CHECKLIST OF THE CENTIPEDES (CHILOPODA) OF HISPANIOLA

Lista anotada de los ciempiés (Chilopoda) de la Hispaniola

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ABSTRACT

Ten years have passed since the last checklist of Hispaniolan Chilopoda was done and the last bibliographic compendium was published. In this work we expand the former list of species and bibliography, update the taxonomic classification and provide an assessment on Chilobase records. A new intensive literature review was performed and both recent and formerly overlooked myriapodological works were included. The treatment of supraspecific taxonomic ranks was updated and follows Chilobase 2.0. This catalogue lists 4 fossil taxa as well as 24 extant species of centipedes from Hispaniola, 9 of which are endemic. For each extant species considered, there is information on Hispaniolan synonymies and geographic distribution. Included are some clarifications on synonymies and locality problems, and species with uncertain taxonomic status are indicated. Chilobase 2.0 was tested for completeness and accuracy. We propose several updates, grouped by incorrect species records, records not backed by known literature and species not under their currently accepted synonym. We also recommend chilopodologists to maintain active collaboration and send their updates to this useful database.

Keywords: centipedes, Chilopoda, fauna, Hispaniola, Dominican Republic, Haiti, Chilobase, MyriaLit, EoL, MCZbase, ITIS.

RESUMEN

Han pasado 10 años desde que se publicara la última lista y compendio bibliográfico de Chilopoda de La Española. En este trabajo expandimos la lista anterior de especies y bibliografía, actualizamos la clasificación taxonómica y proveemos una evaluación de los registros en Chilobase. Se hizo una nueva revisión intensiva de la literatura y se incluyeron trabajos miriapodológicos, tanto recientes como antes obviados. El tratamiento de rangos taxonómicos supraespecíficos fue actualizado y sigue a Chilobase 2.0. Este catálogo lista cuatro táxones fósiles, así como 24 especies vivientes de ciempiés para la Hispaniola, nueve de las cuales son endémicas. Para cada especie viviente considerada hay información sobre sinonimias de la isla y distribución geográfica. Se incluyen algunas aclaraciones sobre sinonimias y problemas de localidad, y se indican las especies con estatus taxonómico incierto. Chilobase 2.0 fue evaluada en cuanto a compleción y precisión. Proponemos varias actualizaciones, agrupadas por registros de especies incorrectos, registros no respaldados por literatura y especies que no están bajo su sinónimo actual. También recomendamos a los quilopodólogos el mantener una colaboración activa y enviar sus nuevos registros a esta útil base de datos.

Palabras clave: ciempiés, Chilopoda, fauna, Hispaniola, República Dominicana, Haití, Chilobase, MyriaLit, EoL, MCZbase, ITIS.

INTRODUCTION

The history of Hispaniolan Myriapodology started very early. The first contribution known to us is in the "Historia General de las Indias", published in 1535 by Gonzalo Fernández de Oviedo Valdés, one of the famous chroniclers of the Indies and at the time warden of the fortress of Santo Domingo city. In his narration he writes about "scolopenders or centipedes", and also about "worms", a category in which millipedes and lepidopteran larvae seem to have been mixed. Concerning the centipedes, it is evident from his story that Oviedo saw or was informed about bioluminiscent geophilomorphs and big *Scolopendra* specimens of about 20 centimeters or more.

More than 250 years later came the description of the "bète à mille pieds de St. Domingue" by the resident royal physician Charles Arthaud (1787). His description is detailed enough to identify the species as *Scolopendra alternans* Leach, 1816.

Other 50 years passed without new records, until Johann Friedrich Brandt (1840), director of the Zoological Museum of the Saint Petersburg Academy of Sciences, described *Scolopendra platypus* from Havana and Hispaniola. Brandt (1840) also reported *Scolopendra sagraea* Guérin in Gervais, 1837 from Hispaniola. The Hispaniolan specimens were collected by Benedict Jaeger, who was collector for the botanical garden in St. Petersburg and worked in the island from 1827 to 1828.

The second half of the 19th Century was a flourishing time for Myriapodology in Europe. Scientists working on European collections started to identify, describe and name many new species, including some from the New World. One example is the species *Cormocephalus impresus*, described by Carl Oscar von Porat (1876) while working with material from the Natural History Museum of Gothenburg, with provenance stated as "S:t Domingo" (= Hispaniola).

The first author giving a more complete account of the Hispaniolan centipede fauna was the Danish entomologist Frederik Vilhelm August Meinert. Alexander Agassiz, the director of the Museum of Comparative Zoology (MCZ), Harvard University, sent the Chilopoda collection to Meinert, who was based at the Zoological Museum, Copenhagen. Meinert (1886) then described *Cupipes ungulatus* from two localities in Haiti and one in Brazil, and *Otostigmus occidentalis* from Haiti. He reported *Scolopendra crudelis* Koch, 1847 from Haiti, treated *S. sagraea* as its synonym and reported *Scoloperyptops miersii* from Haiti. In a subsequent work based on the collection at the museum in Copenhagen, Meinert (1887) published one more locality of *Cupipes ungulatus* and added *Scolopendra alternans* to the Hispaniolan fauna.

Reginald Innes Pocock was the first important reviewer of the Caribbean myriapods. Pocock (1893) listed from Hispaniola *S. alternans* (including *S. sagraea* and *S. crudelis* as synonyms), *S. morsitans* Linnaeus, 1758 (perhaps implicitly including *S. platypus*), *Cormocephalus guildingii* (including *C. impressus*), *Cormocephalus ungulatus* (as closely related to *C. guildingii*), *Otostigmus occidentalis* and *Scolopocryptops ferrugineus* (including Meinert's concept of *S. miersii*). That way, Hispaniola officially finished the 19th century with six centipede species, all from order Scolopendromorpha. Karl Kraepelin (1904a) provided the first record of *S. melanostoma* Newport, 1845. Kraepelin (1904b) recorded *S. alternans*, and for the first time *S. subspinipes*. Karl Wilhelm Verhoeff (1904) described the first scutigeromorph, *Pselliophora pulchritarsis*.

Ralph Vary Chamberlin (1915) worked with material deposited at the MCZ and described several Haitian species, including the first and only representative from the genus *Cryptops* Leach, 1814 and five species of Geophilomorpha.

Chamberlin (1918) continued working with the MCZ collection and produced a monograph on West Indian Chilopoda and Diplopoda, in which a second scutigeromorph species and two additional geophilomorphs were described. He gave the first records of *Rhysida nuda* (Newport, 1845), *Newportia longitarsis* (Newport, 1845), *N. ernsti* Pocock, 1891 and *Mecistocephalus guildingii* Newport, 1843. Additionally, he reexamined Meinert's specimens of *Scolopocryptops miersii* confirming them as *S. ferrugineus*, and the Haitian syntypes of *C. ungulatus* as *C. guildingii*. One hundred years have passed since Chamberlin's last work, but notably no new geophilomorph species or localities have been published.

Wolcott (1927) mentioned another name for Haiti, *Scutigera forceps* (Rafinesque, 1820). Chamberlin (1944) gave new localities for *S. alternans*, *C. guildingii* and *Scolopocryptops melanostoma*. The rest of the 20th century passed without new scolopendromorph species from Hispaniola being described or reported. The only exceptions are two obscure records in Schileyko & Minelli (1999) from Dominican Republic, one of *Newportia cubana* Chamberlin, 1915, masked as Dominica, and one of *N. ernsti* from St. Domingo (= Dominican Republic).

In the 21st century, research on local Scolopendromorpha and Geophilomorpha revived. Shelley (2002) was the first to publish new locality records for some Hispaniolan scolopendromorphs, namely *S. alternans* and *S. morsitans*. Chao (2002) reported *R. longipes* (Newport, 1845) from Haiti. Chagas-Júnior & Shelley (2003) included Hispaniola (both Haiti and the Dominican Republic) in the Caribbean distribution of the genus *Newportia* Gervais, 1847 but they did not cite species or localities.

