additionally, we included samples of *B. miriamae*, *B. cebuensis*, *B. lukbani*, and *B. minimus* as members of the established sister clade to the *B. bonitae* Complex (Siler and Brown, 2011; Siler et al., 2011a). A total of 26 ingroup samples were used in the phylogenetic analyses. This relatively small total sample size (resulting from more than 20 yr of field work) is an indication of the rarity of *B. bonitae* Complex members.

DNA Extraction, Purification, and Amplification.—For data not already available on GenBank, we extracted total genomic DNA from tissues (Appendix I) using M. Fujita's modified guanidine thiocyanate extraction method (Esselstyn et al., 2008). Using the primers and protocols provided in Siler and Brown (2011) and Siler et al. (2011a), we sequenced the mitochondrial NADH dehydrogenase subunit 1 (ND1) gene and two protein-coding nuclear loci: brain-derived neurotrophic factor (BDNF) and prostaglandin E2 receptor type 4 (PTGER4). The final datasets included complete sequence data for all but one gene for a single outgroup sample (Appendix I).

Alignment and Phylogenetic Analyses.—Initial alignments were produced in MUSCLE (Edgar, 2004) with minimal subsequent manual adjustments. To assess phylogenetic congruence between the mitochondrial and nuclear data, we inferred the phylogeny for each gene independently using likelihood and Bayesian analyses. Following the observation of no moderate to highly supported incongruence between datasets, we felt justified in using the combined, concatenated data for subsequent analyses.

Partitioned Bayesian analyses were conducted in MrBayes v3.2.1 (Ronquist and Huelsenbeck, 2003). The alignment was partitioned into nine regions consisting of the codon positions of ND1 and the two nuclear loci, BDNF and PTGER4, following

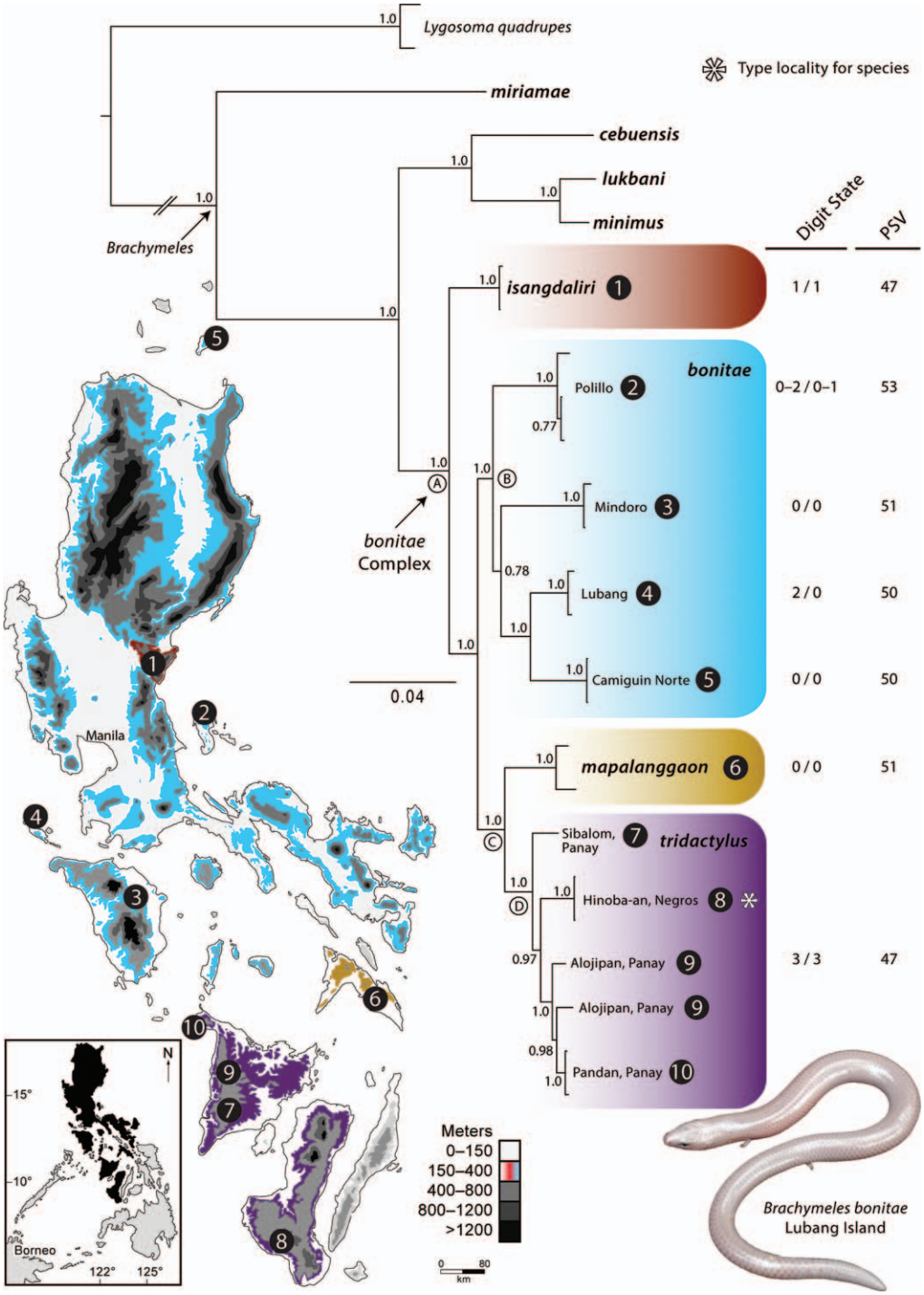

FIG. 2. (Left) Map of the Philippine islands showing revised distribution of *Brachymeles bonitae* and hypothesized distributions of *B. isangdaliri*, *B. mapalanggaon*, and *B. tridactylus* in the central and northern Philippines. Sampling localities are indicated by numerical labels, and the hypothesized geographic range of each species is indicated by shaded elevational ranges corresponding to the map's key. (Right) Hypothesized relationships of *Brachymeles* used for this study, illustrated by the maximum clade credibility tree resulting from Bayesian analyses. Nodes supported by ≥95% Bayesian posterior probabilities (PP) were considered significantly supported. Terminals are labeled with taxonomic names and sampling localities (Appendix 1) as well as fore- and hindlimb digit states and number of presacral vertebrae. Numerical labels correspond to sampling localities represented on the map.

the methods of Siler et al. (2011a). The Akaike Information Criterion (AIC), as implemented in jModelTest v2.1.4 (Guindon and Gascuel, 2003; Darriba et al., 2012), was used to select the best model of nucleotide substitution for each partition (Table 1). A rate multiplier model was used to allow substitution rates to vary among subsets, and default priors were used for all model parameters. We ran four independent Markov chain Monte Carlo (MCMC) analyses, each with four Metropolis-coupled chains, an incremental heating temperature of 0.02, and an exponential distribution with a rate parameter of 75 as the prior on branch lengths (Marshall, 2010). All analyses were run for 10 million generations, with parameters and topologies sampled every 5,000 generations. We assessed stationarity and convergence of parameters with Tracer v1.4 (Rambaut and

