Rev. peru. biol. 16(2): 175- 182 (Diciembre 2009)

Versión *Online* ISSN 1727-9933

Distribution of the Peruvian Plantcutter *Phytotoma raimondii* (Passeriformes: Cotingidae)

Distribución de la cortarrama peruana *Phytotoma raimondii* (Passeriformes: Cotingidae)

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Presentado: 27/08/2009
Aceptado: 15/10/2009
Publicado *online*: 12/01/2010

Abstract

The Peruvian Plantcutter, *Phytotoma raimondii* Taczanowski, 1883, is a restricted-range species endemic to coastal northern Peru. Historically its range is given from Tumbes in the extreme north-western Peru, south to the northern part of Lima Department. Although an increasing amount of information on the Peruvian Plantcutter exists, from historical records to new locations, it has remained dispersed, sometimes unverified, not systematized, and largely unpublished. A careful revision of museum collections as well as published and unpublished records results in a total of 53 sites where the species has been recorded and that represent the present knowledge of the distribution of the species.

Keywords: *Phytotoma raimondii,* Peruvian plantcutter, coastal north Peru, Peruvian endemic, restricted-range species.

Resumen

La cortarrama peruana, *Phytotoma raimondii* Taczanowski, 1883, es una especie endémica y de distribución restringida a la costa norte del Perú. Históricamente su rango ha sido considerado desde Tumbes en el extremo noroeste del Perú y hacia el sur hasta la parte norte del Departamento de Lima. Aunque existe mayor cantidad de información sobre la cortarrama peruana, entre registros históricos y localidades nuevas, esta información ha permanecido dispersa, a veces no verificada, no sistematizada y consecuentemente no publicada. Una revisión meticulosa de ejemplares de museos así como de registros publicados y no publicados da como resultado un total de 53 localidades donde la especie ha sido registrada y que representan el conocimiento actual de su distribución.

Palabras Clave: *Phytotoma raimondii*, Cortarrama peruana, costa norte del Perú, endémico peruano, especie de distribución restringida.

Introduction

The Peruvian plantcutter *Phytotoma raimondii* Taczanowski, 1883 is a restricted-range species endemic to coastal northern Peru (Ridgely and Tudor 1994). Historically its range is given as extending from Tumbes in the extreme north-western Peru, south to the northern part of Lima Department (Collar et al. 1992). The Peruvian Plantcutter inhabits open dry forest, desert scrub, riparian thickets and low open woodland, from near sea level to 550 m. (Collar et al. 1992). However, remaining habitat is highly fragmented and the species is currently classified as Endangered (IUCN 2009). Although an increasing amount of information on the Peruvian Plantcutter exists, from historical records to new locations, it has remained dispersed, sometimes unverified, not systematized, and largely unpublished. With the objective of providing an updated review of the species' distribution the authors present the following article.

Material and methods

Collar et al. (1992) gave the first detailed review of the distribution of the Peruvian plantcutter *Phytotoma raimondii* Taczanowski, 1883 listing fourteen sites from Tumbes city in Tumbes Department in the extreme north of coastal Peru to Chillón in Lima Department. Most sites were based on information from museum specimens and only one record (from 1982) came from field observations. As most museum specimens lacked coordinates Collar et al. (1992) assigned these based on Stephens and Traylor (1983). This has lead to some confusion for several records. In revising the distribution of the Peruvian plantcutter the authors contacted all eight museum collections mentioned in Collar et al. (1992) to verify information. This exercise resulted in additional specimens being found in collections mentioned in Collar et al. (1992), three new collections being located and new locations for the species. Collections and specimens are detailed in Appendix 1.

The following list of locations for the Peruvian Plantcutter combines museum records, published and unpublished records and observations from the authors. Clarifications on information are dealt with by site. Coordinates are in UTM and altitude in metres, followed by how the position was determined: by authors with a GPS in the field; using maps at 1:100,000 scale published by the Insituto Geográfico Nacional (IGN) of Peru; from a published source or museum label or using Google Earth. Authors are abbreviated to their initials. Abbreviations for specimen collections are given in Appendix 1. Sites are listed geographically from north to south by department (now called Regions in Peru) and within Regions.

Results

Tumbes Region

Tumbes: Konstanty Jelski is credited with the type-specimen for the species which if correct would have been pre-1878 as in this year he returned to Poland to become the curator of the Krakow Museum. From 1874 to 1878 Jelski served as the curator of the Museo Raimondi in Lima, which was set up by the Peruvian government based on the collections it purchased from Antonio Raimondi. At some stage Raimondi sent parts of this collection to Wladyslaw Taczanowski in Warsaw for identification, from where the species was formally named (Taczanowski 1883). A history of the Raimondi collection is given by Plenge (1979) who notes that the type-specimen later disappeared, "presumed lost or destroyed", however it is not clear that the type specimen was ever returned to Peru. The only information as to the origin of this specimen is given in Taczanowski (1883)