Within his Checklist of the Hispaniolan Arthropods, Perez-Gelabert (2008) published a synthesis of Hispaniolan Chilopoda, on which 27 species names were mentioned, including synonyms. After this compilation, Perez-Gelabert & Edgecombe (2013) updated the treatments for Scutigeromorpha and provided new records from Dominican Republic, Chagas-Júnior (2013) reported *Rhysida celeris* (Humbert & Saussure, 1870) from Dominican Republic and Haiti, and Schileyko (2014) reported *Newportia longitarsis stechowi* from Dominican Republic. Mercurio (2016) republished former records of *S. alternans* from Hispaniola and added some new.

Fossil taxa from Dominican amber have been scarcely treated. Shear (1987) reported four centipede specimens, of which two were exuvii and two were adults of a species of *Cryptops*. Poinar (1992) cited the records by Shear (1987) and showed a photograph of an amber piece from the Costa collection, Puerto Plata, Dominican Republic, containing a specimen of house centipede, order Scutigeromorpha. Wu (1996) reported a second scutigeromorph, *Scutigera coleoptrata* Linnaeus, 1758, a record later questioned by Perez-Gelabert & Edgecombe (2013). Poinar & Poinar (1999) showed an additional amber piece containing a specimen of Scolopendromorpha, later assigned to Scolopocryptopinae by Edgecombe (2011) and Edgecombe *et al.* (2012). Perez-Gelabert (2008) included the fossil *Cryptops* sp. and the *S. coleoptrata* in his Chilopoda list. Here we synthesize the new literature and take further actions.

New sources of extant species taxa comprise genetic data and stomach content. Genetic data was found for one species, *Newportia ernsti* (Edgecombe *et al.*, 2012; Vahtera *et al.*, 2013). One record of *S. alternans* from the stomach content of a lizard (Inchaústegui *et al.*, 1985) has been integrated.

In the current catalog we capture pre-2008 names and publications additional to Perez-Gelabert (2008), as well as the records and bibliography from the last ten years, to produce this updated monograph. We cover 483 years of research on the Hispaniolan Chilopoda, from 1535 to the present.

MATERIALS AND METHODS

Classification from class to family ranks follows Minelli (2011), except for the date of order Geophilomorpha Pocock, which is corrected to 1896 and the date of family Geophilidae Leach, which is corrected to 1816. Presentation of families within each order starts with the "typical" family, even if the International Code of Zoological Nomenclature (ICZN, 1999) rules no rank above family level and therefore defines no term such as "type family". The rest of the families follow in alphabetical order.

Classification of genera, species and subspecies follows Chilobase 2.0 (Bonato *et al.*, 2016), except for the correction of the publication data of two genera, one subgenus and two species, for the addition of three undetected species synonyms and for the reversal of one synonymy. Presentation of genera within families and subfamilies starts with the type genus (if recorded from Hispaniola) and continues in alphabetical order. Presentation of species within genera starts with the type species (if recorded from Hispaniola) and continues in alphabetical order. The species synonyms reported from the island are given under the valid species name, in chronological order. Deleted taxa are listed at the end of the account of their parent taxon.

This list includes the names of the genera and species in italics, authors, years of publication and one or more of the reference sources with page number in which the species is recorded from Hispaniola. Citation of dates in the text follows the ICZN (ICZN, 1999), article 22, recommendation 22A.2.2. Dates in bibliographic references follow recommendation 22A.2.3. For every species the type locality and known distribution in Hispaniola is provided. The localities given summarize all known Hispaniolan localities for the species and its synonyms. The species are classified as introduced, native or endemic.

We chose to include three theses in this compendium (Chao, 2002; Chagas-Júnior, 2003a, 2008). The theses are not publications in the sense of the Articles 8 and 9 of the Code (ICZN, 1999), so they cannot be used as a source of nomenclatural acts. However, the theses are still a valid source for descriptions, illustrations and locality records. Here we use the mentioned thesis mainly as a source of species records (Chao, 2002), localities (Chagas-Júnior, 2003a, 2008) and also because of their (Chagas-Júnior, 2003a) explanatory power on published literature (Chagas-Júnior, 2003b). We also included the reference Chao (2008), an edited version of Chao (2002). It was commercialized by VDM Verlag, which prints "books on demand", a procedure that does not comply with article 8.1.3 of the Code (ICZN, 1999) because there is no first edition containing simultaneously obtainable copies. On the other hand, the procedure matches article 9.7 of the Code regarding that copies obtained on demand of an unpublished work (like theses) do not constitute published work. Therefore, Chao (2008) is not considered a published work in the sense of the Code.

Fossil species in Dominican amber, specimens retrieved from stomach content and records coming from molecular works are indicated in brackets. Fossils are listed separately at the beginning of the account of their parent taxon. Regarding extant genera and species, all taxonomic and geographic updates were submitted to Chilobase 2.0. Efforts were also made to correct or complete references, which were submitted to the MyriaLit Database. Comments were also sent to the Encyclopedia of Life (EoL), Integrated Taxonomic Information System (ITIS) and the Database of the Zoological Collections of the MCZ (MCZbase).

RESULTS

This catalogue lists 4 fossil taxa as well as 24 extant species of centipedes from Hispaniola, of which 11 species occur in Dominican Republic and 21 species in Haiti. About the partition of the species, we record 8 from both Haiti and Dominican Republic, 13 only from Haiti and 3 only from Dominican Republic. There are 9 endemic species, all from Haiti. Among the remaining, 11 are native and 4 are introduced. There are no endemic chilopod genera in Hispaniola. The genera *Cormocephalus, Otostigmus* and extant *Cryptops* have not been reported from Dominican Republic and the family Scutigeridae has no records from Haiti. The order Geophilomorpha has no published occurrences from Dominican Republic and the order Lithobiomorpha is so far absent from the island. A summary of data per order is presented in Table I. The valid extant species are consolidated in Table II.

Table I. Numbers of valid extant families, genera and species, endemic species, percent of endemism and fossil species of centipedes known from Hispaniola by order.

Orders	Families	Genera	Species	Endemic species	% Endemism	Fossil species
Scolopendromorpha	3	7	14	2	14.3	3
Geophilomorpha	4	6	8	7	87.5	0
Scutigeromorpha	2	2	2	0	0	1
TOTAL	9	15	24	9	37.5	4

SYSTEMATIC ACCOUNT

Class CHILOPODA Latreille, 1817 Subclass NOTOSTIGMOPHORA Verhoeff, 1901 Order SCUTIGEROMORPHA Pocock, 1895

Family SCUTIGERIDAE Leach, 1814

Dendrothereua Verhoeff, 1944

Dendrothereua linceci (Wood, 1867: 42). Perez-Gelabert & Edgecombe, 2013: 39. Type locality: USA, Texas. Regarded as native to Hispaniola.

HISPANIOLAN LOCALITIES

DOMINICAN REPUBLIC: Nizaito, Valle Nuevo, La Vega Prov., 2,205 m; Way down from Cuevita, Valle Nuevo, La Vega Prov., 2,096 m; Hilltop on way to Palos Grandes, NE of San José de Ocoa, 1,437 m, Ocoa Prov.; Way down from Palos Grandes, NE of S. J. de Ocoa, Ocoa Prov., 1,440 m; Down from Cuevita, Valle Nuevo, La Vega Prov., 2 280 m; La Jarda (monte arriba), Padre Las Casas, Azua Prov.; Caseta no. 3, Parque Nacional Sierra de Bahoruco, Independencia Prov., 1,941 m; Loma Quita Espuela, halfway to peak, 616 m, [Duarte Prov.]; Trail to peak and Centro SOECI, Pico Diego de Ocampo, Santiago Prov., 918 m; Bejucalito García, 19 km W of Higuey, [La Altagracia Prov.]; Palo de Agua, P. N. Sierra de Bahoruco, 1806 msnm; M. A. Pinar Parejo [Valle Nuevo, Prov. La Vega].

DELETED GENUS

Scutigera Lamarck, 1801

Scutigera coleoptrata Linnaeus, 1758: 638 [Fossil in Dominican amber]. – Wu, 1997: 129. Perez-Gelabert, 2008: 71. Perez-Gelabert & Edgecombe, 2013: 42.

Scutigera coleoptrata Linnaeus, 1758: 638 [By synonymy of species below]. Perez-Gelabert, 2008: 71. Perez-Gelabert & Edgecombe, 2013: 42. Type locality: "Hispania" (=Spain).

