

TRABAJOS ORIGINALES

Revision of the South American wasp genus *Alophophion* Cushman, 1947 (Hymenoptera: Ichneumonidae: Ophioninae)

Revisión del género de avipas sudamericanas *Alophophion* Cushman, 1947 (Hymenoptera: Ichneumonidae: Ophioninae)

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Abstract

The species of the strictly Neotropical ophionine wasp genus *Alophophion* Cushman, 1947 are revised. New descriptions of all previously named species are provided, except *Alophophion holosericeus* (Taschenberg, 1875) for which the type series is lost and the name is herein considered a *nomen dubium*. The female of *A. flavorufus* (Brullé, 1846) is described for the first time. Four informal species groups are proposed based on the morphology of the mandibles, development of the malar space, and general proportions of the head (*i.e.*, development of the face and gena). Whereas the genus previously included only seven named species, it is here expanded to include 49 species (not including the aforementioned *nomen dubium*), 43 of which are newly discovered and described and thereby increasing the diversity by over eight times. A key to the four species groups and their included taxa is provided. *Alophophion* is confined to cold and/or dry areas of subequatorial South America, with the exception of *A. mancopacaci* new species and *A. pedroi* new species which occur in cloud forests around Cuzco, Peru. The genus is newly recorded from Bolivia and Ecuador, and more extensive and accurate distributions are summarized for *A. chilensis*, *A. flavorufus*, and *A. politus*. *Alophophion flavorufus* is newly recorded from Argentina.

Keywords: Ichneumonoidea; taxonomy; new species; parasitoid; Euhymenoptera; Neotropical

Resumen

Las especies del género de avispas neotropicales *Alophophion* Cushman, 1947 son revisadas. Se presenta nuevas descripciones para todas las especies previamente descritas, excepto *Alophophion holosericeus* (Taschenberg, 1875) debido a que los especímenes tipo están perdidos y el nombre es considerado *nomen dubium*. La hembra de *A. flavorufus* (Brullé, 1846) es descrita por primera vez. Cuatro grupos de especies informales son propuestos basados en la morfología de las mandíbulas, amplitud del espacio malar, y las proporciones de la cabeza (tales como la amplitud del rostro y gena). El género previamente incluía siete especies, aquí se amplía a 49 especies (sin incluir el *nomen dubium*), 43 de las cuales son nuevas para la ciencia. Claves para los cuatro grupos de especies son propuestas. *Alophophion* está confinado a áreas frías y/o secas de América del Sur subecuatorial, con la excepción de las especies *A. mancopacaci* new species y *A. pedroi* new species que ocurren en los bosques húmedos de Cuzco, Perú. El género es registrado por primera vez para Bolivia y Ecuador; distribuciones más precisas para *A. chilensis*, *A. flavorufus*, y *A. politus* son proporcionadas; y, *A. flavorufus* es registrado por primera vez para Argentina.

Palabras clave: Ichneumonoidea; taxonomía; especies nuevas; parasitoides; Euhymenoptera; Neotrópico.

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Introduction

Alophophion Cushman is an endemic South American genus of parasitoid wasps in the diverse ichneumonid subfamily Ophioninae (Gauld & Lanfranco 1987). Currently comprising seven species distributed in Argentina, Brazil, Chile, and the Falkland Islands (Yu & Horstmann 1997), the genus is also known to include numerous undescribed species including several in the Andean region such as Peru and Ecuador (e.g., Gauld 1985, Gauld & Lanfranco 1987, Alvarado *et al.* 2010). Species of *Alophophion* are not rare and can be found throughout South America. Even though it has been known that there are at least 30 species in the genus (e.g., Gauld 1985, Gauld & Lanfranco 1987, Baudino 2005) no new species has been described formally during its 66-year history. Cushman (1947) established the genus by removing its type species from *Ophion* Fabricius, and Townes & Townes (1966) did the same by removing additional species from the latter genus and moving them to *Alophophion* without naming any additional taxa. Thus, despite a steady accumulation of new species the systematics of the group has only become more and more challenging given the lack of any taxonomic action to address the circumscription of the genus and identification of its included units.

Gauld (1980, 1985) proposed the following characters to support the putative monophyly of *Alophophion*: complete absence of the occipital carina; *Rs+2r* joining the pterostigma near the its midpoint; the first subdiscal cell stouter than is typical for other ophionine genera; and the ramulus, when present, is directed more anteriorly than that of other ophionines (Gauld 1980, 1985). These have never been tested in a formal cladistic analysis. Nonetheless, monophyly of the genus seems solid, particularly in relation to genera such as *Ophion* Fabricius which are undoubtedly holding genera for taxa not readily placed elsewhere (Gauld 1985). The proper classification of the numerous species presently placed within *Ophion* remains one of the more complicated and long-standing challenges for the systematics of the subfamily.

The aim of the present paper is to clearly delineate the genus, redescribe the currently recognized species, and add the description of 43 new species. As will be discussed more below, resolving such taxonomic issues surrounding the biodiversity of *Alophophion* will also provide a solid basis for future biological investigation which is critical given the apparent importance of these wasps as biological control agents of critical crop pests (e.g., cutworms on alfalfa). This monograph will permit for the first time a more accurate perspective on the species and morphological diversity within *Alophophion*, a finer understanding of their distribution and ecological preferences, and allow for their identification by biologists and agronomists interested in further study of these wasps.

Material and methods

The present study was based on examination of 970 specimens of *Alophophion* and housed in the following institutions:

AEIC: American Entomological Institute, Gainesville, Florida, USA (David Wahl)

BMNH: Natural History Museum, London, England (Gavin Broad)

MNHN: Muséum national d'histoire naturelle, Paris, France (Claire Villemant).

MNNC: Museo Nacional de Historia Natural, Santiago, Chile (Mario Elgueta).

MLP: Museo de La Plata, Argentina (Marta Loiacono).

MUSM: Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Peru (Gerardo Lamas).

SEMC: Snow Entomological Museum Collection, Kansas, USA (Michael Engel).

UCDC: *Bohart Museum of Entomology, University of California, California, USA* (Steve Heydon).

USNM: United States National Museum, Washington D.C., USA (Robert Kula)

All of the descriptions were based of females, while information from males was provided only if they were confidently associated with females.

Large portions of the specimens studied where collected in Peru and from the following localities:

Montesecco is located between the basins of the Rio Zana and Chancay-Lambayeque Rivers; between the departments of Cajamarca and Lambayeque. It has a unique environment including montane cloud forests on the western slopes of the Peruvian Andes and associated ecosystems, such as dry forests and puna grasslands (DS-020-2011-MINAM). Three expeditions were conducted, the first during April 2009 at the following elevations: 1615 m, 2150 m, and 2841m; the second was during October 2009 at elevations of 1195 m, 1615 m, 2150 m, and 2841m; and the last was in May 2010 at elevations of 1232 m, 1615 m, 2150 m, 2841 m, and 3116 m. At each locality 15 hours of clear light traps were used.

The *Polylepis* forest located in **Chaviña District**, Lucanas Province, Ayacucho Department, between 4000m and 4200m Species of *Polylepis* Ruiz & Pav. (Rosaceae) are rosaceous shrubs or trees native to the mid- and high-elevation tropical Andes (Simpson 1979). The expedition was conducted in April 2010 and the following collecting methods were used: two malaise traps and four yellow pan traps working during five days; 10 pitfall traps during three days; and light traps during 12 hours.

Measurements and morphological terminology.- The morphological terminology adopted in this work broadly follows Gauld & Mitchell (1981) and Gauld (1988). Indices used by Gauld & Mitchell (1981) were also followed, but some are further explained below. The following measurements were realized as suggested by Gauld & Mitchell (1981): the width of the face is the minimum distance between the compound eyes, and its height is the median vertical distance from the clypeal margin to the facial tubercle. The head in lateral view is measured perpendicularly to the torulus. Malar space is measured as the shortest distance between a point just above the anterior dorsal margin of the mandible and the compound eye. The indices for wing used are cubital index of fore wing (CI), intercubital index (ICI), second discoidal index (SDI) and nervellar index of hind wing (NI). The propodeal anterior area and posterior to the anterior transverse carina are referred respectively as propodeum

anterior area and propodeum posterior area (Gauld & Mitchell, 1981). The measurement of the flagellomeres were done in lateral view, the width of each was measured at its individual apex. The ventral face of the mesopleuron is described as “mesosternum” (Bennett 2008). Selected terms from Townes (1969) were used.

For the purpose of indicating the level of accuracy, ratios are expressed to the nearest tenth and represent estimated values. Integumental sculpture terminology follows Harris (1979).

Imaging.- Photomicrographs were prepared using a Canon 7D digital camera attached to an Infinity K-2 long-distance microscopic lens. Digital photos were combined by using the program CombineZP. Plates were prepared using Adobe Fotoshop and Illustrator CS3.

Taxonomy

Genus *Alophophion* Cushman

Alophophion Cushman, 1947: 439. Type species: *Ophion chilensis* Spinola, 1851, by original designation.

Diagnosis.- This lineage is characterized by the following putative apomorphies: occipital carina entirely absent (Fig. 2); *Rs+2r* joining pterostigma near center (Fig. 1); first subdiscal cell stouter than normal; ramulus, when present, directed more anteriorly than that of other ophionines (Gauld 1980, 1985).

Description (modified from Gauld 1985).- **Head.** Mandibles not twisted, weakly narrowed apically, subequally bidentate; outer mandibular surface flat, usually punctate and hirsute; upper mandibular surface generally slightly convex or concave, with or without a diagonal groove extending from upper corner to middle of mandible. Maxillary palp 5-segmented, labial palp 4-segmented. Margin of clypeus often impressed, sometimes very narrowly so. Ocelli generally large, posterior (lateral) ocelli close to compound eyes; frontal carina absent; occipital carina absent.

Mesosoma.- Pronotum unspecialized or mediodorsally somewhat flattened and quite long; spiracle longer than wide;

spiracular sclerite exposed. Notauli present on anterior part of mesoscutum. Epicnemial carina generally strong. Mesopleural furrow varying in length, from absent to reaching the lower-posterior end of mesopleuron; diagonal, extending from episternal scrobe to near subalar prominence. Mesoscutellum very weakly convex, usually narrow and not carinate laterally. Posterior transverse carina of mesosternum absent except for lateral vestiges (Fig. 3). Propodeum with anterior area occluded, transverse and often lateromedian longitudinal carinae discernible, sometimes complete; posterior area smooth, rugulose or carinate. Fore wing with pterostigma broad; marginal cell long; *Rs+2r* slender, curved near proximal 0.3x before joining pterostigma near center; discosubmarginal cell with glabrous area anterior; *1m-cu* generally centrally angled, sometimes with a short ramulus which is directed more anteriorly than that of *Ophion*. Hind wing with *Rs* curved. Protibial spur with a membranous flange behind macrotrichial comb; meso- and metatrochantelli unspecialized; inner metatibial spur flattened, with a margin of long close setae; metapretarsal claws unspecialized; inner surface of tarsi with a margin of long close setae.

Metasoma.- Gaster moderately slender; tergite II in profile elongate, thyridium oval, separated from anterior margin of tergite by its own length or less; umbo distinct; epipleuron upturned. Ovipositor sheath narrow.

Comments.- Genus diagnosis remarks:

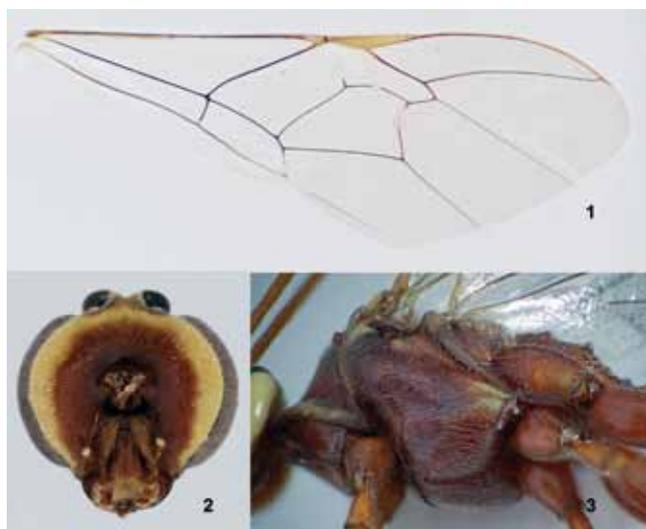
The upper mandibular surface is described; the presence of a diagonal groove on the mandible is newly described for the genus. The description of the mesopleural furrow is included.

The genus currently contains seven species, while here are presented 43 putative new species. Four informal species groups are proposed on the basis of their morphology, supported by the presence/absence and degree of development of a diagonal groove on the mandible, size of the compound eyes in relation to the face, coloration, and facial and genital proportions.

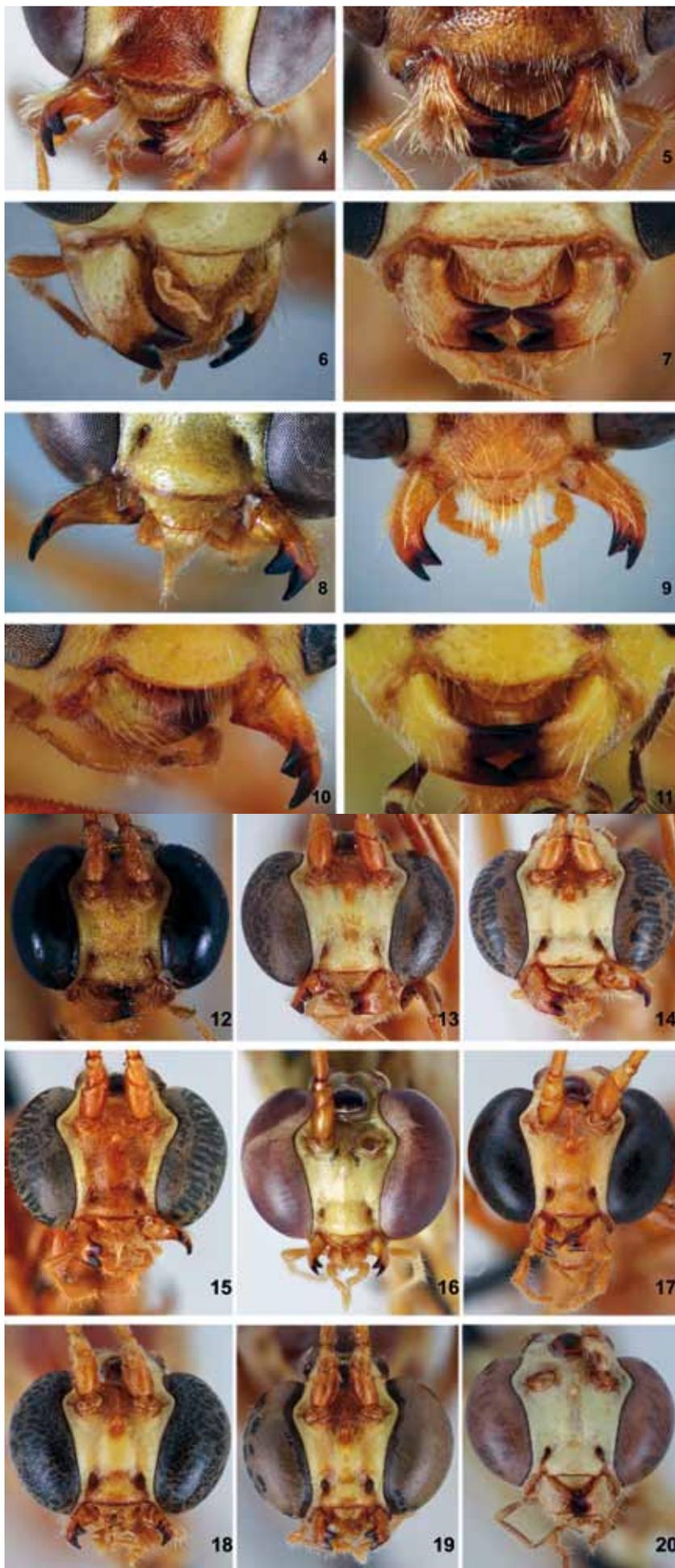
Key to Species-groups of *Alophophion*

- (1) Mandibles with a diagonal groove extending from upper corner to middle of mandible, groove bears long setae (Figs. 4, 5) **Species-group B**
 - Mandibles without a groove in upper surface (Figs. 10, 11); if there is a concavity basally them bears small setae (Figs. 6-9) **2**
- (2) Malar space 0.4-0.8x as long as basal width of mandible; body bright yellow with reddish or black spots; diurnal activity **Species-group D**
 - Malar space 0.1-0.3x as long as basal width of mandible; body brownish, olive green, or light straw yellow; nocturnal activity..... **3**
- (3) Face generally long, at least 1x as long as wide (Figs. 12-30); compound eyes at least 0.8x as wide as facial width; head, in lateral view, with gena 0.3-0.5x as wide as compound eyes (Figs. 31-49) **Species-group A**
 - Face at most 1.0x as wide as long (Figs. 118-139); compound eyes at most 0.6x as wide as facial width; head, in lateral view, with gena at least 0.6x as wide as compound eyes (Figs. 140-161) **Species-group C**

Biology.- Ophionines are solitary koinobiont endoparasitoids of the caterpillars of many conspicuous larger Lepidoptera (Fernandez-Triana 2005, Gauld 1985, Gauld & Lanfranco 1987, Townes 1971). The parasitoid egg is apparently free in the host's haemocoel where it hatches to produce a caudate first instar larva; species attacking mature larvae undergo rapid development, but taxa that oviposit in very young larvae have a protracted first larval instar. The parasitoid larva completes development just prior to host-pupation, often after the host



Figures 1 – 3. Details of *Alophophion atahualpai* new species. (1) Fore wing, (2) Head, in dorsal view, (3) Mesosoma, in lateral view.



Figures 4 – 20.
 Details of mandibles in ventral view.
 (4) *A. capayan* new species
 (5) *A. flavorufus*
 (6) *A. yestay* new species
 (7) *A. pachacutii* new species
 (8) *A. jujuye* new species
 (9) *A. trauco* new species
 (10) *A. diaguita* new species
 (11) *A. inti* new species.
 Details of face.
 (12) *A. mancocapaci* new species
 (13) *A. picunche* new species
 (14) *A. mapuche* new species
 (15) *A. chango* new species
 (16) *A. alvarengai* new species
 (17) *A. ona* new species
 (18) *A. chono* new species
 (19) *A. alacalufe* new species
 (20) *A. pihuchen* new species.

has constructed a cocoon. The ichneumonid larva spins a characteristic fibrous, ovoid cocoon which is generally dark brown with a pale equatorial band. Species may remain as mature larvae or even adults inside this cocoon for the greater part of the year in seasonal habitats (Gauld 1985).

Alophophion have been recovered from Noctuidae (Baudino 2005, Gauld & Lanfranco 1987). Baudino (2005) recovered species from larvae of the cutworms *Agrotis malefida* (Guenée), *Feltia gypaetina* (Guenée), and *Peridroma saucia* (Hübner) feeding on *Medicago sativa* L. (Fabaceae) during a survey conducted over four years (1999–2002) in La Pampa Province, Argentina. *Alophophion* was responsible for 80% of the parasitoidism of these cutworms, indicating them as potentially critical biological control agents. Pupal formation occurred between 18 September and 28 November of each year of sampling, and adults emerged between 5 May and 4 August the year after cocoon formation; the average date of adult emergence was 12 June. The period between adult emergences averaged 222.7 days (about 7 months), meaning that once the cocoon is formed, and the larva remains in diapause until early winter of the following year, so that emerging adults coincide with the birth of cutworms. *Alophophion larseni* (Enderlein, 1912) was recovered from an undetermined noctuid (Gauld & Lanfranco 1987).

Gauld & Lanfranco (1987) mentioned that *Alophophion* occurs in South America south of the equator and in cooler areas partially replaces *Ophion*, a cosmopolitan genus; that *Alophophion* is most diverse in southern Chile and Patagonia. *Alophophion larseni* (Enderlein, 1912) is the only ophionine present in the Falkland Islands (Yu & Horstmann 1997, Gauld & Lanfranco 1987).

Most Ophionines, including *Alophophion*, are crepuscular or nocturnal and frequently come to light at night in large numbers (Gauld & Carter 1983). They may be collected using light traps which makes them particularly suitable for zoogeographic and ecological study; and large samples may be collected in terrain where sweep netting and Malaise traps yield poor results, or, as in the case of the rainforest canopy, where collections can only be achieved by cumbersome, expensive, and (for fast-flying insects) unproven techniques (Gauld 1985).

Taxonomic history.—Cushman (1947) proposed *Alophophion* on the basis of the lack of the occipital carina, a character that barely warranted generic distinction from *Ophion* and commented that "... several species before me, all from South America, present such uniformity of structure as to form a compact group more conveniently treated here as a genus". He designated *Ophion chilensis* Spinola, 1851 as the type species but did not formally transfer any other species into *Alophophion* thereby leaving it monotypic for the time.

Townes & Townes (1966) transferred *O. filicornis* (Morley, 1912), *O. flavorufus* (Brullé, 1846), *O. holosericeus* (Taschenberg, 1875), *O. politus* (Morley, 1912), *O. porculatus* (Morley, 1912), and *O. larseni* (Enderlein, 1912) to *Alophophion*. It is unclear whether some or all of these species were those already mentioned by Cushman (1947) when he wrote, "... several species before me..."

Townes (1971) proposed two tribes in Ophioninae, the Ophionini and Enicospilini. *Alophophion* was included in

Ophionini, a group that was distinguished by the protibial spur with a longitudinal comb of short bristles on its front side, and on its hind side a longitudinal membranous scraper, the scraper similar in shape to the comb and parallel to it; protibial spur a little thicker than in the Enicospilini; and second tergite usually with a median triangular or semi-triangular raised area at the base that is bounded by a weak impression. He re-described *Alophophion* and mentioned that it occurs in South America and Falkland Islands and that it was a large genus despite including only seven described species.

Gauld (1980) did an analysis of the classification of the *Ophion* genus-group, he disagree with Cushman (1947) that *Alophophion* scarcely warranted generic distinction from *Ophion* and despite the fact that *Alophophion* was undoubtedly close to *Ophion*, the combination of characters exhibited by this group separated it well from *Ophion*. Gauld did not consider the tribes proposed by Townes (1971) because he considered that the tribe Enicospilini was a heterogeneous assemblage of potentially unrelated genera. He also mentioned that *Alophophion* occurs in southern South America from Ecuador to the Falkland Islands and that it may potentially compromise about 30 species.

Gauld & Lanfranco (1987) provided a key for genera occurring in South America, and suggested that *Alophophion* was not present north of 25°S latitude and in cooler areas was partially replacing *Ophion* in such regions. Additionally, they noted that the genus was more diverse in the south part of Chile and Patagonia and that *Alophophion* was the only lineage of ophionines collected in the Falkland Island (Islas Malvinas). These authors also proposed that *A. occidentalis* should be considered as a synonym of *A. larseni*.

Relationships to other genera.—Gauld (1985) made the first attempt to reconstruct the phylogeny of the genera of the Ophioninae using both parsimony and compatibility methods of analysis. He recognized within Ophioninae five major evolutionary lineages as the *Ophion*, *Sicophion*, *Eremotylus*, *Thyreodon*, and *Enicospilus* genus-groups for thirty-two genera and a scenario for the possible evolution of the subfamily was suggested. The *Ophion* group contained seven genera: *Afrophion* Gauld, *Agathophion* Westwood, *Alophophion*, *Xylophion* Gauld, *Sclerophion* Gauld, *Rhopalophion* Seyrig, and *Ophion*. According to Gauld (1985) *Ophion* is apparently a paraphyletic stem-group from which all other genera in this group have arisen, and the genus was primarily a Holarctic taxon, originating in the temperate north. It is probable that at some period it was present in most regions and has gradually disappeared from equatorial regions leaving isolated relicts in South Africa (*Afrophion*), Australia (*Xylophion*), Madagascar (*Rhopalophion*), and Patagonia (*Alophophion*). The possibility that there has been repeated expansion into and extinction within the tropics is suggested by the presence of some groups of species of *Ophion* on isolated mountains in Southeast Asia, New Guinea, and South America, and by the occurrence of distinctive *Ophion* species-complexes in Australia and New Zealand (Gauld 1985). Obviously, if this scenario is correct, then *Ophion s.str.* requires a comprehensive and rigorous phylogenetic analysis and eventual division into monophyletic genera. Quicke *et al.* (2009) analyzed the internal phylogeny of the Ichneumonidae and found scant evidence for the *Thyreodon* genus group of Gauld (1985), though these taxa did tend to form a grade in the combined morphological and molecular trees

leading to a clade comprising *Ophion*, *Alophophion*, *Afrophion*, *Xylophion*, and *Rhopalophion*, and various additional genera in their gaps-informative tree. Unfortunately, their study was not specifically designed to fully resolve internal relationships within Ophioninae and this remains an area for critical investigation.

Species-group A

Diagnosis.— Face long, at least 1x as long as wide (Figs. 12–30); compound eyes at least 0.8x as wide as face; head, in lateral view, with gena 0.3–0.4x as wide as compound eyes (Figs. 31–49), exceptionally 0.5x in *A. mancopacaci* new species (Fig. 45). Lateral ocellus separated from compound eye by usually less than 0.2x ocellar diameter (Figs. 50–52), exceptionally 0.3x in *A. picunche* new species (Figs. 53). Compound eyes and ocelli, in relation to vertex, larger than in other species groups. Upper margin of mandibles with a small concavity at base, glabrous in lateral edge; bearing small setae (Fig. 8–9), concavity longer in *A. trauco* new species (Fig. 8) but not reaching external surface of mandibles. Notaulus extending 0.4x length of mesoscutum, exceptionally reaching to 0.6x in *A. maytacapaci* new species. Color yellowish, brownish, some species brownish with cream or yellowish spots.