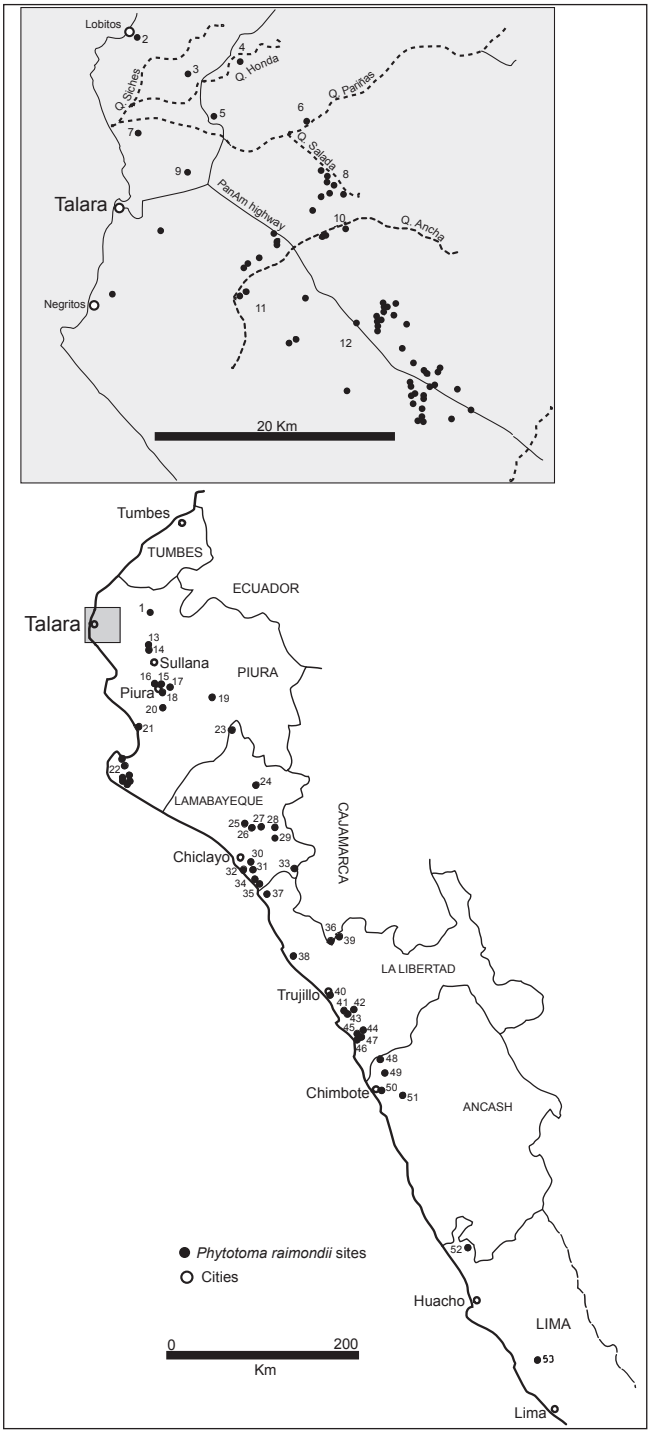

Figure 1. Distribution of the Peruvian Plantcutter *Phytotoma raimondii*.

as *Tumbez*. However, whether this specimen was actually caught in the vicinity of Tumbes city is not clear, and it is quite likely that the specimen was labelled in Tumbes before transporting back to Lima. Given the subsequent lack of records of the species from Tumbes Region the authors consider it prudent to exclude Tumbes from the known distribution.

Piura Region

(1) Quebrada Angolo (Sauce Chico) (UTM 0528000 / 9512000, altitude 530 m JNMF with IGN map): This location is on the access track to the Sauce Grande area of El Angolo Hunting Reserve. At least three individuals seen and others heard. Record from JNMF, Robert Ridgely and others, 13 April 2004.

(2) Lobitos (UTM 0469900 / 9507700, altitude 35 m): Of historical interest are records from Fergus Milligan, a Scottish explorer who worked in Lobitos (M. Starkey *in litt*. to BMNH, 2001). From 1905 to 1913 Milligan travelled overland from Brazil to Peru, finally arriving at the oil fields of Lobitos where he worked as a truck driver. During this time he collected eggs, including five of the Plantcutter, although the exact date and location are not known. In 1913 he returned to England with his collection, which was finally deposited with BMNH in 2001. From his notes Milligan also provides perhaps the first description of the Plantcutter's call with "fairly common in wooded quebradas. Distinctive note as of a creaking hinge". Coordinates assigned by authors.

(3) Quebrada Siches (east of Lobitos) (UTM 0472000 / 9505000, altitude 30 m JNMF with IGN map): An area east of Lobitos where the species was recorded in 2002 by IF and probably an area where F. Milligan did his collecting.

(4) Quebrada Honda (UTM 0478568 / 9505932, altitude 40 m JNMF with GPS): A male seen and another individual heard. Record from JNMF and FA, 19 October 2007.

(5) Km 82, north of Quebrada Pariñas (UTM 0476476 / 9501172, altitude 35 m JNMF with GPS): Next to the Pan-American Highway the species was recorded near kilometre post 82. Record from JNMF, 1999.

(6) Quebrada Pariñas (Casas Negras) (UTM 0484280 / 9500406, altitude 55 m JNMF with IGN map): One female and one male collected 1 August 1967 by Raymond B. Huey. An additional male was collected 29 October 1974 by Ned K. Johnson. All specimens are held by the MVZ with identical text as to the site ("Pariñas, 7 km N and 15 km E of Talara"), which would place the site near the hamlet of Casas Negras. While MVZ records are included in Collar et al. (1992) for other species, these Plantcutter records were apparently overlooked. Visits to the area by JNMF in 2000 and 2006 did not find the species.