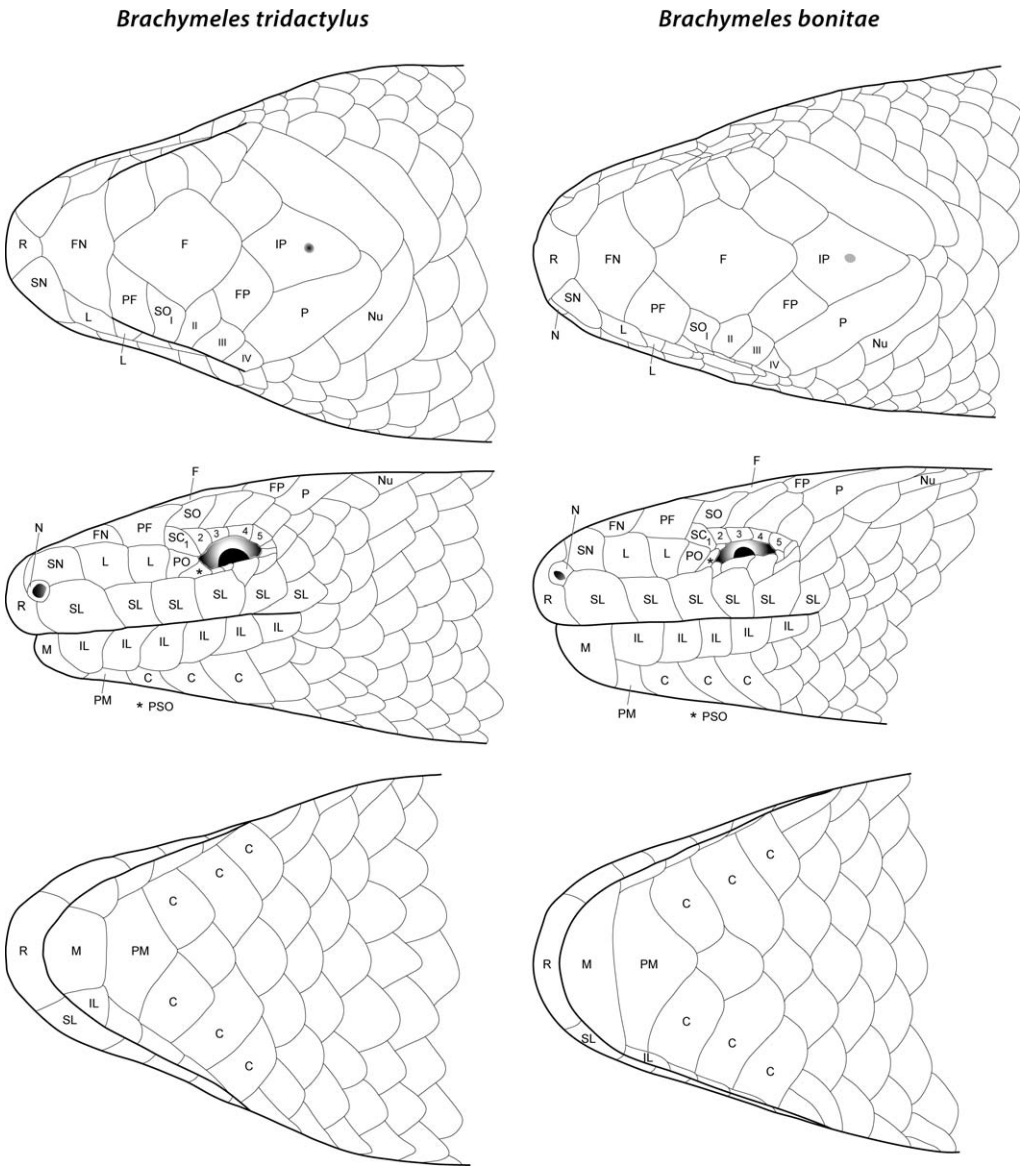

FIG. 3. Illustration of head of *Brachymeles tridactylus* (KU 307726) and *Brachymeles bonitae* (KU 326082) in dorsal, lateral, and ventral views. Taxonomically diagnostic head scales are labeled as follows: C, chin shield; F, frontal; FN, frontonasal; FP, frontoparietal; IL, infralabial; IP, interparietal; L, loreal; M, mental; N, nasal; Nu, nuchal; P, parietal; PF, prefrontal; PM, postmental; PN, postnasal; PO, preocular; PSO, presubocular; R, rostral; SC, supraciliary; SL, supralabial; SN, supranasal; and SO, supraocular. Roman numerals indicate scales in the supraocular series, with Arabic numbers indicating scales in the supraciliary series. Illustrations by K. D. Feller and C. D. Siler.

Drummond, 2007) and confirmed convergence of tree splits with AWTY (Wilgenbusch et al., 2004). We conservatively discarded the first 25% of samples as burn-in. We considered topologies with posterior probabilities $\geq$0.95 to be well supported (Leaché and Reeder, 2002; Wilcox et al., 2002).

Morphological Data.—We examined fluid-preserved specimens (Appendix II) for variation in qualitative, meristic (scale counts), and mensural (measurements) characters. Sex was determined by gonadal inspection, and measurements were taken by Siler to the nearest 0.1 mm with digital calipers. X-rays were taken with a company cabinet X-ray on Kodak MIN-R 2000 film exposed at 5 milliamperes and 30 volts for 1 min 15 sec.

Meristic and mensural characters were chosen based on Siler et al. (2009, 2010a,b): snout–vent length (SVL), axilla–groin distance (AGD), total length (TotL), midbody width (MBW), midbody height (MBH), tail length (TL), tail width (TW), head length (HL), head width (HW), snout–forearm length (SnFa), eye diameter (ED), eye–narial distance (END), snout length (SNL), forelimb length (FLL), hind limb length (HLL), midbody scale-row count (MBSR), paravertebral scale-row count (PVSR), axilla–groin scale-row count (AGSR), supralabial count (SL),

TABLE 1. Models of evolution selected by AIC and applied for partitioned Bayesian phylogenetic analyses.

Partition	AIC model	Number of characters
ND1, 1st codon position	GTR+Γ	322
ND1, 2nd codon position	GTR+Γ	322
ND1, 3rd codon position	GTR+Γ	322
BDNF, 1st codon position	GTR	239
BDNF, 2nd codon position	HKY	238
BDNF, 3rd codon position	GTR+Γ	238
PTGER4, 1st codon position	JC+Γ	164
PTGER4, 2nd codon position	HKY	163
PTGER4, 3rd codon position	GTR+Γ	163

TABLE 2. Uncorrected pairwise sequence divergence (%) for mitochondrial data (below diagonal) and nuclear data (above diagonal) for focal species of the *Brachymeles bonitae* Complex (*Brachymeles bonitae*, *B. isangdaliri*, *B. mapalanggaon*, and *B. tridactylus*; Fig. 2). Percentages on the diagonal represent intraspecific genetic diversity for mitochondrial data (bolded for emphasis).

Brachymeles spp.	*bonitae*	*isangdaliri*	*mapalanggaon*	*tridactylus*
bonitae	**0.2–1.5**	0.3–0.5	0.4	0.3–0.6
isangdaliri	9.5–10.0	**0.0**	0.2–0.4	0.3–0.6
mapalanggaon	9.0–11.1	10.4–11.2	**2.6**	0.0–0.2
tridactylus	8.6–9.6	9.5–10.3	7.8–8.8	**0.1–5.0**

infralabial count (IFL), supraciliary count (SC), and supraocular count (SO). Additionally, we counted the number of presacral vertebrae (PSV) from X-ray images of specimens. In the description, ranges are followed by mean ± standard deviation (SD) in parentheses.

Species Concept.—We follow the General Lineage Concept of species (de Queiroz, 1998, 1999), an extension of the Evolutionary Species Concept (Simpson, 1961; Wiley, 1978; Frost and Hillis, 1990), and consider as distinct lineages those populations that are morphologically and genetically distinct, especially if allopatric. In this study we use estimated phylogenetic relationships to guide and bolster our recognition of species boundaries; however, our diagnoses of new species are restricted to those populations that are clearly identified by fixed diagnostic differences in nonoverlapping morphological character states.

RESULTS

Phylogeny.—Of 2,171 mitochondrial and nuclear characters, 490 were variable. The results were consistent with relationships reported in recent phylogenetic studies (Siler and Brown, 2011; Siler et al., 2011a) and do not support the monophyly of *B. bonitae* (Fig. 2). Three major clades are recovered in all analyses, each consisting of deeply divergent lineages represented by allopatric populations of the *B. bonitae* Complex (Fig. 2, Clades A–C). The unidactyl population from northeastern Luzon is recovered as sister to all other sampled populations of the complex (Fig. 2, Clade A), with the tridactyl species *B. tridactylus* recovered as sister to a digitless population from Masbate Island (Fig. 2, Clade B). All other sampled populations, including samples from Polillo Island identified as *B. bonitae* sensu stricto, are recovered as part of a third, well-supported clade (Fig. 2, Clade C).

All analyses result in the strong support for seven genetically distinct lineages within the *Brachymeles bonitae* Complex (Fig. 2). With the exception of *B. tridactylus*, uncorrected pairwise sequence divergences are low within lineages and high between lineages (Table 2). Percent divergences for the mitochondrial and nuclear data show that the monophyletic lineages defined by our phylogenetic analyses (*B.* sp. nov. [northeastern Luzon Island], *B.* sp. nov. [Masbate Island], *B. tridactylus*, and *B. bonitae*) are distinguished from congeners by levels of genetic divergence greater than those between previously defined species—viz., *B. cebuensis*, *B. minimus*, *B. lukbani* (Table 2; Fig. 2; Siler et al., 2011a,b).

Identification of True B. bonitae.—Descriptions of the holotype of *B. bonitae* (Duméril and Bibron, 1839; Brown, 1956) ally this specimen (reportedly collected in Manila, central Luzon; Fig. 2) with the population of *B. bonitae* known from central Luzon and Polillo Island (Fig. 2) based on the following set of diagnostic characters: 1) limbs digitless or unidactyl; 2) midbody scale rows

TABLE 3. Summary of meristic and mensural characters among species of the *Brachymeles bonitae* Complex and other morphologically similar, limbed, nonpentadactyl species of *Brachymeles*. Sample size, body length, and total length among males and females and general geographical distribution (PAIC = Pleistocene Aggregate Island Complexes, sensu Brown and Diesmos, 2002) are included for reference (SVL, TotL, FLL, and HLL given as range over mean ± SD; all body proportions given as percentage over mean ± SD).

	B. bonitae (3 m, 1 f)	*B. isangdaliri* (1 f)	*B. mapalanggaon* (3 m, 6 f)	*B. tridactylus* (12 m, 9 f)	*B. libayani* (10 m, 25 f)	*B. muntingkamay* (12 f)	*B. paeforum* (3 m, 9 f)
Range[a]	Luzon and Polillo Islands	Luzon Island	Masbate Island	West Visayan PAIC	Lapinig group islands	Luzon Island	Leyte Island
SVL (f)	69.4	59.5	61.7–75.8 (67.2 ± 5.4)	59.9–82.3 (71.4 ± 6.9)	52.8–66.1 (58.6 ± 3.3)	61.8–81.3 (73.6 ± 5.9)	47.2–61.4 (56.5 ± 4.2)
SVL (m)	69.7–78.4 (72.8 ± 4.8)	N/A	65.1–72.7 (68.4 ± 3.9)	60.7–77.6 (69.0 ± 6.0)	52.7–57.4 (56.0 ± 1.6)	N/A	62.4–66.1 (63.4 ± 1.5)
TotL (f)	N/A	106.1	120.2	133.6[b]	91.4–111.2 (102.2 ± 6.4)	107.4–136.0 (124.0 ± 8.6)	99.5–108.5 (102.6 ± 5.1)
TotL (m)	122.0	N/A	112.6–118.6 (115.6 ± 4.3)	120.9–154.1 (136.0 ± 9.8)	92.1–103.4 (99.4 ± 4.5)	N/A	106.7–114.6 (110.6 ± 5.6)
TL/SVL	73	78	67–84 (78 ± 9)	85–112 (95 ± 10)	63–84 (77 ± 6)	50–79 (65 ± 10)	69–79 (75 ± 4)
FLL	1.0–1.7 (1.3 ± 0.3)	1.3	0.8–1.0 (0.9 ± 0.1)	1.5–2.5 (2.0 ± 0.3)	1.1–1.8 (1.3 ± 0.2)	2.4–3.0 (2.7 ± 0.2)	1.3–1.7 (1.5 ± 0.1)
FLL/SVL	1–2 (2 ± 0)	2	1–2 (1 ± 0)	2–4 (3 ± 0)	2–3 (2 ± 0)	3–4 (4 ± 0)	2–4 (3 ± 0)
HLL	1.5–2.3 (1.9 ± 0.3)	2.2	1.2–1.6 (1.4 ± 0.1)	2.6–3.6 (3.1 ± 0.3)	2.0–2.7 (2.4 ± 0.2)	5.3–6.0 (5.7 ± 0.2)	2.3–3.0 (2.6 ± 0.3)
HLL/SVL	2–3 (3 ± 0)	4	2–2 (2 ± 0)	3–6 (5 ± 1)	3–5 (4 ± 0)	7–9 (8 ± 1)	4–5 (4 ± 0)

[a] Male, m; female, f; specimens or characters unavailable for measurement, N/A.
[b] Only a single adult female was available with an original tail for measurement.