=Scutigera forceps (Rafinesque, 1820: 7). Muralewicz, 1910: 78. Wolcott, 1927: 12. Perez-Gelabert, 2008: 71. Type locality: "near Baltimore" (U.S.A.).

REMARKS. According to Perez-Gelabert & Edgecombe (2013), *S. coleoptrata* originates in the Mediterranean region and has spread to many parts of the world by anthropogenic introduction in rather recent times. It is very unlikely that it is the species fossilized in Miocene Dominican amber. So far, extant specimens of *S. coleoptrata* have never been found in Hispaniola. The genus *Scutigera* and its species records are therefore deleted, the only name applicable to the records being Scutigeromorpha.

Family PSELLIODIDAE Chamberlin, 1955

Sphendononema Verhoeff, 1904

=Pselliophora Verhoeff, 1904: 259 non Pselliophora Osten-Sacken, 1886 (Diptera).

= *Pselliodes* Chamberlin, 1921: 25.

Sphendononema guildingii (Newport, 1845: 356). Würmli, 1978: 137. Perez-Gelabert, 2008: 71. Perez-Gelabert & Edgecombe, 2013: 39. Type locality: Saint Vincent island. Regarded as native to Hispaniola.

SYNONYMS WITH HISPANIOLAN RECORDS

=Pselliophora pulchritarsis Verhoeff, 1904: 279. Chamberlin, 1918: 167. Würmli, 1978: 138. Perez-Gelabert, 2008: 71. Perez-Gelabert & Edgecombe, 2013: 37. Type locality: Haiti.

=Pselliophora haitiensis Chamberlin, 1918: 170. Würmli, 1978: 138. Perez-Gelabert, 2008: 71. Perez-Gelabert & Edgecombe, 2013: 37. Type locality: Grand Rivière.

HISPANIOLAN LOCALITIES

HAITI: Grand Rivière. DOMINICAN REPUBLIC: km 8 Cabo Rojo-Aceitillar Rd., Pedernales Prov.; Las Yayitas, Azua Prov., by river, 104 m; Las Yayitas, Azua Prov., under forest cover; El Callejón de la Loma, Parque Nacional El Choco, Puerto Plata prov., 110 m; Cerro San Francisco, Bánica, Elías Piña prov., 366 m; San Cristóbal Prov., ~3 km N La Colonia, Mano Matuey, Loma Guaconejo, Prov. María Trinidad Sánchez; Loma Isabel de Torres, Puerto Plata; Prov. Independencia, La Descubierta, Isla Cabritos, 9 m.

Subclass PLEUROSTIGMOPHORA Verhoeff, 1901 Order LITHOBIOMORPHA Pocock, 1895

We have found no taxonomic papers recording lithobiomorph centipedes from Hispaniola. No Lithobiomorpha from the West Indies were listed by Pocock (1893) or Chamberlin (1918), and no current review is available. The only works on Caribbean Lithobiomorpha that we are aware of are those by Chamberlin (1952), Negrea *et al.* (1973) and Matic *et al.* (1977). Chamberlin (1952) described *Lamyctes nesiotes* from South Bimini, Bahamas. Negrea *et al.* (1973) recorded *Lamyctes coeculus* (Brölemann, 1889) from Cuba. Matic *et al.* (1977) added new Cuban localities to the distribution of *L. coeculus* and the first records of *Lamyctes fulvicornis* Meinert, 1868, a current synonym of *Lamyctes emarginatus* (Newport, 1844). The current knowledge of the group is therefore limited to two islands and three species.

Order SCOLOPENDROMORPHA Pocock, 1895

Family SCOLOPENDRIDAE Leach, 1814 Subfamily SCOLOPENDRINAE Leach, 1814

Scolopendra Linnaeus, 1758

Scolopendra morsitans Linnaeus, 1758: 638. Pocock, 1893: 459. Chamberlin, 1918: 158. Shelley, 2002: 39. Shelley *et al.*, 2005: 45. Shelley, 2006: 5. Perez-Gelabert, 2008: 70, & Edgecombe, 2013: 193. Type locality: Not designated. Regarded as introduced to Hispaniola.

SYNONYMS WITH HISPANIOLAN RECORDS

=Scolopendra platypus Brandt, 1840: 153. Gervais, 1847: 280. Shelley, 2006: 8. Perez-Gelabert, 2008: 70. Type locality: Havana and Hispaniola.

HISPANIOLAN LOCALITIES

Pocock (1893) wrote "Recorded from (...)? St. Domingo by Gervais" referring to Gervais (1847) who listed *S. platypus* from Hispaniola. Pocock continues "The British Museum has specimens from (...) Hayti", also meaning Hispaniola. Simaiakis & Edgecombe (2013) refer it from Dominican Republic and Haiti. First and only definite localities in Haiti were given by Chamberlin (1918); those in Dominican Republic were given by Shelley (2002). HAITI: Jérémie; Port-au-Prince; Grande Anse; St.-Marc. DOMINICAN REPUBLIC: Azua; San Juan.

Scolopendra alternans Leach, 1816: 383. Arthaud, 1787: 427 [la bète à mille pieds de St. Domingue]. Brandt, 1840: 157. Meinert, 1886: 194. Meinert, 1887: 125. Underwood, 1887: 64. Pocock, 1893: 458. Kraepelin, 1903: 244. Kraepelin, 1904b: 318. Chamberlin, 1918: 157. Wolcott, 1927: 24 [la bête à mille pieds]. Attems, 1930: 37. Bücherl, 1942: 287. Chamberlin, 1944: 184. Bücherl, 1974: 104. Inchaústegui *et al.*, 1985: 200 [lizard stomach content]. Lewis, 1989: 1003. Shelley, 2002: 35. Shelley, 2006: 6. Perez-Gelabert, 2008: 70. Mercurio, 2016: 12. Type locality: Not designated. Shelley (2002) selected a neotype from British Virgin Islands, Tortola, Fat Hog's Bay. Regarded as native to Hispaniola.

REMARKS. Publication date of *S. alternans* corrected from 1815 (Chilobase) to 1816. The work by Leach (1816) appeared in the Transactions of the Linnean Society of London, volume 11, part 2, with 1815 as the printed date. However, it is recorded in the minute books of the society that the secretary presented part 2 to the council on January 16th, 1816, being authorized its publication, which took place on January 24th, 1816, as advertised that same day in the Times (Raphael, 1970). Kraepelin's (1904 a, b) catalogue of Paris Museum collection has been cited incorrectly at least two times, once by Shelley *et al.* (2005) as "Brölemann (1904)" and once by Le Bras *et al.* (2015) as "Kraepelin (1910)".

SYNONYMS WITH HISPANIOLAN RECORDS

=Scolopendra sagraea Guérin in Gervais, 1837: 50. Brandt, 1840: 157. Gervais, 1847: 281. Type locality: Cuba. Four specimens from Hispaniola at Saint Petersburg's museum, collected by Benedict Jaeger and reported by Brandt (1840).

=Scolopendra crudelis Koch, 1847: 170. Meinert, 1886: 194. Underwood, 1887: 64. Lewis, 2016: 24. Type locality: Saint Barthélemy island. Restored synonymy.

REMARKS. Meinert (1886) used the name *S. crudelis* for Hispaniolan samples. Meinert (1887) used the name *S. alternans* for other Hispaniolan samples, perhaps updating his species concept and valid name without explicitly saying it. For Pocock (1893), *S. crudelis* was already a synonym under *S. alternans*, synonymy of which Kraepelin (1903) and Chamberlin (1918) were aware of. Attems (1930) overlooked the synonymy by Pocock (1893), Kraepelin (1903) and Chamberlin (1918), Attems (1930) mistakenly introduced the character of "transverse sulcus present on tergite 1" in his description of *S. crudelis*. Shelley (2006) noticed the old synonymy but not the artifact by Attems (1930) and gave *S. crudelis* as a valid species. This explains why the synonymy is missing in Chilobase. Recently, Lewis (2016) reported two specimens from Hispaniola communicated by Dr. Arkady Schileyko. We confirm the synonymy, based on the original description by Koch (1847) and the re-description by Porat (1876).