(7) Piedritas (UTM 0470200 / 9499807, altitude 43 m JNMF with IGN map): This small collection of houses lies on southern side of Quebrada Pariñas on the road between Talara and Lobitos. Recorded on four visits by JNMF, 2001.

(8) Quebrada Salada (UTM 0486000 / 9496200, altitude 100 m JNMF with IGN map): One male collected here by O. D. Boggs on 23 September 1933 and held by the BMNH. Coordinates on specimen label give 4°33'S 81°08'W at an altitude of 300 feet (ft.), which place the site in Quebrada Salada. Species was relocated here by GE in December 1998 and was still present in 2007 by JNMF. Note that Quebrada Salada is a dry river ravine more than 5 km in length, leading to the larger Quebrada Pariñas.

(9) Near Talara (El Pato air force base) (UTM 0474271 / 9496504, altitude 84 m JNMF with IGN map): One female and 2 eggs collected 27 March 1934 and 3 eggs collected on 4 April 1934 by O. D. Boggs and held by the ROM (see Flanagan and Millen 2008). Coordinates on label give 4°33'S 81°13'W, at 275 ft., which would place the site within El Pato air force base.

(10) Quebrada Ancha (UTM 0485400 / 9491500, 150 m JNMF with IGN map): One female and one male collected 15 October 1933, one male collected 25 October 1936 and

one female collected 5 March 1937, all by O. D. Boggs. All specimens are held by the ROM, except the 1933 male, which is held by the BMNH. Coordinates are given on the 1933 male as 4°36'S 81°08'W and altitudes on all specimens are 500 or 550 ft. Species was relocated here by GE in December 1998 and was still present in 2007 by JNMF. Quebrada Ancha is a shallow dry river course, some 25 km in length, so sites assigned to this geological feature will vary in coordinates and altitudes.

(11) La Brea (UTM 0487461 / 9478776, 150 m GE with GPS): Male and female seen here 5 January 1999 by GE. La Brea is an area named on the IGN map of Talara.

(12) La Brea District (UTM 0480600 / 9485800, 84 m JNMF from Google Earth, coordinate is for a central point): Based on GE results from 1998/99 JNMF conducted further searches around Talara during 1999 to 2000, finding the species distributed over a large area to the east and south-east of Talara (including Quebrada Ancha, Quebrada Salada and La Brea), estimated at 30,000 hectares (ha), although not all this area has suitable habitat. This large area is considered as one site here and consists of 69 GPS points where the species was recorded. Given that the majority of this area falls within the political unit of La Brea District, it has been assigned this name. The area is bisected by the Pan-American Highway. Evidence that the species crosses the highway comes from a road-kill male collected by Juan Malo de Molina in May 2000.

(13) Perro Muerto (UTM 0527824 / 9475073, altitude 100 m JNMF with GPS): Two males and three females collected by Walter Markl 8 February 1959 and held by the NHMB. The site is on the access track to El Angolo Hunting Reserve, but is now heavily degraded and searches by JNMF have not found the species.

(14) La Noria (UTM 0528272 / 9471158, altitude 60 m JNMF with GPS): One male collected 16 December 1956 and one female collected 24 September 1958 by Walter Markl and held by the NHMB. Searches in the area by JNMF have not relocated the species. The village of La Noria is on the access track to El Angolo Hunting Reserve and the surrounding area is heavily degraded.

(15) Los Ejidos (UTM 0543096 / 9430620, altitude 50 m JNMF with GPS): Small patch of forest just after the Campo de Paz cemetery in Piura city. Recorded 24 August 2004 by García y Chávez (2004). Site was visited in June 2007 by JNMF but the species was not found.

(16) Quebrada Las Monjas (UTM 0534529 / 9430800, altitude 65 m JNMF with GPS): Two males seen and others heard in this small patch of trees mixed with crops, 1 km from the Pan-American Highway. Record from JNMF, 23 June 2007.

(17) Km 248-249 (UTM 0549438 / 9428492, altitude 70 m JNMF with GPS): Located behind a petrol station between kilometre posts 248 and 249, just outside Piura on the Piura to Chulucanas road. Recorded here by GE December 2002. Species still present in general area, which extends east to behind the campus of the Universidad Alas Peruanas, as recently as June 2007.

(18) East of Piura airport (UTM 0543758 / 9425456, altitude 35 m JNMF with GPS): An individual recorded here by Alex More, June 2007, was likely a transient as the species has not been recorded here subsequently.

(19) Near Cerro Tongo (UTM 0596900 / 9419000, altitude 125 m GE with IGN map): Site is along the old Pan-American Highway from Piura to Olmos. Record consists of 2 individuals by GE, January 2004.

(20) Km 977 (UTM 0542341 / 9408468, altitude 17 m JNMF with GPS): on Pan-American Highway south of Piura. Pair heard and male seen on west side of road by Robert Ridgely, July 2007.

(21) San Pedro Mangroves (UTM 0511995 / 9390360, altitude 10 m JNMF with GPS): Species found in area of dry forest and mangrove at the southern end of these mangroves in October 2006 by Cesar Chavez (Birding Peru 2006). Site receives some protection as a Municipal Conservation Area.