Table 4. Summary of meristic and qualitative diagnostic characters (present, absent) among species of the *Brachymeles bonitae* Complex and other morphologically similar, limbed, nonpentadactyl species of *Brachymeles*. The pairs of enlarged scales posterior to the postmental scale are abbreviated as chin shield pairs with reference to the 1st, 2nd, and 3rd pairs (when present). In cases of scale-count variation within species, numbers of individuals showing specific counts are given in parentheses. Male, m; female, f.

	B. bonitae (3 m, 1 f)	*B. isangdaliri* (1 f)	*B. mapalanggaon* (3 m, 6 f)	*B. tridactylus* (12 m, 9 f)	*B. libayani* (10 m, 25 f)	*B. muntingkamay* (12 f)	*B. paeforum* (3 m, 9 f)
Number of digits (fingers/toes)	0/0[a] 2/1[a]	1/1	0/0	3/3	3/3	3/3	3/3
PSV	53	47	51	47	47	42, 44	47
MBSR	21–24	22	22, 23	22–24	22–23	22–24	21–22
AGSR	83–90	73	80–84	72–79	72–75	65–70	71–74
PVSR	103–110	97	99–102	90–98	90–92	85–90	93–96
SL	6 (4)	6 (1)	6 (9)	6 (13) 7 (8)	6 (35)	6 (12)	6 (12)
IFL	5 (4)	6 (1)	5 (8) 6 (1)	6 (13) 7 (8)	5 (35)	6 (12)	5 (4) 6 (8)
SC	5 (4)	6 (2)	5 (9)	5 (21)	6 (35)	6 (10) 7 (2)	6 (12)
SO	4 (4)	4 (1)	4 (9)	4 (21)	5 (35)	5 (11) 6 (1)	5 (12)
Prefrontal contact	Absent	Absent	Absent	Absent	Point contact or Absent	Present	Absent
Frontoparietal contact	Absent	Absent	Point contact or Absent	Absent	Present	Absent	Present
1st chin shield pair contact	Absent	Absent	Absent	Present or Absent	Present or Absent	Absent	Present or Absent
3rd chin shield pair	Present	Absent	Present or Absent	Present	Present	Present	Present
Mental/1st IFL fusion	Present	Absent	Present or Absent	Absent	Present	Absent	Present or Absent
Enlarged nuchals	Present	Present	Present	Present	Present	Absent	Present
Longitudinal rows of dark spots	Absent	Absent	Absent	Absent	Absent	Present, around body	Absent

[a] Observed for two individuals.

22–23; 3) paravertebral scale rows 104; and 4) mental/first infralabials fused (Fig. 3; Tables 3, 4; Appendix II). Based on these diagnostic morphological characters of the holotype, we restrict our recognition of the species *B. bonitae* to populations in central Luzon Island and Polillo Island. Unfortunately, with the exception of the holotype, no specimens from this region of Central Luzon exist in museum collections and, therefore, comparisons with *B. bonitae* are based on vouchered material from Polillo Island that match diagnostic descriptions of the holotype (Duméril and Bibron, 1839; Brown, 1956; Tables 3, 4).

Morphology.—Variation in morphological characters (Tables 3, 4) mirrors the results from phylogenetic analyses and supports the recognition of the four focal *B. bonitae* lineages. Characters differing among these four lineages include: digit number, presacral vertebrae number, degree of digit development, and head and body scale counts and patterns (Tables 3, 4; species accounts below). All of these characters are recognized as morphologically diagnostic and have been employed by taxonomists working with this genus (review Brown and Alcala, 1980, and Siler et al., 2012). We observed no intraspecific mensural or meristic differences between the sexes of any of the six species.

With the exception of *B. tridactylus*, *B. bonitae* sensu stricto, *B.* sp. nov. (Northeastern Luzon Island), and *B.* sp. nov. (Masbate Island) superficially appear morphologically similar in overall body size and general shape. However, upon closer inspection, distinct body forms are observed among these lineages, including digitless (*B.* sp. nov. [Masbate Island], *B. bonitae*), unidactyl (*B.* sp. nov. [northeastern Luzon Island]), and tridactyl (*B. tridactylus*) body plans as well as individuals with two forelimb digits and one hindlimb digit (*B. bonitae*; Tables 3, 4). Additionally, numerous nonoverlapping differences were detected in meristic, mensural, and osteological characters for each lineage (Tables 3, 4). In summary, each lineage (all of which are allopatric) possesses unique and nonoverlapping suites of diagnostic character states of morphology, perfectly corresponding to the divergent lineages defined in the phylogenetic analyses of DNA sequence data.

Taxonomic Conclusions.—Our estimates of phylogeny (Fig. 2), allopatric distributions of species, and the identification of diagnostic, nonoverlapping morphological character states indicate the lineages in northeastern Luzon Island and Masbate Island are new species. Of the study's focal lineages, one species appears to be an island endemic, one is endemic to the Visayan PAIC, and the third appears to be endemic to the recognized Mid-Sierra Filter Zone, a unique biogeographic region of Luzon Island (Welton et al., 2010c), thereby providing additional biogeographical support for the distinctiveness of each clade's evolutionary history and lineage integrity. Accordingly, we recognize *B. tridactylus* as a species that occurs only in the western Visayan Philippine islands and hereby recognize two additional lineages within the *B. bonitae* Complex as new species (Fig. 3).

Taxonomic Accounts

Brachymeles ***tridactylus*** Brown 1956

(Figs. 2, 3)

Brachymeles tridactylus, Brown, 1956, Type locality: "at an altitude of about 2000 feet," "1 to 3 kilometers northwest of Mayaposi spring, about 20 kilometers west of Bais," Negros Oriental Province, Negros Island, Philippines (holotype: CAS-SU 18354), collected by Mr. Filomeno Empeso between January

12–17 1955; Brown and Rabor, 1967; Brown and Alcala, 1970; Brown and Alcala, 1980.

Diagnosis.—*Brachymeles tridactylus* can be distinguished from congeners by the following combination of characters: 1) body size small (SVL 59.9–82.3 mm); 2) limbs tridactyl; 3) limb length short; 4) supralabials six or seven; 5) infralabials six or seven; 6) supraciliaries five; 7) supraoculars four; 8) midbody scale rows 22–24; 9) axilla–groin scale rows 72–79; 10) paravertebral scale rows 90–98; 11) pineal eye spot present; 12) prefrontals not contacting on midline; 13) frontoparietals not contacting on midline; 14) mental/first infralabial fusion absent; 15) postnasals absent; 16) enlarged chin shields in three pairs; 17) nuchal scales enlarged; 18) auricular opening absent; 19) presacral vertebrae 47; and 20) uniform body color (Tables 3, 4; Appendix II).

Characters distinguishing *B. tridactylus* from all nonpentadactyl, limbed species of *Brachymeles* are summarized in Tables 3 and 4. *Brachymeles tridactylus* most closely resembles *B. libayani*, *B. muntingkamay*, and *B. paeforum*, the only other tridactyl species. However, *B. tridactylus* differs from these three taxa by having five supraciliaries (vs. six [*B. libayani*, *B. muntingkamay*, *B. paeforum*]) and four supraoculars (vs. five [*B. libayani*, *B. muntingkamay*, *B. paeforum*]; Table 4); from *B. libayani* by having six or seven infralabials (vs. five); from *B. libayani* and *B. paeforum* by having frontoparietals separate (vs. in medial contact) and by the absence of fusion of the mental and first infralabial (vs. presence; Table 4); and from *B. muntingkamay* by having 47 presacral vertebrae (vs. 42, 44), 72–79 axilla–groin scale rows (vs. 65–70), 90–98 paravertebral scale rows (vs. 85–90), prefrontals separate (vs. in medial contact), enlarged nuchals present (vs. absent), and by the absence of longitudinal rows of dark spots around the body (vs. present; Table 4). *Brachymeles tridactylus* can be distinguished from all limbless species of *Brachymeles* by having limbs and from all pentadactyl species of *Brachymeles* by having tridactyl limbs.

Description (Based on Holotype and 21 Referred Specimens).—Details of the head scalation of an adult male are shown in Figure 3. Measurements and character states of the holotype are provided below in square brackets. Body small, slender; SVL 60.7–77.6 (69.0 ± 6.0) mm for males, maximum SVL 59.9–82.3 (71.4 ± 6.9) mm for females, [60.8, adult male] (Tables 3, 4); head weakly differentiated from neck, nearly as wide as body, HW 6.3–9.4% (7.6 ± 0.7) SVL [8.0%], 83.6–127.0% (99.5 ± 12.6) HL [88.5%]; HL 29.4–45.7% (38.8 ± 4.2) SnFa [45.7%]; SnFa 18.0–22.3% (19.8 ± 1.1) SVL [19.7%]; snout short, rounded in dorsal and lateral profile, SNL 46.2–72.2% (56.1 ± 7.0) HL [54.0%]; ear completely hidden by scales; eyes small, ED 0.9–1.6% (1.2 ± 0.2) SVL [1.4%], 11.6–22.3% (16.0 ± 2.4) HL [15.9%], 27.7–46.1% (37.3 ± 4.7) END [38.7%], pupil subcircular; body slightly depressed, nearly uniform in thickness, MBW 93.6–148.9% (116.9 ± 16.2) MBH [148.9%]; scales smooth, glossy, imbricate; longitudinal scale rows at midbody 22–24 [24]; paravertebral scale rows 90–98 [93]; axilla–groin scale rows 72–79 [73]; limbs short, poorly developed, tridactyl; digit moderately developed with small claws, finger and toe lamellae absent; FLL 2.5–4.9% (3.7 ± 0.6) AGD [4.2%], 1.9–3.7% (2.9 ± 0.5) SVL [3.3%]; HLL 4.3–7.8% (5.9 ± 0.9) AGD [7.2%], 3.4–5.7% (4.5 ± 0.7) SVL [5.6%]; tail nearly as wide as body, gradually tapered towards end, TW 70.1–103.7% (83.4 ± 7.6) MBW [77.4%], TL 85.0–112.4% (95.5 ± 10.1) SVL [N/A].