HISPANIOLAN LOCALITIES

First Hispaniolan record by Brandt (1840) as *S. sagraea*. Meinert (1887) identified samples of *S. alternans* from some West Indian islands, including "St. Domingo" (= Hispaniola). Pocock (1893) wrote "Known from the following W. Indian Islands: (...) San Domingo...", therefore implying Hispaniola, but later he added "The British Museum has specimens from Hayti...", apparently also meaning Hispaniola. Attems (1930) also mentioned Haiti in the distribution, meaning Hispaniola. First Haitian definite localities were given by Meinert (1886) as *S. crudelis* and by Kraepelin (1904b) as *S. alternans*, first Dominican definite locality was given by Kraepelin (1904b) as *S. alternans*.

HAITI: Jérémie; Port-au-Prince; Diquini; Pétionville; Manneville; Grand Rivière; Momance; Cape Haitien; Christophe's Citadel; Plaisance; San Michel; Gonave I.; Lake Assuei; Etang Saumatre; Trou Caiman; Les Cayes; Borgne; Carrefour; Ennery; Pilboreau Mtn.; Thor; Vacinal Trouin. DOMINICAN REPUBLIC: Puerto Plata; Porto Cabarete; Azua; Samaná; Boca del Inferno [=Boca del Diablo], Samaná; Santo Domingo; Colegio De La Salle (Santo Domingo); East of La Romana, humid forest north of large sugar plantation. One specimen intercepted in quarantine at the District of Columbia, USA, coming from Puerto Plata. *Scolopendra subspinipes* Leach, 1816: 383. Kraepelin, 1904b: 322. Type locality: Not designated. Regarded as introduced to Hispaniola.

REMARKS. Publication date of *S. subspinipes* corrected from 1815 (Chilobase) to 1816, see Leach (1816) in references.

HISPANIOLAN LOCALITIES

DOMINICAN REPUBLIC: Saint-Domingue; Puerto Plata (misplaced by Kraepelin, 1904b in Brazil); Porto-Cabarete, dans un chargement de bois d'acajou (coll. H.-W. Brölemann, 1902).

DELETED SPECIES

Scolopendra gigantea Linnaeus, 1758: 638. Shelley & Kiser, 2000: 159. Shelley, 2006: 5. Perez-Gelabert, 2008: 70. Type locality: Jamaica. Shelley & Kiser (2000) selected a neotype from Venezuela, Carabobo, Valencia.

REMARKS. One specimen from Haiti, without further data, was found at the Zoological Museum, University of Amsterdam, The Netherlands, and assumed to represent an accidental human importation or perhaps a labeling error; the species does not appear to be established (Shelley & Kiser, 2000).

Cormocephalus Newport, 1844

=Cupipes Kohlrausch, 1878

Cormocephalus guildingii Newport, 1845: 425. Pocock, 1893: 460. Chamberlin, 1918: 156. Chamberlin, 1944: 182. Bücherl, 1974: 100. Perez-Gelabert, 2008: 70. Type locality: Saint Vincent island. Regarded as native to Hispaniola.

REMARKS. In the species page in Chilobase it was stated "Notes: Possibly a synonym of *Cormocephalus impressus* Porat, 1876 according to Kraepelin (1903 - Mitt. Nat. Mus. Hamburg, 20: 181)". However, that synonymy is not to be treated as a possibility but as a certainty, and not by Kraepelin (1903) but by Pocock (1893). The opinion of Pocock is to be trusted, as he (Pocock, 1891) was the last person known to have examined the type of *Cormocephalus guildingii*, back in May, 1889, through the kindness of Prof. Westwood. Chamberlin (1918) followed Pocock (1893). Attems (1930) and Bücherl (1974) overlooked the records by Chamberlin (1918) but Bücherl (1974) accounted the record by Chamberlin (1944).

SYNONYMS WITH HISPANIOLAN RECORDS

=Cormocephalus impressus Porat, 1876: 15. Pocock, 1893: 460. Kraepelin, 1903: 181. Chamberlin, 1918: 156. Attems, 1930: 104. Bücherl, 1942: 298. Bücherl, 1974: 100. Schileyko, 2002: 497. Cupul-Magaña, 2009: 90. Cupul-Magaña, 2010: 4. Cruz-Trujillo *et al.*, 2015: 308. Type locality: S:t Domingo (=Hispaniola). Restored synonymy.

REMARKS. Type locality given as "S. Domingo" (=Hispaniola) by Pocock (1893) and as Haiti (=Hispaniola) by Kraepelin (1903), Attems (1930) and Bücherl (1974). Cupul-Magaña (2009) wrongly mentions a record from "San Bartolomé (Saint Berthelemy, Haiti)" which he attributes to Porat (1876). However, Porat's record is not related to Hispaniola but refers to the island of Saint Barthelemy, a Swedish possession at the time. This mistake was not fixed by Cruz-Trujillo *et al.* (2015), whom again left Saint Barthelemy out of the distribution of *C. impressus*. Cupul-Magaña (2010) made a second mistake citing the type locality as "Dominican Republic (La Hispaniola)", instead of as "island Saint Domingo (=Hispaniola)".

Schileyko (2002) mentioned Haiti in the distribution, without specifying that it is "island Haiti (=Hispaniola)". Kraepelin (1903) missed the synonymy by Pocock (1893). All later authors (Attems, 1930; Bücherl, 1974; Schileyko, 2002; Shelley, 2006; Cupul-Magaña, 2009, 2010; Cruz-Trujillo *et al.*, 2015) missed the treatment by both Pocock (1893) and Chamberlin (1918). The work by Kraepelin (1903) is included in this account for the sake of completeness, but this author mistakenly introduced the character of "tooth-plates usually with three teeth" in his re-description of *C. impressus*. Number of teeth bears importance on species discrimination. Here we follow Porat's original description (8-10 teeth) and reaffirm the synonymy of *C. impressus* under *C. guildingii* (4+4 teeth). Synonymy is_missing in Chilobase.

=Cormocephalus ungulatus (Meinert, 1886: 187): partim major. Meinert, 1887: 123. Pocock, 1893: 460. Kraepelin, 1903: 177. Chamberlin, 1918: 156. Attems, 1930: 101. Bücherl, 1942: 300. Bücherl, 1974: 103. Perez-Gelabert, 2008: 70. Type locality: Haiti, Grande Anse, Port-au-Prince; Brazil, Pernambuco.

REMARKS. Meinert (1887) reported the third locality from Hispaniola, Haiti, Asquin (=Aquin, sic!). Pocock (1893) regarded *C. ungulatus* as "Related to *C. guildingii*". Kraepelin cited the type locality as Pernambuco [Brazil] and Haiti (=Haiti in this specific case). Chamberlin (1918) reexamined the type series and reidentified the syntypes from Grande Anse and Port-au-Prince as *C. guildingii*, leaving the syntype from Pernambuco as the only name bearer for *C. ungulatus*. Attems (1930) and Bücherl (1974) missed the partial synonymy of *C. ungulatus* to *C. guildingii* by Chamberlin (1918). Partial synonymy is missing in Chilobase.

HISPANIOLAN LOCALITIES

First record from Hispaniola by Porat (1876) as *C. impressus*, from Haiti by Meinert (1886) as *C. ungulatus*. HAITI: Grande Anse; Port-au-Prince; Aquin; Manneville; Pétionville; Momance; Kenscoff; Diquini; Diquini Cave.

Subfamily OTOSTIGMINAE Kraepelin, 1903

Otostigmus Porat, 1876

Otostigmus (Parotostigmus) Pocock, 1896: 25.

REMARK. Publication date of *Otostigmus (Parotostigmus)* corrected from 1895 (Chilobase) to 1896. The work by Pocock (1895-1896) was printed in five 8-page bundles (A. Minelli, pers. com.). The first three bundles, pages 1 to 24, were printed in December 1895, the last two bundles, pages 25 to 40, were printed in January 1896. *Parotostigmus* appeared in page 25, which is the first page of the fourth bundle, the first printed in 1896. A footnote dates the page as printed in January 1896.

Otostigmus (Parotostigmus) occidentalis Meinert, 1886: 185. Pocock, 1893: 461. Pocock, 1896: 25. Kraepelin, 1903: 130. Chamberlin, 1918: 155. Attems, 1930: 166. Bücherl, 1974: 115. Lewis, 1989: 1007. Shelley & Edwards, 2004: 116. Perez-Gelabert, 2008: 70. Chagas-Júnior, 2016: 45. Type locality: Grande Anse. Regarded as endemic to Hispaniola.