(22) Illescas Peninsular (UTM 0507204 / 9332984, altitude 130 m IF with GPS): Eighteen individuals recorded at seven GPS points along the eastern side of Cerro Illescas (one GPS point given above). Records were distributed from a point close to the shore to the northeast, south to the southern edge of this massif, where the largest number of individuals was observed in June 2006. During a second survey of the area in February 2007, 27 individuals were observed at four sites in the same area. On this occasion the species was absent from the northern localities close to the shore and, similar to the previous occasion, most birds were observed in the southern part of the massif. Records from IF.

Lambayeque Region

(23) Cerro de Ñaupe (UTM 0616000 / 9384000, altitude 300 m JNMF with IGN map): First records from this area by Morris Williams in 2001 and still present as recently as 2009. This area is on the old Pan-American Highway from Piura to Olmos.

(24) Twenty one kilometers south of Olmos (UTM 0644000 / 9318500, altitude 160 m JNMF with Google Earth): On old Pan-American Highway between Olmos and Chiclayo. One male collected 24 December 1964; two males collected 25 December 1964 by J. Alan Feduccia and held by the LSUMZ. While the LSUMZ collection was used for other sites, these specimens and site are not mentioned by Collar et al. (1992). Original coordinates were not given, which have been assigned here and place the site just south of the town of Motupe.

(25) Santuario Histórico Bosque de Pómac (UTM 0636474 / 9282728, altitude 70 m JNMF with GPS): Bosque de Pómac is a state protected area of some 5,887 ha. The species was first recorded here in July 2000 by Simon Allen near the entrance point at La Curva, with the interpretation centre and close to the Algarrobo Milenario tree. Also the species has been reported by locals in the area of Pómac II (UTM 0635900 / 9287000, 70 m) and another site (UTM 0630900 / 9283900, 60 m) to the west.

(26) Tambo Real (UTM 0640785 / 9278926, altitude 100 m Consuelo Salazar with GPS): Species recorded in this forest located to the east of Bosque de Pómac. Record from Consuelo Salazar, 6 March 2008.

(27) Hacienda Batán Grande (UTM 0654566 / 9278482, altitude 100 m FA with GPS): Twelve individuals seen in some 500 ha. of forest. Record from FA, 27 October 2006.

(28) Área de Conservación Privada Chaparri (UTM 0669200 / 9276000, altitude 400 m JNMF with Google Earth): two records from this reserve. Two records from the area near the lodge (coordinates above) in the reserve. One from Darren Woodhead, July 2003 and another from Tomas Salazar, October 2009. Also another record by locals from Quebrada Chirquipe to the east in 2004 (UTM 0679149 / 9272251, 270 m).

(29) Four kilometers Northwest Tinajones (UTM 0665824 / 9270061, altitude 170 m Rob Williams with GPS): record from this quebrada north-west of Tinajones reservoir next to the Chaparri reserve by Rob Williams, June 2001. The habitat here has since been cleared and the species has not been recorded again.

(30) Siete Techos (UTM 0640283 / 9246440, altitude 50 m GE with GPS): Four individuals seen in a small patch of woodland surrounded by farmland and barren hills east of Siete Techos archaeological site. Record from GE, 8 January 1999.

(31) South of Chiclayo (near Pan-American Highway) (UTM 0629282 / 9244886, altitude 20 m TV with GPS): South of Chiclayo, with *Prosopis* stands and olive plantations next to a small river. Record from TV, 8 June 2002.

(32) Eten (UTM 0626000 / 9237000, altitude 10-15 m JNMF with IGN map): Six specimens collected in September and October 1899 by P. O. Simons and held by the BMNH. Eten is a small port south-west of Chiclayo and the exact site is unclear. Coordinates are assigned by the authors to an area east of Eten.

(33) Five kilometers South southeast of Oyotún (UTM 0688544 / 9237060, altitude 240 m JNMF with GPS): 5 km south-south-east of the town of Oyotún, where the road runs along the Río de Nanchoc, with dry forest. Species recorded here 22 November 2008 by JNMF.

(34) Near Río Saña (UTM 0645500 / 9223000, altitude 20 m JNMF with IGN map): This site is given in Collar et al. (1992) based on a specimen collected by M. D. Williams in September 1979 and held by the LSUMZ. Williams gives the location as "0.5 km N Rafán", Rafán is a small village near the site. However, Collar et al. (1992) do not mention other collections assigned to this site, all held by the LSUMZ. One male was collected 22 July 1979 by David A. Wiedenfeld, with the directions of "8 road km W Mocupe", which would put this site in the general area of the Williams site. Then on the 10 August 1980 Theodore A. Parker III and Michael J. Braun collected three specimens between them, with the directions of "0.5 km N Rafán, (between Mocupe and Lagunas)", again coinciding with the original Williams site. In its unclear where the directions given by Collar et al. (1992) of "c. 5 km north-north-east of Rafán and c.8 km south-west of Mocupé…where a specimen (in LSUMZ) was collected in September 1978" originate from, unless some one supplied more precise information. Moreover the "c. 5 km" in Collar et al. (1992) should read c. 0,5 Km and the specimen was collected in September 1979, not 1978. This site became popular with birdwatchers and is more widely known as Rafán.