Rostral projecting onto dorsal snout to level past posterior edge of nasal, broader than high, in contact with frontonasal; frontonasal wider than long; nostril ovoid, in center of single trapezoidal nasal, longer axis directed anterodorsally and posteroventrally; supranasals present, large, broadly separated; postnasals absent; prefrontals broadly separated; frontal nearly diamond-shaped, its anterior margin in moderate contact with frontonasal, in contact with first two anterior supraoculars, 4 times wider than anterior supraocular; supraoculars four; frontoparietals moderate, separated, each frontoparietal in contact with supraoculars 2 and 3; interparietal moderate, its length 1.5 times midline length of frontoparietal, longer than wide, diamond-shaped, wider anteriorly; parietals broader than frontoparietals, in broad contact behind interparietal; nuchals enlarged; loreals two, anterior loreal about as long as and higher than posterior loreal; preocular one; presubocular one; supraciliaries five, the anteriormost contacting prefrontal and separating posteriormost loreal from first supraocular, posteriomost extending as far back as posterior edge of fourth supraocular; subocular scale row single, complete, in contact with supralabials; lower eyelid with one row of scales; supralabials six or seven, first twice the width of others, fourth and fifth subocular; infralabials six or seven (Fig. 3).

Mental wider than long, in contact with first infralabials; postmental single, enlarged, its width greater than width of mental; followed by three pairs of enlarged chin shields, first pair in medial contact or separated, second pair broadly separated by single medial scale, third pair separated by three medial scales (Fig. 3).

Scales on limbs smaller than body scales; palmar surfaces of hands and plantar surfaces of feet with several small, irregular scales, each with irregular raised edges; middle claws greatest in length.

Color in Life.—Coloration in life is unrecorded; however, because *Brachymeles* specimens do not change significantly during preservation (Siler and Brown, pers. obs.), we suspect that the preserved coloration and patterns are much like those in life.

Color in Preservative.—Body ground-color medium brown. Each dorsal scale darker along posterior tip, which consists of three dark streaks which may be absent in some individuals, and surrounded by flecks of dark pigmentation. Anterior end of each scale has six to eight thin, dark longitudinal lines. Dorsal scale patterning present around entire body and tail, though less pronounced on venter and on subcaudal scales due to reduced dark pigmentation. Posterior edge of all body scales transparent. Forelimb and hindlimb scales medium brown. Forelimb scales with weakly defined scale boundaries. Head scales mottled light and dark brown, matching dorsal background coloration. Rostral, nasal, supranasal, and first supralabial scales slightly lighter in coloration than other head scales. Scales directly surrounding the eye, including loreals, supraoculars, and supralabials darker than dorsal head scales. Infralabials, postmentals, and chin shields beige with slight light brown mottling, with mental and first infralabials lightest in color in some individuals.

Distribution.—*Brachymeles tridactylus* is known from Boracay, Carabao, Inampulugan, Negros, and Panay islands, western Visayan PAIC (Fig. 3).

Natural History.—*Brachymeles tridactylus* is believed to have once occurred in low- to mid-elevation primary forest habitats. As the majority of primary forest in the Philippines has been destroyed, the recent observations of this species have occurred in secondary growth and heavily disturbed forest habitats. In contrast to the other members of the *B. bonitae* Complex, this species appears now to be quite common in heavily disturbed habitat and secondary growth forest fragments. The species is

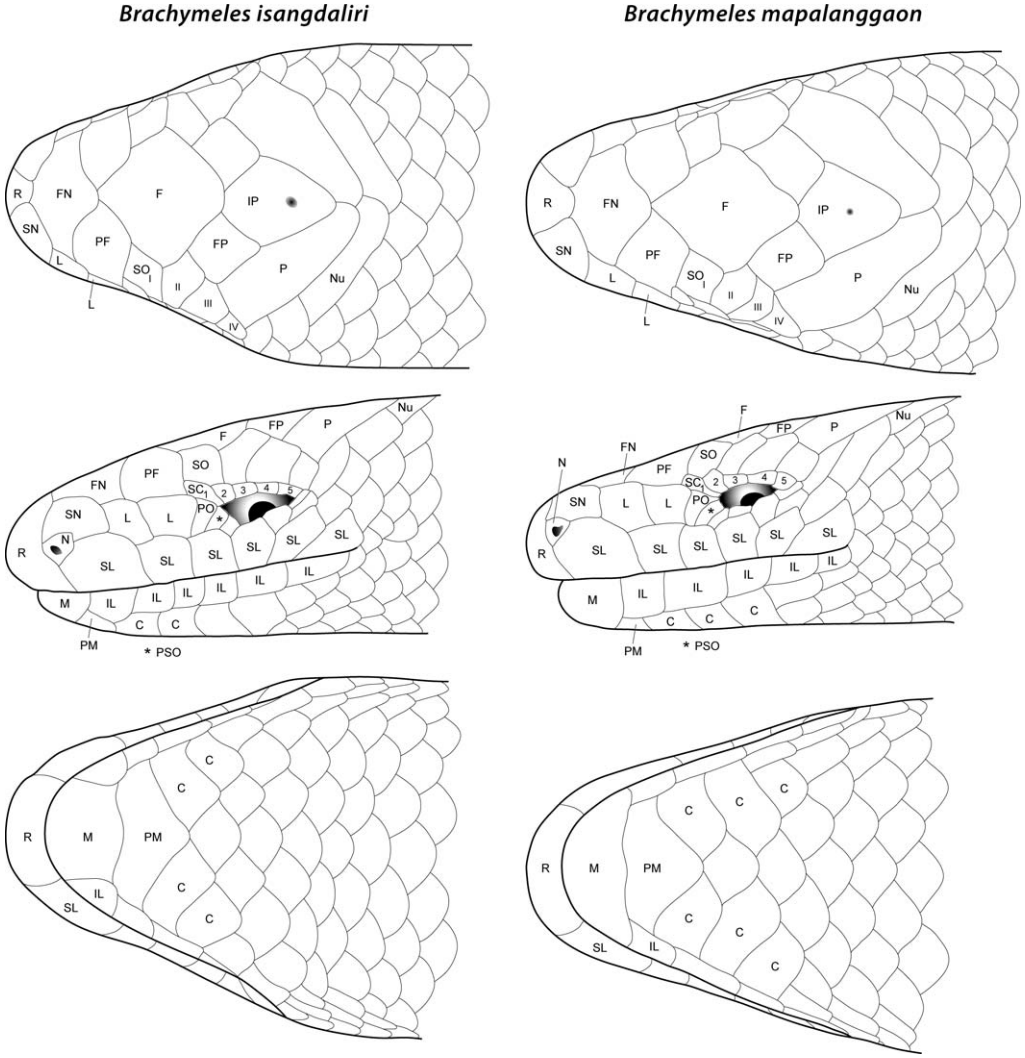

FIG. 4. Illustration of head of adult female *Brachymeles isangdaliri* (PNM 9791; KU 323086; holotype) and adult female *Brachymeles mapalanggaon* (PNM 9792; formerly KU 323937; holotype) in dorsal, lateral, and ventral views. Taxonomically diagnostic head scales are labeled as follows: C, chin shield; F, frontal; FN, frontonasal; FP, frontoparietal; IL, infralabial; IP, interparietal; L, loreal; M, mental; N, nasal; Nu, nuchal; P, parietal; PF, prefrontal; PM, postmental; PN, postnasal; PO, preocular; PSO, presubocular; R, rostral; SC, supraciliary; SL, supralabial; SN, supranasal; and SO, supraocular. Roman numerals indicate scales in the supraocular series, with Arabic numbers indicating scales in the supraciliary series. Illustrations by K. D. Feller and C. D. Siler.

commonly found under piles of rotting coconut husks in heavily disturbed coconut palm plantation habitats and in residential areas on Panay and Negros Island (Siler, pers. obs.). Near the type locality in Southwest Negros Island, up to seven individuals have been observed beneath a single pile of rotting coconuts in deforested agricultural fields. Several other species of *Brachymeles* occur in the Visayan (central) PAIC including *B. cebuensis*, *B. talinis*, *B. boulengeri*, *B. tungaoi*, and *B. mapalanggaon*. However, only *B. talinis* and *B. boulengeri* occur sympatrically with *B. tridactylus*.

We have evaluated this species against the International Union for Conservation of Nature (IUCN) criteria for classification and find that it does not qualify for Critically Endangered, Endangered, Vulnerable, or Near Threatened status. *Brachymeles tridactylus* has a broad geographic distribution across multiple islands of the western PAIC in the Philippines. We therefore classify this species as Least Concern, LC (IUCN, 2013).

Brachymeles ***isangdaliri*** sp. nov.
(FIGS. 2, 4)

Holotype.—PNM 9791 (formerly KU 323086; RMB Field No. 12651), adult female, collected under rotting logs in secondary-growth forest (1000–1230 h) on 8 June 2009, near the campus of Aurora State College of Technology (ASCOT), Barangay Zabali, Municipality of Baler, Aurora Province, Luzon Island, Philippines (15°44′31.2′′N, 121°34′33.6′′E; WGS-84), by A. Diesmos, R. M. Brown, and C. D. Siler.

Paratopotypes.—One juvenile (KU 323085) collected on 8 June 2009.

Diagnosis.—*Brachymeles isangdaliri* can be distinguished from congeners by the following combination of characters: 1) body size small (SVL 59.5 mm); 2) limbs unidactyl; 3) limb length short; 4) supralabials six; 5) infralabials six; 6) supraciliaries six; 7) supraoculars four; 8) midbody scale rows 22; 9) axilla–groin scale rows 73; 10) paravertebral scale rows 97; 11) pineal eye spot present; 12) prefrontal contact absent; 13) frontoparietal contact

absent; 14) enlarged chin shields in two pairs; 15) nuchals enlarged; 16) auricular opening absent; 17) presacral vertebrae 47; and 18) uniform body color (Tables 3, 4).