Included species.— Nineteen species are presently included in this species-group, all of which are newly described: *A. alacalufe* new species, *A. alvarengai* new species, *A. ananauca* new species, *A. chango* new species, *A. chono* new species, *A. jujuye* new species, *A. mallecoensis* new species, *A. mancopacaci* new species, *A. mapuche* new species, *A. mapudungun* new species, *A. maytacapaci* new species, *A. ona* new species, *A. pedroi* new species, *A. picunche* new species, *A. pihuchen* new species, *A. sinchirocai* new species, *A. sofiae* new species, *A. trauco* new species, and *A. viride* new species.

Comments.— Most of the species of species-group A are distributed along the western slopes of the Andes with the exception of *A. alvarengai* new species and *A. jujuye* new species and that occur in Brazil and Argentina and *A. mancopacaci* new species and *A. pedroi* new species which are distributed on the eastern slopes of the Andes of Peru.

Key to species of species-group A

- (1) Mesopleuron furrow absent (Figs. 58–68, 75) 2
 – Mesopleural furrow present (Figs. 69–74), projecting from upper epicnemial carina to posterior-lower end of mesopleuron, sometimes short, not reaching middle of mesopleuron 11
 (2) Propodeum without transverse carinae; hind wing with 9 hamuli on R1 distally; gena 0.5x as wide as compound eyes in lateral view (Fig. 45) *Alophophion mancopacaci* new species
 – Propodeum with transverse carinae; hind wing with 6–8 hamuli on R1 distally; gena at most 0.4x wide as compound eyes in lateral view 3
 (3) Lateral ocelli almost in contact with compound eyes, separated from compound eyes by less than 0.1x maximum diameter of lateral ocelli (Fig. 50) *Alophophion alvarengai* new species
 – Lateral ocelli separated from compound eyes by at least 0.1x as maximum diameter of posterior ocelli (Fig. 52–53) 4
 (4) Epicnemial carina oval in a lateral view (Fig. 61); metasomal tergite light straw yellow with a brownish spot apically ...
 *Alophophion pihuchen* new species
 – Epicnemial carina forming an angle or strongly curved between mesopleuron and mesosternum (Figs. 61–68); metasomal tergite with a single color ...
 5

- (5) Posterior transverse carina faintly indicated centrally; area superomedia + dentipara with longitudinal striate sculpture (Fig. 85)
 *Alophophion chango* new species
 – Posterior transverse carina well defined (Figs. 86–90); area superomedia discernible and smooth 6
 (6) Lateromedian longitudinal carinae behind posterior transverse carinae separated, sometimes faint; area petiolaris present (Figs. 86–88) 7
 – Lateromedian longitudinal carinae behind posterior transverse carinae confluent; area petiolaris absent (Figs. 89–90) 9
 (7) Marginal cell of fore wing with a glabrous area next to Rs+2r and cover by setae next to pterostigma (like Fig. 56) ...
 *Alophophion picunche* new species
 – Marginal cell of fore wing with a glabrous area next to Rs+2r and pterostigma (Fig. 55) ... 8
 (8) Compound eyes 0.7–0.8x as wide as face (Fig. 14); metasoma with tergite II with spiracle located at 0.6x length of tergite ...
 *Alophophion mapuche* new species
 – Compound eyes 1.0x as wide as face (Fig. 18); metasoma with tergite II with spiracle located at 0.5x length of tergite ... *Alophophion chono* new species
 (9) Compound eyes 1.0x as wide as face (Fig. 19); mesopleuron brownish red with cream colored spots *Alophophion alacalufe* new species
 – Compound eyes 0.8–0.9x as wide as face (Figs. 17, 28); mesopleuron homogeneously testaceous with or without few yellow spot 10
 (10) Face 0.8–0.9x as wide as long (Fig. 17); lateral ocellus separated from compound eye by 0.1–0.2x ocellar diameter ...
 *Alophophion ona* new species
 – Face 0.9–1.0x as wide as long (Fig. 28); lateral ocellus separated from compound eye by 0.3–0.4x ocellar diameter ...
 *Alophophion mallecoensis* new species
 (11) Carinae on propodeum developed as lamellate (Figs. 91) ...
 *Alophophion trauco* new species
 – Carinae on propodeum not lamellate, sometime faint (Figs. 76–81, 92) ...
 12
 (12) Juxtacoxal carina present (Fig. 71) ...
 *Alophophion sinchirocai* new species
 – Juxtacoxal carina absent 13
 (13) Head with pale mark on orbits; lower face and frons centrally brownish red (Fig. 24–25) 14
 – Head predominantly light straw yellow, except sometimes occiput testaceous, orbits not discernible (Fig. 21–23); lower face and frons sometimes centrally slightly brownish 15
 (14) Mesoscutellum entirely cream colored; compound eyes 0.9x as wide as face (Fig. 25); gena, in lateral view, 0.2x as wide as compound eyes (Fig. 41) ...
 *Alophophion ananauca* new species
 – Apical half of mesoscutellum yellowish; compound eyes 0.8x as wide as face (Fig. 24); gena, in lateral view, 0.4x as wide as compound eyes (Fig. 43) ...
 *Alophophion maytacapaci* new species
 (15) Lateral ocelli almost in contact with compound eyes (Fig. 52) ... 16
 – Lateral ocelli separated from compound eyes by at least 0.1x maximum diameter of lateral ocelli (Figs. 53) 17
 (16) Lower edge of speculum scrobiculate (Fig. 70); metapleuron rugulose ...
 *Alophophion jujuye* new species
 – Lower edge of speculum and metapleuron imbricate with punctures (Fig. 75)
 *Alophophion pedroi* new species
 (17) Gena and occiput of the same color, olive green; face 0.9–1.0x as wide as long (Fig. 30); lower edge of speculum finely scrobiculate (Fig. 74) ...
 *Alophophion viride* new species
 – Gena yellowish and occiput glaucous; face 0.8x as wide as long (Fig. 40, 42); lower edge of speculum imbricate between punctures 18



Figures 21 – 43.

Details of face.

- (21) *A. sofiae* new species
- (22) *A. jujuye* new species
- (23) *A. mapudungun* new species
- (24) *A. maytacapaci* new species
- (25) *A. ananauca* new species
- (26) *A. sinchirocai* new species
- (27) *A. trauco* new species
- (28) *A. mallecoensis* new species
- (29) *A. pedroi* new species.

Details of face.

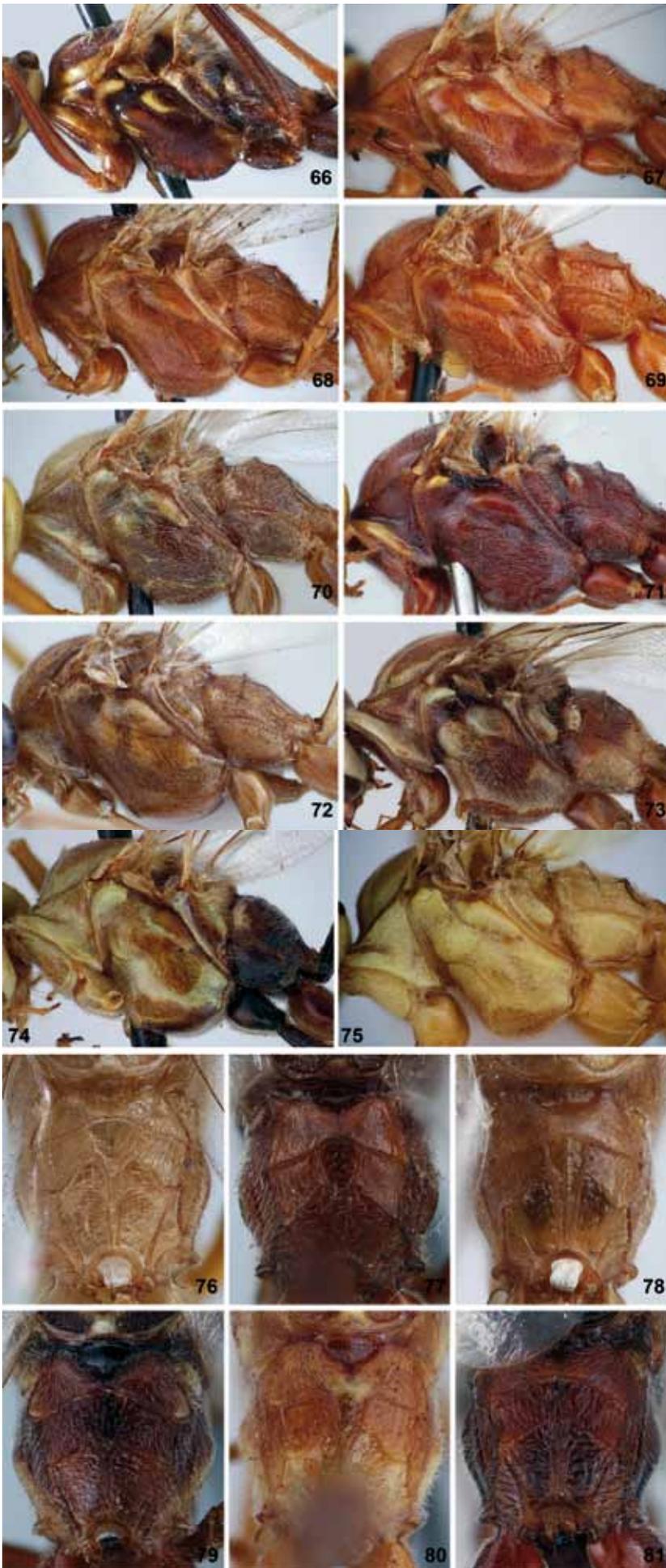
- (30) *A. viride* new species
- Details of head in lateral view.

- (31) *A. chango* new species
- (32) *A. picunche* new species
- (33) *A. mapuche* new species
- (34) *A. chono* new species
- (35) *A. alacalufe* new species
- (36) *A. trauco* new species
- (37) *A. mallecoensis* new species
- (38) *A. jujuye* new species
- (39) *A. sinchirocai* new species
- (40) *A. sofiae* new species
- (41) *A. ananauca* new species
- (42) *A. mapudungun* new species
- (43) *A. maytacapaci* new species.



Figures 44 – 65

- Details of head in lateral view.
 (44) *A. alvarengai* new species
 (45) *A. mancocapaci* new species
 (46) *A. ona* new species
 (47) *A. pedroi* new species
 (48) *A. viride* new species
 (49) *A. pihuchen* new species
 Details of head in dorsal view.
 (50) *A. alvarengai* new species
 (51) *A. ananauca* new species
 (52) *A. jujuye* new species
 (53) *A. picunche* new species.
 Details of fore wing.
 (54) *A. mancocapaci* new species
 (55) *A. mapuche* new species
 (56) *A. trauco* new species.
 (57) Details of mesosoma in lateral view.
A. mancocapaci new species.
 Details of Mesosoma in lateral view.
 (58) *A. mapudungun* new species
 (59) *A. maytacapaci* new species
 (60) *A. alvarengai* new species
 (61) *A. pihuchen* new species
 (62) *A. chango* new species
 (63) *A. picunche* new species
 (64) *A. mapuche* new species
 (65) *A. chono* new species.



Figures 66 – 81.

Details of mesosoma in lateral view.

(66) *A. alacalufe* new species

(67) *A. ona* new species

(68) *A. mallecoensis* new species

(69) *A. trauco* new species

(70) *A. jujuye* new species

(71) *A. sinchirocai* new species

(72) *A. sofiae* new species

(73) *A. ananauca* new species.

Details of mesosoma in lateral view.

(74) *A. viride* new species

(75) *A. pedroi* new species

Details of propodeum.

(76) *A. jujuye* new species

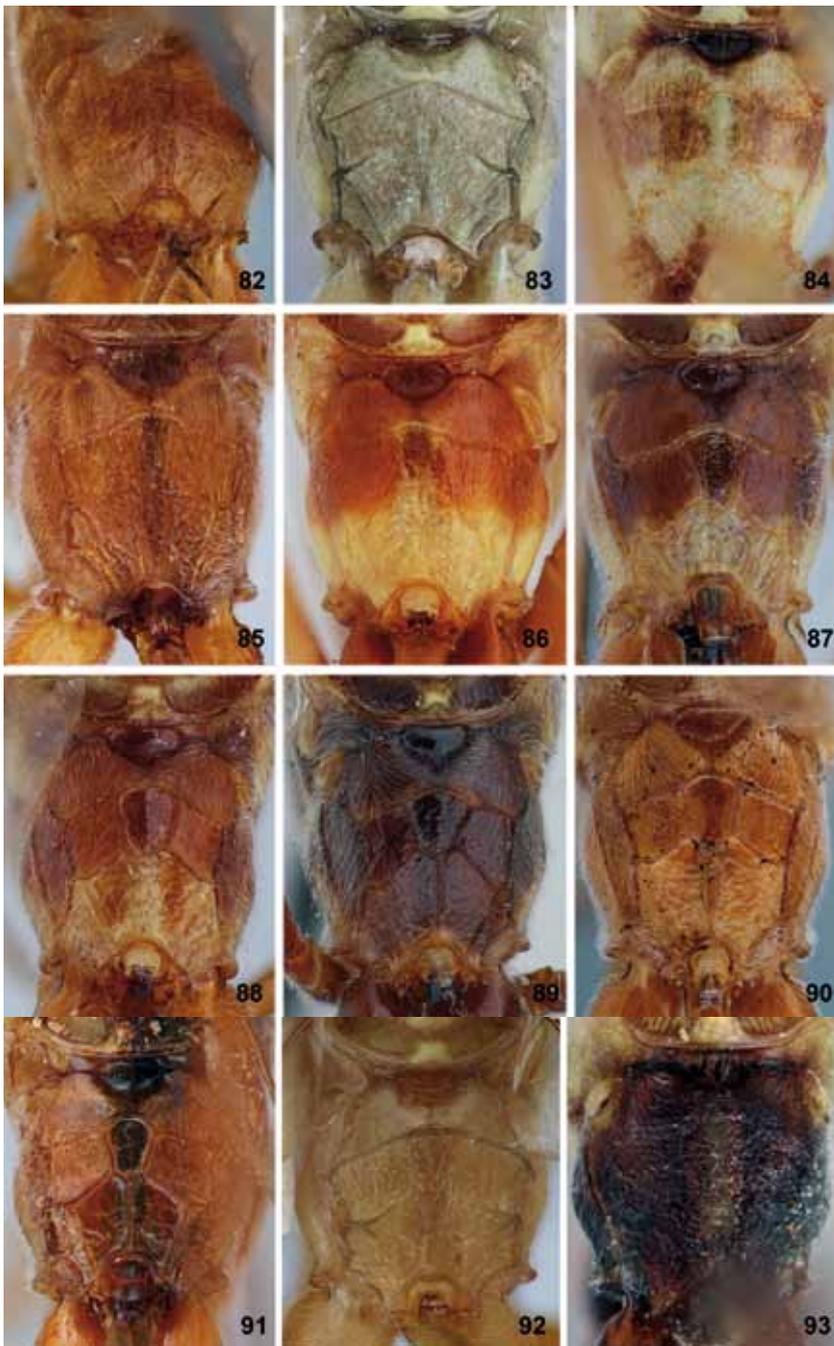
(77) *A. sinchirocai* new species

(78) *A. sofiae* new species

(79) *A. ananauca* new species

(80) *A. mapudungun* new species

(81) *A. maytacapaci* new species.



Figures 82 – 93.
 Details of propodeum.
 (82) *A. mancocapaci* new species
 (83) *A. alvarengai* new species
 (84) *A. pihuchen* new species
 (85) *A. chango* new species
 (86) *A. picunche* new species
 (87) *A. mapuche* new species
 (88) *A. chono* new species
 (89) *A. alacalufe* new species
 (90) *A. ona* new species.
 (91) *A. trauco* new species
 (92) *A. pedroi* new species
 (93) *A. viride* new species

(18) Metapleuron with punctate texture on apical half and rugulose on the lower half; mesopleuron glaucous with yellowish spots ...
 *Alopophion mapudungun* new species
 – Metapleuron with rugulose texture on entire surface (Figs. 72); mesopleuron homogeneously glaucous *Alopophion sofiae* new species

1. *Alopophion alacalufe* new species

(Figs. 19, 35, 66, 89)

Diagnosis.- This species can be recognized by this combination of the features: body mainly brownish red colored, nervellar index of hind wing 1.0 and compound eyes 1.0x as wide as face.

Description.- ♀: Head. Face (Fig. 19) 0.9 x as wide as long; softly imbricate with punctures separated by 1–2x a puncture width; median portion weakly convex. Clypeus convex; upper

half smooth and lower softly imbricate with punctures separated by 2–3x a puncture width; apical edge centrally straight and slightly convex laterally. Compound eyes 1.0x as wide as face. Malar space 0.1–0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 35), 0.4x as wide as compound eyes, softly imbricate with shallow punctures separated by 1x a puncture width. Frons softly imbricate, softly striate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.1x ocellar diameter; distance between ocelli 0.5–0.6x ocellar diameter. Antenna with 51–52 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 5.3:2.7:2.4:2.3:2.2:2.1:2.1. Ratio of length/width of pre-apical flagellomeres: 1.5x.

Mesosoma.- Pronotum on upper half softly imbricate with punctures separated by 1.0–2.0x a puncture width; lower half and collar striate. Mesoscutum smooth with shallow punctures separated by 6–8x a puncture width. Notaulus extending 0.3x

length of mesoscutum, finely scrobiculate. Mesoscutellum evenly convex, with texture as that of mesoscutum; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 66) imbricate with punctures separated by 0.5–1x a puncture width; speculum smooth with shallow punctures separated by 2x a puncture width; mesopleural furrow absent. Epicnemial carina curved to meet anterior margin of mesopleuron at lower third of pronotum; forming an angulation between mesopleuron and mesosternum. Metapleuron softly imbricate with punctures separated by 0.5x a puncture width. Fore wing with CI=0.5; ICI=0.8–0.9; SDI=1.4–1.5; 1m-cu straight; ramulus present; Rs+M slightly curved; marginal cell with a glabrous area next to the upper half of Rs+2r; sub-basal cell glabrous with isolate setae in the apical half. Hind wing with 7 hamuli on R1 distally; NI=1.0; cu-a slightly curved. Propodeum (Fig. 89) softly imbricate with shallow punctures; anterior transverse carina present between lateral longitudinal carinae; posterior transverse carina present, reaching to pleural carinae; longitudinal carinae present; lateromedian longitudinal carinae confluent behind posterior transverse carina and absent before anterior transverse carinae; pleural carina present.

Metasoma.— First tergite 5.6x as long as apical width. Tergite II with spiracle located at 0.5x length of tergite.

Color.— Brownish red except following: face, gena, between ocelli, vertex, anterior upper half of pronotum, collar, lateral margins of mesoscutum, a longitudinal stripe from notaulus to the posterior end of mesoscutum, mesoscutellum, tegula, subalar prominence, anterior half of speculum, spot between subalar prominence and mesopleural furrow, a spot in posterior lower mesopleuron, and a spot in upper-apical third metapleuron. Wings grayish hyaline; veins brownish and pterostigma fulvous.

♂: Unknown.

Comments.— This species is distributed in the Chilean region of Coquimbo.

Etymology.— The species epithet refers to the Alacalufes, a South American people living in the Chilean Patagonia. It is treated as a noun in apposition.

Holotype: ♀, “CHILE: Prov. [Provincia] Elqui Choros Bajos 25.X.1988 JEBarriga [J.E. Barriga]” (MNNC).

Paratypes: ♀, same data as holotype (UCDC).

2. *Alophophion alvarengai* new species

(Figs. 16, 44, 60, 83)

Diagnosis.— This species can be recognized by having the ocelli in contact with compound eyes, the mesopleural furrow absent, and olive green color.

Description.— ♀: **Head.** Face (Fig. 16) 0.8x as wide as long; imbricate with shallow punctures separated by 2x a puncture width; median portion weakly convex. Clypeus convex; softly imbricate with shallow punctures separated by 2–3x a puncture width; apical edge straight centrally, slightly convex laterally. Compound eyes 1.0x as wide as face. Malar space 0.1x as long as basal width of mandible. Gena imbricate with shallow punctures separated by 2x a puncture width; in lateral view (Fig. 44), 0.3x as wide as compound eyes. Frons bearing setae laterally between

ocelli; imbricate, slightly striate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by less than 0.1x ocellar diameter; distance between ocelli 0.3–0.4x ocellar diameter (Fig. 50). Antenna with 47–48 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 3.9–4.0:2.4–2.6:2.2–2.4:2.1–2.2:2.1:2.1:2.0–2.1. Ratio of length/width of pre-apical flagellomeres: 2.0–2.1x.

Mesosoma. Pronotum imbricate with shallow punctures separated by 3x a puncture width. Notaulus extending 0.3x length of mesoscutum. Mesoscutum and mesoscutellum imbricate with shallow punctures separated by 2–3x a puncture width. Mesoscutellum evenly convex lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 60) imbricate with shallow punctures separated by 1–2x a puncture width; mesopleural furrow absent. Epicnemial carina not joining to anterior margin of mesopleuron. Metapleuron imbricate between punctures. Fore wing with CI=0.7; ICI=0.8; SDI=1.5; 1m-cu slightly curved; ramulus present; Rs+M slightly curved; marginal cell apically glabrous, except by a row of setae next to upper margin; sub-basal cell glabrous. Hind wing with 6–8 hamuli on R1 distally; NI=0.8; cu-a slightly curved. Propodeum (Fig. 83) with anterior area imbricate with shallow punctures separated by 2–3x a puncture width, behind anterior transverse carina granulo-striate with punctures separated by 1–2x a puncture width; with anterior transverse carina present, reaching pleural carinae; posterior transverse carina absent centrally; lateromedian longitudinal carinae present before anterior transverse carina, converging at the middle; lateral longitudinal carinae faint.

Metasoma.— First tergite 4.7x as long as apical width. Tergite II with spiracle located at 0.6x length of tergite.

Color.— Olive green to light straw yellow except following: antennae, two diagonal stripes in externum, trochanter, trochantellus, femur, tibia, tarsomeres and ovipositor sheath ferruginous.

♂: Similar to female except: Hind wing with 6–8 hamuli on R1 distally.

Comments.— This species was been only collected in Bahia, Brazil. Its distribution is overlapping with *A. jujuyae* new species; both species have predominately olive green color, and ocelli in contact with compound eyes; within the Species-group A are the only that share these features. Additionally, *A. alvarengai* new species and *A. jujuyae* new species they have the easternmost distribution of the genus.

Etymology.— Named in honor of the Brazilian entomologist M. Alvarenga, who collected the type material.

Holotype: ♀ “Encruzilhada Bahia, Brazil XI.'74 [xi.1974] 980m. M. Alvarenga”

Paratypes: 2♂♂, 5♀♀: labeled as follows: 2♀♀, same data as holotype; and 2♂♂, 3♀♀ “Encruzilhada, Bah. [Bahia] XI.'72 [xi.1972] 960m. Braz. [Brazil] M. Alvarenga” (AEIC).

3. *Alophophion ananauca* new species

(Figs. 25, 41, 51, 73, 79)

Diagnosis.— This species can be recognized by this combination of the features: body mainly reddish brown colored with

cream color spots, compound eyes 0.9x as wide as face and metapleuron softly rugulose.

Description.- ♀: Head. Face (Fig. 25) 0.8x as wide as long; imbricate with punctures separated by 1–2x a puncture width; median portion weakly convex. Clypeus with punctures separated by 3–4x a puncture width; apical edge slightly straight, laterally slightly convex. Compound eyes 0.9x as wide as face. Malar space less than 0.1x as long as basal width of mandible. Gena, in lateral view (Fig. 41), 0.2x as wide as compound eyes; softly imbricate with punctures separated by 4x a puncture width. Frons imbricate, slightly striate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.1x ocellar diameter; distance between ocelli 0.4–0.5x ocellar diameter. Antenna with 50–51 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.8–5.1:2.5–2.7:2.3–2.4: 2.3–2.4: 2.2–2.1:2.0–2.1: 2.0–2.1. Ratio of length/width of pre-apical flagellomeres: 1.5–1.6x.

Mesosoma.- Pronotum in upper half imbricate with punctures separated by 1x a puncture width and lower half rugulose; lower half of collar striate and upper half imbricate. Mesoscutum imbricate with punctures separated by 2x a puncture width, except smooth in the anterior margins between notaulus and tegula. Notaulus extending 0.3x length of mesoscutum of mesoscutum, basally scrobiculate. Mesoscutellum evenly convex; smooth between punctures; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 73) smooth on upper half and imbricate on lower half with punctures separated by 1x a puncture width; speculum smooth between punctures; mesopleural furrow softly rugulose, reaching to posterior end. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of pronotum. Metapleuron softly rugulose. Fore wing with CI=0.7–0.8; ICI=0.8; SDI=1.5; 1m-cu slightly curved; ramulus present; Rs+M slightly curved; marginal cell apically with a glabrous area next to pterostigma and Rs+2r; sub-basal cell glabrous with isolated setae apically. Hind wing with 7 hamuli on R1 distally; NI=1.0; cu-a slightly curved. Propodeum (Fig. 79) softly carinate texture, except areas basalis and externa imbricate with shallow punctures separated by 3–4x a puncture width; anterior transverse carina present, faint laterally; posterior transverse carina present between pleural carinae; lateral longitudinal carinae present before anterior transverse carina, faint between transverse carinae, well develop behind posterior transverse carina; lateromedian longitudinal carinae present between transverse carina, behind posterior transverse carina confluent; softly carinate texture, except: areas basalis and externa imbricate with punctures separated by 1–2x a puncture width; pleural carina present.

Metasoma.- First tergite 5.0–5.2x as long as apical width. Tergite II with spiracle located at 0.5x length of tergite.

Color.- Reddish brown except following: face laterally, frons laterally, between ocelli, vertex, gena, collar, a spot in upper margin of pronotum and lower half, tegula, subalar prominence, lateral margins of mesoscutum, a longitudinal stripe from notaulus to the posterior end of mesoscutum, mesoscutellum, anterior half of speculum, spot between subalar prominence and mesopleural furrow, a spot in posterior lower mesopleuron, metapleuron apical half, propodeum apical half and hind coxae dorsally yellowish. Wings grayish hyaline; veins brownish; pterostigma cream colored, centrally brownish.

♂: Similar to female.