Note that Collar et al. (1992) list Reque, a small town just south of Chiclayo, as a site for the Plantcutter, with details credited to Bret Whitney. However there is an error here as Whitney's notes describe the Rafán site above (B. Whitney *in litt.* 2008).

(35) Bosque de Murales (UTM 0647310 / 9218715, altitude 18 m GE with GPS): First recorded in this area by GE 9 January 1999 and still present November 2008 by JNMF. Species was also recorded in a small patch on entrance track to site (UTM 0647096 / 9220947), some 2 km to the north in 1999 by GE. This site is close to the Rafán site, separated only by the Río Saña.

Cajamarca Region

(36) Algarrobal / Hacienda Jaguay (UTM 0726000 / 9157790, altitude 400 m By GE with IGN map): Some six hectares of *Prosopis* forest in the Río Chicama valley, where the species was heard by Juvenal Ccahuana in 2001.

La Libertad Region

(37) San Pedro de Lloc (UTM 0665500 / 9179000, altitude 40 m JNMF with IGN map): One female collected by James Orton and held in the MNHN. No coordinates or date are given on the specimen label but would have been collected during Orton's expeditions in Peru during 1873-4 or 1876-77, most probably the latter. Coordinates are assigned by the authors to the vicinity of the town of San Pedro de Lloc.

(38) Paijan (UTM 0691457 /9143943, altitude 100 m TV with GPS): East of the town of Paijan there are extensive cattle enclosures and patches of *Prosopis* forest, although there was evidence of on-going deforestation. Record from TV, 23 March 2006.

(39) Baños de Chimú (UTM 0761413 / 9164664, 950 m JNMF with Google Earth): Two males and two females collected by Raul Samame V. and Ismael Arevalo Benites of the MZJOR, 10 December 1978. The altitude is slightly high for what is known about the Plantcutter and the specimens might have been caught lower down the Río Chicama valley. As both collectors are deceased efforts to locate the actual collection site have been unsuccessful.

(40) Trujillo (UTM 0717200 / 9102800, altitude 35 m JNMF with IGN map): Collar et al. (1992) list three collections for Trujillo. First however Collar et al. (1992) state that four specimens were collected in May 1885. This is an error as these four specimens were collected in May 1895, together with another four specimens, totalling eight, and all collected by O. T. Baron. Four of the specimens are held by the AMNH and four by the BMNH. All Baron specimens give an altitude of 1500 ft. (460 m). As Trujillo city is at 35 m, the Baron specimens were probably catalogued, but not caught there. A further specimen in the BMNH collected October 1912 by an unknown collector is labelled as Trujillo, but no coordinates or altitude are given. In March 1953 Edmond-Blanc collected two specimens held in the MNHN and again labelled as Trujillo, but with no coordinates or altitudes.

The Baron site represents a new site, which should not be considered as Trujillo, although it is impossible to locate exactly where it is, probably in the foothills to the east of the city. The unknown collector and Edmond-Blanc sites are also ambiguous. Given this the authors follow Collar et al. (1992) in giving the

general coordinates for Trujillo city to group these collections, but with the previous considerations.

(41) Near La Huaca (between Tomobal and Mayasgo, north-east of Virú) (UTM 0748428 / 9082995, altitude 350 m GE with GPS): One individual seen and four heard 11 January 1999 by GE. Site visited again by Mattias Fehlow in January 2003 who found a group of six birds.

(42) Km 465 near Trujillo (UTM 0743800 / 9068700, altitude 50 m JNMF with IGN map): One female specimen collected by Ortiz de la Puente in April 1951 and held by MHNJP. No coordinates or altitude are given on the label which have been assigned by the authors as this site would be in the area just north of Virú.

(43) Virú (UTM 0744990 / 9067470, altitude 45 m JNMF with IGN map): Two specimens taken in April 1919 by H. Watkins and held by the AMNH. Altitudes of 150 ft. are given on the labels. Coordinates are assigned by the authors to the vicinity of Virú town. GE visited the area of Virú during his 1998/99 study, but found no suitable vegetation; concluding the species was no longer present.

(44) Hacienda Buenavista in Chao Valley (UTM 0761000 / 9062000, altitude 300 m JNMF with IGN map): Specimens collected January and February 1975 by Peter Hocking (held by MHNJP and FMNH) 2 to 3 kilometres up the valley from Chao. Area was visited by GE in November 1998, but was unable to find any suitable habitat.

(45) Chao (UTM 0722856 / 9100650, altitude 30 m TV with GPS): West of Pan-American Highway, where small patches of *Prosopis* remain in extensions of otherwise arid land next to irrigated fields. Record from TV, 2005.

(46) C. 5 km east of Hacienda Laramie (UTM 0720540 /9055100, altitude 120 m JNMF with IGN map): On road to Humanzaña. One specimen collected 30 August 1975 by Robert S. Kennedy and held in the LSUMZ, but not mentioned in Collar et al. (1992). The location is not clear as Laramie is 8 km south-west of Chao, where Río Humanzaña and Río Chao meet, and 5 km east of Laramie would place the site back near the Pan-American Highway. Coordinates given are for a site along the Río Humanzaña 5 km from Laramie, but the original site needs confirming.