REMARKS. Attems (1930) stated that he was not able to accommodate this species in his *Otostigmus* key due to the incompleteness of the original description. Attems (1930) cited the species but forgot to write the distribution, as he was doing for every other taxon. This explains why Bücherl (1974) listed the species with locality as "patria?".

HISPANIOLAN LOCALITIES

HAITI: Grande Anse.

Rhysida Wood, 1862

Rhysida celeris (Humbert & Saussure, 1870: 202) Chagas-Júnior, 2013: 19. Schileyko 2014: 183. Type locality: Carolina (U.S.A.). The type locality is clearly misassigned. Records from North America have been questioned (Shelley, 2002). Regarded as native to Hispaniola.

HISPANIOLAN LOCALITIES

HAITI: Port-au-Prince. DOMINICAN REPUBLIC: Sánchez, Bay V. Samaná.

Rhysida longipes longipes (Newport, 1845: 411). Chao, 2002: 28. Chao, 2008: 62. Waldock & Lewis, 2014: 77. Schileyko & Stoev, 2016: 257. Type locality: Not stated in the original publication. Regarded as introduced to Hispaniola.

REMARKS. Chao (2002) examined one specimen from "HAITI, Cape Haiti[an], March 30, 1989" from the Natural History Museum, London, UK, referring to it in his master thesis on Scolopendromorpha from Taiwan. A picture of the specimen has the identification label *"Rhysida longipes* Newport" and the characteristic handwriting reveals John Lewis as the author of the identification. This primary (Chao, 2002) Haitian record has not being cited in other literature known to us. Waldock & Lewis (2014) and subsequently Schileyko & Stoev (2016) listed the Haitian record as coming from Chao (2008), the later version of the original master thesis.

HISPANIOLAN LOCALITIES

HAITI: Cap-Haïtien.

Rhysida nuda (Newport, 1845: 412). Chamberlin, 1918: 156. Shelley & Edwards, 2004: 116. Perez-Gelabert, 2008: 70. Type locality: Australia: New South Wales: Paramatta. Regarded as introduced to Hispaniola if truly present, but probably to be deleted.

REMARKS. Koch (1985) reviewed the taxonomy of Australian *Rhysida* species and determined that *R. nuda* is an endemic species of Australia; therefore all forms of *Rhysida* outside Australia to which the specific epithet *nuda* was applied belong to other species. This left in doubt the true identity of the species recorded from Haiti by Chamberlin (1918). Shelley & Edwards (2004) also mentioned *R. nuda* from Haiti and expressed that literature records were confusing and probably unreliable. Martínez-Muñoz (2014) addressed the need to reexamine *R. nuda* specimens seen by Chamberlin (1918) before assigning them to other species. We consider that many published New World records of *R. nuda* are probably referable to either *R. longipes* or *R. celeris*.

HISPANIOLAN LOCALITIES

HAITI: Milot, Diquini.

Family CRYPTOPIDAE Kohlrausch, 1881

Cryptops Leach, 1814

REMARKS. Publication date corrected from 1815 (Chilobase) to 1814, source of name also corrected, see Leach (1814) in references.

Cryptops sp. [Fossil in Dominican amber] – Shear, 1987: 43. Poinar, 1992: 92. Perez-Gelabert, 2008: 70.

Cryptops (Trigonocryptops) Verhoeff, 1906.

Cryptops (*Trigonocryptops*) *manni* Chamberlin, 1915: 501. Chamberlin, 1918: 151. Attems, 1930: 230. Bücherl, 1974: 122. Perez-Gelabert, 2008: 69. Type locality: Milot. Regarded as endemic to Hispaniola.

REMARKS. Attems (1930) subjectively assigned *C. manni* to subgenus *Cryptops* (*Cryptops*) Leach, 1814. However, the presence and arrangement of distal spinose processes of the ultimate pair of legs closely relate *C. manni* to the Cuban representatives of *Cryptops* (*Trigonocryptops*). Therefore, we transfer this species from subgenus *Cryptops* to subgenus *Trigonocryptops*.

HISPANIOLAN LOCALITIES

HAITI: Milot.

Family SCOLOPOCRYPTOPIDAE Pocock, 1896 Subfamily SCOLOPOCRYPTOPINAE Pocock, 1896

Scolopocryptops Newport, 1844

=Otocryptops Haase, 1887

=Dinocryptops Crabill, 1953

REMARKS. *Scolopocryptops* Newport, 1844 had the right author and date in Chilobase but incorrect source. It is here corrected; see Newport (1844) in references. *Dinocryptops* Crabill, 1953 was synonymized to *Scolopocryptops* by Edgecombe *et al.* (2012) but this synonymy is missing in Chilobase.

Scolopocryptops sp. [Fossil in Dominican amber] – Poinar & Poinar, 1999: 82, fig. 87. Edgecombe, 2011: 359. Edgecombe *et al.*, 2012: 769.

REMARKS. Poinar & Poinar (1999) reconstructed the ecosystem that existed on the island of Hispaniola between fifteen and forty-five million years ago. In their work, they showed an additional amber piece containing a specimen of Scolopendromorpha. Edgecombe (2011) referred to this specimen as "a member of Scolopocryptopinae, with a single large ventral spinous process on the ultimate leg prefemur that is consistent with a more precise identity as one of the two extant genera in the Neotropics, *Scolopocryptops* and *Dinocryptops*".

Edgecombe *et al.* (2012: 769) mentioned the specimen again as belonging to Scolopocryptopinae (23 leg-bearing segments and a single strong ventral spinose process on the prefemur of the last leg pair). In the same work, Edgecombe *et al.* (2012) synonymized *Dinocryptops* to *Scolopocryptops*, leaving the latter as the only genus within *Scolopocryptopinae*. Therefore, we formally assign the Dominican amber specimen to the genus *Scolopocryptops*.

Scolopocryptops melanostoma Newport, 1845: 406. Kraepelin, 1904a: 245. Chamberlin, 1918: 152. Chamberlin, 1944: 177. Bücherl, 1974: 129. Chagas-Júnior, 2003a: 44. Perez-Gelabert, 2008: 70 [by mistake, see remarks]. Schileyko, 2014: 154. Schileyko & Stoev (2016): 250. Type locality: Saint Vincent island. Regarded as native to Hispaniola.

REMARKS. Hispaniolan records by Kraepelin (1904a) and Chamberlin (1918, 1944) have been forgotten and are absent from classic monographs (Attems, 1930; Bücherl, 1942) and from recent literature (Chagas-Júnior, 2008; Chagas-Júnior, 2010; Schileyko, 2014, Schileyko & Stoev, 2016). A "Haiti" literature record in Chagas-Júnior (2003a), evidently coming from Bücherl (1974), was not listed in Chagas-Júnior (2008). The other recent record is found in Perez-Gelabert (2008) by reference to the work by Pocock (1893), where the species is not mentioned from Hispaniola. Bücherl (1974) was the only author noticing at least one of the historical records, specifically the record by Chamberlin (1944). Schileyko (2014) followed Chagas-Júnior (2010) and believed to be publishing the first island record: "I add to this list Dominican Republic (Island Haiti in Greater Antilles)", where Haiti means Hispaniola. Schileyko & Stoev (2016) continued using Haiti with the same meaning of Hispaniola. Because of its importance, all localities are listed in full below.

HISPANIOLAN LOCALITIES

Kraepelin (1904a): Saint-Domingue (Sallé [leg.], 1861), meaning Hispaniola. HAITI: Chamberlin, 1918: Furcy (W. M. Mann [leg.]). Chamberlin (1944): Kenscoff, 4,500 feet, 5 [specimens], under stones, December 2, 1928 (K. P. Schmidt [leg.]). DOMINICAN REPUBLIC: Schileyko (2014): St. Cristobal, 1 spec, N 7075.

Scolopocryptops ferrugineus ferrugineus (Linnaeus, 1767: 1063). Pocock, 1893: 463. Chamberlin, 1918: 152. Bücherl, 1942: 329. Chagas-Júnior, 2003a: 26, 28. Chagas-Júnior, 2003b: 2. Chagas-Júnior, 2008: 77, 79 [as *Scolopocryptops mexicana* Humbert & Saussure, 1869, but see remarks]. Perez-Gelabert, 2008: 70. Schileyko, 2014: 156. Type locality: West Africa. Regarded as native to Hispaniola.