Comments.- There are variations in the marginal cell of some specimens; they have setae next to the pterostigma and posterior transverse carina weak centrally. This species is distributed on the western Andes north of Chile.

Etymology.- The species epithet "*ananauca*" refers to Añañuca, a legend character from the north of Chile that gave the name to the red flower. It is treated as a noun in apposition.

Holotype: ♀ "Q. El León [Quebrada El León], Atac. [Atacama] X.5.1980 [05.x.1980] Chile [,] Luis Peña" (AEIC)

Paratypes: 4♂♂, 14♀♀ "Q. El León [Quebrada El León], Atac. [Atacama] X.5.1980 [05.x.1980] Chile [,] Luis Peña" (AEIC).

4. *Alophophion chango* new species

(Figs. 15, 31, 62, 85)

Diagnosis.- This species is easy to recognize, within the Species-groups A, by having the propodeum with areas dentipara and superomedia faintly delimited, with carinate texture.

Description.- ♀: Head. Face (Fig. 15) 1.0 x as wide as long; centrally smooth and softly imbricate laterally with shallow punctures separated by 1x a puncture width; median portion weakly convex. Clypeus convex; smooth basally and apically imbricate with punctures separated by 1–2x a puncture width; apical edge slightly convex. Compound eyes 0.8–0.9x as wide as face. Malar space 0.1x as long as basal width of mandible. Gena, in lateral view (Fig. 31), 0.4x as wide as compound eyes; imbricate with shallow punctures separated by 4x a puncture width. Frons imbricate, softly striate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.1x ocellar diameter; distance between ocelli 0.3–0.6x ocellar diameter. Antenna with 52–54 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.5–4.9:2.4–2.6:2.1–2.3:2.0–2.2:2.0–2.1:2.0–2.1:1.9–2.1. Ratio of length/width of pre-apical flagellomeres: 1.5–1.6x.

Mesosoma.- Pronotum on upper half punctate imbricate laterally with shallow punctures separated by 0.5–1x a puncture width; lower half striate; collar striate. Mesoscutum smooth centrally and imbricate laterally with shallow punctures separated by 1x a puncture width. Notaulus extending 0.3x length of mesoscutum, scrobiculate. Mesoscutellum evenly convex, smooth with shallow punctures separated by 1x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 62) imbricate with punctures separated by 1–2x a puncture width; subalar prominence smooth with shallow punctures separated by 3–4x a puncture width; lower edge of speculum finely scrobiculate; mesopleural furrow absent. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of pronotum. Metapleuron imbricate with punctures separated by 0.5–1x a puncture width. Fore wing with CI=0.4; ICI=0.8; SDI=1.3–1.4; 1m-cu slightly curved; ramulus present; Rs+M slightly curved; marginal cell homogeneously covered by setae; sub-basal cell glabrous, except row of setae next to vein 1A apically. Hind wing with 6–7 hamuli on R1 distally; NI=0.8–0.9; cu-a slightly curved. Propodeum

(Fig. 85) with anterior transverse carina present, faint laterally; posterior transverse carina weak centrally; longitudinal carinae present, faint; longitudinal carinate texture, except areas basalis and externa imbricate with punctures separated by 1–2x a puncture width; pleural carina present.

Metasoma.— First tergite 5.5–5.7x as long as apical width. Tergite II with spiracle located at 0.6 of tergite.

Color.— Testaceous except following: area surrounding compound eyes, between ocelli, vertex and gena light straw yellow.

♂: Similar to female, except texture of propodeum softer than in female.

Comments.— *Alophophion chango* new species is distributed in the Chilean region of Maule and Araucanía and the Argentinean province of Tucuman.

Etymology.— The species epithet "*chango*" refers to the tribe of native South Americans, the Chango people, who appeared to have originally inhabited the Peruvian coast and spread south to the coast of Atacama, in northern Chile. It is treated as a noun in apposition.

Holotype. ♀ "Curacautín, Malleco II.'64 [ii.1964] R. [Río] Blanco Chile Luis E. Peña" (AEIC).

Paratypes: 1♂, 8♀♀: labeled as follows: **ARGENTINA:** 1♂, 1♀ "ARGENTINA: Tuc. [Tucuman], Taft d. [del] Valle, 2,500 m. 6-8.I.1970 [06-08.i.1970]. At light Vardy & Argulindeguy.B.M.1970-36" (BMNH) **CHILE:** 1♀ "Chovellen Maule Prov. [Province] XII.5.53 [05.xii.1953] Chile L. Pena Guzman [Peña Guzman]"; and 4♀♀ "Curacautín, Malleco II.'64 [ii.1964] R. [Río] Blanco Chile Luis E. Peña" (AEIC). 2♀♀ "CHILE: [Araucania] Los Alpes–Nahuelbuta 17.i.1985 I.D. Gauld" (BMNH).

5. *Alophophion chono* new species

(Figs. 18, 34, 65, 88)

Diagnosis.— This species can be recognized by this combination of the features: the clypeus convex, the compound eyes 1.0x as wide as face and hind wing with 6 hamuli on R1 distally.

Description.— ♀: **Head.** Face (Fig. 18) 0.8–0.9x as wide as long; imbricate with punctures separated by 1x a puncture width; median portion weakly convex. Clypeus convex; imbricate with sparse punctures separated by 2–4x a puncture width; apical edge slightly convex. Compound eyes 1.0x as wide as face. Malar space less than 0.1x as long as basal width of mandible. Gena, in lateral view (Fig. 34), 0.4x as wide as compound eyes, softly imbricate with shallow punctures separated by 8x a puncture width. Frons imbricate, slightly striate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.2x ocellar diameter; distance between ocelli 0.7–0.8x ocellar diameter. Antenna with 50–53 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 5.0:2.5–2.7:2.3:2.2:2.1–2.2:2.1:2.0–2.1. Ratio of length/width of pre-apical flagellomeres: 1.7–1.8x.

Mesosoma.— Pronotum punctate, imbricate with punctures separated by 1x a puncture width; collar striate. Mesoscutum smooth with shallow punctures separated by 6x a puncture width. Notaulus extending 0.2x length of mesoscutum; softly

scrobiculate. Mesoscutellum evenly convex, with texture as that of mesoscutum; lateral carina reaching 0.2x to posterior margin of mesoscutellum. Mesopleuron (Fig. 65) punctate, imbricate with punctures separated by 1–2.5x a puncture width; mesopleural furrow absent. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of pronotum. Metapleuron imbricate with punctures separated by 3–4x a puncture width. Fore wing with CI=0.4–0.5; ICI=0.7–0.9; SDI=1.4; 1m-cu slightly curved; ramulus present; Rs+M slightly curved; marginal cell with glabrous area next to proximal half of Rs+2r and pterostigma; sub-basal cell with isolate setae in the third apical. Hind wing with 6 hamuli on R1 distally; NI=0.9; cu-a slightly curved. Propodeum (Fig. 88) with anterior transverse carina present, faint laterally; posterior transverse carina present, reaching to pleural carinae; lateromedian longitudinal carinae absent before anterior transverse carina, present and well defined between transverse carinae, behind posterior transverse carina faint; lateral longitudinal carinae faint; pleural carina present; softly rugulose-carinate texture, except anterior area imbricate with punctures separated by 1–2x a puncture width.

Metasoma.— First tergite 4.9–5.1x as long as apical width. Tergite II with spiracle located at 0.5x of tergite.

Color.— Rufo-testaceous except following: face, frons laterally, vertex, gena, pronotum (except upper dorsal corner), lateral margins of mesoscutum, spot from notaulus to 3/4 of mesoscutum, mesoscutellum, tegula, subalar prominence, speculum, a spot between subalar prominence and mesopleural furrow, a spot in posterior lower mesopleuron, metapleuron apical half, propodeum apical half and hind coxae dorsally yellowish. Wings grayish hyaline; veins brownish; pterostigma fulvous.

♂: Unknown.

Comments.— One female has the mesopleuron with isolate holes in the surface. *Alophophion chono* new species is distributed in the Chilean region of Coquimbo.

Etymology.— The species epithet "*chono*" refers to the language spoken by the indigenous people that of the Chiloe Archipelago. It is treated as a noun in apposition.

Holotype. ♀ "El Calabazo Had. [Hacienda] Illapel Coquimbo Prov. [Provincia] XI.21-23.57 [21-23.xii.1957] Chile L. Pena Guzman [L. Peña Guzmán]" (AEIC).

Paratypes: 2♀♀: labeled as follows: 1♀ "Canela Baja, Coquimbo, Chile X.23 1961 [23.x.1961] Luis Peña"; and 1♀ "Rivadavia Elqui valley Coquimbo V.16.53 [16.v.1953] Chile L. Pena Guzman [L. Peña Guzmán]" (AEIC).

6. *Alophophion jujuye* new species

(Figs. 8, 22, 38, 52, 76)

Diagnosis.— This species can be recognized by this combination of the features: light straw yellow to olive green colored, posterior ocelli almost in contact with compound eyes and distance between ocelli 0.2–0.3x ocellar diameter.

Description.— ♀: **Head.** Face (Fig. 22) 0.8–0.9x as wide as long; imbricate with punctures separated by 1.0–1.5x a puncture width; median portion weakly convex; median portion weakly convex. Clypeus slightly convex; imbricate with punctures

separated by 2.0–3.5x a puncture width; apical edge slightly convex. Compound eyes 1.0x as wide as face. Malar space at most 0.1x as long as basal width of mandible. Gena, in lateral view (Fig. 38), 0.4x as wide as compound eyes; imbricate with shallow punctures separated by 4–6x a puncture width. Frons imbricate, slightly striate between antennae and median ocellus; setae present laterally and between ocelli. Vertex with texture as gena. Lateral ocellus separated from compound eye by less than 0.1x ocellar diameter; distance between ocelli 0.2–0.3x ocellar diameter (Fig. 52). Antenna with 51–62 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.0–4.6:2.3–2.7:2.1–2.5:2.0–2.4:1.9–2.4:1.9–2.3:1.9–2.2. Ratio of length/width of pre-apical flagellomeres: 2.0–2.1x.

Mesosoma.- Pronotum on upper half punctate, imbricate with punctures separated by 0.5–1x a puncture width; lower half striate; lower half of collar striate. Mesoscutum smooth and centrally imbricate with punctures separated by 2x a puncture width. Notaulus extending 0.2 length of mesoscutum, basally scrobiculate. Mesoscutellum evenly convex; smooth with punctures separated by 1–2x a puncture width; lateral carina reaching 0.2x to posterior margin of mesoscutellum. Mesopleuron (Fig. 52) with subalar prominence, speculum and area between subalar prominence and epicnemial carina smooth with punctures separated by 1–2x a puncture width; lower edge of speculum finely scrobiculate; mesopleural furrow rugulose-punctate reaching to the posterior end, finely scrobiculate upper epicnemial carina. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of pronotum. Metapleuron rugulose. Fore wing with CI=0.6; ICI=0.7; SDI=1.4–1.5; 1m-cu slightly sinuate; ramulus present; marginal cell cover by setae; sub-basal cell glabrous with isolated setae. Hind wing with 6–7 hamuli on R1 distally; NI=1.0–1.1; cu-a slightly curved. Propodeum (Fig. 76) with rugulose texture, except area basalis imbricate-striate with soft punctures separated by 6–8x a puncture width; anterior transverse carina present, faint laterally; posterior transverse carina present between pleural carinae, weak centrally; lateral longitudinal carinae present before anterior transverse carina, faint between transverse carinae, well develop behind posterior transverse carina with traces of an additional one next to it; lateromedian longitudinal carinae present, behind posterior transverse carina confluent with traces of an additional one between them; pleural carina present.

Metasoma.- First tergite 4.7x as long as apical width. Tergite II with spiracle located at 0.6x of tergite.

Color.- Light straw yellow to olive green except following: mandibles, antennae, mesopleuron, trochanter, trochantellus, femur, tibia and tarsomeres rufo-testaceous. Wings grayish hyaline; veins brownish and pterostigma fulvous.

♂: Unknown

Comments.- There is some variation in the specimen from Brazil, it has posterior transverse carina homogeneously develop and longitudinal carinae behind simple.

This species is distributed in the Argentinean regions of Jujuy, Salta, and Tucuman and the Brazilian state of Bahia. Its distribution overlaps with *A. alvarengai* new species. And they seem to be closely related, as both have the ocelli in contact with the compound eyes and have similar coloration.

Etymology.- The species epithet "jujuy" refers to the Jujuyes, a name of sedentary indigenous people that inhabited the valley of Jujuy. It is treated as a noun in apposition.

Holotype: 1♀ "Horco Molle nr. Tucumán XII-26-65 [26. xii.1965] Arg. [Argentina] H. & M. Townes" (AEIC)

Paratypes: 8♀♀: labeled as follows: **ARGENTINA:** 7♀♀: 1♀ "Horco Molle nr. Tucumán I.28-II.3.66 [28.i-03.ii.1966] Arg. Lionel Stange"; 2♀♀ "Horco Molle nr. Tucumán I-8-15-66 [08-15.i.1966] Arg. [Argentina] H. & M. Townes"; 1♀ "Jujuy, Argent. [Argentina] I-14-66 [14.i.1966] H. & M. Townes"; 1♀ "Tartagal, Salta I.'72 [i.1972] Argentina Manfredo Fritz"; 1♀ "Amaicha, Argent. [Argentina] Nov. 19-21, 1966 [19-21. xi.1966] Lionel Stange"; and, 1♀ "Capillitas, Catam. [Catamarca] I-II.70 [i-ii.1970] Argentina Luis Peña" (AEIC). **BRAZIL:** 1♀ "Encruzilhada [,] Bahia, Brazil XI.'74 [xi.1974] 980m. M. Alvarenga" (AEIC).

7. *Alophophion mallecoensis* new species

(Figs. 28, 37, 68)

Diagnosis.- This species can be recognized by this combination of the features: face almost square, clypeus convex and posterior transverse carina present with M shape between lateral carinae.

Description.- ♀: **Head.** Face (Fig. 28) 0.9–1.0x as wide as long; median portion weakly convex; softly imbricate with punctures separated by 1.0–2.0x a puncture width. Clypeus convex; softly imbricate with punctures separated by 2.0–3.0x a puncture width; apical edge slightly convex. Compound eyes 0.7–0.8x as wide as face. Malar space 0.1x as long as basal width of mandible. Gena, in lateral view (Fig. 37), 0.3–0.4x as wide as compound eyes; imbricate with soft punctures separated by 5.0–7.0x a puncture width. Frons imbricate, slightly striate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.3–0.4x ocellar diameter; distance between ocelli 0.5–0.6x ocellar diameter. Antenna with 53–56 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.3–4.4:2.3–2.5:1.9–2.1:1.8–2.0:1.8–1.9:1.7–1.9:1.7–1.8. Ratio of length/width of pre-apical flagellomeres: 1.7–2.2x.

Mesosoma.- Pronotum in upper half smooth with punctures separated by 1.5–2.0x a puncture width and lower half striate; lower half of collar striate and upper half imbricate. Mesoscutum smooth with punctures separated by 4.0–5.0x a puncture width. Notaulus extending 0.4x length of mesoscutum, basal half scrobiculate. Mesoscutellum evenly convex, smooth with punctures separated by 2.0–3.0x a puncture width; lateral carina reaching 0.2x to posterior margin of mesoscutellum. Mesopleuron (Fig. 68) imbricate with punctures separated by 1.0–2.0x a puncture width; mesopleural furrow absent; speculum softly imbricate with punctures separated by 3.0–5.0x a puncture width. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of pronotum. Metapleuron imbricate with punctures separated by 0.5–1.0x a puncture width; juxtacoxal carina present. Fore wing with CI=0.4–0.5; ICI=0.8–0.9; SDI=1.3–1.4; 1m-cu slightly curved; ramulus present; marginal cell basally with a glabrous area next to pterostigma and vein Rs+2r; sub-basal cell glabrous. Hind wing with 7 hamuli on R1

distally; NI=0.8; cu-a slightly curved. Propodeum with leathery texture, except areas basalis and externa imbricate with punctures separated by 0.5–1.5x as a puncture width; anterior transverse carina present, faint laterally, strongly up-curved centrally; posterior transverse carina present between pleural carinae with a M shape between lateral carinae; lateral longitudinal carinae faint between transverse carinae, behind posterior transverse carina complete and well defined; lateromedian longitudinal carinae present before anterior transverse carina and between transverse carinae, behind posterior transverse carina forming a single carina (some specimens with additional, faint carinae next to lateromedian longitudinal carina); pleural carina present.

Metasoma.- First tergite 3.8–4.3x as long as apical width. Tergite II with spiracle located at 0.5x of tergite.

Color.- Testaceous except following: face laterally, frons laterally, between ocelli, vertex, gena next to compound eyes cream colored.

♂: similar to female.

Comments.- Some specimens have irregular texture on mesopleuron that can resemble the mesopleural furrow but in this species this texture is not contacted to epicnemial carina. Other have sub-basal cell glabrous with isolate setae on distal half.

Etymology.- The specific epithet is based on Malleco the type locality.

Holotype: ♀ “CHILE MALLECO Vn. [¿] Louquimay [Lonquimay] 1400m 22.XII.1994 [22.xii.1994] J.E. Barriga” (MNNC)

Paratypes: 2♂♂, 15♀♀ labeled as follows: **ARGENTINA:** 1♀, “ARGENTINA. N.-W [NW] Patagonia. 1,000-3,000ft. [305-915m] Dec. 1919. H.E. Box” (BMNH). **CHILE:** 2♂♂, 13♀♀ same data as holotype (UCDC); 1♀ “Curacautín, Malleco II. '64 [ii.1964] R. [Río] Blanco Chile Luis E. Peña” (AEIC).

8. *Allophopion mancopapaci* new species

(Figs. 12, 45, 54, 57, 82)

Diagnosis.- This species is easy to recognize by its entirely yellow face; fore wing Rs+2r markedly sinuous just before the center of vein; and the hind wing with 9 hamuli on R1 distally.

Description.- ♀: **Head.** Face (Fig. 12) 1.0 x as wide as long; coarsely punctate, imbricate with punctures separated by 0.5–1x a puncture width; median portion weakly convex. Clypeus convex; with texture as face; apical edge straight centrally, slightly convex laterally. Compound eyes 0.8x as wide as face. Malar space 0.1x as long as basal width of mandible. Gena, in lateral view (Fig. 45), 0.5x as wide as compound eyes, softly imbricate with punctures separated by 1–2x a puncture width. Frons imbricate, slightly striate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.1x ocellar diameter; distance between ocelli 0.3x ocellar diameter. Antenna with 56 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.1:2.3:2.1:2.0:1.9:1.8:1.7. Ratio of length/width of pre-apical flagellomeres: 2.7x.

Mesosoma.- Pronotum in upper half punctate, imbricate with punctures separated by 0.5–1x a puncture width; collar

striate-punctate. Mesoscutum softly imbricate laterally and smooth centrally with punctures separated by 1–2x a puncture width. Notaulus extending 0.3x length of mesoscutum, rugulose basally. Mesoscutellum evenly convex, imbricate with punctures separated by 1–2x a puncture width; lateral carina reaching 0.4x to posterior margin of mesoscutellum. Mesopleuron (Fig. 57) softly imbricate with punctures separated by 0.5–1x a puncture width; mesopleural furrow absent. Epicnemial carina not curved to meet anterior margin of mesopleuron, reaching about lower third of pronotum. Metapleuron imbricate with punctures separated by 1x a puncture width. Fore wing (Fig. 54) with CI=0.5; ICI=0.9; SDI=1.2; 1m-cu straight; ramulus present; Rs+M curved; Rs+2r markedly sinuous just before center of vein; marginal cell with a glabrous area next to Rs+2r; sub-basal cell glabrous with a row of setae next to M+Cu. Hind wing with 9 hamuli on R1 distally; NI=1.1; cu-a slightly curved. Propodeum (Fig. 82) imbricate with shallow punctures; transverse carinae absent; longitudinal carinae present only apically; pleural carina absent.

Metasoma.- First tergite 4.0x as long as apical width. Tergite II with spiracle located at 0.6x length of tergite.

Color.- Fulvous except following: face, gena, frons, vertex, subalar prominence and mesoscutellum yellowish, and apical quarter of tergite III and tergites IV to VIII brownish. Wings infuscate; veins and pterostigma brownish except next to Rs+2r fulvous.

♂: Unknown.

Comments.- The locality label mentions Quincemil near Macapata, but it should be Marcapata given that Macapata in Peru is in Lima Department.

Etymology.- The species epithet “*mancopapaci*” refers to Manco Capac, the first ruler of the Tawantinsuyu

Holotype: 1♀: labeled as follows: **PERU:** 1♀, “Quincemil, Perú 30 m. nr. Macapata [Marcapata] IX.1-3.62 Luis Peña [handwritten]” (AEIC).

9. *Allophopion mapuche* new species

(Figs. 14, 33, 55, 64, 87)

Diagnosis.- This species has a similar appearance to *A. picunche* new species. *Allophopion mapuche* new species has the clypeus with the upper half convex and the lower half flat while *A. picunche* new species has the clypeus convex.

Description.- ♀: **Head.** Face (Fig. 14) 0.9–1.0 x as wide as long; softly imbricate with punctures separated by 1–2x a puncture width; median portion weakly convex. Clypeus with upper half convex and lower half flat; imbricate with punctures separated by 2–3x a puncture width; apical edge straight centrally, laterally slightly convex. Compound eyes 0.7–0.8x as wide as face. Malar space 0.1x as long as basal width of mandible. Mandibles imbricate with irregularly distributed punctures. Gena, in lateral view (Fig. 33), 0.3–0.4x as wide as compound eyes; softly imbricate with punctures separated by 4–5x a puncture width. Frons imbricate, softly carinate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.2–0.3x ocellar diameter; distance between ocelli 0.6–0.8x ocellar diameter.

Antenna with 48–46 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.5–4.6:2.3–2.7:2.1–2.3:2.0–2.2:1.9–2.1:1.9–2.0:1.9. Ratio of length/width of pre-apical flagellomeres: 1.6–1.8x.

Mesosoma.- Pronotum smooth with punctures separated by 2x a puncture width; collar striate; with a row of transverse carinae on posterior edge of pronotum. Mesoscutum smooth with shallow punctures separated by 10x a puncture width. Notaulus extending 0.2x length of mesoscutum, basally scrobiculate. Mesoscutellum evenly convex, smooth with punctures separated by 3x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 64) on upper half smooth and lower half imbricate; coarsely punctate, punctures separated by 2x a puncture width; mesopleural furrow absent. Epicnemial carina curved to meet anterior margin of mesopleuron at lower third of pronotum. Metapleuron imbricate with punctures separated by 2x a puncture width. Fore wing (Fig. 55) with CI=0.4–0.5; ICI=0.8–1.0; SDI=1.3–1.4; 1m-cu straight; ramulus present; Rs+M slightly curved; marginal cell with a glabrous area apically, extending next to Rs+2r and pterostigma; sub-basal cell glabrous, with isolate setae apically. Hind wing with 7–8 hamuli on R1 distally; NI=0.6–0.9; cu-a slightly curved. Propodeum (Fig. 87) areas lateralis, petiolaris and posteroexterna softly wavy-rugulose and areas anterior, dentipara and superomedia punctate, smooth with shallow punctures; anterior transverse carina present, faint laterally; posterior transverse carina present between pleural carinae, sometimes broken medially; lateromedian longitudinal carinae absent before anterior transverse carina, present and well defined between transverse carinae, behind posterior transverse carina, sometimes converging, when converging there are two lateral carinae; lateral longitudinal carinae faint between transverse carinae, behind posterior transverse carina present; pleural carina present.

Metasoma.- First tergite 4.7–4.8x as long as apical width. Tergite II with spiracle located at 0.6x of tergite.

Color.- Rufo-testaceous except following: face, frons laterally, vertex, gena, lower pronotum, collar, lateral margins of mesoscutum, spot from notaulus to 3/4 of mesoscutum, mesoscutellum, tegula, subalar prominence, speculum, a diagonal stripe in mesopleuron, metapleuron apical half and propodeum apical half yellowish. Wings grayish hyaline; veins brownish and pterostigma testaceous.

♂: Similar to female.

Comments.- *Alophophion mapuche* new species is distributed in the Chilean regions Biobío, Coquimbo and Valparaíso. This species overlaps its distribution with *A. picunche* new species.

Etymology.- The species epithet "*mapuche*" refers to The Mapuche, a group of indigenous inhabitants of south-central Chile and southwestern Argentina. It is treated as a noun in apposition.

Holotype: ♀ "El Pangué, Coquimbo, Chile XI.3-5 1961 [03-05.xi.1961] Luis Peña" (AEIC).

Paratypes: 2♂♂, 18♀♀: labeled as follows: 7♀♀ "El Pangué, Coquimbo, Chile XI.3-5 1961 [03-05.xi.1961] Luis Peña"; 1♀ "El Pangué, Coquimbo, Chile XI.4 1961 [04.xi.1961] Luis Peña"; 1♀ "Las Vizcachas Chile 50 km. E Valparaíso X.20-21.51 [20-

21.x.1951] L. Peña"; 2♂♂, 6♀♀ "Río Los Chores [Los Choros], Coquimbo, Chile X.29-30 1961 [29-30.x.1961] Luis Peña"; 1♀ "Rio los Molles [handwritten] Coquimbo, Chile XI.7-10.61 [07-10.xi.1961; handwritten] Luis Peña"; 1♀ "Rio los Molles [handwritten] Coquimbo, Chile XI.7-10.61 [07-10.xi.1961; handwritten] Luis Peña" and 1♀ "Rivadavia Elqui valley Coquimbo X.28-29.57 Chile L. Peña Guzman [Peña Guzmán]" (AEIC).

10. *Alophophion mapudungun* new species

(Figs. 23, 42, 58, 80)

Diagnosis.- This species can be recognized by this combination of the features: face 0.8x as wide as long, clypeus convex with imbricate texture between punctures and metapleuron fulvous with apical half yellowish.