(47) Conachi (UTM 0749712 / 9049078, altitude 20 m TV with GPS): Species recorded in *Prosopis* tree patches and hedges between extensive agricultural lands. Record from TV, 8 October 2006.

Ancash Region

(48) Suchimán (UTM 0784000 /9036000, altitude 200 m JNMF with IGN map): On the Río Santa, where two specimens were collected in March 1932 by Carriker and held by the ANSP. No recent records.

(49) Cerro Campana (UTM 0785062 / 9015364, altitude 300 m GE with GPS): Two males seen and three birds heard by GE in January 1999. Species heard again at 0781126 / 9016286, which is a continuation of the same area.

(50) Chimbote (UTM 0765635 / 8996466, altitude 20 m JNMF with Google Earth): Three specimens collected in March 1932 by Carriker and held by the ANSP. No recent records. Coordinates refer to the town of Chimbote.

(51) Near Pañamarca Archaeological Site (UTM 0788857 / 8981276, 115 m GE with Google Earth): Four birds recorded at this site which appears to receive some protection by the Instituto Nacional de Cultura as an archaeological site. Record from GE, 3 June 2004 and still present here in August 2009.

Lima Region

(52) Huariconga (UTM 0208076 / 8852547, altitude 450 m JNMF with Google Earth): Site in the Fortaleza valley above Paramonga, where two specimens were taken by Clarence Birdseye in August and September 1954 at 1,500 ft and held by the AMNH and MHNJP. No coordinates were given, which have been assigned here by the authors. No recent records.

(53) Río Chillón (UTM 0940576 / 8701248, altitude 550 m GE with GPS): Given as Chilcon in Collar et al. (1992), the exact location is not clear. Record from Paul Scharf of several individuals at 550 m in Chillón valley on the road to Canta, September 1982 (P. Scharf *pers. comm.* to GE, 2007). Scharf took the altitude with an altimeter, however GE returned to the general location in 1999 but was unable to find suitable habitat.

The above list gives a total of 53 sites for the Peruvian Plantcutter which are plotted in Figure 1.

Discussion

Results show that the Peruvian Plantcutter is known from many more sites than previously documented and undoubtedly still more sites will be found. However, as witnessed by the authors, the majority of sites are extremely small, fragmented and increasingly under pressure from degradation and deforestation. Although further studies are required it appears evident that the species requires a reasonable diversity of plant life, particularly trees and shrubs, with good understorey or dense vegetation low to the ground. Providing these conditions exist the species can be found in close proximity to agricultural lands, tracks, roads and human settlements. However as observed by the authors the majority of dry forest in the region is heavily degraded with reduced understorey due to goats and firewood collection, suitable areas are becoming increasingly rare and isolated. It also appears evident that the species is mobile over reasonably large areas; where it is present at certain sites then disappears, or where it appears at sites that have been studied before. This movement may be in search for suitable food or nesting sites, the displacement of recruited individuals, birds moving as other areas of habitat are destroyed or a combination of these. To this end it is possible that several of the sites listed here do not represent permanent populations of the species, but transient areas.

The main threat to the species is loss, degradation and fragmentation of its habitat. Forest patches maybe removed rapidly and completely for agriculture, development or steadily degraded for firewood for cooking or charcoal. Charcoal production is a serious threat throughout the northwest where the *Prosopis* tree is prized for its qualities. Extraction is highly diffuse, occurring everywhere and with many people involved as a subsistence economic activity. Charcoal produced is sold locally or exported to the south and other areas of the country to fuel restaurant grills; representing a more serious and organized economic ac-

tivity. Although there are occasional confiscations of this illegal charcoal, the vast majority is freely transported to wherever it is in demand. Brick kilns are another activity that demand large quantities of wood and can be seen throughout the northwest of Peru, especially near Chiclayo and north of Sullana. In Peru natural gas (in cylinders) for cooking is relatively expensive for most people and cooking with firewood is still the norm in rural communities and even in towns and cities. For example, on any evening mule drawn carts can be seen returning to Piura carrying wood from a day's extraction from the surrounding dry forests.

The Peruvian Plantcutter´s stronghold near Talara, in the area of Quebrada Ancha east of the Pan-American Highway, is under serious threat from logging to fuel stoves *in-situ* to process fish meal (the off-cuts of giant squid are transported to the forest from Talara port to be boiled then dried in the sun). This new threat, first documented in 2005, is rapidly destroying this area and other ´squid-kitchens´ have been seen along the coast north of Talara. An inspection of this area in August 2009 noted over 100 large cooking vessels, over 200 people dedicated to this activity and a very hostile reaction by them to questions. The squid processors have installed themselves along 2 km of the well-known access track from the Pan-American Highway towards Quebrada Salada. This area has been divided up into lots for each individual operation, but which are now grouped under the Association of Artisan Processors of Squid of Talara. Such activities are incredibly difficult to control or eradicate once initiated. This discovery is a catastrophe for the survival of the Plantcutter and represents the demise of its main stronghold. Elsewhere throughout Talara goats and charcoal burning are present. Charcoal is of particular concern, with Quebrada Pariñas a well known centre of production.