SYNONYM WITH HISPANIOLAN RECORDS

=Scolopocryptops miersii Meinert, 1886: 181 non Newport, 1845 partim major [Haiti, Jamaica]. Kraepelin, 1903: 72. Chamberlin, 1918: 152. Attems, 1930: 261. Bücherl, 1942: 329. Chagas-Júnior, 2003a: 25; 2003b: 2; 2008: 77.

REMARKS. Proper identity of Meinert's records was subjectively established by Kraepelin (1903) and followed by Attems (1930) and Bücherl (1942). Sadly, Bücherl (1974) did not mention the issue again. The identity of Meinert's specimens was objectively established by Chamberlin (1918) who reexamined the whole series from Haiti, Jamaica and Martinique, establishing that the Haitian and Jamaican specimens were *S. ferrugineus* and that the specimens from Martinique were true *S. miersii*. At one hundred years from that time, Chamberlin's clarifications have been forgotten and it is necessary to explain the further development of this issue in the pertinent literature.

Shelley (2000) wrote "Meinert (1886) reported it [S. miersii] from Haiti, Jamaica, and Martinique, records that surely refer to Scolopocryptops melanostomus Newport, which he considered to be a synonym". However, Shelley (2000) missed the statements by Kraepelin (1903), Attems (1930) and Bücherl (1942) regarding Meinert's records being S. ferrugineus, and overlooked the work by Chamberlin (1918), in which he reidentified Haitian and Jamaican records as S. ferrugineus and the Martinican record as true S. miersii. Overall, Shelley's (2000) assumption doesn't hold, as no record by Meinert (1886) is S. melanostoma. Chagas-Júnior (2003a, b, 2008) overlooked Chamberlin (1918) in his accounts of S. miersii and S. ferrugineus. Without knowing, he (2003 a, b) examined Meinert's MCZ specimens and independently arrived to the same conclusions than Chamberlin (1918). As Chagas-Júnior (2003a) was not able to match Meinert's specimens to his, he kept (Chagas-Júnior, 2003b) the erroneous opinion from Shelley (2000) of Meinert's records belonging to S. melanostoma. By 2005, Chagas-Júnior was certainly aware that the lot from Martinique was S. miersii and he was probably sure that he had seen Meinert's specimens from Haiti and Jamaica, they truly being S. ferrugineus. This explains why the "S. melanostoma hypothesis" and "Haiti" are not in the distribution of S. melanostoma in Chagas-Júnior (2008).

Chagas-Júnior (2008), in his doctoral thesis on Scolopocryptopinae, "revalidated" the name *S. mexicana* Humbert & Saussure, 1869 for the New World species *S. ferrugineus*. The author correctly states that his thesis is not a publication in the sense of the Article 9 of the Code (ICZN, 1999), so it cannot be used as a source of nomenclatural acts. Martínez-Muñoz (2014) highlighted the issue and how later authors have overlooked the Code and applied the non-revalidated name *S. mexicana* to the New World forms of *S. ferrugineus*. Here we follow Martínez-Muñoz (2014) and keep *S. ferrugineus*.

HISPANIOLAN LOCALITIES

HAITI: Grande Anse; Jérémie; Diquini; Port-au-Prince; Pétionville; Kenscoff; Roche Plate; Formont; Macaya; La Visite. DOMINICAN REPUBLIC: La Sigua, La Vega Province; Barahona Province.

DELETED SPECIES

Scolopocryptops miersii Newport, 1845: 405. Chamberlin, 1918: 153. Perez-Gelabert, 2008: 70. Type locality: Brasilia (=Brazil). Chagas-Júnior (2003b) selected a neotype from Brazil, São Paulo, Paranapiacaba, but Chagas-Júnior (2008) claimed to have found the holotype, adding that the label reads "Paraná".

REMARKS. Chamberlin (1918) refers the species from "Haiti: Furcy (W. M. Mann)". However, this seems to be a lapsus calami, because Chamberlin also cites the same locality and collector for *S. melanostoma* immediately above of the account of *S. miersii*. There is no specimen of *S. miersii* from Furcy at the MCZ but there is a card for *S. melanostoma* and a database entry for a lost lot of the same. Therefore, the "record" of *S. miersii* from Haiti by Chamberlin (1918) is here formally deleted. Chagas-Júnior (2003a, b, 2008) overlooked Chamberlin (1918) in his account of *S. miersii*, which explains why the Haitian "record" was not mentioned by him in its distribution.

Subfamily NEWPORTIINAE Pocock, 1896

Newportia Gervais, 1847: 298

REMARKS. Genus mentioned in Chilobase as from Gervais (1847: 243). That page does show the first mention of *Newportia* but it does not contain a diagnosis. The diagnosis appears on page 298, which is here used as the valid citation for the genus. The revision of *Newportia* by Schileyko & Minelli appeared in volume 7, number 4 of Arthropoda Selecta. Printed date is 1998, but publication was delayed until 2.vii.1999 (A. Minelli, pers. com.).

Newportia sp. [Fossil in Dominican amber] – Wu, 1996: 126, fig. 178.

REMARKS. This record is based in a picture by Wu (1996), who regarded the specimen as a representative of Geophilomorpha. However, the picture shows a scolopendromorph with 17 antennal articles and body shape, forcipular apparatus and sternites typical of *Newportia*. To the best of our knowledge, this is the first literature record of fossil *Newportia*.

Newportia longitarsis (Newport, 1845: 407). Chamberlin, 1918: 153. Schileyko & Minelli, 1999: 277. Perez-Gelabert, 2008: 70. Type locality: Saint Vincent island. Regarded as native to Hispaniola.

HISPANIOLAN LOCALITIES

HAITI: Pétionville, Port-au-Prince, Furcy, Manneville, Jacmel.

Newportia longitarsis stechowi Verhoeff, 1938: 123. Schileyko, 2014: 162. Type locality: Venezuela, Caracas, Maracay. Regarded as native to Hispaniola.

HISPANIOLAN LOCALITIES

DOMINICAN REPUBLIC: La Vega Province.

Newportia cubana Chamberlin, 1915: 497. Schileyko & Minelli, 1999: 273. Type locality: Cuba: Juan Guerra, Sagua de Tánamo; Guantánamo, Arroyo Hondo. Regarded as native to Hispaniola.

REMARKS. Type locality mistaken in Chilobase, as "Cuba, Oriente, Cueva Del Fustete", evidently confused with the type locality of the Cuban synonym *Newportia inexpectata* Negrea, Matic & Fundora-Martínez, 1973. The species record from Dominica by Schileyko & Minelli (1999) is a typo, the true locality of the specimen being Dominican Republic. Arkady Schileyko (pers. com.) clarified the issue: "...exemplar No 6711 of *N. cubana* was erroneously cited by Schileyko & Minelli (1999) as No 6709. According to my DB, specimen No 6711 is from Hispaniola Isl., Dominican Republic, Barahona Province, coffee plantation on the S edge of Polo, 1997."

REMARKS. *N. cubana* has a character combination rare in *Newportia*: locomotory legs with two tibial spurs and no tarsal spur. The only other Caribbean species sharing this character combination is the closely related *Newportia longitarsis virginensis* Lewis, 1989, while it is absent from other subspecies of *N. longitarsis*. With this unique exception, presence versus absence of leg spurs is currently used for species discrimination in *Newportia*. We consider these two taxa as conspecific, *N. l. virginensis* thus becoming the subspecies *Newportia cubana virginensis* Lewis, 1989.

HISPANIOLAN LOCALITIES

DOMINICAN REPUBLIC: South edge of Polo, Barahona Province.

Newportia ernsti ernsti Pocock, 1891: 161. Chamberlin, 1918: 153. Schileyko & Minelli, 1999: 274. Perez-Gelabert, 2008: 70. Edgecombe *et al.*, 2012: 771 [Specimen used for sequencing]. Vahtera *et al.*, 2013: 580 [Specimen used for sequencing]. Schileyko, 2014: 160. Type locality: Venezuela, Caracas and Brazil. Regarded as native to Hispaniola.