Description.- ♀: **Head.** Face (Fig. 23) 0.8x as wide as long; median portion weakly convex; softly imbricate. Clypeus convex; imbricate with punctures separated by 1–2x a puncture width; apical edge slightly convex. Compound eyes 0.8–0.9x as wide as face. Malar space 0.1x as long as basal width of mandible. Gena, in lateral view (Fig. 42), 0.3–0.4x as wide as compound eyes, softly imbricate with punctures separated by 3–4x a puncture width. Frons imbricate, slightly striate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.2x ocellar diameter; distance between ocelli 0.5–0.9x ocellar diameter. Antenna with 46–52 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.5–5.3:2.9–3.0:2.6:2.4–2.5: 2.4–2.5:2.4:2.2–2.3. Ratio of length/width of pre-apical flagellomeres: 1.5–1.7x.

Mesosoma.- Pronotum in upper half imbricate with punctures separated by 1.0–2.0x a puncture width and lower half rugulose; lower half of collar striate and upper half imbricate with punctures separated by 1x a puncture width. Mesoscutum smooth with punctures separated by 1.0–2.0x a puncture width, punctures closer centrally. Notaulus extending 0.3x length of mesoscutum, basally scrobiculate. Mesoscutellum evenly convex, smooth with punctures separated by 4x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 58) on upper half smooth and lower half imbricate; coarsely punctate, punctures separated by 0.5–1x a puncture width; speculum smooth between punctures; mesopleural furrow softly rugose, reaching to middle of mesopleuron. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of pronotum. Metapleuron softly imbricate with punctures separated by 0.5–1x a puncture width; lower half softly rugose. Fore wing with CI=0.5–0.6; ICI=0.8–0.9; SDI=1.4–1.5; 1m-cu slightly curved; ramulus small; marginal cell apically with a glabrous area next to proximal half of Rs+2r; sub-basal cell glabrous. Hind wing with 6–7 hamuli on R1 distally; NI=0.6–0.9; cu-a slightly curved. Propodeum (Fig. 80) softly carinate texture, except areas basalis and externa punctate imbricate with shallow punctures; anterior transverse carina present, faint laterally; posterior transverse carina present between pleural carinae; lateral longitudinal carinae present before anterior transverse carina, faint between transverse carinae, well develop behind posterior transverse carina; lateromedian longitudinal carinae present between transverse carina, behind posterior transverse carina confluent; pleural carina present.

Metasoma.- First tergite 5.3x as long as apical width. Tergite II with spiracle located at 0.5x of tergite.

Color.- Testaceous except following: face laterally, frons laterally, between ocelli, vertex, gena, collar, a spot in upper margin of pronotum and lower half, tegula, subalar prominence, lateral margins of mesoscutum, a longitudinal stripe from notaulus to the posterior end of mesoscutum, mesoscutellum, anterior half of speculum, spot between subalar prominence and mesopleural furrow, a spot in posterior lower mesopleuron, metapleuron apical half, propodeum apical half and lateral and posterior margins of tergites III to VII yellowish. Wings grayish hyaline; veins brownish and pterostigma cream colored, centrally brownish.

♂: Similar to female.

Comments.- There are variations in the texture of the face and clypeus whereby they are smooth instead of imbricate between the punctures. There is also variation in the propodeum with a few specimens having the lateromedian longitudinal carinae behind the posterior transverse carina close together forming a thin area petiolaris and with a smoother texture. This species is distributed in the Chilean regions of Atacama, Araucanía, and Coquimbo.

Etymology.- The species epithet "mapudungun" refers to a language spoken in south-central Chile and west central Argentina by the Mapuche people. It is treated as a noun in apposition.

Holotype: ♀ "Q. [Quebrada] Algodones Pr. [Provincia] Atacama CHILE Oct. 18, 1957 [18.x.1957] L.E. Pena [Peña]" (AEIC).

Paratypes: 4♂♂, 7♀♀: labeled as follows: 1♀ "40 km. S. Copiapo CHILE Prov. [Provincia] Atacama Oct. 15, 1957 [15.x.1957] L.E. Pena [Peña]"; 1♂ "El Pangue, Coquimbo, Chile Oct. 27, 1961 [27.x.1961] Luis Peña"; 3♂♂, ♀ "[Valparaíso, Petorca] Los Molles XI.20.65 [20.xi.1965] Chile Luis Peña"; 3♀♀ "Araucanía Q. [Quebrada] Boquerón Atacama Pr. [Provincia] X.18.57 Chile LPenaGuzman [Peña Guzmán]"; ♀ "Q. [Quebrada] de CHANARAL [Chañaral] Pr. [Provincia] Atacama CHILE Oct.1957 [x.1957] 300m. L.E. Pena [Peña]"; and 1♀ "Río Los Choros [Los Choros], Coquimbo, Chile X.29-30 1961 [29-30.x.1961] Luis Peña" (AEIC).

11. *Alophopion maytacapaci* new species

(Figs. 24, 43, 59, 81)

Diagnosis.- This species can be recognized by this combination of the features: notaulus extending 0.6x length of mesoscutum and mesoscutellum with basal half brownish and apical half yellowish.

Description.- ♀: **Head.** Face (Fig. 24) 0.9 x as wide as long; median portion weakly convex; centrally smooth and laterally imbricate texture with punctures separated by 0.5–1x a puncture width. Clypeus convex; upper half smooth with punctures separated by 1–3x a puncture width and lower half imbricate with punctures separated by 0.5–1x a puncture width; apical edge slightly straight, laterally slightly convex. Compound eyes 0.8x as wide as face. Malar space 0.1x as long as basal width of mandible. Gena, in lateral view (Fig. 43), 0.4x as wide as compound eyes; imbricate with soft punctures separated by 6–8x a puncture width. Frons imbricate, slightly striate between antennae and

median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.1–0.2x ocellar diameter; distance between ocelli 0.4–0.5x ocellar diameter. Antenna with 51–53 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.8–5.1:2.8–2.9:2.5–2.6:2.4–2.5: 2.3–2.4: 2.3: 2.2–2.3. Ratio of length/width of pre-apical flagellomeres: 1.9x.

Mesosoma.- Pronotum in upper half smooth with punctures separated by 1x a puncture width; lower half rugulose; lower half of collar striate. Mesoscutum smooth punctures separated by 0.5–1x a puncture width. Notaulus extending 0.6x length of mesoscutum, basal half scrobiculate. Mesoscutellum evenly convex, smooth with punctures separated by 2–3x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 59) smooth with punctures separated by 0.5x a puncture width; mesopleural furrow upper epicnemial carina finely scrobiculate, after that faintly scrobiculate reaching to middle of mesopleuron. Epicnemial carina weak anteriorly, curved to meet anterior margin of mesopleuron at lower quarter of pronotum. Metapleuron coarsely punctate, imbricate with punctures separated by 2–3x a puncture width; juxtacoxal carina absent. Fore wing with CI=0.5–0.6; ICI=0.7–0.8; SDI=1.5; 1m-cu slightly curved; ramulus present; marginal cell basally with a glabrous area next to pterostigma and proximal half of Rs+2r; sub-basal cell glabrous with one or two setae apically. Hind wing with 6 hamuli on R1 distally; NI=0.8; cu-a slightly curved. Propodeum (Fig.81) with softly carinate texture, except areas basalis and externa punctate imbricate with punctures separated by 3–4x as a puncture width; anterior transverse carina present, faint laterally; posterior transverse carina faint or absent between lateromedian longitudinal carinae; lateral longitudinal carinae faint; lateromedian longitudinal carinae present between transverse carina, behind posterior transverse carina close to each other with traces of additional ones between them; pleural carina present.

Metasoma.- First tergite 4.2–4.6x as long as apical width. Tergite II with spiracle located at 0.5x of tergite.

Color.- Reddish brown except following: face laterally, frons laterally, between ocelli, vertex, gena, upper half of collar, basal half of tegula, subalar prominence, anterior half of speculum, apical half of mesoscutellum yellowish; between subalar prominence and speculum blackish brown. Wings grayish hyaline; veins brownish and pterostigma cream colored, centrally brownish.

♂: Unknown.

Comments.- *Alophopion sinchirocai* new species and *A. maytacapaci* new species overlap in distribution in Lima.

Etymology.- The species epithet "*maytacapaci*" refers to Mayta Cápac the fourth ruler of the Tawantinsuyu.

Holotype: ♀ "PERU: AY [Ayacucho], Laramate 14°50'44.1"S/ 74°44'13.4"W. 2100m. 14.ii.2009. Light Trap. L Figueroa" (MUSM)

Paratypes: 4♀♀ labeled as follows: 2♀♀ "PERU: AY [Ayacucho], Laramate 14°50'44.1"S/74°44'13.4"W. 2100m. 14.ii.2009. Light Trap. L Figueroa" (1♀ SEMC, 1♀ MUSM); 1♀ "LIMA 20-V-68 N. ESPINOLA COL" (MUSM); and 1♀ "PERU: Dpto. [Departamento] Lima: Capillucas (R. [Rio] Cañete) 19:III:87 Pedro Hocking" (MUSM).

12. *Alophophion ona* new species

(Figs. 17, 46, 67, 90)

Diagnosis.- This species can be recognized by this combination of the features: lateral longitudinal carinae present between transverse carinae, area dentipara well defined and distance between ocelli 0.9–1.0x ocellar diameter.

Description.- ♀: **Head.** Face (Fig. 17) 0.8–0.9x as wide as long; median portion weakly convex; centrally smooth with punctures separated by 2–3x a puncture width and laterally imbricate with punctures separated by 1–2x a puncture width. Clypeus convex; with upper half smooth with sparse punctures separated by 2–4x a puncture width and lower half imbricate with punctures separated by 2–4x a puncture width; apical edge slightly convex. Compound eyes 0.8–0.9x as wide as face. Malar space 0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 46), 0.4x as wide as compound eyes, softly imbricate with shallow punctures separated by 4–5x a puncture width. Frons imbricate, slightly striate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.1–0.2x ocellar diameter; distance between ocelli 0.9–1.0x ocellar diameter. Antenna with 56 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 5.1–5.2:2.5–2.6:2.3:2.2–2.3:2.1–2.2:2.0–2.2:1.9–2.1. Ratio of length/width of pre-apical flagellomeres: 1.6x.

Mesosoma.- Pronotum on upper half smooth with shallow punctures separated by 2–3x a puncture width; lower half striate; collar striate. Mesoscutum smooth with shallow punctures separated by 2–3x a puncture width. Notaulus extending 0.3x length of mesoscutum. Mesoscutellum evenly convex, with texture as that of mesoscutum; lateral carina reaching 0.4x to posterior margin of mesoscutellum. Mesopleuron (Fig. 67) imbricate with punctures separated by 1–2x a puncture width; speculum punctate, smooth with punctures separated by 0.5–1x a puncture width; mesopleural furrow absent. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of pronotum. Metapleuron imbricate on anterior half with punctures separated by 0.5–1x a puncture width and on posterior half with punctures separated by 1–2x a puncture width. Fore wing with CI=0.3–0.5; ICI=0.8; SDI=1.4–1.5; 1m-cu straight; ramulus present; Rs+M slightly curved; marginal cell apically with a glabrous area next to Rs+2r vein; sub-basal cell glabrous, with isolate hairs apically. Hind wing with 6 hamuli on R1 distally; NI=1.0–1.1; cu-a slightly curved. Propodeum (Fig. 90) softly rugulose with shallow punctures, except anterior area imbricate with punctures separated by 1–2x a puncture width; anterior transverse carina present between lateral longitudinal carinae; posterior transverse carina present between pleural carinae; lateral longitudinal carinae, present before anterior transverse carina; lateromedian longitudinal carinae present between transverse carinae; lateromedian longitudinal carinae converge behind posterior transverse carina; pleural carina present.

Metasoma.- First tergite 5.6x as long as apical width. Tergite II with spiracle located at 0.5x of tergite.

Color.- Rufo-testaceous except following: face laterally, frons laterally, between ocelli, vertex, gena, tegula, subalar prominence, anteriorly speculum and a spot between subalar prominence

and mesopleural furrow yellowish. Wings grayish hyaline; veins brownish and pterostigma fulvous.

♂: Unknown.

Comments.- The propodeal carinae are well developed but not as much as *trauco* new species. *Alophophion ona* new species is distributed in the Chilean region of Biobio.

Etymology.- The species epithet "*ona*" refers to the Ona people an indigenous people that inhabited in the Patagonian region of southern Argentina and Chile, including the Tierra del Fuego islands. It is treated as a noun in apposition.

Holotype: ♀ "Las Trancas, Chile XII.1-15.75 [01-15.xii.1975] Chillán Luis Peña" (AEIC);

Paratypes: 2♀♀: labeled as follows: **CHILE:** 1♀ "Las Trancas, Chile XII.1-15.75 [01-15.xii.1975] Chillán Luis Peña" (AEIC); and **ARGENTINA:** ♀ "CHILE [Argentina]: R.N. [Río Negro], El Bolson. 10.ii.1960. A. Kavocs. B.M.1964-193" (BMNH).

13. *Alophophion pedroi* new species

(Fig. 29, 47, 75, 92)

Diagnosis.- This species can be recognized by this combination of the features: mesopleuron imbricate with shallow punctures and the mesopleural furrow softly rugulose, and the areas dentipara and superomedia with carinate texture.

Description.- ♀: **Head.** Face (Fig. 29) 0.9x as wide as long; imbricate with shallow punctures separated by 2x a puncture width; median portion weakly convex. Clypeus convex imbricate with punctures separated by 1–2x a puncture width; apical edge slightly convex laterally. Compound eyes 0.9x as wide as face. Malar space less than 0.1x as long as basal width of mandible. Gena, in lateral view (Fig. 47), 0.3–0.4x as wide as compound eyes, imbricate with shallow, punctures separated by less than a puncture width. Frons imbricate, slightly striate between central ocelli and toruli. Vertex with texture as gena. Lateral ocellus separated from compound eye by less than 0.1x ocellar diameter; distance between ocelli 0.4x ocellar diameter. Antenna with 54–55 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.8–4.6:2.9–2.8:2.6–2.5:2.5–2.4:2.5–2.3:2.4–2.2:2.4–2.1. Ratio of length/width of pre-apical flagellomeres: 2.6–1.7x.

Mesosoma.- Pronotum and mesoscutum imbricate with shallow punctures separated by 1–2x a puncture width. Notaulus extending 0.6x length of mesoscutum, with same texture as mesoscutum. Mesoscutellum evenly convex, with texture as that of mesoscutum; lateral carina extending 0.3x length of mesoscutellum. Mesopleuron (Fig. 75) imbricate with shallow punctures separated by 1–2x a puncture width; lower edge of speculum imbricate, slightly shine; mesopleural furrow softly rugulose, extending 0.3x length of mesopleuron. Epicnemial carina curved to meet anterior margin of mesopleuron at lower third of pronotum. Metapleuron imbricate with shallow punctures separated by 1–2x a puncture width. Fore wing with CI=0.6; ICI=0.9–1.0; SDI=1.3; 1m-cu slightly curved; ramulus present; Rs+M slightly curved; marginal cell of fore wing cover by setae; sub-basal cell glabrous. Hind wing with 8 hamuli on R1 distally; NI=0.6–0.8; cu-a slightly curved. Propodeum (Fig. 92) with area basalis imbricate with shallow punctures separated

by 2x a puncture width, rest of propodeum finely imbricate with punctures separated by less than 1x a puncture width; anterior transverse carina strongly elevated and complete, slightly weaker laterally; posterior transverse carina strongly elevated, absent centrally; lateral longitudinal carinae absent; lateromedian longitudinal carinae present after anterior transverse carina, confluent behind posterior transverse carina; areas superomedia with triangular shape, centrally divided by a carina; posterior transverse carinae strongly elevated, centrally absent.

Metasoma.- First tergite 5.1x as long as apical width. Tergite II with spiracle located at 0.5–0.6x length of tergite.

Color.- Light straw yellow except following: antennae, mandibles, palpi, legs (except fore coxa, mid coxa posteriorly) and metasoma after tergite II testaceous; and ovipositor sheath brownish.

♂: Unknown.

Comments.- This species was collected between 1400 and 1700 m, in a secondary cloud forest pers. obs.). Structurally is quite similar to *A. alvarengai* new species; both species have similar arrangement of carinae and texture of the body. They can be differentiated by the proportion of the face, wider in *A. pedroi* new species (0.9x as wide as long) than in *A. alvarengai* new species (0.8x as wide as long).

Etymology.- Named in honor of the naturalist Pedro Hocking.

Holotype: ♀, “PERU: CU [Cuzco], La Convención, Echarate, C. [Community] Otsanampiato, 73°8'57.71”W/12°39'31.36”S 1449m. 20-22.i.2010. Light. C. Carranza y C. Rossi” (MUSM)

Paratype: ♀, “PERU: CU [Cuzco], La Convención, Echarate, CC. [Community] Otsanampiato, 12°39'43.50”[S] 73°09'40.93”[W] 1687m. 16.ix.2010. Light. M. Alvarado y J. Peralta” (MUSM)

14. *Alophophion picunche* new species

(Figs. 13, 32, 53, 63, 86)

Diagnosis.- This species can be recognized by this combination of features: epicnemial carina oval, lateromedian longitudinal carinae converging behind posterior transverse carina, and tergites fulvous.

Description.- ♀: **Head.** Face (Fig. 13) 0.8–0.9x as wide as long; imbricate with shallow punctures separated by 1–2x a puncture width; median portion weakly convex. Clypeus convex; imbricate with shallow punctures separated by 4–6x a puncture width; apical edge straight centrally, laterally slightly convex. Compound eyes 0.8–0.9x as wide as face. Malar space 0.1x as long as basal width of mandible. Mandibles smooth texture between punctures. Gena, in lateral view (Fig. 32), 0.4x as wide as compound eyes, smooth with shallow punctures separated by 4–6x a puncture width. Frons imbricate, softly striate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.2x ocellar diameter; distance between ocelli 0.6–0.8x ocellar diameter. Antenna with 47–54 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.2:2.4–2.5:2.2–2.3:2.1–2.2:2.0–2.1:1.9–2.0:1.9. Ratio of length/width of pre-apical flagellomeres: 1.6–1.8x.

Mesosoma.- Pronotum imbricate with shallow punctures separated by 2–4x a puncture width, getting smooth to anteriorly; collar striate. Mesoscutum smooth with shallow punctures separated by 6–8x a puncture width. Notaulus extending 0.3x length of mesoscutum. Mesoscutellum evenly convex, smooth with shallow punctures separated by 3–4x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 63) upper half smooth and lower half imbricate with shallow punctures separated by 2–4x a puncture width; mesopleural furrow absent. Epicnemial carina oval in a lateral view, curved to meet anterior margin of mesopleuron at lower quarter of pronotum; faint next to pronotum. Metapleuron smooth between punctures. Fore wing (Fig. 53) with CI=0.5; ICI=0.6–0.7; SDI=1.4; 1m-cu slight curved; ramulus present; Rs+M slightly curved; marginal cell with a glabrous area next to Rs+2r; sub-basal cell glabrous. Hind wing with 7–8 hamuli on R1 distally; NI=1.0–1.1; cu-a slightly curved. Propodeum (Fig. 86) with area basalis imbricate with shallow punctures separated by 3x a puncture width, areas spiracularis, lateralis, dentipara, superomedia, posteroexterna and petiolaris imbricate with softly carinate texture, punctate; anterior transverse carina present, faint laterally; posterior transverse carina present between pleural carinae; lateral longitudinal carinae present, faint between transverse carinae; lateromedian longitudinal carinae present, behind posterior transverse carina converging; anterior area imbricate between punctures; pleural carina present.

Metasoma.- First tergite 4.5–4.7x as long as apical width. Tergite II with spiracle located at 0.5x length of tergite.

Color.- Rufo-testaceous except following: face, frons laterally, vertex, gena, pronotum, lateral margins of mesoscutum, spot from notaulus to posterior end of mesoscutum, mesoscutellum, tegula, subalar prominence, speculum, a diagonal stripe in mesopleuron, metapleuron apical half, propodeum apical half and tergites laterally yellowish. Wings grayish hyaline; veins brownish and pterostigma testaceous.

♂: Similar to female.

Comments.- A few females have metapleuron and propodeum imbricate between punctures. Some specimens have, behind posterior transverse, the lateromedian longitudinal carinae present and with only one carina each one; while other specimens an additional carina next to lateromedian and lateral longitudinal carinae. This species was only collected in Coquimbo.

Etymology.- The species epithet “*picunche*” refers to the Picunche, a mapudungun speaking Chilean people who lived to the north of the Mapuches or Araucanians and south of the Choapa River and the Diaguitas. It is treated as a noun in apposition.

Holotype: ♀ “[Coquimbo, Valle de Elqui] Las Hedionditas [Termas Las Hedionditas] I.10-11.66 [10-11.i.1965] Chile Luis Peña” (AEIC).

Paratypes: 19♂♂, 15♀♀: labeled as follows: 19♂♂, 14♀♀ “[Coquimbo, Valle de Elqui] Las Hedionditas [Termas Las Hedionditas] I.10-11.66 [10-11.i.1965] Chile Luis Peña”; 1♀ “Río Los Chores [Los Choros], Coquimbo, Chile X.29-30 1961 [29-30.x.1961] Luis Peña” (AEIC).

15. *Alophophion pihuchen* new species

(Figs. 20, 49, 61, 84)

Diagnosis.- This species can be recognized by having the epicnemial carina oval, and the metasomal tergite I–IV light straw yellow with an apical brownish spot.

Description.- ♀: **Head.** Face (Fig. 20) 0.9 x as wide as long; median portion weakly convex; smooth with punctures separated by 2–3x as a puncture width. Clypeus convex; with upper half punctate smooth with punctures separated by 5–6x as a puncture width, and lower half imbricate with shallow punctures separated by 4x as a puncture width; apical edge straight centrally, laterally slightly convex. Compound eyes 0.7–0.8x as wide as face. Malar space 0.1x as long as basal width of mandible. Gena, in lateral view (Fig. 49), 0.4x as wide as compound eyes, smooth with shallow punctures separated by 4x as a puncture width. Frons smooth, slightly striate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.2–0.3x ocellar diameter; distance between ocelli 1.0x ocellar diameter. Antenna with 50 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.5–5.2:2.4–2.8:2.3–2.5:2.2–2.4:2.2–2.3:2.1–2.3:2.0–2.2. Ratio of length/width of pre-apical flagellomeres: 1.2x.

Mesosoma.- Pronotum with punctures separated by 1–2x a puncture width on upper half smooth and lower half of propodeum; collar imbricate-striate. Mesoscutum smooth with punctures separated by 3–4x as a puncture width. Notaulus extending 0.3x length of mesoscutum, smooth. Mesoscutellum evenly convex, with texture as that of mesoscutum; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 61) smooth with punctures separated by 2–4x as a puncture width; mesopleural furrow absent. Epicnemial carina oval in a lateral view; curved to meet anterior margin of mesopleuron at lower third of pronotum. Metapleuron smooth with punctures separated by 2–3x as a puncture width. Fore wing with CI=0.4–0.5; ICI=0.7; SDI=1.5; 1m-cu straight; ramulus present; Rs+M slightly curved; marginal cell basally and next to Rs+2r glabrous; sub-basal cell glabrous with some isolate setae apically. Hind wing with 6–7 hamuli on R1 distally; NI=0.9; cu-a slightly curved. Propodeum (Fig. 84) with carinate texture on areas superomedia and lateralis, areas basalis and externa smooth with punctures separated by 1–2x as a puncture width, and softly carinate-rugulose texture on areas dentipara, superomedia, posteroexterna and petiolaris; anterior transverse carina present, faint laterally; posterior transverse carina weak reaching to pleural carinae; longitudinal carinae present, faint; pleural carina present.

Metasoma.- First tergite 4.0x as long as apical width. Tergite II with spiracle located at 0.5x length of tergite.

Color.- Light straw yellow except following: except following: palpi, antennomeres, a posterior spot in fore coxae, an anterior spot in mid and hind coxae, basal 2/3 of trochanter, tibiae, tarsomeres, axilla, mesopleuron with a longitudinal stripe between notaulus and lateral mesoscutum and one between notauli, a spot in posterior lower mesopleuron, metapleuron basal half, basal half of propodeum and hind coxae dorsally fulvous; and tergites I–IV with an apical central spot, tergites IV–VI basally and ovipositor sheath brownish.

♂: Unknown.

Comments.- One female has the lateromedian longitudinal carinae, behind posterior transverse, wavy; while the other specimen have these carinae straight.

This species is distributed in the Chilean region of Metropolitana de Santiago.

Etymology.- The species epithet "*pihuchen*" refers to the creature from the Mapuche and Chilote mythology, a much feared shapeshifting creature which could instantly change into animal form. It is treated as a noun in apposition.

Holotype: ♀ “[Metropolitana de Santiago, Cordillera] Las Gunilias [Lagunillas] II.19.66 [19.ii.1966] Chile LPenaGuzman [L. Peña Guzmán]” (AEIC).

Paratypes: 2♂♂, 1♀: labeled as follows 1♂, 1♀ “[Metropolitana de Santiago, Cordillera] Las Gunilias [Lagunillas] II.19.66 [19.ii.1966] Chile LPenaGuzman [L. Peña Guzmán]” y 1♂ “[Maule Region] Rio Teno Curico, Chile III.8.62 [08.iii.1962] Luis Peña” (AEIC).

16. *Alophophion sinchirocai* new species

(Figs. 26, 39, 71, 77)

Diagnosis.- This species can be recognized by this combination of the features: metapleuron reddish brown, mesoscutellum cream colored, and, has the juxtacoxal carina developed.

Description.- ♀: **Head.** Face (Fig. 26) 0.8–0.9 x as wide as long; median portion weakly convex; softly imbricate with punctures separated by 0.5–1x a puncture width. Clypeus convex; softly imbricate with punctures separated by 1–2x a puncture width; apical edge slightly convex. Compound eyes 0.8x as wide as face. Malar space 0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 39), 0.4x as wide as compound eyes, imbricate with punctures separated by 3–4x a puncture width. Frons imbricate, slightly striate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.1x ocellar diameter; distance between ocelli 0.4–0.5x ocellar diameter. Antenna with 56 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 5.0–5.8:2.9–3.2:2.7–2.8:2.5–2.7: 2.4–2.6: 2.4–2.5: 2.3–2.4. Ratio of length/width of pre-apical flagellomeres: 1.7x.