The Bosque de Pómac Historical Sanctuary is the only state protected area with the species, and combined with neighbouring sites of Batán Grande and Tambo Real represents an important centre for the Plantcutter. However this reserve suffered for eight years from illegal land colonizers who occupied some 1,500 hectares of the reserve deforesting and planting crops. Repeated attempts to remove the colonizers failed and only in February 2009 were they evicted in a conflict that cost the lives of two policemen. The species' distribution here is quite localised and further studies are required to clarify its distribution throughout the sanctuary. Elsewhere in Lambayeque the species is confined to small pockets of habitat surrounded by agriculture or desert. Although there are several records from La Libertad all sites are small and under continuing threat. The distribution of the species in the south has most likely contracted with only two recent records from Ancash and no recent records from Lima.

Although more sites are now known for the Peruvian Plantcutter, its situation is one of constant demise and without a concerted effort by regional authorities and landowners the outlook for the species is bleak. However an action plan has been produced as a first step towards a strategy to conserving the species throughout its distribution. The survival of the species will ultimately depend on changing attitudes towards dry forest conservation in the north-west of Peru and internationally.

Acknowledgements

For assistance in the revision of museum collections and bibliographic material the authors are most grateful to: José G. Tello of the American Museum of Natural History (New York), Mark Adams, Robert Prys-Jones and Mark Walters of the Natural History Museum (England), Michael Palmer of the Zoological Society of London, Brad Millen of the Royal Ontario Museum, Tom Schulenberg of Cornell University, Nate Rice of the Academy of Natural Sciences of Philadelphia, Patrick Boussès of the Muséum d´Histoire Naturelle (Paris), Carla Cicero of the Museum of Vertebrate Zoology (University of California), Doris Mercado of the Museo de Zoología Juan Ormea Rodriguez (Universidad Nacional de Trujillo), Steve Cardiff of the Louisiana State University Museum of Zoology, Nigel Collar, Todd Mark and Manuel Plenge. Cristian Abramonte, Simon Allen, Alan Feduccia, Mattias Fehlow, Peter Hocking, Robert Kennedy, Juan Malo de Molina, Alex More, Sergio Nolazco, Robert Ridgely, Consuelo Salazar, Tomas Salazar, Bret Whitney, Morris Williams, Rob Williams and Darren Woodhead are thanked for their contributions. For funding studies; I. Franke thanks Compañía Minera MiskiMayo S.A.C. Grupo CVRD through Golder Associates Peru S.A. (2006-2007); G. Engblom thanks Asociación PeruVerde (1998-1999). J.N.M. Flanagan thanks the Audubon Society and PetroPerú (1999-2000), the Darwin Initiative / DEFRA (2006-2007) and Alberto Paniagua of PROFONANPE and Thierry Givois of the KfW (2008-2009).

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Appendix 1. Collections of *Phytotoma raimondii*. Information in the following table represents that given on the collection labels of the specimens or information provided by the institution holding the collection. Specimen numbers are those assigned by the respective collection. Collections are ordered by date within each institution. Where certain information is absent this is represented by a dash (-).

Specimen No.	Sex	Locality	Altitude	Coordinates	Date	Collector
Academy of Natural Sciences of Philadelphia (ANSP).						
115201	male	Chimbote, Ancash	-	-	5 March 1932	M. A. Carriker, Jr.
115205	female	Chimbote, Ancash	-	-	5 March 1932	M. A. Carriker, Jr.
115202	male	Chimbote, Ancash	-	-	6 March 1932	M. A. Carriker, Jr.
115203	female	Suchiman, Río Santa	-	-	10 March 1932	M. A. Carriker, Jr.
115204	male	Suchiman, Río Santa	-	-	10 March 1932	M. A. Carriker, Jr.
American Museum of Natural History (AMNH).						
495027	female	Trujillo	1500 ft	-	14 May 1895	O. T. Baron
495025	Male (juv.)	Trujillo	1500 ft	-	18 May 1895	O. T. Baron
495024	male	Trujillo	1500 ft	-	19 May 1895	O. T. Baron
495026	-	Trujillo	1500 ft	-	May 1895	O. T. Baron
152255	male	Virú, La Libertad	150 ft	-	28 April 1919	H. Watkins
152256	female	Virú, La Libertad	150 ft	-	28 April 1919	H. Watkins
461801	male	Huariconga, Fortaleza Valley	1500 ft	-	8 August 1954	Clarence Birdseye
Field Museum of Natural History (Chicago) (FMNH).						
299918	male	Buenavista, Chao Valley, Libertad	1000 ft	08°29S 78°38W	25 January 1975	Peter Hocking & Gilberto Martinez
Louisiana State University Museum of Zoology (LSUMZ).						
35269	male	21 km. S Olmos, on Pan American Highway	-	-	24 December 1964	J. Alan Feduccia
35270	male	21 km. S Olmos, on Pan American Highway	-	-	25 December 1964	J. Alan Feduccia
50811	male	21 km. S Olmos on Pan American Highway	-	-	25 December 1964	J. Alan Feduccia
81156	unknown	Ca. 5 km E Hda. Laramie on rd. to Humanzaña	400 ft	-	30 August 1975	Robert S. Kennedy
88529	male	0.5 km N Rafan, Lambayeque Dept.	5 m	-	25 September 1978	Morris D. Williams
92925	male	8 road km W Mocupe, Lambayeque Dept.	25 m	-	22 July 1979	David A. Wiedenfeld
97766	female	0.5 km N Rafan, (between Mocupe and Lagunas)	3 m	-	10 August 1980	Theodore A. Parker III
97767	male	0.5 km N Rafan, (between Mocupe and Lagunas)	3 m	-	10 August 1980	Michael J. Braun
97768	male	0.5 km N Rafan, (between Mocupe and Lagunas)	3 m	-	10 August 1980	Michael J. Braun
Museo de Historia Natural Javier Prado (Lima) (MHNJP).						
3725	female	Km 465 c. Trujillo, La Libertad	-	-	6 April 1951	J. Ortiz de la Puente
623	male	Huariconga, Fortaleza Valley	-	-	30 August 1954	Clarence Birdseye
6774	male	Buenavista, Valle Chao, La Libertad	-	-	4 February 1975	Peter Hocking
Museo de Zoología Juan Ormea Rodríguez, Universidad Nacional de Trujillo (MZJOR).						
CTG-002 R1	male	Baños Chimú, Cajamarca	-	-	10 December 1978	R. Samame V. & I. Arevalo Benites
CTG-002 R2	female	Baños Chimú, Cajamarca	-	-	10 December 1978	R. Samame V. & I. Arevalo Benites
CTG-002 R3	male	Baños Chimú, Cajamarca	-	-	10 December 1978	R. Samame V. & I. Arevalo Benites
CTG-002 R4	female	Baños Chimú, Cajamarca	-	-	10 December 1978	R. Samame V. & I. Arevalo Benites