Characters distinguishing *Brachymeles isangdaliri* from all nonpentadactyl, limbed species of *Brachymeles* are summarized in Tables 3 and 4. Additionally, *B. isangdaliri* can be distinguished from other species in the *B. bonitae* Complex (*B. bonitae*, *B. mapalonggaon*, *B. tridactylus*) by having unidactyl limbs (vs. polydactyl or digitless limbs; Table 4). *Brachymeles isangdaliri* can be distinguished from all limbless species of *Brachymeles* by having limbs and from all pentadactyl species of *Brachymeles* by having unidactyl limbs.

Description of Holotype.—Details of the head scalation are shown in Figure 4. Adult, gravid female, body small, slender, SVL 59.5 mm; uterus with two eggs visible; head weakly differentiated from neck, nearly as wide as body, HW 7.1% SVL, 101.2% HL; HL 34.5% SnFa; SnFa 20.2% SVL; snout short, rounded in dorsal and lateral profile, SNL 68.6% HL; ear completely hidden by scales; eyes small, ED 1.6% SVL, 22.2% HL, 44.0% END, pupil subcircular; body slightly depressed, nearly uniform in thickness, MBW 140.5% MBH; scales smooth, glossy, imbricate; longitudinal scale rows at midbody 22; paravertebral scale rows 97; axilla–groin scale rows 73; limbs short, diminutive, bluntly rounded, with digits reduced to one small claw on both forelimbs and hind limbs, finger and toe lamellae absent; FLL 2.9% AGD, 2.2% SVL; HLL 4.8% AGD, 3.7% SVL; tail not as wide as body, gradually tapered towards end, TW 77.4% MBW, TL 78.4% SVL.

Rostral projecting onto dorsal snout to level in line with posterior edge of nasal, roughly equal in width and height, in contact with frontonasal; frontonasal wider than long; nostril ovoid, in anteroventral corner of single trapezoidal nasal, longer axis directed anterodorsally and posteroventrally; supranasals present; postnasals absent; prefrontals narrowly separated; frontal roughly diamond-shaped, its anterior margin in narrow contact with frontonasal, in contact with first two anterior supraoculars, 4 times wider than anterior supraocular; supraoculars four; frontoparietals moderate, moderately separated, each frontoparietal in contact with supraoculars two and three; interparietal moderate, its length roughly equal to 1.5 times midline length of frontoparietal, longer than wide, diamond-shaped, wider anteriorly; parietals as broad as frontoparietals, in broad contact behind interparietal; enlarged nuchals present; loreals two, anterior loreal about as long as and slightly higher than posterior loreal; preocular one; presubocular one; supraciliaries six, the anteriormost contacting prefrontal and separating posterior loreal from first supraocular, posteriormost extending to posterior edge of fourth supraocular; subocular scale row single, incomplete, in contact with supralabials; lower eyelid with one row of scales; supralabials six, first twice the width of others, fourth and fifth subocular; infralabials six (Fig. 4).

Mental wider than long, in contact with first infralabials; postmental single, enlarged, its width greater than width of mental; followed by two pairs of enlarged chin shields, first pair narrowly separated, second pair smaller than first, broadly separated by single medial scale (Fig. 4). Scales on limbs smaller than body scales.

Variation.—Differences in scalation patterns were observed between the holotype and a single juvenile specimen. This juvenile (KU 323085) varied from the holotype by having five infralabials, five supraciliaries, 24 midbody scale rows, and contact between the first pair of enlarged chin shields.

Color in Life.—Coloration in life is unrecorded; however, because *Brachymeles* specimens do not change significantly during preservation (Siler, Brown, pers. obs.), we suspect that the preserved coloration and patterns are much like those in life.

Color in Preservative.—Body ground-color medium brown. Each dorsal scale darker along posterior tip, which consists of three dark streaks surrounded by flecks of dark pigmentation. Anterior end of each scale has six to eight thin, dark longitudinal lines. Dorsal scale patterning present around entire body and tail, though less pronounced on venter and on subcaudal scales due to reduced dark pigmentation. Posterior edge of all body scales transparent. Forelimb and hindlimb scales dark brown. Forelimb scales with weakly defined scale boundaries. Head scales mottled light and dark brown, matching dorsal background coloration. Rostral, nasal, supranasal, and first supralabial scales lighter in coloration than other head scales. Scales directly surrounding the eye, including loreals, supraoculars, and supralabials, dark brown and heavily mottled. Infralabials, postmentals, and chin shields beige with slight light brown mottling, with mental and first infralabials lightest in color.

Etymology.—The name of the new species is derived from the Tagalog (Filipino) terms 'isa,' meaning one, and 'daliri,' meaning digit, to represent the species unidactyl limbs. Suggested common name: Aurora Slender Skink.

Distribution.—*Brachymeles isangdaliri* is known only from Aurora Province, SE Luzon Island (Fig. 3).

Natural History.—*Brachymeles isangdaliri* has only been collected in secondary-growth forest. As has been observed with most members of the *B. bonitae* Complex, *B. isangdaliri* appears to be restricted to cooler, forested microhabitats and has not been observed in heavily disturbed environments. Unlike many species in the genus, *B. isangdaliri* and most members of the *B. bonitae* Complex are patchily distributed, with few individuals observed in any single locality. *Brachymeles isangdaliri* is found in sympatry with *B. kadwa* and *B. boulengeri* but not with *B. bicolor*, a species limited to primary forest. Other species of *Brachymeles* known to occur in the Luzon PAIC include *B. bicolandia*, *B. bicolor*, *B. bonitae*, *B. boulengeri*, *B. brevidactylus*, *B. cobos*, *B. elerae*, *B. kadwa*, *B. lukbani*, *B. makusog*, *B. minimus*, *B. muntingkamay*, and *B. wrighti*.

Although this species does appear to be restricted to forested microhabitats, so little is known about its ecology and distribution that we determine the status of this species to be Data Deficient, DD, and recommend immediate survey efforts in Aurora Province focused on studying this potentially rare species.

Brachymeles ***mapalanggaon*** sp. nov.
(Figs. 2, 4)

Holotype.—PNM 9792 (formerly KU 323937; CDS Field No. 5101), adult female, collected under rotting logs in heavily disturbed habitat (1000–1230 h) on 3 September 2009, in Masbate City, Masbate Province, Masbate Island, Philippines (12°21′1.08″N, 123°37′41.628″E; WGS-84), by C. D. Siler and J. Fernandez.

Paratopotypes.—One adult female (KU 323938) collected on 7 September 2009.

Paratypes.—Two adult males (CAS 144223, 144239) and two adult females (CAS 144236, 144237) collected in Tugbo Watershed, Municipality of Mobo, Masbate Province, Masbate Island, Philippines. One adult female (CAS 144270) collected in Pulangkahoy, Maputo, Municipality of Mobo, Masbate Province, Masbate Island, Philippines. One adult female (CAS 144340) collected in Uwak, Mapuyo, Municipality of Mobo, Masbate

Province, Masbate Island, Philippines. One adult male (MCZ 152082) collected at Makuya barrio area, Municipality of Mobo, Masbate Province, Masbate Island, Philippines.

Diagnosis.—*Brachymeles mapalanggaon* can be distinguished from congeners by the following combination of characters: 1) body size small (SVL 61.7–75.8 mm); 2) limbs digitless; 3) limb length short; 4) supralabials six; 5) infralabials five or six; 6) supraciliaries five; 7) supraoculars four; 8) midbody scale rows 22 or 23; 9) axilla–groin scale rows 80–84; 10) paravertebral scale rows 99–102; 11) pineal eye spot present or absent; 12) prefrontal contact absent; 13) frontoparietal contact present or absent; 14) enlarged chin shields in two or three pairs; 15) nuchals enlarged; 16) auricular opening absent; 17) presacral vertebrae 51; and 18) uniform body color (Tables 3, 4).

Characters distinguishing *Brachymeles mapalanggaon* from other morphologically similar, nonpentadactyl, limbed species of *Brachymeles* are summarized in Tables 3 and 4. Additionally, with the exception of *B. bonitae*, *B. mapalanggaon* can be distinguished from all other nonpentadactyl species of *Brachymeles* by having digitless limbs (Table 4). *Brachymeles mapalanggaon* can be distinguished from *B. bonitae* by having 51 presacral vertebrae (vs. 53), 80–84 axilla–groin scale rows (vs. 83–90), and 99–102 paravertebral scale rows (vs. 103–110). *Brachymeles mapalanggaon* can be distinguished from all limbless species of *Brachymeles* by having limbs and from all pentadactyl species of *Brachymeles* by having digitless limbs.

Description of Holotype.—Details of the head scalation are shown in Figure 4. Adult female, body small, slender, SVL 64.7 mm; head weakly differentiated from neck, nearly as wide as body, HW 6.2% SVL, 101.8% HL; HL 33.0% SnFa; SnFa 18.9% SVL; snout short, rounded in dorsal and lateral profile, SNL 60.9% HL; ear completely hidden by scales; eyes small, ED 1.7% SVL, 28.0% HL, 62.0% END, pupil subcircular; body slightly depressed, nearly uniform in thickness, MBW 107.9% MBH; scales smooth, glossy, imbricate; longitudinal scale rows at midbody 23; paravertebral scale rows 101; axilla–groin scale rows 81; limbs short, digits absent; FLL 1.7% AGD, 1.3% SVL; HLL 2.4% AGD, 1.9% SVL; tail not as wide as body, incomplete, gradually tapered toward incomplete end, TW 82.5% MBW.