REMARKS. The type locality is incomplete in Chilobase and in Schileyko (2014), as "Venezuela, Caracas". It is complete in Schileyko & Minelli (1999), as "Venezuela, Caracas and Brazil". Schileyko & Minelli (1999) considered that a lectotype had to be selected from the two syntypes. However, this cannot be done on the base of geographic distance between localities alone. The designation has to be made with the specific purpose of clarifying the application of the species name (ICZN, 1999). As long as both syntypes are considered conspecific, there is no need for a lectotype. The species was mentioned from Haiti and St. Domingo by Schileyko & Minelli (1999). Chagas-Júnior & Shelley (2003) included both Haiti and the Dominican Republic in the distribution of the genus *Newportia*, based in the locality list by Schileyko & Minelli (1999) (A. Chagas-Júnior, pers. com.). A. Schileyko (pers. com.) clarified that the St. Domingo distribution included in Schileyko & Minelli (1999) was based on a lot at the Zoological Museum, Moscow University: "*Newportia ernsti ernsti Pocock*, 1891, No Rc 6760, 1 adult + 1 subad, Dominican Rep., La Vega Prov., 5 km off the Autopista Duarte, road to Jarabacoa, stn: 97 H 21, alt. 555 m, 18.03.1997, leg. Muratov & Robinson, det. Ark.A. Schileyko".

HISPANIOLAN LOCALITIES

HAITI: Diquini, Grande Rivière, Emery, Manneville, St. Marc, Milot, Cape Haitien, Jacmel, Pétionville. DOMINICAN REPUBLIC: 5 km off the Autopista Duarte, road to Jarabacoa, La Vega Province.

Order GEOPHILOMORPHA Pocock, 1896: 35

REMARKS. Publication date corrected from 1895 (Minelli, 2011) to 1896. Geophilomorpha appeared in page 35 of Pocock's (1895-1896) Chilopoda, which belongs to the fifth 8-page bundle, the second printed in 1896. A footnote in page 33 gives the printing date as of January 1896. The date of 1895 has made it to the Encyclopedia of Life, harvested from Plazi.org. Plazi in turn mined the date from the Biodiversity Data Journal, which had semantically enhanced the work by Decker *et al.*, (2014), the ultimate source.

Family GEOPHILIDAE Leach, 1816

REMARK. Publication date corrected from 1815 (Minelli, 2011) to 1816, see Leach (1816) in references.

Nesidiphilus Chamberlin, 1915

REMARKS. The genus *Nesidiphilus* was given in Chilobase as a synonym of *Telocricus* Chamberlin, 1915, supported by a reference to Kraus (1954: 295) which happened not to contain the synonymy. This issue was solved on April 2018, by returning *Nesidiphilus* to valid status and separating its component species from *Telocricus* (L. Pereira, L. Bonato and A. Minelli, pers. com.).

Nesidiphilus juvenis Chamberlin, 1918: 161. Attems, 1929: 284. Foddai *et al.*, 2000: 79. Perez-Gelabert, 2008: 70. Type locality: Petionville. Regarded as endemic to Hispaniola.

HISPANIOLAN LOCALITIES

HAITI: Pétionville.

Polycricus Saussure & Humbert, 1872

=Lestophilus Chamberlin, 1915

Polycricus haitiensis (Chamberlin, 1915: 526). Chamberlin, 1918: 163. Attems, 1929: 304. Foddai *et al.*, 2000: 88. Perez-Gelabert, 2008: 70. Type locality: Furcy. Regarded as endemic to Hispaniola.

HISPANIOLAN LOCALITIES

HAITI: Furcy.

Polycricus nesiotes (Chamberlin, 1915: 527). Chamberlin, 1918: 164. Attems, 1929: 304. Foddai *et al.*, 2000: 89. Perez-Gelabert, 2008: 70. Type locality: Petionville. Regarded as endemic to Hispaniola.

HISPANIOLAN LOCALITIES

HAITI: Pétionville.

Telocricus Chamberlin, 1915

Telocricus multipes Chamberlin, 1915: 521. Chamberlin, 1918: 162. Attems, 1929: 310. Foddai *et al.*, 2000: 102. Perez-Gelabert, 2008: 70. Type locality: Mann[e]ville. Regarded as endemic to Hispaniola.

HISPANIOLAN LOCALITIES

HAITI: Manneville.

Family MECISTOCEPHALIDAE Bollman, 1893

Mecistocephalus Newport, 1843

Mecistocephalus guildingii Newport, 1843: 179. Chamberlin, 1918: 164. Foddai *et al.*, 2000: 63. Perez-Gelabert, 2008: 70. Bonato *et al.*, 2009: 28. Type locality: Saint Vincent island. Regarded as native to Hispaniola.

HISPANIOLAN LOCALITIES

HAITI: Grande Rivière.

Family ORYIDAE Cook, 1896

Titanophilus Chamberlin, 1915

Titanophilus maximus Chamberlin, 1915: 503. Chamberlin, 1918: 160. Attems, 1929: 122. Foddai *et al.*, 2000: 119. Perez-Gelabert, 2008: 70. Type locality: Grande Rivière. Regarded as endemic to Hispaniola.

HISPANIOLAN LOCALITIES

HAITI: Grande Rivière.

Titanophilus fratrellus Chamberlin, 1915: 505. Chamberlin, 1918: 161. Attems, 1929: 122. Foddai *et al.*, 2000: 118. Perez-Gelabert, 2008: 70. Type locality: Petionville. Regarded as endemic to Hispaniola.

HISPANIOLAN LOCALITIES

HAITI: Pétionville.

Family SCHENDYLIDAE Cook, 1896

Ctenophilus Cook, 1896

=Pleuroschendyla Brölemann & Ribaut, 1911

Ctenophilus nesiotes (Chamberlin, 1918: 159). Attems, 1929: 87. Pereira, 1981: 180. Pereira & Demange, 1991: 93. Pereira & Demange, 1997: 310. Foddai *et al.*, 2000: 121. Perez-Gelabert, 2008: 70. Type locality: Diquini. Regarded as endemic to Hispaniola.

HISPANIOLAN LOCALITIES

HAITI: Diquini, with Jacmel also mentioned in the original description.

SUMMARY OF PROPOSED UPDATES TO CHILOBASE

Chilobase 2.0 was tested for completeness and accuracy. We found that Chilobase geographic search renders 8 species from Dominican Republic and 14 species from Haiti, of which *Scolopendra alternans* and *Cormocephalus impressus* (= *C. guildingii*) are shared, for a total of 20 Hispaniolan species records as of April, 2018. However, after adding the information available from the simple search and species pages and comparing the resulting list and records to those in our checklist, we found out that there are four incorrect species records from Dominican Republic and one from Haiti; one Hispaniolan and three Dominican records are not backed by known literature; and five species and one genus are not under their current accepted synonym. The issues found are discussed below.

INCORRECT RECORDS

The record of *Paracryptops inexpectus* Chamberlin, 1914 is a mismatch with a true record from Dominica (Chagas-Jr. & Shelley, 2004). The record of *Piestophilus tenuitarsis* (Pocock, 1888) is a mismatch between Dominica (the type locality) and Dominican Republic.

The record of *Newportia cubana* Chamberlin, 1915, is also included because a mismatch between the published record from Dominica (Schileyko & Minelli, 1999) and Dominican Republic. However, this is a mismatch over a mistake, the record from Dominica being a misprinting for Dominican Republic, which ultimately makes the Chilobase *N. cubana* record from Dominican Republic correct. *Cormocephalus impressus* (= *C. guildingii*) is recorded from Haiti and Dominican Republic in Chilobase, which represents a misinterpretation of the original "S:t Domingo" (= Hispaniola) record.