continues...

Muséum d´Histoire Naturelle (Paris) (MNHN).						
2000-2448	female	San Pedro de Lloc	-	-	-	James Orton
1954-230	male	Trujillo	-	-	8 March 1953	Francois Edmond-Blanc
1954-231	female	Trujillo	-	-	8 March 1953	Francois Edmond-Blanc
Museum of Vertebrate Zoology (MVZ) University of California.						
157866	female	Pariñas, 7 km N and 15 km E Talara		-	1 August 1967	Raymond B. Huey
157867	male	Pariñas, 7 km N and 15 km E Talara		-	1 August 1967	Raymond B. Huey
163912	male	Pariñas, 7 km N and 15 km E Talara	100 ft	-	29 October 1974	Ned K. Johnson
Natural History Museum (London) (BMNH).						
1899.4.20.2735	male	Trujillo, Peru	1500 ft	-	17 May 1895	O. T. Baron
1899.4.20.2736	male	Trujillo, Peru	1500 ft	-	17 May 1895	O. T. Baron
1899.4.20.2737	female	Trujillo, Peru	1500 ft	-	18 May 1895	O. T. Baron
1899.4.20.2738	female	Trujillo, Peru	1500 ft	-	18 May 1895	O. T. Baron
1902.3.13.978	female?	Eten, Peru	10 m	-	8 September 1899	P. O. Simons
1902.3.13.979	female	Eten, Peru	15 m	-	13 September 1899	P. O. Simons
1902.3.13.990	male	Eten, Peru	15 m	-	15 September 1899	P. O. Simons
1902.3.13.991	male	Eten, Peru	15 m	-	26 September 1899	P. O. Simons
1902.3.13.992	female	Eten, Peru	15 m	-	28 September 1899	P. O. Simons
1902.3.13.993	male	Eten, Peru	15 m	-	4 October 1899	P. O. Simons
1914.12.2.180	female	Trujillo, Peru	-	-	13 October 1912	Anon.
E/2001.13.5	5 eggs	Lobitos	-	-	-	Fergus Milligan
1934.7.7.2	male	Quebrada Salada, Talara, Peru	300 ft	4°33S 81°08W	23 September 1933	O. D. Boggs
1934.7.7.1	male	Quebrada Ancha, near Talara, Peru	550 ft	4°36S 81°08W	15 October 1933	O. D. Boggs
Natural History Museum Basel (NHMB) (Switzerland).						
13079	male	La Noria, Malleres (Sullana)	-	-	16 December 1956	Walter Markl
13394	female	La Noria, Malleres (Sullana)	-	-	24 September 1958	Walter Markl
13395	male	Perro Muerto, Malleres (Sullana)	-	-	8 February 1959	Walter Markl
13396	female	Perro Muerto, Malleres (Sullana)	-	-	8 February 1959	Walter Markl
13397	male	Perro Muerto, Malleres (Sullana)	-	-	8 February 1959	Walter Markl
13398	female	Perro Muerto, Malleres (Sullana)	-	-	8 February 1959	Walter Markl
13399	female	Perro Muerto, Malleres (Sullana)	-	-	8 February 1959	Walter Markl
Royal Ontario Museum (ROM).						
36.7.20.13	female	Quebrada Ancha, near Talara	550 ft	-	15 October 1933	O. D. Boggs
36.7.20.12	female	near Talara	275 ft	-	27 March 1934	O. D. Boggs
505820	eggs	near Talara	275 ft	4°33S 81°13W	27 March 1934	O. D. Boggs
505821	eggs	near Talara	275 ft	4°33S 81°13W	4 April 1934	O. D. Boggs
28635	male	Quebrada Ancha, near Talara	500 ft	-	25 October 1936	O. D. Boggs
28634	female	Quebrada Ancha, near Talara	500 ft	-	5 March 1937	O. D. Boggs