Rostral projecting onto dorsal snout and extending past the posterior edge of nasal, as broad as it is high, in contact with frontonasal; frontonasal wider than long; nostril ovoid, in center of single trapezoidal nasal, longer axis directed anteroventrally and posterodorsally; supranasals present, large, broadly separated; postnasals absent; prefrontals narrowly separated; frontal nearly diamond-shaped, its anterior margin in narrow contact with frontonasal, in contact with first two anterior supraoculars, 4 times wider than anterior supraocular; supraoculars four, supraoculars two and three fused on right side of head; frontoparietals moderate, moderately separated, each frontoparietal in contact with supraoculars two and three; interparietal moderate, its length roughly equal to 1.5 times midline length of frontoparietal, longer than wide, triangular-shaped, wider anteriorly; parietals broader than frontoparietals, in broad contact behind interparietal; enlarged nuchals present; loreals two, anterior loreal about as long as and slightly higher than posterior loreal; preocular one; presubocular one; supraciliaries five, the anteriormost contacting prefrontal and separating posterior loreal from first supraocular, posteriormost extending nearly to posterior edge of fourth supraocular; subocular scale row single, complete, in contact with supralabials; lower eyelid with one row of scales; supralabials six, first twice the width of others, fourth and fifth subocular; infralabials five (Fig. 4).

Mental wider than long, fused with first infralabials; postmental single, enlarged, its width less than width of mental; followed by three pairs of enlarged chin shields, first pair smallest, broadly separated, second pair broadly separated by single medial scale, left third chin shield reduced in size (Fig. 4). Scales on limbs smaller than body scales.

Variation.—We observed slight variation in scale count and contact among the nine specimens examined. Specimens were observed to have midbody scale row counts of 22 (CAS 144223, 144236, 144237, 144239, 144270, 144340, KU 363938, MCZ 152082); axilla–groin scale row counts of 80 (KU 363928) and 84 (CAS 144223, 144236, 144237, 144239, 144270, 144340, MCZ 152082); paravertebral scale row counts of 99 (KU 363938) and 102 (CAS 144223, 144236, 144237, 144239); infralabials six (KU 363938); supraciliaries six (KU 363938); prefrontals in point contact (MCZ 152082); third chin shield absent (CAS 144340); fusion between mental and first infralabial absent (KU 363938); and pineal eyespot absent (CAS 144223, 144236, 144237, 144239, MCZ 152082).

Color in Life.—Coloration in life is unrecorded; however, because *Brachymeles* specimens do not change significantly during preservation (Siler, Brown, pers. obs.), we suspect that the preserved coloration and patterns are much like those in life.

Color in Preservative.—Body ground-color medium brown. Each dorsal scale darker along posterior edge, which consists of three dark streaks surrounded by flecks of dark pigmentation. Anterior end of each scale has six to eight thin, dark longitudinal lines. Dorsal scale patterning present around entire body and base of tail, though less pronounced on venter and subcaudal scales due to reduced dark pigmentation. Distal end of tail with reduced dark streaks. Posterior edge of all body scales transparent. Forelimb and hindlimb scales dark brown. Forelimb scales with weakly defined scale boundaries. Precloacal scale coloration lighter than surrounding ventral scale coloration. Head scales mottled light and dark brown, matching dorsal background coloration. Rostral, nasal, supranasal, and first supralabial scales cream, lighter than supraocular scales. Scales directly surrounding the eye, including loreals, supraoculars, and supralabials, dark brown and heavily mottled. Infralabials, postmentals, and chin shields beige with slight light brown mottling, with fused mental and first infralabials lightest in color.

Etymology.—The name of the new species is derived from the Masbatenyo (dialect of Masbate Island) term 'Pagkamapalanggâon,' meaning loving kindness. C. D. Siler is pleased to name this new species in honor of family members Larry Merchant, Brook Siler, Matt Siler, and Joel Katz for their support and contributions to our Philippine biodiversity research program. Suggested common name: Masbate Slender Skink.

Distribution.—*Brachymeles mapalanggaon* is known only from Masbate Island (Fig. 2).

Natural History.—Presumably, *Brachymeles mapalanggaon* occurs in primary- and secondary-growth forest habitats; however, no primary forest remains on Masbate Island. Recent collections of this species were made in deforested, residential habitats and heavily disturbed secondary-growth forest. This species has never been observed in high densities, a pattern consistent with many members of the *B. bonitae* Complex. *Brachymeles mapalanggaon* is found in sympatry with *B. tungaoi*. Several other species of *Brachymeles* occur in the Visayan (central) PAIC including *B. cebuensis*, *B. talinis*, *B. boulengeri*, *B. tridactylus*, and *B. tungaoi*.

As with *Brachymeles isangdaliri*, little is known about the ecology and distribution of *B. masbate* on Masbate Island. However, this species is endemic to an island with complete

deforestation and small apparent population sizes. Therefore, in evaluating *B. masbate* against the IUCN criteria for classification, we find that it qualifies for the status of Vulnerable (VU) based on the following criteria: VU B2ab(iii,iv); D2 (IUCN, 2013).

Discussion

The species recognized in this paper stabilize the recognized taxonomy within the *B. bonitae* Complex (Fig. 2). Although there remains considerable work to be done on the species complex, particularly with respect to documenting the geographical distributions of the respective poorly known species, this study results in the recognition of morphologically diagnosable, monophyletic lineages (Fig. 2). The new species recognized in this paper increases the total number of known species of *Brachymeles* to 38, and all but two of these are endemic to the Philippines.

However, we would not be surprised if further additional species were eventually discovered and assigned to the *B. bonitae* Complex. We note additional body plan variation in digit number and presacral vertebrae number (e.g., Polillo Island population of *B. bonitae*) and, given the rarity of these secretive skinks, additional populations in other parts of the archipelago or northern Luzon are expected to be discovered with ongoing field work. The small islands between Luzon and the Visayan PAIC have, additionally, not been adequately surveyed, and if *B. bonitae* Complex members are discovered on any other Philippine PAICs (e.g., Samar, the northern end of the Mindanao PAIC), we might expect additional species diversity to be defined.

Following the recognition of *B. mapalanggaon*, *B. isangdaliri*, *B. bicolandia*, *B. brevidactylus*, *B. cobos*, *B. libayani*, *B. paeforum*, and *B. samarensis* we now recognize a total of 15 nonpentadactyl, limbed species of *Brachymeles*. Of these, one species is digitless (*B. mapalanggaon*), one species is unidactyl (*B. isangdaliri*), four species are bidactyl (*B. bicolandia*, *B. brevidactylus*, *B. cobos*, *B. samarensis*; Siler et al., 2011b), four are tridactyl (*B. libayani*, *B. muntingkamay*, *B. tridactylus*, *B. paeforum*; Siler et al., 2009, 2011a), and two are tetradactyl (*B. elerae*, *B. wrighti*; Siler et al., 2011d). Additionally, two species have unequal fore- and hindlimb digit numbers (*B. cebuensis*, 3/2; *B. pathfinderi*, 5/4; Siler et al., 2011c), and the remaining populations of *B. bonitae* have 0–2 fingers and toes. With the exception of *B. wrighti*, all nonpentadactyl species have smaller body lengths (Taylor, 1925; Siler et al., 2011d). The distribution of limbed, nonpentadactyl species in the Philippines is uneven across the major biogeographic regions of the Philippines, with eight species known to occur on the Luzon PAIC, four on the Mindanao PAIC, three on the Visayan PAIC, and one on Mindoro (Siler et al., 2011b, 2012).

Recent reviews of Philippine biogeography (Brown and Diesmos, 2009; Brown et al., 2013) have emphasized ancient geological events, Pleistocene sea level oscilations and resulting variation in land connectivity, and elevational/atmospheric/ecological gradients as drivers of speciation and determinants of species accumulation and coexistence. The Philippine *Brachymeles* radiation constitutes a remarkable model system for understanding biogeography, the processes of diversification (Siler et al., 2011a), evolution of morphological novelty (Siler and Brown, 2011), and phylogenetic patterns of local community structure (Siler et al., unpubl. data). We note that at most localities where we have worked, reduced-limb and -digit, small, fossorial specialist species coexist with larger, pentadactyl habitat generalists. The repeated geographical pattern of combinations of small and large species (Siler et al., unpubl. data) suggests deterministic evolutionary responses to ecological phenomena (Losos et al., 1998; Mahler et al., 2013). The role of the *B. bonitae* Complex species in this pattern, as well as the general anticipation of complex community assembly dynamics in this exemplary clade of island archipelago lizards, provides compelling questions for future studies.

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APPENDIX I. Summary of specimens corresponding to genetic samples included in the study, general locality, and GenBank accession number. KU = University of Kansas Biodiversity Institute; LSUHC = La Sierra University Herpetological Collections; GVAG = Genevieve V. A. Gee field series, deposited at the National Museum of the Philippines.

			GenBank accession numbers		
Species	Voucher	Locality	ND1	BDNF	PTGER4
Brachymeles bonitae	KU 307747	Philippines, Polillo Island, Municipality of Quezon	JN981976	JX069878	JN982002
B. bonitae	KU 326080	Philippines, Polillo Island, Municipality of Quezon	JN981977	JX069879	JN982003
B. bonitae	KU 326081	Philippines, Polillo Island, Municipality of Quezon	KJ555053	KJ555046	KJ555059
B. bonitae	KU 307748	Philippines, Mindoro Island	HQ907339	HQ907241	HQ907541
B. bonitae	KU 307749	Philippines, Mindoro Island	HQ907340	HQ907242	HQ907542
B. bonitae	KU 320473	Philippines, Lubang Island	HQ907344	HQ907246	HQ907546
B. bonitae	KU 320471	Philippines, Lubang Island	HQ907343	HQ907245	HQ907545
B. bonitae	KU 307967	Philippines, Camiguin Norte Island	HQ907346	HQ907248	KJ555060
B. bonitae	KU 308004	Philippines, Camiguin Norte Island	HQ907345	HQ907247	HQ907547
Brachymeles cebuensis	KU 320421	Philippines, Cebu Island, Municipality of Carcar	HQ907411	HQ907315	HQ907615
Brachymeles isangdaliri[a]	KU 323085	Philippines, Luzon Island, Aurora Province	HQ907415	HQ907319	HQ907619
B. isangdaliri[b]	PNM 9791	Philippines, Luzon Island, Aurora Province	HQ907338	HQ907240	HQ907540
Brachymeles lukbani	KU 313602	Philippines, Luzon Island, Municipality of Labo	HQ907407	HQ907311	HQ907611
Brachymeles mapalanggaon[b]	PNM 9792	Philippines, Masbate Island	HQ907347	HQ907249	HQ907548
B. mapalanggaon[a]	KU 323938	Philippines, Masbate Island	HQ907348	HQ907250	HQ907549
Brachymeles minimus	KU 308130	Philippines, Catanduanes Island, Municipality of Gigmoto	HQ907406	HQ907310	HQ907610
Brachymeles miriamae	KU 327692	Thailand	HQ907333	HQ907235	HQ907535
Brachymeles tridactylus	KU 307726	Philippines, Panay Island, Municipality of Alojipan	KJ555054	KJ555047	KJ555061
B. tridactylus	KU 307728	Philippines, Panay Island, Municipality of Alojipan	KJ555055	KJ555048	KJ555062
B. tridactylus	KU 307733	Philippines, Panay Island, Municipality of Pandan	KJ555056	KJ555049	KJ555063
B. tridactylus	KU 307734	Philippines, Panay Island, Municipality of Pandan	KJ555057	KJ555050	KJ555064
B. tridactylus	GVAG 287	Philippines, Panay Island, Municipality of Sibalom	KJ555058	KJ555051	KJ555065
B. tridactylus	KU 320423	Philippines, Negros Island	HQ907335	HQ907237	HQ907537
B. tridactylus	KU 320424	Philippines, Negros Island	HQ907336	HQ907238	HQ907538
Lygosoma quadrupes	LSUHC 8002	West Malaysia	KJ555052	KJ555045	–
L. quadrupes	LSUHC 8403	West Malaysia	HQ907330	HQ907232	HQ907532

[a] Paratopotype.
[b] Holotype.