Mesosoma.- Pronotum imbricate with punctures separated by 0.5–1x a puncture width; collar striate. Mesoscutum smooth with punctures separated by 1–1.5x a puncture width. Notaulus extending 0.3x length of mesoscutum. Mesoscutellum evenly convex, smooth with punctures separated by 0.2–0.3x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 11) imbricate with punctures separated by 1x a puncture width; speculum smooth with punctures separated by 2x a puncture width; mesopleural furrow faintly scrobiculate reaching to posterior end. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of pronotum. Metapleuron imbricate with punctures separated by 0.5–1x a puncture width; juxtacoxal carina present. Fore wing with CI=0.6–0.7; ICI=0.7; SDI=1.4; 1m-cu straight; ramulus present as an angulation or absent; Rs+M slightly curved; marginal cell with a glabrous area next to Rs+2r; sub-basal cell glabrous. Hind wing with 6–7 hamuli on R1 distally; NI=0.9–1.0; cu-a slightly curved. Propodeum (Fig. 77) imbricate

te with punctures separated by 2–3x a puncture width and softly rugose, except area basalis imbricate with punctures; anterior transverse carina present, faint laterally; posterior transverse carina broke in the middle; lateral longitudinal carinae present, faint; lateromedian longitudinal carinae present, faint behind posterior transverse carina and with an additional longitudinal carina between them; pleural carina present.

Metasoma.- First tergite 4.8–5.2x as long as apical width. Tergite II with spiracle located at 0.5x of tergite.

Color.- Reddish brown except following: face laterally, frons laterally, between ocelli, vertex, gena, collar, basal half of tegula, subalar prominence, postscutellum and mesoscutellum yellowish. Wings grayish hyaline; veins brownish and pterostigma fulvous.

♂: Unknown.

Comments.- *Alophophion sinchirocai* new species and *A. maytacapaci* new species occur in central Peru, on the eastern slopes of the Andes. They have a similar appearance, but can be differentiated by the color of speculum which is fulvous reddish in *A. sinchirocai* new species and is fulvous reddish with a yellowish spot in *A. maytacapaci* new species. *Alophophion sinchirocai* new species has the area superomedia imbricate between punctures while in *A. maytacapaci* new species this area is carinate.

Etymology.- The species epithet "*sinchiroca*" refers to Sinchi Roca the second ruler of the Tawantinsuyu.

Holotype: ♀ "PERU: Dpto. [Departamento] Lima: Torna-mesa (R. [Rio] Rimac) 25:II:12 [25.ii.2012] (1600 mt.) Pedro Hocking [Handwritten]" (MUSM)

Paratype: ♀ "Huamachuco, PERU: 3200m. 23.II [23.ii.?] Coll. Weyrauch / MHN 3276 [Handwritten]" (MUSM)

17. *Alophophion sofiae* new species

(Figs. 21, 40, 72, 78)

Diagnosis.- This species can be recognized by this combination of the features: body mainly fulvous to light straw yellow colored, compound eyes 1.1x as wide as face and metapleuron softly rugulose.

Description.- ♀: **Head.** Face (Fig. 21) 0.8x as wide as long; median portion weakly convex; centrally smooth and laterally imbricate with punctures separated by 0.5–1x a puncture width. Clypeus convex; upper half smooth with punctures separated by 4–5x a puncture width and lower half imbricate with punctures separated by 2–3x a puncture width, slightly striate; apical edge slightly convex. Compound eyes 1.1x as wide as face. Malar space 0.1x as long as basal width of mandible. Gena, in lateral view (Fig. 40), 0.3x as wide as compound eyes, imbricate with punctures separated by 2–3x a puncture width. Frons imbricate, slightly striate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.1x ocellar diameter; distance between ocelli 0.8x ocellar diameter. Antenna with 56 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.4–4.6:2.5–2.8:2.2–2.3:2.0–2.2:1.9–2.1:1.8–2.1:1.8–2.0. Ratio of length/width of pre-apical flagellomeres: 1.4x.

Mesosoma.- Pronotum in upper half smooth with punctures separated by 1–2x a puncture width and lower half striate; lower

half of collar striate. Mesoscutum smooth with punctures separated by 2x a puncture width. Notaulus extending 0.3x length of mesoscutum, basally scrobiculate. Mesoscutellum evenly convex, smooth with punctures separated by 3–4x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 72) imbricate (except between subalar prominence and epicnemial carina smooth) with punctures separated by 0.5–1.5x a puncture width; speculum smooth with punctures separated by 2–3x a puncture width; mesopleural furrow softly rugulose reaching to the posterior end. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of pronotum. Metapleuron softly rugulose. Fore wing with CI=0.7–0.8; ICI=0.8–0.9; SDI=1.3–1.4; 1m-cu straight; ramulus present; marginal cell apically with a glabrous area next to pterostigma and Rs+2r; sub-basal cell glabrous with isolated setae in the apical half. Hind wing with 7–8 hamuli on R1 distally; NI=1.0; cu-a slightly curved. Propodeum (Fig. 78) with softly carinate texture, except: areas basalis and externa punctate, imbricate with punctures separated by 2–3x a puncture width; anterior transverse carina present, faint laterally; posterior transverse carina weak centrally and absent between lateromedian longitudinal carinae; lateral longitudinal carinae present before anterior transverse carina, faint between transverse carinae, well develop behind posterior transverse carina; lateromedian longitudinal carinae present after anterior transverse carina; areas superomedia and petiolaris more less confluent, posterior transverse carinae rarely faintly indicated; behind posterior transverse carina with traces of an additional one between them; pleural carina present.

Metasoma.- First tergite 4.5–4.6x as long as apical width. Tergite II with spiracle located at 0.5x of tergite.

Color.- Fulvous to light straw yellow except following: face, frons laterally, between ocelli, vertex and gena. Wings grayish hyaline; veins brownish and pterostigma fulvous.

♂: Unknown.

Comments.- This species overlaps in distribution with *A. ofeliae* new species and both even seem to have the same seasonality, although sample sizes are quite small so this may reflect collecting bias. Both even seem to have the same general appearance but they are easily differentiable by having the face longer than wide in *A. sofiae* new species and face 1.1x as wide as long in *A. ofeliae* new species.

Etymology. Named in honor of Sofia Carranza.

Holotype: ♀ "PERU: MO [Moquegua], General Sánchez Cerro, La Capilla, 71°20'56"W/ 16°45'37"S, 2739 m. 16.iv.2011. C. Carranza" (MUSM).

Paratypes: 3 ♀♀: labeled as follows: PERU: 2 ♀♀, same data as holotype (MUSM) and 1 ♀ "Arequipa [,] Peru Dr Esemel [handwritten] / Press. By Imp. Bur. Ent. Brit. Mus. 1921–472/179 u [handwritten] / Ophion sp n [handwritten]" (BMNH).

18. *Alophophion trauco* new species

(Figs. 9, 27, 36, 56, 69, 91)

Diagnosis. *Alophophion trauco* new species has propodeum with carinae lamellate as *A. chiquiyane* new species; but can be distinguished of them by having metapleuron and mesopleural furrow scrobiculate-rugulose.

Description.- ♀: Head. Face (Fig. 27) 0.9–1.0 x as wide as long; centrally smooth and softly imbricate laterally with shallow punctures separated by 1–2x a puncture width; median portion weakly convex. Clypeus convex; smooth basally and imbricate apically with shallow punctures separated by 3–4x a puncture width; apical edge slightly straight, laterally slightly convex. Compound eyes 0.7–0.9x as wide as face. Malar space 0.1–0.2x (Fig. 9) as long as basal width of mandible. Gena, in lateral view (Fig. 36), 0.4–0.6x as wide as compound eyes, softly imbricate with shallow punctures separated by 2–4x a puncture width. Frons imbricate, slightly striate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.1–0.3x ocellar diameter; distance between ocelli 0.7–0.9x ocellar diameter. Antenna with 53–56 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 3.6–4.3:2.1–2.3:1.9–2.0:1.9:1.9:1.8:1.7. Ratio of length/width of pre-apical flagellomeres: 1.3–1.6x.

Mesosoma.- Pronotum imbricate with shallow punctures separated by 0.5–1.5x a puncture width; collar striate. Mesoscutum smooth centrally and imbricate laterally with shallow punctures separated by 1x a puncture width. Notaulus extending 0.2–0.3x length of mesoscutum, basally with a carina along notaulus. Mesoscutellum evenly convex, smooth with punctures separated by 2x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 69) smooth on upper half and imbricate on lower half with soft punctures separated by 3x a puncture width; speculum smooth with soft punctures separated by 2–3x a puncture width; mesopleural furrow scrobiculate- rugulose, reaching only next to epicnemial carina or reaching to the posterior end of mesopleuron. Upper part of epicnemial carina, at mesopleuron, indistinguishable from mesopleural furrow; epicnemial carina curved to meet anterior margin of mesopleuron at lower third of pronotum. Metapleuron scrobiculate- rugulose to softly scrobiculate. Fore wing (Fig. 56) with CI=0.3–0.6; ICI=0.7–0.9; SDI=1.2–1.5; 1m-cu straight; ramulus present; Rs+M slightly curved; marginal cell with a glabrous area next to 0.3 proximal of Rs+2r vein; sub-basal cell glabrous with isolate setae apically. Hind wing with 6–7 hamuli on R1 distally; NI=0.8–1.2; cu-a slightly curved. Propodeum (Fig. 91) smooth with shallow punctures, except: areas spiracularis and lateralis with softly carinate-rugulose texture; with carinae lamellate; anterior transverse carina present, faint laterally; posterior transverse carina present between pleural carinae; lateromedian longitudinal carinae present before anterior transverse carina and between transverse carinae, behind posterior transverse carina confluent or close together, so area petiolaris thin; pleural carina present.

Metasoma. First tergite 4.2–4.7x as long as apical width. Tergite II with spiracle located at 0.5–0.6x length of tergite.

Color. Rufo-testaceous except following: face laterally, frons laterally, between ocelli, vertex and gena yellowish. Wings grayish hyaline; veins brownish and pterostigma fulvous.

♂: Similar to female but all males have a single lateromedian longitudinal carina behind the posterior transverse carina without traces next to it.

Comments. There is some variation in the lateromedian longitudinal carinae behind the posterior transverse carina, in some specimens the carinae are close together forming a thin

area petiolaris (Fig. 82) or confluent with or without traces of lateromedian longitudinal carinae next to it (Fig. 81); while one specimen has these carinae wavy. Specimens with metapleuron softly rugulose have smooth texture with punctures. The specimen from Paso de Pino Hachado is distinctly smaller than the remainder of the series and with a forewing CI=0.4, hind wing NI=0.7, and spiracle of tergite II near the middle, otherwise it agrees with the species. This size difference likely represents development in a slightly smaller or malnourished host.

This species was collected at an elevation of 1080 m and 1600 m in the Chilean regions Araucania, Biobío and Maule. Its distribution overlaps with *A. chiquiyane* new species.

Etymology.- The species epithet "*trauco*" refers to the name of a mythical entity that inhabits the woods of Chiloé, an island in the south of Chile. It is treated as a noun in apposition.

Holotype: ♀ "Curacautín, Malleco II.'64 [ii.1964] R. [Río Blanco Chile Luis E. Peña" (AEIC)

Paratypes: 15♂♂, 7♀♀ labeled as follows: **CHILE:** 7♂♂, 8♀♀ "Curacautín, Malleco II.'64 [ii.1964] R. [Río Blanco Chile Luis E. Peña"; 1♀ "Fundo El Coigo Cord [Cordillera] Curico Chile XII.20-31.59 [20-31.xii.1959] Luis Peña [Peña]"; 1♂ "Las Trancas Chillán, Chile I.19-22.79 [19-22.i.1979] 1600m. L. Peña"; 1♂ "Las Trancas Chillán, Chile April 1972 [iv.1979] Luis Peña"; 1♂ "Las Trancas, Chile II.6-11.66 [06-11.ii.1966] Chillán Luis Peña"; 1♂ "Las Trancas, Chile XII.1-15.75 [01-15.xii.1975] Chillán Luis Peña"; 1♂ "Las Trancas, Ñuble, Chile, December 1976 [xii.1976] Luis Peña"; 1♂ "Las Nieves XI.15.47 [12.xi.1947] Chile L. Peña Guzman"; 1♀ "El Pangue, Coquimbo, Chile XI.3-5 1961 [03-05.xi.1961] Luis Peña"; 2♂♂ "[Libertador General Bernardo O'Higgins, Cachapoal] Las Nieves XI.12.47 Chile L. Peña Guzman [Peña Guzmán]"; 1♂ "[Libertador General Bernardo O'Higgins, Cachapoal] Las Nieves XI.16.47 [16.xi.1947] Chile L. Peña Guzman [Peña Guzmán]" and 1♀ "Pino Hachado [Paso de Pino Hachado] Lonquimay, Mal. [Malleco] II.18.80 [18.ii.1980] Chile 1600m. L. Peña" (AEIC); and 4♂♂, 1♀ "CHILE: VIII Región [Biobío] Los Lluquyes 14km w. Termas de Chillán 1080m 36°54'S [I] 71°32'W 23-24.XI.1994 SLHeydon [S.L. Heydon] & EArias [E. Arias]" (UCDC).

19. *Alophophion viride* new species

(Figs. 30, 48, 74, 93)

Diagnosis.- *Alophophion viride* resembles *A. teushen* new species in the general appearance and olive green coloration but *A. viride* can be distinguished by the rugulose texture of propodeum and lateromedian longitudinal carinae absent between transverse carinae which are well defined in *A. teushen*; additionally *A. teushen* has a predominantly smooth texture on the propodeum.

Description.- ♀: Head. Face (Fig. 30) 0.9–1.0x as wide as long; smooth with punctures separated by 0.5–1x a puncture width; median portion weakly convex. Clypeus convex; upper half smooth and lower softly imbricate with isolated punctures; apical edge softly convex. Compound eyes 0.8x as wide as face. Malar space 0.1x as long as basal width of mandible. Gena, in lateral view (Fig. 48), 0.5–0.6x as wide as compound eyes; smooth with punctures separated by 5–7x a puncture width. Frons smooth, softly striate between antennae and median ocellus. Lateral ocellus

llus separated from compound eye by 0.2–0.3x ocellar diameter; distance between ocelli 0.7–1.0x ocellar diameter. Antenna with 46 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 3.8–3.7:2.5:2.4:2.3–2.2:2.2–2.1:2.2–2.0:2.1–1.9. Ratio of length/width of pre-apical flagellomeres: 1.2x.

Mesosoma.- Pronotum on upper half softly imbricate with punctures separated by 1.0–1.5x a puncture width; lower half and collar striate. Mesoscutum smooth laterally and imbricate centrally with shallow punctures separated by 2–3x a puncture width. Notaulus extending 0.2x length of mesoscutum, finely scrobiculate. Mesoscutellum evenly convex; lateral carina reaching 0.1x to posterior margin of mesoscutellum; smooth with punctures separated by 2–3x a puncture width. Mesopleuron (Fig. 74) softly imbricate with punctures separated by 1–2x a puncture width; lower edge of speculum finally scrobiculate; speculum smooth with shallow punctures separated by 4–6x a puncture width; mesopleural furrow rugulose, short. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of pronotum; forming an angulation between mesopleuron and mesosternum. Metapleuron imbricate with punctures separated by 0.5–1.0x a puncture width. Fore wing with CI=0.7; ICI=0.7–0.8; SDI=1.4; 1m-cu straight; ramulus present; Rs+M slightly curved; marginal cell cover by setae; sub-basal cell glabrous rarely with a setae on apical quarter. Hind wing with 7 hamuli on R1 distally; NI=0.6–0.8x; cu-a slightly curved. Propodeum (Fig. 93) rugulose except imbricate with punctures separated by 1.0x a puncture width on anterior area; anterior transverse carina present between lateral longitudinal carinae, faint; posterior transverse carina present, faint; lateral longitudinal carina absent; lateromedian longitudinal carinae present behind posterior transverse carina, faint; pleural carina present.

Metasoma.- First tergite 4.0–4.2x as long as apical width. Tergite II with spiracle located at 0.5x length of tergite.

Color.- Olive green to light straw yellow except following: antennae, palpi, mandibles, two lateral and one central vittae on mesoscutum, scuto-scutellar groove, basal half of mesoscutellum, upper half of speculum, mesosternum, legs (except coxae dorsally) and tergites rufo-testaceous.

♂: unknown

Comments.- The specimens have metasoma brownish instead of olive green, this variation in the color was obtained probably because the killing method.

Comments.- The paratype has the face thinner and lateromedian longitudinal carinae present but faint. *Alophophion viride* new species overlaps its distribution with *A. teushen* new species.

Etymology.- The specific epithet *viride*, meaning “green”, in reference to the body coloration.

Holotype: ♀, “CHILE [ARGENTINA]: Chubut. 18.vi.1962. A. Kovacs. B.M. 1964-193.” (BMNH).

Paratypes: ♀, “Villa Regina Argentina Rio Negro X.7.61 [07.X.1961] Luis Peña” (AEIC).

Species-group B

Diagnosis.- Face at most 1x as long as wide; compound eyes at most 0.5x wide as face; head, in lateral view, gena at least 0.7x as wide as compound eyes. Mandibles with a diagonal groove

extending from upper corner to middle of mandible, bearing long setae. Notaulus reaching 0.3–0.8x of length of mesoscutum. Forewing with discosubmarginal cell cover by setae next to Rs+M. Color orange, brownish, some species brownish with cream spots.

Included species.- Six species are included in this group, three of which are new: *A. caleuche* new species, *A. capayan* new species, *A. filicornis* (Morley, 1912), *A. flavorufus* (Brullé, 1846), *A. politus* (Morley, 1912), and *A. yagane* new species.

Comments.- This species group is distributed in Argentina, the south of Brazil, and Chile, possibly also Uruguay and Paraguay but collections are lacking from that countries.

Key to species of species-group B

- (1) Pre-apical flagellomeres wider than long; ramulus absent ...
..... *Alophophion filicornis* (Morley, 1912)
- Pre-apical flagellomeres longer than wide; ramulus present 2
- (2) Propodeum with posterior transverse carina when present faintly indicated; no trace of longitudinal carinae (Fig. 113) ...
..... *Alophophion flavorufus* (Brullé, 1846)
- Propodeum with transverse carinae well developed; longitudinal carinae delimiting dentipara area (Figs. 114–117) 3
- (3) Lateral ocelli separated from compound eyes by 0.1x maximum ocellar diameter (Fig. 106); female with area petiolaris and posteroexterna confluent, without traces of longitudinal carinae (Fig. 115) ...
..... *Alophophion capayan* new species
- Lateral ocelli separated from compound eyes by at least 0.2x maximum ocellar diameter (like Fig. 107); female with area petiolaris and posteroexterna separated by traces of longitudinal carinae 4
- (4) Mesopleural furrow reaching to posterior lower edge of mesopleuron (Fig. 110); marginal cell homogeneously cover by setae; mesosoma entirely burnt orange; marginal cell of fore wing basally cover by setae ...
..... *Alophophion yagane* new species
- Mesopleural furrow reaching at most to middle of mesopleuron (Fig. 111); marginal cell of fore wing basally glabrous; mesosoma fulvous or brownish with yellowish spots 5
- (5) Hind wing length of Cu1 between M and cu-a 0.6–0.7x length of cu-a; metapleuron Testaceous *Alophophion politus* (Morley, 1912)
- Hind wing length of Cu1 between M and cu-a 0.9–1.0x length of cu-a; metapleuron with basal half brownish and apical half cream colored ...
..... *Alophophion caleuche* new species

20. *Alophophion caleuche* new species

(Figs. 96, 105, 117)

Diagnosis. Within this species-group, *A. caleuche* new species is the only one with coloration brownish red with cream color spots, and the lateromedian longitudinal carinae after posterior transverse carinae well defined, not converging.

Description.- ♀: **Head.** Face (Fig. 96) 1.3x as wide as long; softly imbricate with punctures separated by 0.5–1x a puncture width; median portion weakly convex. Clypeus imbricate with punctures separated by 1–2x a puncture width; upper half convex and lower half flat; apical edge straight centrally, slightly convex laterally. Outer mandibular surface smooth between punctures bearing long setae in the basal 2/3 and smooth between punctures in the apical 1/3. Compound eyes 0.5x as wide as face. Malar space 0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 105), 0.9x as wide as compound eyes, smooth with shallow punctures separated by 4–6x a puncture width. Frons carinate



Figures 94 – 111.

Details of face.

- (94) *A. filicornis*, holotype
- (95) *A. flavorufus*
- (96) *A. caleuche* new species
- (97) *A. capayan* new species
- (98) *A. yagane* new species
- (99) *A. politus*.

Details of head in lateral view.

- (100) *A. filicornis*, holotype
- (101) *A. flavorufus*
- (102) *A. politus*, holotype
- (103) *A. capayan* new species.

Details of face in lateral view.

- (104) *A. yagane* new species
- (105) *A. caleuche* new species.

Details of head in dorsal view.

- (106) *A. capayan* new species
- (107) *A. flavorufus*.

Details of mesosoma in lateral view.

- (108) *A. flavorufus*
- (109) *A. capayan* new species
- (110) *A. yagane* new species
- (111) *A. politus*.



Figures 112 – 126.

Details of propodeum.

- (112) *A. filicornis*, holotype
- (113) *A. flavorufus*, holotype
- (114) *A. politus*, holotype
- (115) *A. capayan* new species
- (116) *A. yagane* new species
- (117) *A. caleuche* new species.

Details of face.

- (118) *A. chilensis*
- (119) *A. larseni*
- (120) *A. porculatus*
- (121) *A. capacitypanquii* new species
- (122) *A. incarocai* new species
- (123) *A. yahuarhuacaci* new species
- (124) *A. waca* new species
- (125) *A. ofeliae* new species
- (126) *A. lloqueypanquii* new species.

between antennae and median ocellus. Vertex smooth with shallow punctures separated by 3–4x a puncture width. Lateral ocellus separated from compound eye by 0.3–0.4x ocellar diameter; distance between ocelli 0.7–0.8x ocellar diameter. Antenna with 45–49 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 5.0–5.2:2.3:2.1:2.0–1.9:2.0–1.9:1.9–1.8:1.8:1.7. Ratio of length/width of pre-apical flagellomeres: 1.2–1.4x.

Mesosoma. Pronotum in upper posterior half smooth with punctures separated by 0.5–1x a puncture width; lower lateral

half and collar dorsally striate-punctate. Mesoscutum smooth with punctures separated by 0.5–1x a puncture width. Notaulus extending 0.3x length of mesoscutum, scrobiculate basally. Mesoscutellum evenly convex, smooth with punctures separated by 1–2x a puncture width; lateral carina reaching 0.2x to posterior margin of mesoscutellum. Mesopleuron on upper half smooth and lower half imbricate; coarsely punctate, punctures separated by 0.5–1x a puncture width; lower edge of speculum scrobiculate; mesopleural furrow basally scrobiculate-rugose reaching usually to the middle of mesopleuron. Epicnemial

carina curved to meet anterior margin of mesopleuron at lower quarter of the pronotum. Metapleuron rugulose-punctate. Fore wing with CI=0.6; ICI=0.6–0.7; SDI=1.5–1.6; 1m-cu straight; ramulus present; Rs+M curved; marginal cell apically glabrous; sub-basal cell with isolated setae apically. Hind wing with 7 hamuli on R1 distally; NI=0.9–1.0; cu-a curved. Propodeum (Fig. 117) with anterior transverse carina present and well defined, reaching to lateral longitudinal carina; posterior transverse carina present, reaching to pleural carina; longitudinal carinae present, except before anterior transverse carina; lateromedian longitudinal carinae after posterior transverse carina convergent, fused to form a single median longitudinal carina; rugulose texture, except punctate before anterior transverse carina.

Metasoma.- First tergite 4.9x as long as apical width. Tergite II with spiracle located at 0.5x of tergite.

Color.- Brownish red except following: around to compound eyes, between ocelli, vertex, anterior half of upper half of pronotum, collar, lateral margins of mesoscutum, a central stripe, a longitudinal stripe from notaulus to 3/4 of mesoscutum, mesoscutellum, tegula, subalar prominence, speculum, spot between subalar prominence and mesopleural furrow, a spot in posterior lower mesopleuron, metapleuron apical half, propodeum apical half and tergite basal half. Wings grayish hyaline; veins brownish and pterostigma brownish, basally yellowish.

♂: Similar to female except by the yellowish spots more expanded than in females.

Comments.- This species is distributed in the Chilean regions of Atacama and Coquimbo.

Etymology.- The species epithet "*caleuche*" refers to the name of the mythical ghost ship of the Chilote mythology. It is treated as a noun in apposition.

Holotype: ♀ "Vista Alegre prov. [province] Huasco CHILE 6.XI.1991 [06.xi.1991 leg. J.E. Barriga/Collection J.E. Barriga CHILE 26192 [other specimen 26193]" (MNNC).

Paratypes: 2♂♂, 1♀: labeled as follows: **ARGENTINA:** 1♀, "Chubut Patagonia / From WFH Rosemberg/ [identification label: *Ophion chilensis* Spinola det C.W. Hooker 3.18.1909]" (USNM). **CHILE:** 1♂ "Canela Baja, Coquimbo, Chile X.23.1961 [23.x.1961] Luis Peña" (AEIC); 1♂ "El Calabazo Had. [Hacienda] Illapel Coquimbo Prov. [Provincia] XI.29.59 [22.xii.1957] Chile L Pena Guzman [L. Peña Guzmán]"; and 1♀ same data as holotype (UCDC).

21. *Alophophion capayan* new species

(Figs. 4, 97, 103, 106, 109, 115)

Diagnosis.- *Alophophion capayan* new species is unique, within this species-group, in having the posterior ocelli separated from the compound eyes by 0.1x its maximum diameter and the distance between ocelli 0.6x ocellar diameter.