RECORDS NOT BACKED BY KNOWN LITERATURE

Chilobase lists Dominican Republic in the distribution of *Newportia leptotarsis* Negrea, Matic & Fundora-Martínez, 1973, but the species is not mentioned for Dominican Republic or Haiti by Schileyko & Minelli (1999). Chilobase lists Dominican Republic in the distribution of *Newportia longitarsis*. However the species is not mentioned for Dominican Republic by Schileyko & Minelli (1999) and the Dominican Republic literature record of *N. l. virginensis* that could support this distribution is not incorporated in Chilobase. A footnote on the Chilobase pages of *N. ernsti* and *N. e. ernsti* reads: "Records from 'Hispaniola' refer either to Haiti or the Dominican Republic". We have read Pocock (1891, 1893, 1896), Chamberlin (1918), Attems (1930) and Schileyko (2014) without finding a *N. ernsti* record from Hispaniola in general. The footnote seems superfluous. See also explanation on "St. Domingo" record in species' remarks. Chilobase also lists Dominican Republic in the distribution of *Notiphilides maximiliani* (Humbert & Saussure, 1870). However the species is not mentioned for Dominican for Dominican Republic or Haiti by Foddai *et al.* (2000) and there are no Hispaniolan records in the most recent species map (Calvanese & Brescovit, 2017).

RECORDS NOT UNDER THE CURRENT SYNONYM

Scolopendra crudelis and Scolopendra cubensis are junior synonyms of Scolopendra alternans (see Pocock, 1893). Cormocephalus impressus is a junior synonym of Cormocephalus guildingii (see Pocock, 1893) but this information was absent in Chilobase. The Hispaniolan record of the former should be transferred to the latter. Two Cormocephalus ungulatus syntypes from Haiti are synonymized to Cormocephalus guildingii (see Chamberlin, 1918) but this information was absent in Chilobase. The Haitian records of the former should be transferred to the latter. Pselliophora pulchritarsis and Pselliophora haitiensis are junior synonyms of Sphendononema guildingii (see Würmli, 1978). This information was present in Chilobase but their Haitian records were not transferred to S. guildingii.

ADDITIONAL CORRECTIONS ON GENERA

The date of genus *Cryptops* Leach in Chilobase was given as 1815. It is corrected here to 1814 and to a different publication (see Leach, 1814 in references). *Scolopocryptops* Newport, 1844 had the right author and date but incorrect publication and is here corrected (see Newport, 1844 in references). *Dinocryptops* Crabill, 1953 is a junior synonym of *Scolopocryptops* (see Edgecombe *et al.*, 2012), but this information is missing in Chilobase.

Chilobase 2.0 is a free resource for the common good but it needs every author's effort to improve. We encourage colleagues dealing with centipede research to analyze their papers from the point of view of Chilobase and contribute their updates to this useful database. We actively submitted our comments to Dr. Lucio Bonato, who started to implement the necessary changes during the writing phase of this paper.

Species	Haiti	Dominican Republic	Introduced	Native (non endemic)	Hispaniola Endemic
Scutigeromorpha		<u>^</u>	<u>^</u>	<u>`</u>	
Dendrothereua linceci (Wood, 1867)		X	-	X	_
Sphendononema guildingii (Newport, 1845)	х	X	-	Х	_
Scolopendromorpha		·		·	
Scolopendra alternans Leach, 1816	X	X	-	X	-
Scolopendra morsitans Linnaeus, 1758		Х	х	-	_
Scolopendra subspinipes Leach, 1816	-	X	X		_
Cormocephalus guildingii Newport, 1845	х	-	_	Х	_
Otostigmus (Parotostigmus) occidentalis Meinert, 1886	х	-	_	-	Х
Rhysida celeris (Humbert & Saussure, 1870)	х	X	_	Х	_
Rhysida longipes longipes (Newport, 1845)	X	-	X	-	_
Rhysida nuda (Newport, 1845)	Х	-	Х	-	
Cryptops (Trigonocryptops) manni Chamberlin, 1915	х	-	_	-	Х
Scolopocryptops ferrugineus ferrugineus (Linnaeus, 1767)	х	х	_	Х	_
Scolopocryptops melanostoma Newport, 1845	х	х	-	Х	_
Newportia longitarsis (Newport, 1845)		Х	_	Х	-
Newportia cubana Chamberlin, 1915	-	Х	_	Х	-
Newportia ernsti ernsti Pocock, 1891	x	х	_	Х	_
Geophilomorpha					
Ctenophilus nesiotes (Chamberlin, 1918)	X	_	_	-	Х
Mecistocephalus guildingii Newport, 1843	х	_	_	Х	_
Nesidiphilus juvenis Chamberlin, 1918	х	-	_	-	Х
Polycricus haitiensis (Chamberlin, 1915)	х	-	-	-	Х
Polycricus nesiotes (Chamberlin, 1915)		-	_	-	Х
Telocricus multipes Chamberlin, 1915		-	-	-	Х
Titanophilus fratrellus Chamberlin, 1915		-	-	_	X
Titanophilus maximus Chamberlin, 1915		-	-	_	Х
24 species	21	11	4	11	9

Table II. Summary of the valid extant species of centipedes recorded from Hispaniola (Haiti and Dominican Republic). All endemic species are restricted to Haiti.

DISCUSSION

It is too soon to infer diversity patterns within the island. There is a strong geographic bias, as most collections were done in Haitian territory and most species are known only from Haiti. Knowledge on the Dominican Republic's centipedes is superficial, except for Scutigeromorpha, but conversely, the scutigeromorph distribution in Haiti has not been properly researched. The zoogeographical aspects of the Neotropical Geophilomorpha, including the Haitian species, were addressed by Pereira *et al.* (1997) and will facilitate future analyses at Caribbean level when more data is available.

Regarding cave fauna, no information on centipedes was found in the synopsis of subterranean invertebrates of Hispaniola by Peck (1999). The only published record seems to be *C. guildingii* from "Diquini Cave, west of Port au Prince" by Chamberlin (1944).

At the island level, the number of species could be described as slightly low. The area of Hispaniola is more than two thirds the area of Cuba, but the number of species is just about half, 24 species (this study) versus 45 species in Cuba (Cabrera-Dávila *et al.*, 2017). The endemicity in Hispaniola is also lower, 37.5% (this study) versus 48.9% in Cuba (Cabrera-Dávila *et al.*, 2017).

It should also be noted that the uniqueness of the Hispaniolan fauna is concentrated mainly in species of Geophilomorpha which, except for *Ctenophilus nesiotes*, have not been reviewed. Those species may enter into synonymy or have their known distribution expanded when more research in Hispaniola and the Caribbean is undertaken. On the other hand, the island as a whole remains poorly surveyed and new species records and discoveries should be expected, especially in the small-sized groups Lithobiomorpha, Geophilomorpha, *Cryptops* and *Newportia*.

CONCLUSIONS

In this work, several changes with respect to the former 2008 catalog were compiled from the literature or formalized by us. One scutigeromorph family was added (Pselliodidae). One genus was deleted (*Scutigera*), one genus was found to be synonym of another genus already reported from Hispaniola (*Dinocryptops* of *Scolopocryptops*), one genus was found to be a synonym of a non-reported genus (*Pselliodes* to *Sphendononema*) and one genus was added (*Dendrothereua*). In total, there is one genus less than in Perez-Gelabert (2008). One subgenus was added (*Trigonocryptops*).

Of the species names present in the 2008 catalog, two are synonyms and were transferred (*S. platypus* to *S. morsitans*, *C. ungulatus* [Haitian specimens!] to *C. guildingii*). Three species names and one synonym were deleted (*Scolopendra gigantea*, *Scolopocryptops miersii*, *Scutigera coleoptrata* and *Scutigera forceps*). Those names can be listed in future compendia for completeness but should not be cited in listings of extant species.

Eight species names and one subspecies name were added. From the eight species names, five are valid and represent a 25% increase in the valid species count from the previous list. The other three new species names are previously undetected synonyms.

The description of new species from Hispaniola encompasses a 78-year interval, from 1840 to 1918. Its maximum of 8 new described species occurred during 1915-1918 and then stopped. In the last 100 years no new species have been described from the island, which combined with the insufficient geographic coverage highlights the incomplete knowledge of the group.

RECOMMENDATIONS

After this comprehensive review, several priority tasks are due. It is recommended to assign secondary georeferences to legacy data in order to map the known species diversity. Museum specimens in the island and overseas should be located and examined to continue filling taxonomic and geographic gaps. From the point of view of conservation, endemic species should be evaluated according to the IUCN Red List criteria, considering that they were all reported from Haiti, where extensive habitat loss has occurred. New samplings should be undertaken, including fragile ecosystems like montane forests and caves. Ultimately, morphological and molecular studies are required to understand the origin and affinities of the Hispaniolan centipede fauna.

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