APPENDIX II

Additional Specimens Examined.—With the exception of *B. apus* and *B. miriamae*, all specimens examined are from the Philippines. Numbers in parentheses indicate the number of specimens examined for each species. Several sample sizes are greater than those observed in the description due to the examination of subadult specimens which were excluded from morphometric analyses.

Brachymeles apus (1). BORNEO: MALAYSIA: *Sabah*: Mt. Kinabalu National Park, Sayap Sub-Station (SP 06915).

Brachymeles bicolandia (20). LUZON ISLAND: ALBAY PROVINCE: *Municipality of Malinao*: Barangay Labnig: Paratypes (CAS 140065, 152025–26); *Municipality of Tabaco City*: Barangay Common: Paratopotypes (KU 324005–11, 324015–16, 323087), Holotype (PNM 9756), Paratopotypes (PNM 9757–60); CAMARINES SUR PROVINCE: *Municipality of Pili*: Barrio Curry, Mt. Isarog: Paratypes (CAS-SU 24173, 24413).

Brachymeles bicolor (24). LUZON ISLAND: AURORA PROVINCE: *Municipality of Maria Aurora*: Barangay Villa Aurora, Sitio Dimani, Aurora Memorial National Park (KU 323149–52); CAGAYAN PROVINCE: *Municipality of Baggao*: Sitio Hot Springs (CAS 186111, USNM 140847, 498829–30, 498833); ISABELA PROVINCE, Sierra Madres Mountain Range (KU 324097–99, PNM 5785, 9568–77); KALINGA PROVINCE: Balbalasang-Balbalan National Park (FMNH 259438).

Brachymeles boholensis (19). BOHOL ISLAND: BOHOL PROVINCE: *Municipality of Sierra Bullones*: Barangay Danicop (KU 323944, 323948–9, 323952–6, 323960, 323962–3, 323966, 323970, 323972, 323975–6, 323981–2, 323990, 324001); BOHOL ISLAND: BOHOL PROVINCE: *6 km S of Municipality of Sierra Bullones*: Teachers Park: Holotype (CAS-SU 24528); *13 km SE Municipality of Sierra Bullones*: Dusita Barrio: Paratypes (CAS-SU 24502–04, 24518, 24520–25, 24541, 24543), (CAS-SU 25443–44, 25447); 1 km E Dusita Barrio: Abacjanan (CAS-SU 24867); *Municipality of Sierra Bullones*: Sandayong (CAS-SU 18709, 18717).

Brachymeles bonitae (57). CAMIGUIN NORTE ISLAND: BABUYAN PROVINCE: (KU 304567, 307967, 308004, 308019–20, 308027, 308030); LUBANG ISLAND: OCCIDENTAL MINDORO PROVINCE: (KU 307755, 320470–73); LUZON ISLAND: *Mt. Banahao*: (KU 326089); LUZON ISLAND: KALINGA PROVINCE: (FMNH 259449); LUZON ISLAND: LAGUNA PROVINCE: (CAS 62578, MCZ 26584–85); LUZON ISLAND: MOUNTAIN PROVINCE: (CAS 61377); LUZON ISLAND: CAVITE PROVINCE: (KU 326090); LUZON ISLAND: ZAMBALES PROVINCE: (FMNH 266236); MARINDUQUE ISLAND: MARINDUQUE PROVINCE: (KU 320417–18); MINDORO ISLAND: (CAS 62064, CAS-SU 25712–13, 25724, 25782, 25792–93, 25880, 25886–89, 25891, 25893–96, 25899, 25903–04, KU 307748–49, MCZ 20180); POLILLO ISLAND: QUEZON PROVINCE: (CAS 62278–79, 62575, KU 307747); SIBUYAN ISLAND: ROMBLON PROVINCE: (CAS 137053); TABLAS ISLAND: ROMBLON PROVINCE: (CAS 137148–54).

Brachymeles boulengeri (26). LUZON ISLAND: AURORA PROVINCE: *Municipality of Baler*: (KU 322314–20); LUZON ISLAND: LAGUNA PROVINCE: *Municipality of Los Baños*: Barangay Batong Malake: (KU 32058–60); *Municipality of Los Baños*: (CAS 61096); Mt. Maquiling: (CAS 61297); POLILLO ISLAND: QUEZON PROVINCE: *Municipality of Polillo*: Paratypes (CAS 62272–73, 62276–77); Barangay Pinaglubayan: Neotype (CAS 307756), (KU 307438–9, 307750–54, 307757–58).

Brachymeles brevidactylus (3). LUZON ISLAND: SORSOGON PROVINCE: *Municipality of Irosin*: Holotype (PNM 9764); Barangay San Roque, Mt. Bulusan National Park: Paratypes (TNHC 62469, PNM 4856).

Brachymeles cebuensis (8). CEBU ISLAND: *40 km SW of Cebu City*: Tapal Barrio, Sitio Mantalungon: Holotype (CAS-SU 24400), Paratypes (CAS-SU 24396–97, 24399, 24401, 24403); *Municipality of Carcar*: Tapal Barrio: Paratype (CAS 102405); *3 km NW Cebu City*: Buhisan Barrio, Buhisan Reforestation Project: (CAS-SU 27537).

Brachymeles cobos (10). CATANDUANES ISLAND: CATANDUANES PROVINCE: *Municipality of Virac*: Barangay Palta Small: Paratopotypes (KU 306311, 308077, 324019–21, 324025–26, PNM 9562, 9563), Holotype (PNM 9761).

Brachymeles elerae (5). LUZON ISLAND: KALINGA PROVINCE: *Municipality of Balbalan*: (CAS 61499–500, PNM 9563, 9564), Paratype (CM 1717).

Brachymeles gracilis (69). MINDANAO ISLAND: DAVAO DEL SUR PROVINCE: (FMNH 52642–44, 52646–47, 52662, 52669–70); *Davao City*:

Buhangin, Kabanti-an: (CAS 124803–04, 139293–95, 139301–05); *Digos City*: Tres de Mayo Barrio: (CAS 124806–08, 139296–300); *Municipality of Kiblawan*: Barangay Kimlawis: (KU 326096, 326098–108, 326298–99); *Municipality of Malalag*: Sitio Kibawalan: (CAS-SU 24158–65, 24171, CAS 124809–12, 139306–11); *Municipality of Toril*: Barangay Baracatan, Mt. Apo, Old Eagle Station: (CMC 12170–71); South Cotabato Province: (MCZ 26539, 26541, 26543–44, 26546, 26548–50).

Brachymeles hilong (28). MINDANAO ISLAND: Agusan del Norte Province: *Municipality of Cabadbaran*: Diuata Mountain Range: Mt. Hilonghilong: Balangbalang: Holotype (CAS-SU 24407), Paratypes (CAS-SU 102406, 133578, CAS-SU 24411, 133577, 133579, 133581–82, 133609, 133612, 133692–93, 133703–06, 133743, 133745–47); Agusan del Sur Province: *Municipality of San Francisco*: Barangay Bagusan II: Mt. Magdiwata: (KU 319934–40); Surigao del Sur Province: *Municipality of Lanuza*: Diuata Mountain Range: Sibuhay Barrio: Paratype (CAS-SU 24315).

Brachymeles isangdaliri (2). See type description.

Brachymeles kadwa (101). LUZON ISLAND: Aurora Province: *Municipality of Baler*: Barangay Zabali, Aurora State College of Technology campus: Holotype (PNM 9721), Paratopotypes (KU 323092, 323094–96, 323100, 323104, 323106, KU 323090–91, 323093, 323097–99, 323101–03, 323105, 323107); *Municipality of Casiguran*: IDC property: (KU 323108–48); *Municipality of San Luis*: Barangay Real, Sitio Minoli: (KU 322320); CALAYAN ISLAND: Cagayan Province: *Municipality of Calayan*: Barangay Magsidel: Paratypes (KU 304875, 304897, 304900, 304902–3, 304905–6, 304915, 304929, 304941, KU 304908, , 304899, 304907, 304909, 304921, 304941); CAMIGUIN NORTE ISLAND: Cagayan Province: *Municipality of Calayan*: Barangay Balatubat: Paratypes (KU 304559, 304575, 304593, 304708, 304754, 307984, 307996, 307998, 308011, KU 304558, 304562–65, 304569, 304571–74, 304627–30, 304643, 304647, 304696–99, 304704–07, 304709–12, 304714, 304753, 304755–59, 307965–66, 307985–86, 307997, 307999–8003, 308006–10, 308012–15, 308017–18).