Description.- ♀: **Head.** Face (Fig. 97) 1.2x as wide as long; softly imbricate with punctures separated by less than 0.5x a puncture width; median portion weakly convex. Clypeus imbricate with punctures separated by less than 0.5–1x a puncture width; slightly convex; apical straight centrally, slightly convex laterally. Outer mandibular surface smooth

bearing isolate long setae in the basal 1/2. Compound eyes 0.5x as wide as face. Malar space 0.2x as long as basal width of mandible (Fig. 4). Gena, in lateral view (Fig. 103), 0.7x as wide as compound eyes; smooth with shallow punctures separated by less than 6–8x a puncture width. Frons imbricate laterally; striate between antennae and median ocellus. Vertex with texture as that of gena. Lateral ocellus (Fig. 106) separated from compound eye by 0.1x ocellar diameter; distance between ocelli 0.6x ocellar diameter. Antenna with 53–59 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.5–4.9:2.6:2.2:2.1–2.0:2.0:1.9:1.9. Ratio of length/width of pre-apical flagellomeres: 1.5–1.6x.

Mesosoma.- Pronotum in upper posterior half imbricate with punctures separated between them by less than the puncture diameter; lower lateral half and dorsal to collar striate-carinate. Mesoscutum smooth with punctures separated between them by less than the puncture diameter. Notaulus extending 0.4x length of mesoscutum; scrobiculate. Mesoscutellum evenly convex, with texture as that of mesoscutum; lateral carina reaching 0.6x to posterior margin of mesoscutellum. Mesopleuron (Fig. 109) with speculum and subalar prominence smooth with punctures separated by 1–2x a puncture width, area between subalar prominence and mesopleural furrow rugulose, and lower edge of speculum scrobiculate; mesopleural furrow basally scrobiculate them becoming rugulose reaching to posterior lower mesopleuron. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of the pronotum. Metapleuron rugulose. Fore wing with CI=0.5–0.6; ICI=0.5–0.7; SDI=1.4; 1m-cu straight; ramulus present; Rs+M curved; marginal cell apically cover by setae; sub-basal cell usually without setae, at most with one or two isolate setae. Hind wing with 7 hamuli on R1 distally, rarely with 8 hamuli; NI=0.9; cu-a curved. Propodeum with anterior and posterior transverse carina present; longitudinal carinae present between transverse carinae; area petiolaris confluent with area posteroexterna (lateromedian longitudinal carinae faint if present), occupying more than half of propodeum (Fig. 115); with coarsely wavy carinate texture, except punctate before anterior transverse carinae; pleural carinae present.

Metasoma.- First tergite 4.4–4.6x as long as apical width. Tergite II with spiracle located at 0.5x of tergite.

Color.- Rufo-testaceous except following: surrounding area of compound eyes, vertex, gena, pronotum, lateral margin of mesoscutum, notauli, tegula lower 1/3 and apical 1/3, axila, mesoscutellum, postscutellum centrally, subalar prominence, speculum, a diagonal stripe in mesopleuron, metapleuron, sternite I and II, sternite III to VI centrally yellowish and tarsomeres yellowish.

♂: Similar to female except following: softer texture in propodeum, behind posterior transverse carinae with several longitudinal carinae and mesopleuron between mesopleural furrow and subalar prominence (under scrobiculate area) punctate, smooth between punctures, punctures separated between them by less than the puncture diameter.

Comments.- Distributed on the Tucumán and Salta provinces in Argentina.

Etymology.- The species epithet "*capayan*" refers to the Capayanes, an indigenous people nowadays extinct that lived in Argentine territory. It is treated as a noun in apposition.

Holotype: ♀ “San Pedro de Colalao Tucumán, Argent. [Argentina] IX.1-11.68 [01-11.xi.1968] Lionel Stange” (AEIC).

Paratypes: 6♂♂, 6♀♀: labeled as follows: **ARGENTINA:** 1♂, 1♀ “San Pedro de Colalao Tucumán, Argent. [Argentina] IX.1-11.68 [01-11.xi.1968] Lionel Stange”, 5♂♂, 2♀♀ “Tacamas, Tucumán IX.11-X.5.68 [11.ix-05.x.1968] Argent. [Argentina] Lionel Stange”, 2♀♀ “Tacamas, Tucumán X.5-30.68 [05-30.x.1968] Argent. [Argentina] Lionel Stange”, and 1♀ “R. A. [Argentina] SALTA Cafayate 26.VII.944 [26.vii.1944] Col. R. Golbach” (AEIC).

22. *Alophophion filicornis* (Morley, 1912)

(Figs. 94, 100, 112)

Ophion filicornis Morley, 1912: 57. Holotype ♀ BMNH [Morley's use of “type” is herein regarded as an original holotype designation (ICZN 1999: Art. 73.1.1)] [description, key].

Alophophion filicornis (Morley): Townes & Townes, 1966: 171 [generic transfer]; Yu & Horstmann, 1997: 730 [listed].

Diagnosis.- This species is easily differentiable of the rest member of this species-group due lack of ramulus and apical flagellomeres wider than long, this last feature is only found in this species within the genus.

Description.- ♀: **Head.** Face (Fig. 94) 1.2x as wide as long; median portion weakly convex; smooth centrally and imbricate laterally with punctures separated by 1x a puncture width. Clypeus upper half of clypeus convex, smooth with punctures separated by 1x a puncture width; lower half with imbricate; apical edge straight centrally, slightly convex laterally. Compound eyes 0.5x as wide as face. Outer mandibular surface smooth between punctures bearing long setae in the basal 2/3 and smooth between punctures in the apical 1/3. Malar space 0.3x as long as basal width of mandible. Gena, in lateral view (Fig. 100), 0.7x as wide as compound eyes, with fine punctate texture. Frons carinate between antennae and median ocellus. Vertex with texture as gena. Lateral ocelli separated from compound eye by 0.3x ocellar diameter; distance between ocelli 1.0x ocellar diameter. Antenna with 43 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 3.8:1.9:1.6:1.4:1.4:1.4:1.3. Ratio of length/width of pre-apical flagellomeres: 0.8x.

Mesosoma.- Pronotum in upper posterior half with punctures separated between them by less than the puncture diameter, smooth between punctures; lower half and dorsal to collar striate-punctate. Mesoscutum smooth between punctures, punctures separated between them by less than the puncture diameter. Notaulus extending 0.7x length of mesoscutum, scrobiculate. Mesoscutellum evenly convex, with texture as that of mesoscutum; lateral carina reaching to posterior margin of mesoscutellum. Mesopleuron with punctures separated between them by less than the puncture diameter, smooth between punctures; lower edge of speculum scrobiculate; mesopleural furrow basally scrobiculate them becoming areolate-rugose, reaching to posterior lower mesopleuron; lower edge of speculum to subalar prominence, on area next to epicnemial carinae scrobiculate. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of the pronotum. Metapleuron with rugulose texture. Fore wing with CI=0.5; ICI=0.5; SDI=1.4; 1m-cu centrally curved and with ramulus absent; fenestra in a bead shape;

sub-basal cell without setae; marginal cell marginal cell apically cover by setae. Hind wing with 7 hamuli on R1 distally; NI=0.7; cu-a curved. Propodeum (Fig. 112) with anterior and posterior transverse carina present, between them longitudinal carinae present but faintly indicated; with rugulose texture, except punctate before anterior transverse carinae; pleural carinae present.

Metasoma.- First tergite 3.8x as long as apical width. Tergite II with spiracle located at 0.5 of tergite

Color.- Rufo-testaceous except following: laterally to compound eyes, between ocelli, mesoscutellum and subalar prominence yellowish. Wings grayish hyaline; veins and pterostigma brownish black.

♂: unknown

Type material examined. Holotype: ♀ labeled as follows: “Type [handwritten:] MS/B.M. TYPE HYM. [handwritten:] 3.b.1304/ Name by Claude Morley [handwritten:] *O. filicornis* Morl. Slm Type ♀ ii.1911/ Argentina. O.W. Thomas 1904-148” (BMNH).

23. *Alophophion flavorufus* (Brullé, 1846)

(Figs. 5, 95, 101, 107, 108, 113)

Ophion flavo-rufus Brullé, 1846: 144. [description]

Ophion flavorufus Dalla Torre, 1902: 191 [listed]; Hooker, 1912: 164 [translation of original description].

Neophion flavorufus (Brullé): Morley, 1912: 31 [generic transfer].

Alophophion flavorufus (Brullé): Townes & Townes, 1966:171. Lectotype ♂ MNHN [generic transfer, lectotype designation]; Yu & Horstmann, 1997: 730 [listed].

Diagnosis.- This species can be recognized by this combination of the features: propodeum with anterior and posterior transverse carinae defined with carinate-rugose texture between them, ramulus present and apical flagellomeres longer than wide.

Description.- ♀: **Head.** Face (Fig. 95) 1.2–1.3x as wide as long; softly imbricate with punctures separated by less than 1x a puncture width; median portion weakly convex. Clypeus softly imbricate with punctures separated by less than 1x a puncture width; slightly convex; apical edge straight centrally, slightly convex laterally. Outer mandibular surface smooth between punctures bearing long setae in the basal 1/2 and small setae in apical 1/2. Compound eyes 0.3–0.5x as wide as face. Malar space 0.3x as long as basal width of mandible. Gena, in lateral view (Fig. 101), 0.7–0.8x as wide as compound eyes; smooth with shallow punctures separated by 3–4x as a puncture width. Frons carinate between antennae and median ocellus. Vertex with texture as gena. Lateral ocelli (Fig. 107) separated from compound eye by 0.2x ocellar diameter; distance between ocelli 0.7–0.8x ocellar diameter. Antenna with 44–54 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.1–4.2:2.1–2.8:1.8–2.1:1.6–2.1:1.5–2.1:1.6. Ratio of length/width of pre-apical flagellomeres: 1.2–1.3x.

Mesosoma.- Pronotum with punctures separated by 1–2x as a puncture width; in upper posterior half smooth or softly imbricate between punctures; lower half imbricate-punctate;

to collar striate-punctate. Mesoscutum smooth with punctures separated by 0.5–1x a puncture width; notauli extending 0.7x length of mesoscutum, scrobiculate basally and apically rugulose. Mesoscutellum evenly convex; lateral carina reaching ca. 0.2x to posterior margin of mesoscutellum; smooth with punctures separated by 3–4x as a puncture width. Mesopleuron (Fig. 108) smooth with punctures separated by 1x as a puncture width; lower edge of speculum and subalar striate-punctate; mesopleural furrow basally (including area between speculum anteriorly to subalar prominence, on area next to epicnemial carinae) scrobiculate them becoming striate-punctate, reaching to posterior lower mesopleuron. Epicnemial carina not reaching anterior margin of mesopleuron. Metapleuron with rugulose texture. Fore wing with CI=0.5–0.7; ICI=0.6; SDI=1.4–1.6; 1m-cu straight; ramulus present; Rs+M curved; marginal cell apically cover by setae; sub-basal cell without setae, rarely with one. Hind wing with 7 hamuli on R1 distally; NI=0.6–0.8; cu-a curved. Propodeum (Fig. 113) wavy-rugulose; anterior transverse carina present and well defined, not reaching to pleural carinae; posterior transverse carina present, longitudinal carinae not discernible; pleural carinae present.

Metasoma.— First tergite 4.8–5.0x as long as apical width. Tergite II with spiracle located at 0.5x of tergite.

Color.— Rufo- testaceous except following: around to compound eyes, something between ocelli, collar, mesoscutum basally between notauli and lateral edges, sometimes notauli, tegula, mesoscutellum, subalar prominence and posterior lower mesopleuron yellowish. Wings grayish hyaline; veins dorsally brownish black, veins ventrally and pterostigma yellowish brown.

♂: Similar to female except by gena, in lateral view, 0.6x as wide as compound eyes. Hind wing with 7 hamuli on R distally but in a small male 6.

Comments.— This species is distributed in the east of the Andes, in Argentina and southern Brazil, from 250 to 1000m.

Brullé (1846) described the species from material collected in Brazil, but no type was designated. Townes & Townes (1966) designated a lectotype from Argentina. The specimens studied of *A. flavorufus* were distributed in the Argentinean provinces Catamarca, Buenos Aires, Mendoza, and San Juan; in Brazil it was only recorded from Rio Grande do Sul.

Type material examined.— **Lectotype:** ♂ labeled as follows: “Muséum Paris EY6718/ del’emb. Del’uruguay jusqu’au missions/ *Ophion flavorufus*” (MNHN).

Non type examined material: 2♂♂ 29♀♀ 1?: labeled as follows: **ARGENTINA:** 2♂♂, 28♀♀, 1?: 1♂ 3♀♀ “16-18 Km. N. La Merced IX.26-27.68 [26-27.ix.1968] 1000m Cat. [Catamarca] Argentina Luis Peña”, 4♀♀ “Alapachiri, Tuc. [Tucumán] X.1.68 [01.x.1968] Argent. [Argentina] Luis Peña”, 1♀ “R. A. [Argentina] MENDOZA III.946 [, iii.1946] Col. Mansoner/Inst. M. Lillo [Instituto Miguel Lillo]”, 3♀♀ “San Luis Argentina Mendoza iv.4.62 [04.iv.1962] Luis Peña”, 2♀♀ “San Pedro de Colalao Tucumán, Argent. [Argentina] XI.8-XII.8.67 [08.xi-08.xii.1967] Lionel Stange”, 1♀ “N. Aconquija, Cat. [Catamarca] X.1-2.68 [01-02.X.1968] Argent. [Argentina] Luis Peña”, 1♂ “Amaicha del Valle XII-30-65 [30.xii.1965] Argent. [Argentina] H. & M. Townes: and 1♀ “Tafi del Valle

[Tafi del Valle] I-2-66 [02.i.1960] Argent. [Argentina] H. & M. Townes” (AEIC); 5♀♀ “Tandil 250m. Bs. Aires [Buenos Aires] Argent. [Argentina] XII.1953 [xii.1953] F.H. Walz” 4♀ AEIC; 1♀ MNHN); 1♀ “[Argentina] Pergamino Buenos Aires -8-ix-1979 [08.ix.1979]”; 7♀♀ “[Argentina: San Juan] Villa Mercedes San Juan x-1979 [x.1979] Col Mansuz” (MLP); and, 1♀ 1? “ARG [Argentina]: S. d. Estero [Santiago del Estero] Colonia Dora 15-26.xi.1979 C. & M. Vardy B.M. 1980-76” (MNHN). **BRAZIL:** 1♀: “BRAZIL: R.G.S. [Rio Grande do Sul] Pelotas 16 x 1952 [16.x.1952] C.M. Blezanko B.M. 1953-249” (BMNH).

24. *Alophophion politus* (Morley, 1912)

(Figs. 99, 102, 111, 114)

Ophion politus Morley, 1912: 57 Holotype ♀ BMNH [Morley use of “type” is herein regarded as an original holotype designation (ICZN 1999: Art. 73.1.1)] [description, key].

Alophophion politus Townes & Townes, 1966:171 [generic transfer]; Yu & Horstmann, 1997: 730 [listed].

Diagnosis.— This species can be recognized by this combination of the features: propodeum with longitudinal carinae well defined between transverse carinae defined and area dentipara and superomedia smooth with isolated punctures.

Description.— ♀: **Head.** Face (Fig. 99) 1.2–1.4x as wide as long; smooth to softly imbricate with punctures separated by less than 1x a puncture width; median portion weakly convex. Clypeus with punctures separated by less than 1x a puncture width; upper half convex, smooth texture between punctures; lower half flat, imbricate texture between punctures; apical edge straight centrally, slightly convex laterally. Outer mandibular surface smooth between punctures; bearing long setae in the basal 2/3 and smooth between punctures in the apical 1/3. Compound eyes 0.4–0.5x as wide as face. Malar space 0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 102), 0.7–0.8x as wide as compound eyes; smooth with shallow punctures separated by 3–4x as a puncture width. Frons imbricate; convex between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.3–0.4x ocellar diameter; distance between ocelli 0.7–1.0x ocellar diameter. Antenna with 47–55 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.4–3.9:2.6–2.4:2.2–2.1:2.2–2.0:2.2–1.9:2.1–1.9:2.0–1.8. Ratio of length/width of pre-apical flagellomeres: 1.4–1.7x.

Mesosoma.— Pronotum with punctures separated by 1–2x as a puncture width; in upper posterior half smooth or softly imbricate between punctures; lower half granulo-punctate; to collar striate-punctate. Mesoscutum punctate, smooth between punctures, punctures separated between them less than the puncture diameter. Notaulus extending 0.4x length of mesoscutum, scrobiculate basally. Mesoscutellum evenly convex, with texture as that of mesoscutum; lateral carina reaching 0.2x to posterior margin of mesoscutellum. Mesopleuron (Fig. 111) with punctures separated by 1–2x as a puncture width; on upper half smooth between punctures and in lower half imbricate between punctures; with lower edge of subalar prominence punctate (smooth between punctures in big specimens and imbricate texture between punctures in small specimens); lower edge of speculum scrobiculate; area between speculum and mesopleural

furrow imbricate between punctures. Mesopleural furrow basally scrobiculate-rugose reaching usually to the middle of mesopleuron, rarely reaching to posterior lower mesopleuron. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of the pronotum. Metapleuron punctate with rugulose texture. Fore wing with CI=0.5–0.7; ICI=0.6–0.7; SDI=1.3–1.5; 1m-cu straight; ramulus present; Rs+M curved; marginal cell apically glabrous; sub-basal cell with isolated setae apically. Hind wing with 7–8 hamuli on R1 distally; NI=0.6–0.7; cu-a curved. Propodeum (Fig. 114) with punctate before anterior transverse carinae, area dentipara and superomedia smooth with isolated punctures; anterior transverse carina present and well defined, up curved laterally, reaching to pleural carinae; posterior transverse carina present, reaching to pleural carina; sometimes with a longitudinal carina dividing area superomedia; carinae longitudinal present behind posterior transverse carina but faintly indicated, wavy carinate; pleural carinae present.

Metasoma.— First tergite 4.2–4.7x as long as apical width. Tergite II with spiracle located at 0.5x of tergite.

Color.— Testaceous except following: around to compound eyes, between ocelli, vertex, pronotum laterally, mesoscutum basally between notauli and lateral edges, notauli, tegula, mesoscutellum, subalar prominence, posterior lower mesopleuron and metapleuron apically yellowish. Wings grayish hyaline; veins dorsally brownish black, veins ventrally and pterostigma yellowish brown.

In small specimens yellowish spot largest, mesopleuron yellowish except lower edge of speculum and subalar prominence orange; in mesoscutum spots reaching to posterior edge and apical half of metapleuron.

♂: Similar to female except some specimens with propodeal carinae less defined and with yellowish spot in the apical half of metapleuron and propodeum and a diagonal stripe in mesopleuron.

Comments.— *Alophophion politus* is quite similar to *A. carcanchoi* new species. They are differentiated easily by the presence of a groove bearing long hair on the mandibles and shorter mesopleural furrow in *A. politus*.

The type locality only mentions Chile. On base of the material examined *A. politus* more precise distribution is found. It occurs at the center of Chile, regions of Araucanía, Biobío, Coquimbo, Los Ríos, Maule, Libertador General Bernardo O'Higgins Region, Metropolitana de Santiago and Valparaíso; and the Argentinian provinces of Chubut and Rio Negro. This is the first record of *A. politus* in Argentina.

Type examined material.— **Holotype:** ♀ labeled as follows: "Type [handwritten:] MS/ B.M. TYPE HYM. 3.b.1301/Named by Claude Morley [handwritten:] *Ophion politus* Morl. Slm Type ♀ ii.1911/Chili. E. Sanders. 93-49" (BMNH).

Non type material examined.— 26♂♂, 121♀♀: labeled as follows: **ARGENTINA:** 7♂♂, 12♀♀; 5♀♀ "CHILE [Argentina]: Chubut. 18.vi.1962. A. Kovacs. B.M. 1964-193"; 7♂♂, 2♀♀ "CHILE [Argentina]: R.N. [Río Negro], El Bolson. 30.xi.1960. A. Kovacs. B.M.1964-193"; and 1♀ "L. Gutierrez 3-14.xi.1926/ Argentina: Terr. Rio Negro. F. & M. Edwards. B. M. 1927-63" (BMNH). 3♀♀, "Chubut Patagonia / From WFH Rosenberg/ [identification label: *Ophion chilensis* Spinola det C.W. Ho-

oker 3.12-18.1909]"; and 1♀, "Chubut,-Gargo Blanco Valle Patagonia / Collection Rosenberg / [identification label: *Ophion bilineatus* Say det C.W. Hooker III.2.1909]" (USNM). **CHILE:** 19♂♂, 109♀♀; 1♀ "Alto Vilches Tal. [Talca] XII.20.77 [20.xii.1977] Chile Luis Peña"; 1♂, 3♀♀ "Canela Baja, Coquimbo, Chile X.23 1961 [23.x.1961] Luis Peña"; 2♀♀ "Concepción, Chile Quebrada Pinares II-III. 1967 [ii-iii.1967] T. Cekalovic"; 4♂♂ "[Chile] Cord. [Cordillera] Las Raices [,] Lonquimay, Chile III.22.79 [22.iii.1979], [L.] Peña"; 1♀ "Chevillen-Tregudema Chile I.25.67 [25.i.1967], [L.] Peña"; 1♀ "Curacautín, Malleco Chile XII.19-21.'50 [19-21.xii.1950] L. Pena [Peña]"; 1♀ "Curacautín, Malleco Chile XII.8.50 [08.xii.1950] L. Pena [Peña]"; 4♀♀ "Curacautín, Malleco II.'64 [ii.1964] R. [Río] Blanco Chile Luis E. Peña"; 1♀ "El Coigual, Curico I.21-25.64 [21-25.i.1964] Chile Luis E. Peña"; 1♀ "El Marchan, Chile III.1971 [iii.1971] Chillán Luis Peña"; 1♂, 1♀ "El Radal 1000-1500 Talca prov. [Provincia] XI.22.57 [22.xi.1957] Chile L. Pena Guzman [L. Peña Guzmán]"; 7♀♀ "Estero La Jaula Los Quenes [Los Queñes] Curico I.4-18.64 [04-18.i.1964] Chile Luis E. Peña"; 1♀ "Fundo El Coigo [,] Cord [Cordillera] Curico Chile XII.20-31.59 Luis Pena [Peña]"; 1♀ "Lago Italma Cord. [Cordillera] Lonquimay I.12-17.62 [12-17.i.1962] Chile Luis Peña"; 1♂ "Lago Puyehue, Pr. [Provincia] Osorno CHILE Feb.18, 1957 [18.ii.1957] L.E. Pena [Peña]"; 1♂, 2♀♀ "Las Trancas, Chile April 1972 [vi.1972] Chillán Luis Peña"; 1♀ "Las Trancas, Chile II.6-11.66 [06-11.ii.1966] Chillán Luis Peña"; 1♂, 1♀ "Las Trancas, Chile I-II.71 [i-ii.1971] Chillán Luis Peña"; 12♀♀ "Las Trancas, Chile XII.1-15.75 Chillán Luis Peña"; 1♀ "Las Trancas, Chillán Chile Jan.1967 [i.1967], [L.] Peña"; 1♀ "Pucatrihue Chile Dec 1967 [xii.1967] 1966 (crossed out) Luis Peña"; 1♀ "Pucatrihue, Chile I.23-31.1966 [23-31.i.1966] Luis Peña"; 2♂♂ "Pucatrihue, Chile Sept.1967 [ix.1966] 1966 (crossed out) Luis Peña"; 1♂, 9♀♀ "Q. [Quebrada] Teniente, Coquimbo, Chile Oct. 26, 1961 [26.x.1961] Luis Pena [Peña]"; 1♀ "Recinto [,] Ñuble I.'76 [i.1976] Chile Luis Pena [Peña]"; 4♀♀ "Rio Blanco, Aconcagua, Chile Dec. 5-8, 1961 [05-08.xii.1961] Luis Peña"; 3♂♂, 5♀♀ "S. Pedro deQuile [San Pedro de Quiles] Coquimbo, Chile Nov. 16-17 [16-17.xi.1961], 1961 Luis Pena [Peña]"; and 1♀ "Vilches Alto Cord. [Cordillera] Talca I.'75 Chile [i.1975] Luis Peña" (AEIC). 2♀♀ "Cespedes Had. [Hacienda] Illapel Coquimbo Pr. [Provincia] XI.26.59 [26.xi.1959] Chile L. Pena Guzman [L. Peña Guzmán]" (1♀ MNHN, 1♀ AEIC). 1♂, Quebrada El Manzano Prov. [Provincia] Santiago Chile X.28.51 [28.x.1951] 1200 m Thra Walz" (MNHN). 1♂ "Casa Pangué. 4-10.xii.1926./ S. Chile: Llanquihue prov. F. & M. Edwards. B.M. 1927-63"; 1♀ "CHILE: Maipo [Maipo] Valley 5.xi.1971 BM1973-192 [handwritten:]"; 1♀ "CHILE: Trata [,] Victoria. 24.iii.1961. A. Kovacs. B.M. 1964-193" (BMNH). 2♀♀ "CHILE MALLECO Vn. [,] Louquimay [Lonquimay] 1400m 22.XII.1994 [22.xii.1994] J.E. Barriga"; 1♀ "CHILE: CURICO Licancel [Licantén], Licanteú [Licantén] 22.XII.1993 [22.xii.1993] JEBarriga [J.E. Barriga] & Lperalta [& L. peralta] black light"; 1♂, 3♀♀ "CHILE: IX Región [Araucanía] Salto El Puma - 28km SE Pucón 39°25'S 71°45'W 7.XII.1994 [07.xii.1994] SLHeydon [S.L. Heydon] & Earias [E. Arias]"; 1♂, 5♀♀ "CHILE: Prov. [Provincia] Curico 10km w. Licanten 20.XII.1993 JEBarriga [J.E. Barriga] & Lperalta [& L. Peralta] at light"; 18♀♀ "CHILE: TALCA Alto Vilches 27.XII.1987 [27.xii.1987] J.E. Barriga"; 1♀ "CHILE: VII [Maule] Región Curicó Altos de Vilches 18.XII.1996 [18.xii.1996] E. Arias lighth trap"; 1♀ "CHILE: VIII Región [Biobío] Hotel de Montaña

Los Pirineos Termas de Chillán 36°54'S 71°29'W 22.XI.1994 [22.xi.1994] 1200m SLHeydon [S.L. Heydon] & Earias [E. Arias]"; and 9♀♀ "CHILE: VIII Región Los Lleuques 14km w. Termas de Chillán 1080m 36°54'S 71°32'W 23-24.XI.1994 [23-24.xi.1994] SLHeydon [S.L. Heydon] & Earias [E. Arias]"; (UCDC). 1♀ "MUSEUM PARIS CHILI GAY 1843 / *Ophion intricatus*" (USNM).

25. *Alophophion yagane* new species

(Figs. 98, 104, 110, 116)

Diagnosis.- The most striking characteristic of this species, within the species-group, is the mesopleural furrow reaching to the posterior lower edge of the mesopleuron, and the lateromedian longitudinal carinae convergent behind posterior transverse carina.

Description.- ♀: **Head.** Face (Fig. 98) 1.2–1.3x as wide as long; softly imbricate with punctures separated by 0.5–1x a puncture width; median portion weakly convex; median portion weakly convex. Clypeus slightly convex, imbricate with punctures separated by 2–3x a puncture width; apical edge straight centrally, slightly convex laterally. Outer mandibular surface smooth bearing long setae in the basal 2/3. Compound eyes 0.5x as wide as face. Malar space 0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 104), 0.7x as wide as compound eyes, smooth with punctures separated by 4x a puncture width. Frons striate between antennae and median ocellus. Vertex smooth with punctures separated by 2x a puncture width. Lateral ocellus separated from compound eye by 0.2–0.3x ocellar diameter; distance between ocelli 0.5–0.6x ocellar diameter. Antenna with 51–52 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.1–4.2:2.4:2.2–2.1:2.1–2.0:1.9–2.0:1.8–1.9:1.7:1.8. Ratio of length/width of pre-apical flagellomeres: 1.6–1.8x.

Mesosoma.- Pronotum in upper posterior half imbricate with punctures separated by less than a puncture diameter; lower half and dorsal to collar striate. Mesoscutum softly imbricate with punctures separated by less than the puncture diameter. Notaulus extending 0.3x length of mesoscutum, finely scrobiculate. Mesoscutellum evenly convex, with texture as that of mesoscutum; lateral carina reaching 0.4x to posterior margin of mesoscutellum. Mesopleuron (Fig. 110) smooth with punctures separated by 0.5x puncture diameter; lower edge of speculum scrobiculate; mesopleural furrow basally softly scrobiculate then becoming rugulose reaching to posterior lower mesopleuron. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of the pronotum. Metapleuron with rugulose texture. Fore wing with CI=0.4–0.5; ICI=0.7; SDI=1.5–1.6; 1m-cu straight; ramulus present; Rs+M curved; marginal cell apically cover by setae; sub-basal cell usually without setae, at most with one or two isolate setae. Hind wing with 7 hamuli on R1 distally, rarely with 8 hamuli; NI=0.5–0.6; cu-a curved. Propodeum (Fig. 116) with coarsely wavy carinate texture, except punctate before anterior transverse carinae; anterior and posterior transverse carina present; longitudinal carinae present, except before anterior transverse carina; lateromedian longitudinal carinae after posterior transverse carinae convergent, fused to form a single median longitudinal carina, unusually longitudinal carinae getting close but not converging; pleural carinae present.

Metasoma.- First tergite 5.0–5.3x as long as apical width. Tergite II with spiracle located at 0.4–0.5x of tergite.

Color.- Burnt orange except following: surrounding area of compound eyes, vertex and gena yellowish orange.

♂: Similar to female

Comments.- Some specimens have softer texture in the propodeum and the epicnemial carina is not well defined in mesopleuron, while other specimens have the median portion weakly and clypeus smooth between punctures; these variations are indistinct from the sex. The apical corner of marginal cell sometimes with the setae fallen down, but the hollows left by them allow them to be identify.

There is one specimen determinate as *Ophion luteus* (Linnaeus, 1758) examined by Morley (1912), he mentioned that he could not find distinction between this specimen and others distributed in Jamaica, Monte Video and Soriano in Uruguay. This specimen belongs to *Alophophion* and was misidentified.

This species is distributed from Biobío in Chile and Neuquén in Argentina to the south of the continent.

Etymology.- The species epithet "*yagane*" refers to the Yaghan indigenous peoples of the Southern Cone, who are regarded as the southernmost peoples in the world.

Holotype: ♀ "CHILE: Chiloe Al Pacifico Road 7.ii.1985 I.D. Gauld" (BMNH).

Paratypes: 12♂♂, 13♀♀, 1?: labeled as follows: **ARGENTINA:** 3♂♂, 3♀♀: 1♀ "CHILE [Argentina]: R.N. [Río Negro], El Bolson. 20.i.1960. A. Kavocs. B.M.1964-193" and 1♀ "CHILE [Argentina]: R.N. [Río Negro], Rio Azul. 05.i.1960. A. Kavocs. B.M.1964-193" (BMNH); 1♀ "Pucará, Lago Lacar, Neuquen, Argentina February 4, 1968 [04.ii.1968] L & J Stange"; 1♂ "R.A. TUCUMAN Qda [Quebrada] Amaicha El Molle 2900m- XI.932 [XI.1932]" 1♂ 1? "Alapachiri, Tuc. [Tucumán] X.1.68 [01.x.1968] Argent. [Argentina] Luis Peña" and 1♂ "Pto. [Puerto] Aqua, L. [Lago] Traful, Neuquen, Argentina January 30, 1968 [30.i.1968] L & J Stange" (AEIC). **CHILE:** 9♂♂, 10♀♀: labeled as follows: 1♂, 4♀♀ "Isla Riesco [,] Magallanes [Magallanes y de la Antártica Chilena, Magallanes] II-18-61 [18.ii.1961] Chile T. Cehalovick"; 1♂ "Pucatrihue Osomo Chile II.3-4.67 [03-04.ii.1967], [L.] Peña"; 1♀ "3 km. E Las Trancas Ñuble Chile I.16.67 [16.i.1967] Lionel Stange" and 5♂♂, 2♀♀ "Dalcahue CHILE Prov. [Provincia] Chiloe Feb. 1957 [ii.1957] L. E. Pena [Peña]" (AEIC); 1♂, 1♀ "Punta Arenas [,] Magallanes [Magallanes y de la Antártica Chilena, Magallanes] III-09-61 [09.iii.1961] Chile T. Cehalovick" (1♀ BMNH, 1♂ AEIC); and 1♂, 1♀ "CHILE: Chiloe Al Pacifico Road 7.ii.1985 I.D. Gauld" (BMNH). **Unknown location:** 1♀ "6349/ *Ophion luteus*, Linn [handwritten:]/ Referred to Holiday Trans Linn. Soc. 1836 p. 319" (BMNH).

Species-group C

Diagnosis.- Face at most 1x as long as wide or wider (Figs. 118–139); compound eyes at most 0.6x wide as face; head, in lateral view (Figs. 140–161), gena 0.7 to 0.9 x wide as compound eyes. Mandible with upper surface with small groove (Figs. 6–7), groove rarely reaches external surface of mandible, if so, then only in intersection between upper and external surface and never reaching to center of external surface; groove bears

small setae. Color yellowish, olive green, brownish, some species brownish with cream spots.

Included species.- Twenty two species were found in this group – *A. atahualpai* new species, *A. capacitypanquii* new species, *A. carcanchoi* new species, *A. chavinaensis* new species, *A. chilensis* (Spinola, 1851), *A. chiquiyane* new species, *A. coquimboensis* new species, *A. huascari* new species, *Alophophion huaynacapaci* new species, *A. incarocai* new species, *A. larseni* (Enderlein, 1912), *A. lloqueypanquii* new species, *A. ofeliae* new species, *A. pachacutii* new species, *A. pincoya* new species, *A. porculatus* (Morley, 1912), *A. teushen* new species, *A. waca* new species, *A. wiracochai* new species, *A. yabuarhuacaci* new species, *A. yestay* new species, and *A. yupankii* new species.

Key to species of species group C

- (1) Propodeum with posterior transverse carina absent between lateral longitudinal carinae (Figs. 186–188), if present, then only present laterally forming area coxalis (Fig. 195) **2**
 - Propodeum with posterior transverse carina present between lateral longitudinal carinae; sometimes weaker centrally (Figs. 185, 189–194, 196–194, 200–204) or only present between lateromedian longitudinal carinae (Figs. 184, 199, 205) **6**
- (2) Propodeum with anterior transverse carina absent, only with longitudinal carinae present apically (Fig. 186) ...
 - *Alophophion capacitypanquii* new species
 - Propodeum with anterior transverse carina present, sometimes only centrally (Figs. 187–188) **3**
- (3) Fore wing with ramulus present; sub-basal cell with a glabrous section next to pterostigma and Rs+2r vein (Fig. 210) ...
 - *Alophophion huascari* new species
- Fore wing with ramulus absent (Fig. 207-208) or only represented as an angle of Rs+M (Fig. 212), sub-basal cell with setae homogeneously covering ...
 - **4**
- (4) Body color brownish with cream white spots (Fig. 178) ...
 - *Alophophion yupankii* new species (in part)
 - Body predominantly brownish without cream spots **5**
- (5) Hind wing with sub-basal cell with a row of setae parallel to M+Cu; fore wing with fenestra comma-shaped (Fig. 207)...
 - *Alophophion incarocai* new species
 - Hind wing with sub-basal cell without a row of setae parallel to M+Cu, if it is present with only two setae; fore wing with fenestra bead shaped (Fig. 208)
 - *Alophophion yabuarhuacaci* new species
- (6) Clypeus with ventral-lateral edges angulate giving a square appearance (Fig. 133) *Alophophion pincoya* new species
 - Clypeus with ventral-lateral edges more or less curved (Figs. 127–129) ...
 - **7**
- (7) Mesopleural furrow absent (Figs. 163, 165, 166–169); mesopleuron with surface homogeneously ornamented, generally punctate **8**
 - Mesopleural furrow present (Figs. 162, 164, 173–174, 182), mesopleural furrow scrobiculate, rugulose or areolate-rugose texture; rest of mesopleuron with surface generally punctate **16**
- (8) Propodeum with longitudinal carinae present between transverse carinae, enclosing area superomedia and dentipara (Figs. 185, 200, 202) **9**
 - Propodeum with lateral longitudinal carinae not distinguishable between transverse carinae (Figs. 184, 191, 199, 203) **11**
- (9) Lateral ocellus separated from compound eye by 0.2x ocellar diameter ...
 - *Alophophion chilensis* (Spinola 1851) (in part)
 - Lateral ocellus separated from compound eye by 0.3–0.4x ocellar diameter
 - **10**
- (10) Pronotum smooth with punctures separated by 2.5–4x a puncture width; legs homogeneously olive green ...

- *Alophophion porculatus* (Morley, 1912)
- Pronotum on the upper half smooth with punctures separated by 1–2x a puncture width and lower half rugulose; legs olive green with brownish spots
 - *Alophophion yestay* new species
- (11) Lower edge of speculum smooth between punctures (Fig. 172)...
 - *Alophophion lloqueypanquii* new species
 - Lower edge of speculum scrobiculate, sometimes only in the proximal half (Figs. 163–164, 171, 180) **12**
- (12) Propodeum with area superomedia not distinguishable; lateromedian longitudinal carinae absent between transverse carinae and present behind posterior transverse carinae but faint (Fig. 203) ... *Alophophion chavinaensis* new species
 - Propodeum with area superomedia distinguishable; lateromedian longitudinal carinae present after anterior transverse carina and behind posterior transverse carinae convergent or fused to form a single median longitudinal carina (Figs. 184, 190–199) **13**
- (13) Fore wing with marginal cell homogeneously cover by setae (like Fig. 207-209); propodeum with posterior transverse carina faint only well-defined between lateromedian longitudinal carinae (Fig. 184) ...
 - *Alophophion larseni* (Enderlein, 1912)
 - Fore wing with marginal cell apically glabrous next to pterostigma and Rs+2r or just next to Rs+2r; propodeum with posterior transverse carina homogeneously defined **15**
- (14) Anterior transverse carina present only centrally; lateral longitudinal carinae absent; shiny; lateral longitudinal carinae absent between transverse carinae (Fig.199) *Alophophion teushen* new species
 - Anterior transverse carina present between pleural carinae; lateral longitudinal carinae present between transverse carinae (Fig. 190), sometimes faint (Fig. 205) **15**
- (15) Propodeum predominantly light straw yellow (Fig. 190); fore wing with marginal cell glabrous next to upper half of Rs+2r (Fig. 206) ...
 - *Alophophion ofeliae* new species
 - Propodeum predominantly brownish (Figs. 205); fore wing with marginal cell glabrous next to pterostigma and Rs+2r (like Fig. 210) ...
 - *Alophophion huaynacapaci* new species
- (16) Metapleuron rugulose (Figs. 3, 173–174) **17**
 - Metapleuron punctate, granulo-punctate, or punctate on upper half and rugulose on lower half (Figs. 162, 175, 182) **18**
- (17) Mesopleuron furrow scrobiculate; epicnemial carina well delimited laterally (Fig. 173)..... *Alophophion atahualpai* new species
 - Mesopleuron furrow rugulose, sometimes present only around epicnemial carina, generally reaching to posterior lower mesopleuron; epicnemial carina not well delimited laterally (Fig. 174) ...
 - *Alophophion carcanchoi* new species
- (18) Fenestra thin, wider transverse diameter narrower than area between fenestra and Rs+M vein (Fig. 209) *Alophophion wiracochai* new species
 - Fenestra wide, transverse diameter wider than the area between fenestra and Rs+M vein (Fig. 211)..... **19**
- (19) Propodeum with area superomedia well defined (Figs. 201–202), enclosed **20**
 - Propodeum with area superomedia not well defined (Figs. 189, 196, 204); lateromedian longitudinal carinae not discernible from the texture between the transverse carinae **21**
- (20) Propodeum with lateromedian longitudinal carinae converging behind posterior transverse carina, area petiolaris absent; carinae lamellate (Fig. 201) ..
 - *Alophophion chiquiyane* new species
 - Propodeum with area petiolaris and area posteroexterna continuous (Fig. 202)
 - *Alophophion chilensis* (Spinola 1851) (in part)
- (21) Fore wing with marginal cell cover by setae (like Figs. 207–209); body predominantly rufo-testaceous *Alophophion waca* new species
 - Fore wing with marginal cell basally glabrous next to proximal half of Rs+2r and pterostigma (Fig. 211) **22**



Figures 127 – 145.

Details of face.

(127) *A. atahualpai* new species

(128) *A. carcanchoi* new species

(129) *A. wiracochai* new species

(130) *A. pachacutii* new species

(131) *A. yupankii* new species

(132) *A. huascari* new species

(133) *A. pincoya* new species

(134) *A. teushen* new species

(135) *A. yestay* new species.

Details of face,

(136) *A. chiquiyane* new species

(137) *A. chavinaensis* new species

(138) *A. coquimboensis* new species

(139) *A. huaynacapaci* new species

Details of head in lateral view

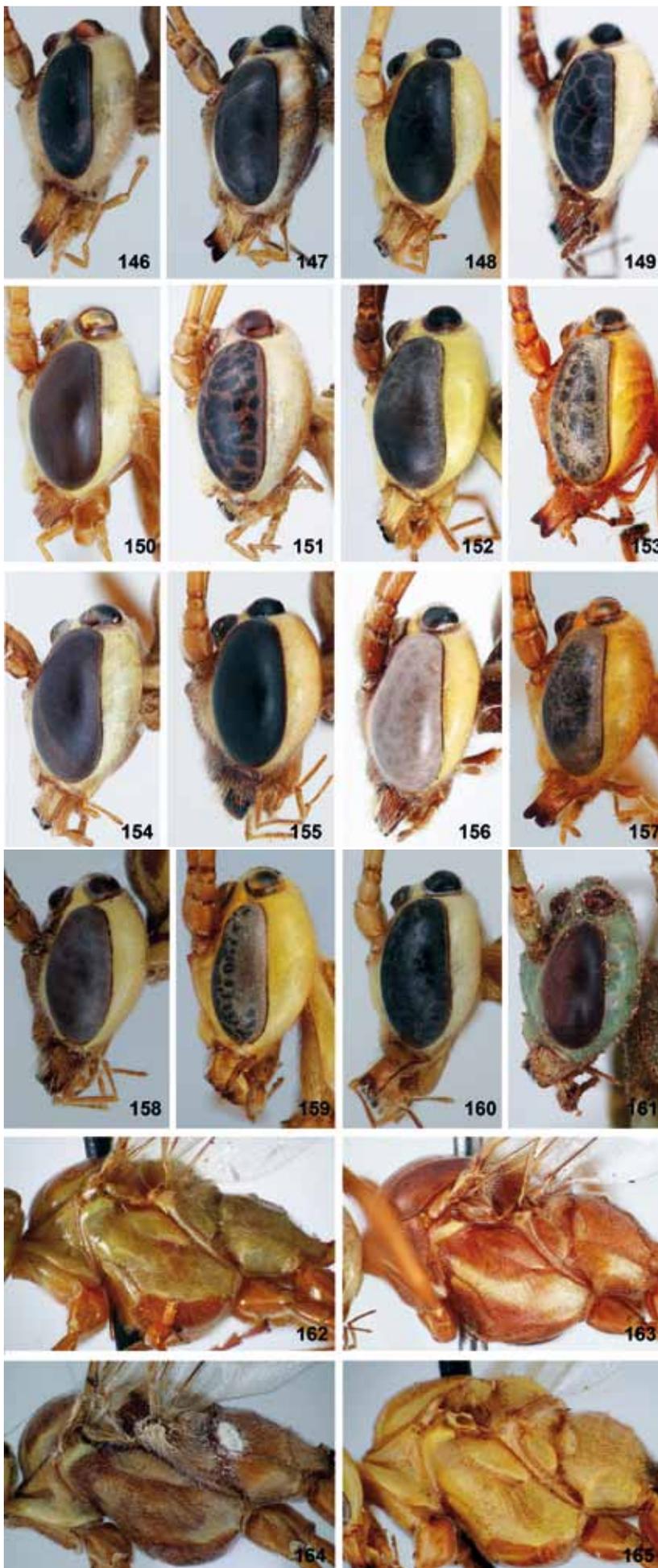
(140) *A. chilensis* 141 *A. larseni*

(142) *A. capacitypanquii* new species

(143) *A. incarocai* new species

(144) *A. yahuarhuacaci* new species

(145) *A. waca* new species



Figures 146 – 165.

Details of head in lateral view

(146) *A. wiracochai* new species

(147) *A. huascari* new species

(148) *A. pachacutii* new species

(149) *A. yupankii* new species

(150) *A. pincoya* new species

(151) *A. teushen* new species

(152) *A. yestay* new species

(153) *A. chiquiyane* new species

(154) *A. ofeliae* new species

(155) *A. lloqueyupanquii* new species

(156) *A. atahualpai* new species

(157) *A. carcanchoi* new species.

Details of head in lateral view

(158) *A. chavinaensis* new species

(159) *A. coquimboensis* new species

(160) *A. huaynacapaci* new species

(161) *A. porculatus*

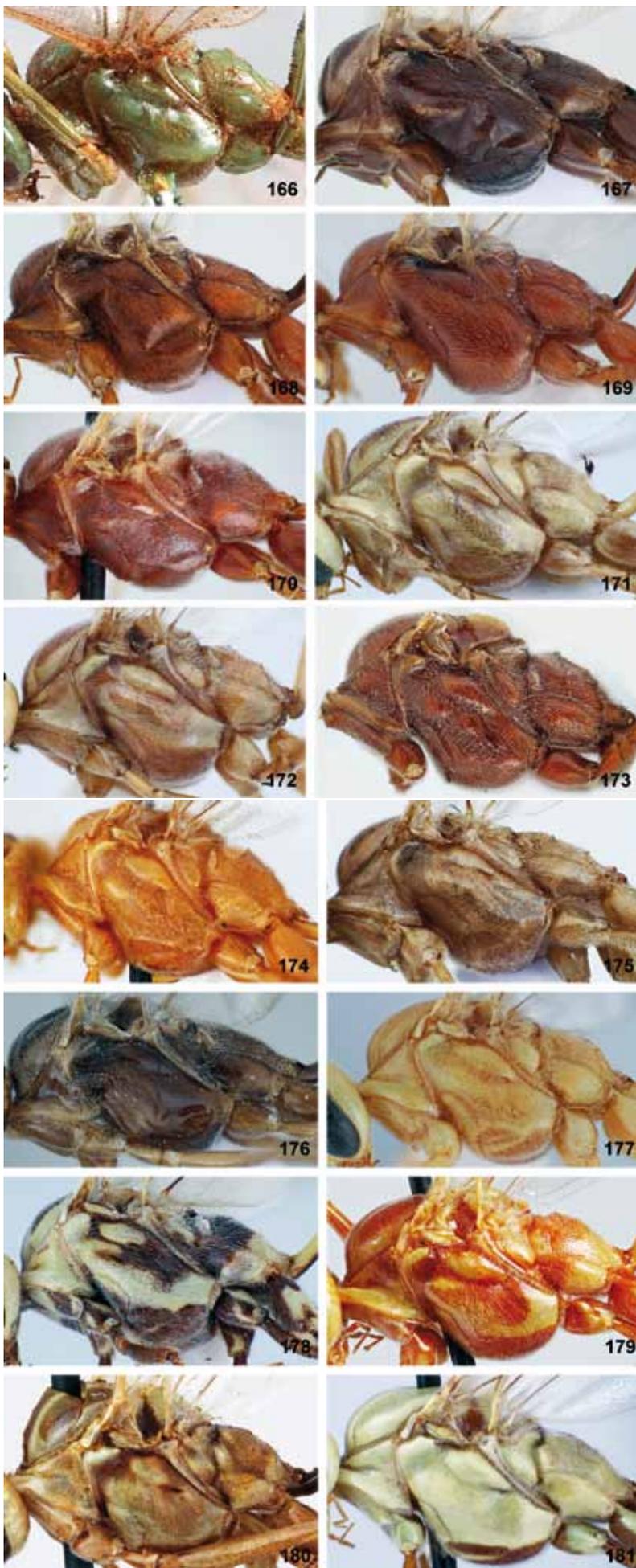
Details of mesosoma in lateral view.

(162) *A. chilensis*

(163) *A. larseni*

(164) *A. chavinaensis* new species

(165) *A. coquimboensis* new species.



Figures 166 – 181.

Details of mesosoma in lateral view.

(166) *A. porculatus*

(167) *A. capacitypanquii* new species

(168) *A. incarocai* new species

(169) *A. yahuarhuacaci* new species

(170) *A. waca* new species

(171) *A. ofeliae* new species

(172) *A. lloqueypanquii* new species

(173) *A. atahualpai* new species

Details of mesosoma in lateral view.

(174) *A. carcanchoi* new species

(175) *A. wiracochai* new species

(176) *A. huascari* new species

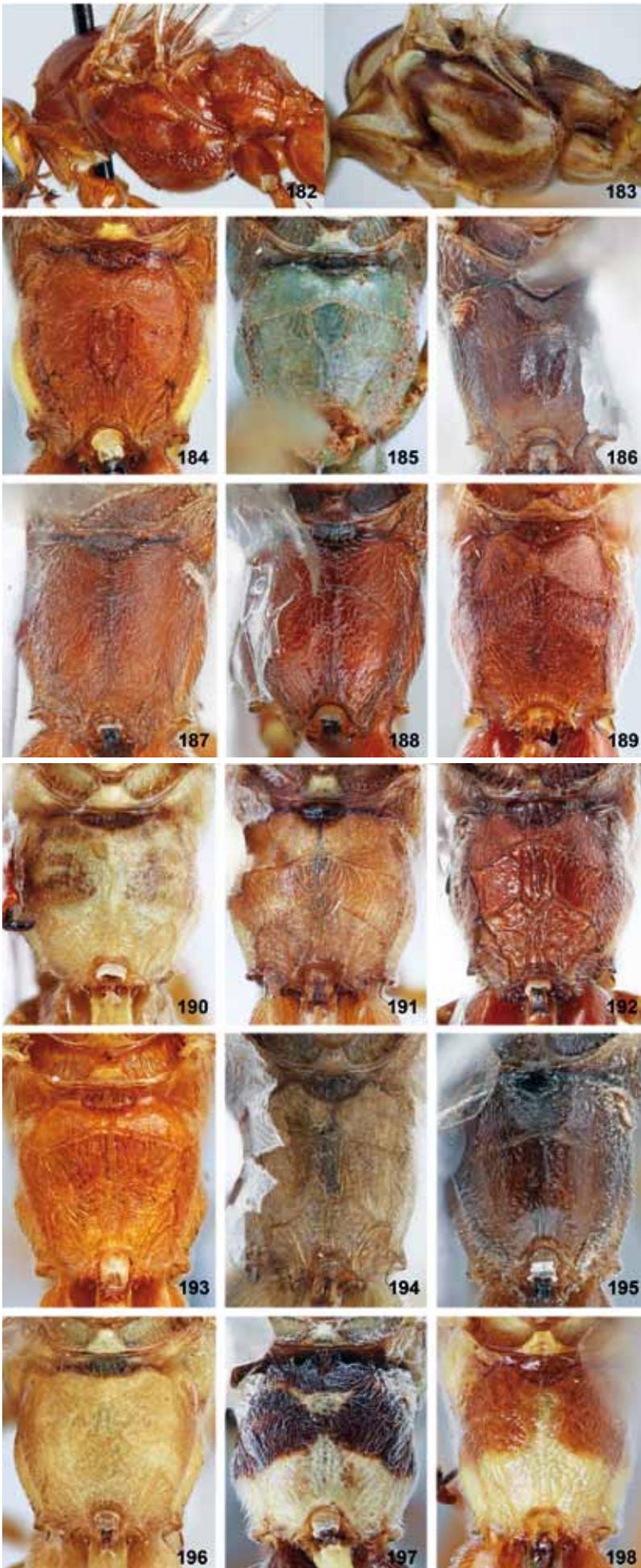
(177) *A. pachacutii* new species

(178) *A. yupankii* new species.