Brachymeles libayani (46). LAPINIG CHICO ISLAND: Bohol Province: *Municipality of President Carlos P. Garcia*: Paratypes (CAS-SU 27556, 28454–55); LAPINIG GRANDE ISLAND: Bohol Province: *Municipality of President Carlos P. Garcia*: Barangay Villa Milagrosa: Paratopotypes (KU 320428–30, 320435–63, 320466–67), Holotype (PNM 9749), Paratopotypes (PNM 9750–55); 0.5 km SW of Barrio Pitogo: Paratype (CAS-SU 28453); POLONG DAKO ISLAND: Bohol Province: *Municipality of President Carlos P. Garcia*: Paratype (CAS-SU 27554).

Brachymeles lukbani (14). LUZON ISLAND: Camarines Norte Province: *Municipality of Labo*: Barangay Tulay Na Lupa, Mt. Labo: Holotype (PNM 9567), Paratopotypes (PNM 9589–92, KU 313597–99, 313601, 313603–04, 313606, 313608, FMNH 270191).

Brachymeles makusog (17). CATANDUANES ISLAND: Catanduanes Province: *Municipality of Gigmoto*: Barangay San Pedro, Sitio Tungaw: Holotype (PNM 9565), Paratopotypes (PNM 9583–9584, KU 308126, 308128, 308136, 308208); LUZON ISLAND: Camarines Norte Province: *Municipality of Labo*: Barangay Tulay Na Lupa, Mt. Labo: Paratypes (KU 313612–313614, 313616, 313617, PNM 9585–9588, FMNH 270200).

Brachymeles mapalanggaon (9). See type description.

Brachymeles mindorensis (34). MINDORO ISLAND: Mindoro Occidental Province: (KU 304351–5, 304412–3, 304488, 307739–42, 308404, 308447–8, 308534); MINDORO ISLAND: Mindoro Oriental Province: *30 km SE Municipality of Calapan*: Bank of Tarogin River: Holotype (CAS-SU 24487); SE slope Mt. Halcon, Tarogin Barrio: Paratypes (CAS-SU 24549–54, 24561–62, 24564; 24566, 24568, 24573–74, 24577–79); Mt. Halcon, SE slope Barawanan Peak: Paratype (CAS-SU 24570).

Brachymeles minimus (6). CATANDUANES ISLAND: Catanduanes Province: *Municipality of Gigmoto*: Barangay San Pedro: (KU 308129–31, 308210–12).

Brachymeles miriamae (2). THAILAND: Nakhon Ratchasima Province: *Wang Nam Khieo District*: Sakaerat Environmental Research Station: (KU 327692, 327693).

Brachymeles muntingkamay (17). LUZON ISLAND: Nueva Vizcaya Province: *Municipality of Quezon*: Barangay Maddiangat, Mt. Palali: Holotype (PNM 9566), Paratopotypes (PNM 9578–82, KU 308865–66, 308900–06, 308908, 308953).

Brachymeles orientalis (53). BOHOL ISLAND: Bohol Province: *Municipality of Sierra Bullones*: Dusita Barrio: Holotype (CAS-SU 24436), Paratypes (CAS-SU 24428, 24434, 24437, CAS 102404), (CAS-SU 25452); Dusita Barrio: Abacjanan: Paratypes (CAS-SU 24446–51), (CAS-SU 25460); Cantaub Barrio: Paratypes (CAS-SU 18702, 24442, 24458); CAMIGUIN SUR ISLAND: Camiguin Province: *Municipality of Catarman*: Mt. Mambajao: Sitio Sangsangan: (CAS 110976–83); LEYTE ISLAND: Leyte Province: *Municipality of Baybay*: (KU 311231–5, 311241); MINDANAO ISLAND: Agusan del Norte Province: *Municipality of Cabadbaran*: Diuata Mountain Range: Mt. Hilonghilong: Kasinganan: (CAS-SU 133301, 133616, 133749, 133752, 133754); SAMAR ISLAND: Eastern Samar Province: *Municipality of Taft*: (KU 305470, 310734–6, 310739, 310942–6, 310949, 310951, 310955).

Brachymeles paeforum (13). LEYTE ISLAND: Leyte Province: *Municipality of Burauen*: Barrio Tambis: Paratypes (CAS-SU 26110, 26112, 26115, 26120–23); *Baybay City*: Barangay Pilim, Siotio San Vicente Tree Nursery: Paratopotypes (KU 311224–25, 311224, PNM 9747, 9748), Holotype (PNM 9746).

Brachymeles pathfinderi (40). MINDANAO ISLAND: Sarangani Province: *Municipality of Glan*: Barangay Taluya: (KU 324089–96); Barangay Tanibulad, Sitio Padido: (KU 324057–88).

Brachymeles samad (45). SAMAR ISLAND: Eastern Samar Province: *Municipality of Taft*: Barangay San Rafael: Holotype (PNM 9767), Paratopotypes (KU 310730–31, 310820–27, 310829–39, 310928–35, 310937, 310941); LEYTE ISLAND: Leyte Province: *Baybay City*: Barangay Pilim: Paratypes (KU 311216, 311218, 311220–21, 311223, PNM 9768–75).

Brachymeles samarensis (7). SAMAR ISLAND: Eastern Samar Province: *Municipality of Taft*: Barangay San Rafael: (KU 310849–52, 311294–6).

Brachymeles schadenbergi (34). BASILAN ISLAND: Basilan Province: Port Holland: Sawmill: (CAS 60493); MINDANAO ISLAND: Misamis Occidental Province: 2 km NW of Masawan: (CAS 23468–69); 4 km NW of Masawan: (CAS 23471); 3 km NW Masawan: south bank of Dapitan River: (CAS 23479–81, 23484–85); Zamboanga del Norte Province: Dapitan River: (CAS-SU 23494–96); Zamboanga City Province: *Municipality of Pasonanca*: Barangay Baluno: Pasonanca Natural Park: (KU 314967, 314969, 314970–8, 314980, 314984–85, 314988–92, 314994, 314996–7).

Brachymeles suluensis (2). BASILAN ISLAND: Basilan Province: Isabela City: (CAS 60365, 60366).

Brachymeles talinis (31). NEGROS ISLAND: Negros Oriental Province: *6 km W Municipality of Valencia*: Cuernos de Negros Mountain Range: ridge on north side of Maite River: Holotype (CAS-SU 18358), Paratype (CAS-SU 89813); Cuernos de Negros Mountain Range: Dayungan Ridge: (CAS 133871); *Dumaguete City*: Paratype (CAS-SU 12225); *Municipality of Siaton*: 20 km N Bondo Barrio: (CAS-SU 22311–12; 22317, 22323); INAMPULAGAN ISLAND: Guimaras Province: *Municipality of Sibunag*: 8 km W Pulupandan Town: (CAS-SU 27972, 27996–97); PANAY ISLAND: Antique Province: *Municipality of San Remigio*: (KU 306756–60, 306762–7, 306769, 306770–6, 306786).

Brachymeles taylori (34). NEGROS ISLAND: Negros Occidental Province: *Municipality of Silay City*: Barangay Patag: (KU 324044–56); NEGROS ISLAND: Negros Oriental Province: *3 km W Municipality of Valencia*: Cuernos de Negros Mountain Range: Sitio Lunga: ridge on north side of Maiti River: Holotype (CAS-SU 18615), (CAS-SU 21873); ridge on south side of Maiti River: Paratypes (CAS-SU 18641, 18656–57, 18748); Cuernos de Negros Mountain Range: Paratypes (CAS-SU 18649); top of Dayungan Ridge: (CAS-SU 21877, 21880, 21883–84); 24 km NW Bondo Barrio: Bantolinao: (CAS-SU 22355–56); CEBU ISLAND: Cebu Province: *Municipality of Carcar*: Tapal Barrio: Sitio Mantalongon: (CAS 154671, 154673, 154678–82, 154686).

Brachymeles tiboliorum (3). MINDANAO ISLAND: South Cotabato Province: *Municipality of Tampakan*: Barangay Tablu: Holotype (PNM 9777), Paratopotype (PNM 9776); Misamis Oriental Province: *Municipality of Tubigan*: Barangay Initao, Initao National Park: Paratype (KU 326109).

Brachymeles tridactylus (20). NEGROS ISLAND: Negros Occidental Province: *16 km E Municipality of La Castellana*: Barrio Cabagna-an: Southern Slope of Mt. Canlaon: (CAS-SU 19424, 19426–27, 19429, 19452, 19458); *20 km E Municipality of La Castellana*: Sitio Kalapnagan: (CAS-SU 27082–83); Negros Oriental Province: Hills North and Northwest of Mayaposi: Holotype (CAS-SU 18354); PANAY ISLAND: Antique Province: *Municipality of Culasi*: Barangay Alojipan: (KU 307726–36).

Brachymeles tungaoi (12). MASBATE ISLAND: Masbate Province: *Municipality of Masbate City*: Holotype (PNM 9722), Paratopotypes (KU 323934–36); *Municipality of Mobo*: Barangay Tugbo: Paratypes (CAS 144229–30, 144290, 144306–7, 144313, 144341–2).

Brachymeles vermis (5). JOLO ISLAND: Sulu Province: Paratype (CAS-SU 62489), (CAS-SU 60720–22, 60857).

Brachymeles vindumi (4). JOLO ISLAND: Sulu Province: Holotype (CAS 60724), Paratypes (CAS 60723, 60725, MCZ 26577).

Brachymeles vulcani (20). CAMIGUIN SUR ISLAND: Camiguin Sur Province: *Municipality of Mambajao*: Barangay Pandan, Sitio Pamahawan: Holotype (PNM 9766); Dago-okan, 2km south of Catibawasan Falls: Paratypes (CAS-SU 26142, 26144–46, 26231, 26236); Sitio Basiao, Barrio Naasag: Paratype (CAS-SU 26294); northwest side of Nasawa crater: Paratype (CAS-SU 26295); Barrio Naasag: Paratypes (CAS-SU 26165–66, 26184–85); Kantinbay: Paratype (CAS 139031); *Municipality of Catarman*: Catarman Town: Paratypes (CAS-SU 28199, 28314, 28329, 28331, 28358–59).

Brachymeles wrighti (2). LUZON ISLAND: Benguet Province: *Municipality of La Trinidad*: Holotype (MCZ 26589), (USNM 140756).