(179) *A. pincoya* new species

(180) *A. teushen* new species

(181) *A. yestay* new species.



Figures 182 – 198.

Details of mesosoma in lateral view,

(182) *A. chiquiyane* new species

(183) *A. huaynacapaci* new species

Details of propodeum,

(184) *A. larseni*

(185) *A. porculatus*

(186) *A. capacitypanquii* new species

(187) *A. incarocai* new species

(188) *A. yahuarhuacaci* new species

(189) *A. waca* new species.

(190) *A. ofeliae* new species

(191) *A. lloqueypanquii* new species

(192) *A. atahualpai* new species

(193) *A. carcanchoi* new species

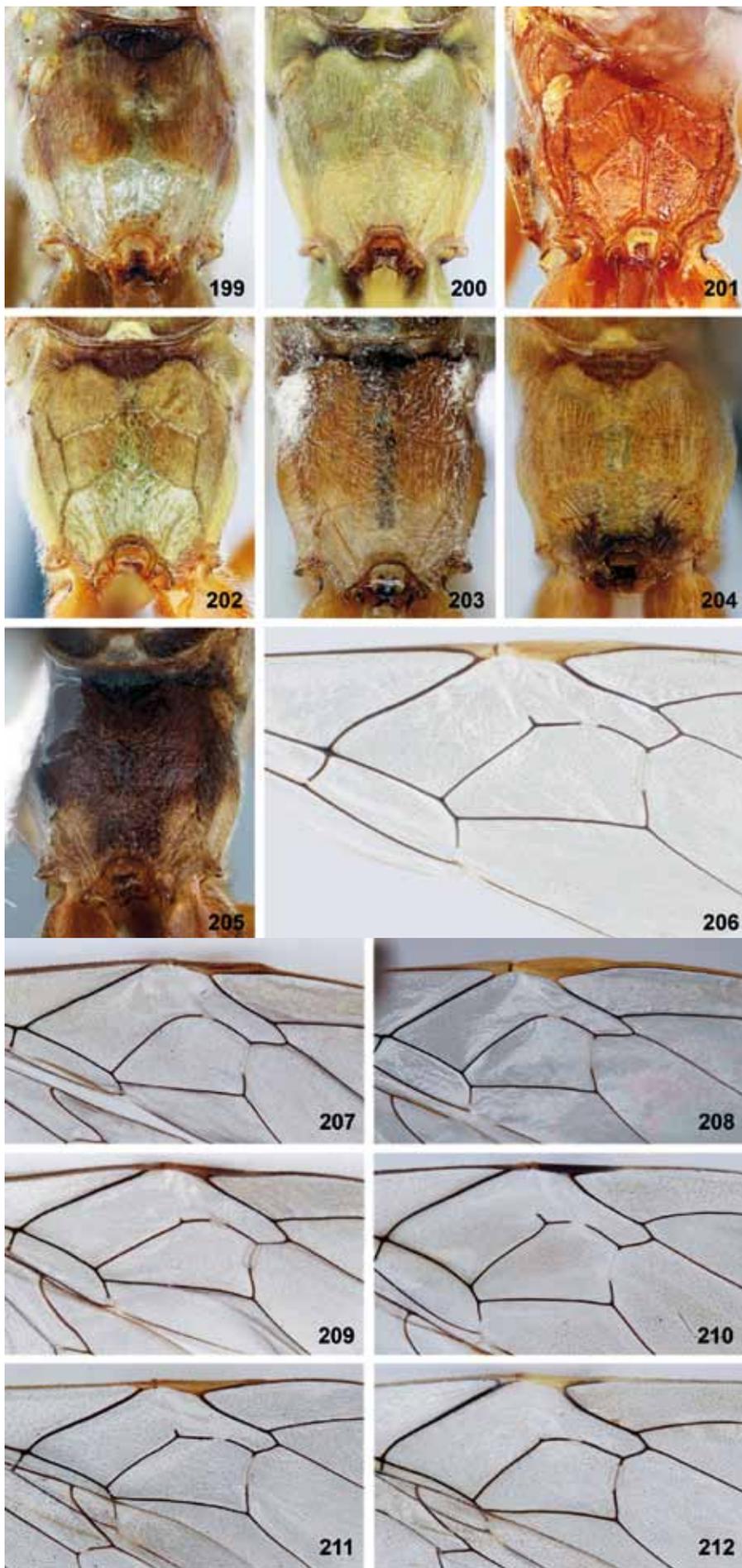
(194) *A. wiracochai* new species

(195) *A. huascari* new species

(196) *A. pachacutii* new species

(197) *A. yupankii* new species

(198) *A. pincoya* new species.



Figures 199 – 212.

Details of propodeum.

(199) *A. teushen* new species

(200) *A. yestay* new species

(201) *A. chiquiyane* new species

(202) *A. chilensis*

(203) *A. chavinaensis* new species

(204) *A. coquimboensis* new species

(205) *A. huaynacapaci* new species.

Details of fore wing,

(206) *A. ofeliae* new species

(207) *A. incarocai* new species

(208) *A. yahuarhuacaci* new species

(209) *A. wiracochai* new species

(210) *A. huascari* new species

(211) *A. pachacutii* new species

(212) *A. yupankii* new species.

(22) Notaulus with same texture as mesoscutum; frons centrally testaceous and laterally light straw yellow ...

..... *Alophophion coquimboensis* new species

– Notaulus basally scrobiculate; frons light straw yellow ...

..... *Alophophion pachacutii* new species

26. *Alophophion atahualpai* new species

(Figs. 1, 2, 3, 127, 156, 173, 192)

Diagnosis.– This species can be recognized by this combination of the features: speculum and mesopleural furrow are homogeneously scrobiculate.

Description.– ♀: **Head.** Face (Fig. 127) 1.0 x as wide as long; smooth with punctures separated by 0.5x a puncture width; median portion weakly convex. Clypeus smooth with punctures separated by 0.5–1x a puncture width; slightly convex; apical edge straight. Compound eyes 0.5–0.6x as wide as face. Malar space 0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 156), 0.7–0.8x as wide as compound eyes; smooth with punctures separated by 0.5–1x a puncture width. Frons striate, between central ocelli and toruli. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.2x ocellar diameter; distance between ocelli 0.5–0.6x ocellar diameter. Antenna with 54 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.8–5.3:3.2–3.1:2.5–2.8:2.5–2.6:2.4:2.3:2.2–2.3. Ratio of length/width of pre-apical flagellomeres: 1.3–1.5x.

Mesosoma.– Pronotum on the upper half smooth with punctures separated by 0.4–0.8x a puncture width and lower half scrobiculate; lower half of collar striate. Mesoscutum smooth with punctures separated by 0.4–0.8x a puncture width. Notaulus extending 0.7x length of mesoscutum, basally scrobiculate. Mesoscutellum evenly convex; lateral carina reaching 0.1x to posterior margin of mesoscutellum; smooth with punctures separated by 1–2x a puncture width. Mesopleuron (Fig. 3, 173) smooth with punctures separated by 0.4–0.8x a puncture width; speculum smooth with punctures separated by 2x a puncture width lower edge of speculum scrobiculate; mesopleural furrow scrobiculate reaching to middle to the posterior lower mesopleuron. Epicnemial carina curved to meet anterior margin of mesopleuron at lower third of pronotum. Metapleuron rugulose; juxtacoxal carina present. Fore wing with CI=0.3–0.4; ICI=0.6; SDI=1.5–1.6; 1m-cu straight; ramulus present; Rs+M curved; marginal cell cover by setae; sub-basal cell usually without setae. Hind wing with 6–7 hamuli on R1 distally; NI=0.6–0.8; cu-a curved. Propodeum (Fig. 192) wavy carinate with punctures except area basalis smooth with punctures separated by 0.5–1x a puncture width; anterior and posterior transverse carina present; longitudinal carinae present, also before anterior transverse; carinae forming areas petiolaris, posteroexterna and coxalis wavy; pleural carinae present.

Metasoma.– First tergite 4.7–5.1x as long as apical width. Tergite II with spiracle located at 0.5–0.6x length of tergite.

Color.– Brown reddish except following: surrounding area of compound eyes, vertex, gena mesoscutum, collar, subalar prominence, basal spot in speculum yellowish orange and a spot on posterior lower mesopleuron light straw yellow.

♂: Similar to female except by the presence of isolate setae apically in sub-basal cell.

Comments.– This species has a wide distribution and the most septentrional distribution for the genus, from Lima-Peru to Ecuador. It is present at elevations of 1700 to 3177 m. They are more abundant in higher elevations as was observed Udima collections; they were collected at elevations of 2150 to 3116m, and were absent at lower elevations (1195m and 1615 m).

Etymology.– The species epithet "atahualpai" refers to Atahualpa the last ruler of the Tawantinsuyu.

Holotype. ♀ “PERU, CA [Cajamarca]. S.N. [National Sanctuary] Udima, 4.6 Km al NE de Monteseo, 2841 m, 6°50'15.8" [S]/79°04'16" [W], 12.v.2009 [12.v.2010]. J. Grados Leg.”

Paratypes. 11♂♂, 126♀♀: labeled as follows: **ECUADOR:** 7♂♂, 6♀♀: labeled as follows: 6♂♂, 5♀♀ “Río León, Ecuador III.21-22.65 [21-22.iii.1965] 1700m. Luis Peña”; 1♂, 1♀ “Río León 2100m. XI.30.70 [30.xi.1970] Ecuador Luis E. Peña” (AEIC). **PERU:** 4♂♂, 121♀♀: labeled as follows: 3♀♀ “PERU, CA [Cajamarca]. S.N. [Zona Reservada] Udima, 4.6 Km al NE de Monteseo, 2841 m, 6°50'15.8" [S]/79°04'16" [W], 19.x.2009. J. Grados Leg.” (MUSM); 1♀, “PERU: CA. 3.8 Km al NE de Monteseo, 2150 m 06°50'37" [S] / 79°04'52" [W] 16-19.v.2010 J. Grados leg” (MUSM); 5♀♀, “PERU, CA [Cajamarca, National Sanctuary Udima], 3.8 Km al NE de Monteseo, 2150 m, 6°50'37" [S]/79°04'52" [W], 17.x.2009. J. Grados Leg.” (3♀♀ SEMC; 2♀♀ MUSM); 5♀♀, “PERU, CA [Cajamarca]. S.N. [National Sanctuary] Udima, 4.6 Km al NE de Monteseo, 2841 m, 6°50'15.8" [S]/79°04'16" [W], 24-26.iv.2009. J. Grados Leg.” (3♀♀ SEMC; 2♀♀ MUSM); 2♂♂, 9♀♀ “PERU, CA [Cajamarca]. S.N. [National Sanctuary] Udima, 4.6 Km al NE de Monteseo, 2841 m, 6°50'15.8" [S]/79°04'16" [W], 12.v.2009 [12.v.2010]. J. Grados Leg.” (1♂, 3♀♀ SEMC; 1♂, 6♀♀ MUSM); 1♂, 94♀♀ “PERU, CA [Cajamarca]. S.N. [Zona Reservada] Udima, Monteseo, 6°50'40.04" [S]/79°03'45.53" [W], 3116m. 14-15.v.2010. J. Grados Leg.” (5♀♀ BMNH, 1♂, 89♀♀ MUSM); and 1♀ “PERU: AN. [Ancash] Huari, Chavin de Huantar 77°19'42.34" W/ 9°35'33.9" S. 3177m. v.2010 L. Figueroa” (MUSM); 1♂, 1♀ “Lima Peru II.15.56 [15.ii.1956] Thra Walz” (AEIC); and 1♂ “PERU, Amazonas Chachapoyas, 2800 m. 26.iii.1984 [handwritten] M Cooper / M. Cooper BMNH (E) 2005-152” (BMNH).

27. *Alophophion capacyupanquii* new species

(Figs. 121, 142, 167, 186)

Diagnosis.– This species can be recognized by this combination of the features: propodeum with the longitudinal carinae only present apically and the epicnemial carina faint.

Description.– ♀: **Head.** Face (Fig. 121) 1.0 x as wide as long; imbricate with punctures separated by 0.5–1x a puncture width; median portion weakly convex. Clypeus with upper half convex and lower half flat; imbricate with punctures separated by 1–2x a puncture width; apical edge straight centrally, slightly convex laterally. Compound eyes 0.5x as wide as face. Malar space 0.2–0.3x as long as basal width of mandible. Gena, in lateral view (Fig. 142), 0.8–0.9x as wide as compound eyes, softly imbricate texture between punctures. Frons imbricate softly striate between central ocelli and toruli. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.7–0.8x ocellar diameter; distance between ocelli 0.9–1.1x

ocellar diameter. Antenna with 52–53 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 5.2–5.7:3.0–3.1:2.6–2.9:2.3–2.6:2.0–2.6: 2.0–2.5: 2.0–2.4. Ratio of length/width of pre-apical flagellomeres: 1.9–2.0x.

Mesosoma.- Pronotum in upper half punctate, imbricate with punctures separated by 0.5–1x a puncture width; median portion weakly convex; lower half striate. Mesoscutum smooth with punctures separated by 1–2x a puncture width. Notaulus extending 0.3x length of mesoscutum. Mesoscutellum evenly convex; smooth with punctures separated by 0.5–1x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 167) smooth with punctures separated by 1–1.5x a puncture width; mesopleural furrow absent. Epicnemial carina faint; not joining to anterior margin of mesopleuron. Metapleuron smooth with punctures separated by 1–2x a puncture width. Fore wing with CI=0.5–0.7; ICI=0.4–0.5; SDI=1.4–1.5; 1m-cu straight; ramulus absent; Rs+M curved; marginal cell apically glabrous; sub-basal cell glabrous. Hind wing with 5–6 hamuli on R1 distally; NI=0.8–0.9; cu-a slightly curved. Propodeum (Fig. 186) with punctures separated by 2–3x a puncture width; without transverse carinae; longitudinal carinae present apically, faint; pleural carina present.

Metasoma.- First tergite 5.8–5.9x as long as apical width. Tergite II with spiracle located at 0.6x of tergite.

Color.- Brownish except following: face laterally, gena, frons laterally, vertex, collar, lateral edges of mesoscutum, two longitudinal stripes at the level of notaulus, central-apically spot on mesoscutum, mesoscutellum, subalar prominence, a diagonal stripe on mesopleuron from the anterior edge to the middle, a spot on posterior lower mesopleuron, apical half of metapleuron, apical third of propodeum, yellowish colored. Wings apically infusate.

♂: Similar to female except metapleuron and propodeum completely brownish.

Comments.- One female has, on sub-basal, cell one apical seta dorsally. *Alophophion capacyupanquii* new species is similar to *A. huascari* new species in appearance; they can be distinguished by the texture of the face imbricate texture between punctures in *A. capacyupanquii* and smooth in *A. huascari*. This species was collected in *Polylepis* forest using light trap and yellow pan traps.

Etymology.- The species epithet "capacyupanqui" refers to Cápac Yupanqui the fifth ruler of the Tawantinsuyu.

Holotype: ♀ "PERU: AY. [Ayacucho] Ayacucho, Chaviña, 73°53'56.99"W/14°54'20.71"S, 4165m. 06-10.iv.2010. Bosque de Polylepis. Pan Trap [yellow]. N. Martinez Leg." (MUSM).

Paratypes: 18♂♂, 3♀♀: labeled as follows: 16♂♂ "PERU: AY. [Ayacucho] Ayacucho, Chaviña, 14°54'21.49"S/73°53'55.78"W, 4153m. 05-12.iv.2010. Bosque de Polylepis. N. Martinez Leg. [Ligth trap]" (3♂♂, AEIC; 3♂♂, BMNH; 3♂♂, SEMC; 7♂♂, MUSM); 1♂ "PERU: AY. [Ayacucho] Ayacucho, Chaviña, 73°53'56.68"W/ 14°54'21.56"S, 4164m. 06-10.iv.2010. Bosque de Polylepis. Pan Trap [yellow]. N. Martinez Leg."; and 1♂, 4♀♀ "PERU: AY. [Ayacucho] Ayacucho, Chaviña, 73°53'56.99"W/14°54'20.71"S, 4165m. 06-10.iv.2010. Bosque de Polylepis. Pan Trap [yellow]. N. Martinez Leg." (1♀ SEMC; 1♂, 3♀♀ MUSM).

28. *Alophophion carcanchoi* new species

(Figs. 128, 157, 174, 193)

Diagnosis.- This species can be recognized by this combination of the features: the epicnemial carina not well delimited laterally and confluent with the mesopleural furrow, and the areas dentipara and superomedia with carinate texture.

Description.- ♀: **Head.** Face (Fig. 128) 1.0–1.2 x as wide as long; smooth with punctures separated by 0.5–1x a puncture width; median portion weakly convex. Clypeus with upper 2/3 convex and lower 1/3 flat; imbricate with punctures separated by 1–2x a puncture width; apical edge slightly convex. Compound eyes 0.5–0.6x as wide as face. Malar space 0.1–0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 157), 0.8–1.0x as wide as compound eyes, smooth with punctures separated by 3–4x a puncture width. Frons imbricate, striate between central ocelli and toruli. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.2–0.3x ocellar diameter; distance between ocelli 0.7–0.8x ocellar diameter. Antenna with 48–53 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.6–4.7:2.7–2.8:2.4:2.3:2.2–2.3:2.1–2.2:2.0–2.1. Ratio of length/width of pre-apical flagellomeres: 1.3–1.7x.

Mesosoma.- Pronotum in upper half imbricate with punctures separated by 0.5–1x a puncture width; lower half striate-carinate. Mesoscutum smooth with punctures separated by 1.5–2x a puncture width. Notaulus reaching from 1/4–1/2 length of mesoscutum, basally scrobiculate. Mesoscutellum evenly convex; smooth with punctures separated by 2–3x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 174) on upper half smooth and lower half imbricate with punctures separated by 0.5–1x a puncture width; lower edge of speculum scrobiculate; speculum smooth with punctures separated by 1–2x a puncture width; mesopleural furrow scrobiculate weakly develop reaching to the posterior-lower margin of mesopleuron. Epicnemial carina curved to meet anterior margin of mesopleuron at lower third of pronotum. Metapleuron usually scrobiculate, rarely imbricate with punctures separated by 0.5–1x a puncture width. Fore wing with CI=0.6; ICI=0.5–0.6; SDI=1.4–1.5; 1m-cu straight; ramulus present; Rs+M slightly curved; marginal cell of fore wing cover by setae, with a pre-apical glabrous area; sub-basal cell glabrous, rarely with one seta apically. Hind wing with 7–8 hamuli on R1 distally; NI=0.6; cu-a slightly curved. Propodeum (Fig. 193) areas spiracularis, lateralis, petiolaris and posteroexterna with wavy-rugulose texture, areas dentipara and superomedia longitudinally carinate and areas externa and basalis imbricate with punctures separated by 0.3–0.7x a puncture width; anterior transverse carina present, faint laterally; posterior transverse carina present, reaching pleural carinae; lateral longitudinal carinae present, faint; lateromedian longitudinal carinae present, wavy; pleural carina present.

Metasoma.- First tergite 4.4–5.2x as long as apical width. Tergite II with spiracle located at 0.5–0.6x length of tergite.

Color.- Testaceous except following: surrounded area to compound eyes, between ocelli and subalar prominence yellowish.

♂: Similar to female. Rarely propodeum predominantly smooth with punctures.

Comments.- There is variation in the mesopleural furrow length, from scrobiculate only basally to reaching the posterior margin of the mesopleuron, and the metapleuron texture from punctate to scrobiculate. Some specimens have mesopleuron and metapleuron yellowish.

Alophopion carcanchoi new species is distributed in the Chilean regions of Araucanía, Biobío, Coquimbo, Libertador General Bernardo O'Higgins, Los Ríos, Maule, Metropolitana de Santiago and Valparaíso; and the Argentinean region of Río Negro.

Etymology.- The species epithet "carcancho" refers to the legend character mentioned in the central zone of Chile, a man covered in hairs that are fed only tubers and walks tirelessly through the snow.

Holotype: ♀ "Curacautín, Malleco II.'64 [ii.1964] R. [Río Blanco Chile Luis E. Peña"

Paratypes: 31♂♂, 184♀♀: labeled as follows: **ARGENTINA:** 6♀♀: 1♀ "CHILE [Argentina]: R.N. [Río Negro], El Bolson. 20.xii.1959. A. Kavocs. B.M.1964-193"; 1♀ "CHILE [Argentina]: R.N. [Río Negro], El Bolson. 22.xii.1959 A. Kavocs. B.M.1964-193"; 1♀ "CHILE [Argentina]: R.N. [Río Negro], El Bolson. 29.xii.1959 A. Kavocs. B.M.1964-193"; 1♀ "CHILE [Argentina]: R.N. [Río Negro], El Bolson. 13.ii.1961 A. Kavocs. B.M.1964-193"; 1♀ "CHILE [Argentina]: R.N. [Río Negro], El Bolson. 30.xi.1961 A. Kavocs. B.M.1964-193"; and, 1♀ "CHILE [Argentina]: R.N. [Río Negro], El Bolson. 25.i.1962 A. Kavocs. B.M.1964-193" (BMNH). **CHILE:** 31♂♂, 178♀♀: 1♂ "Angol, Malleco XI.16-21.70 [16-21.xi.1970] Chile T. Cekalovic"; 1♂ "Cord. [Cordillera] Lonquimay Chile I.9 1962 [09.i.1962] Luis Peña/Lago Galletue [38.6833S/71.2833W]"; 3♂♂, 59♀♀ "Curacautín, Malleco II.'64 [ii.1964] R. [Río Blanco Chile Luis E. Peña"; 1♀ "El Coigual, Curico I.21-25.64 [21-25.i.1964] Chile Luis E. Peña"; 1♀ "El Coigual, Curico I.21-25.64 [21-25.i.1964] Chile Luis E. Peña"; 1♀ "[Libertador General Bernardo O'Higgins] El Marchan, Chile III.1971 [iii.1971] Chillán Luis Peña"; 1♂, 11♀♀ "El Pangué, Coquimbo, Chile Oct. 27, 1961 [27.x.1961] Luis Peña"; 2♀♀ "Enco, Valdivia II.24.78 [24.ii.78] Chile Luis Peña"; 1♂, 1♀ "Estero La Jaula Los Quenes Curico I.4-18.64 [04-18.i.1964] Chile Luis E. Peña"; 1♂, 2♀♀ "Hualpén, Concep. XII.26.70 [26.xii.1970] Chile T. Cekalovic"; 4♂♂, 3♀♀ "Concepción, Chile Quebrada Pinares II-III. 1967 [ii-iii.1967] T. Cekalovic"; 1♀ "[Biobío, Ñuble] Las Trancas Chile Jan.1968 Cord. [Cordillera] Chillán Luis Peña"; 1♂, 2♀♀ "[Biobío, Ñuble] Las Trancas Chillán Chile Jan.1967 [i.1967] Peña [L. Peña]; 1♂, 2♀♀ "[Biobío, Ñuble] Las Trancas, Chile II.6-11.66 [06-11.ii.1966] Chillán Luis Peña"; 2♂♂, 7♀♀ "[Biobío, Ñuble] Las Trancas, Chile I-II.71 [i-ii.1971] Chillán Luis Peña"; 1♂, 2♀♀ "[Biobío, Ñuble] Las Trancas, Chile I-III.1972 [i-iii.1972] Chillán Luis Peña"; 2♂♂ "[Biobío, Ñuble] Las Trancas, Chile XII.1-15.75 [01-15.xii.1975] Chillán Luis Peña"; 1♀ "Macul, Stgo. [Metropolitana de Santiago, Santiago] IX.'74 [ix.1974] Chile Luis E. Peña"; 1♀ "3 km. E. Las Trancas, Ñuble, Chile I.16.67 [16.i.1967] Lionel Stange"; 10♀♀ "Pino Hachado [Paso de Pino Hachado] Lonquimay, Mal. [Malleco] II.18.80 [18.ii.1980] Chile 1600m. L. Peña"; 1♀ "Piscicultura, Chile R. [Río] Blanco, Aconcagua XI.10.64 [10.xi.1964] 1600m. Luis Peña"; 1♀ "Q. Sn. Ramón [Quebrada de San Ramón], Stgo. [Metropolitana de Santiago, Santiago] XII.'74 [xii.1974] Chile Luis Peña"; 1♂ "Río Blanco III.5-27.195- Chile L. Peña

Guzman [Peña Guzmán]; 6♀♀ "Río Blanco, Aconcagua, Chile Dec. 5-8, 1961 [05-08.xii.1961] Luis Peña"; 4♀♀ "Río Blanco, C-tín [Curacautín] I.'74 [i.1974] Chile Luis Peña"; and 2♀♀ "Río Blanco, Cura. [Curacautín] Jan.1974 [i.1974] Chile Luis Peña" (AEIC). 3♀♀ "CHILE: IX Region [Araucanía] Lago Icalma nr. Icalma I. 1980 J.E. Barriga"; 1♂, 18♀♀ "CHILE: Prov. [Provincia] Curico 10km w. Licanten 20.XII.1993 JEBarriga [J.E. Barriga] & LPeralta [& L. Peralta] at light"; 25♀♀ "CHILE: CURICO Licancel, Licanteú [Licantén] 22.XII.1993 JEBarriga [J.E. Barriga] & LPeralta [& L. Peralta] black light"; 11♀♀ "CHILE: CURICO Licancel, Licanteú [Licantén] 22.XII.1993 [22.xii.1993] L. Peralta"; 1♂ "CHILE: VII Región cordillera de Chillan 80 km ese. Chillan 10.XII.1993 E. Arias"; 1♂ "CHILE: VIII Region Shangrilla 24.XI.1994 SEHeydon [S.E. Heydon] & EArias [E. Arias]"; 1♀ "CHILE: Los Angeles 22.XII.1996 E. Arias"; and 1♀ "CHILE: CAUTIN Parque Los Pacaguas 1.XII.1984 JE Barriga [J.E. Barriga]"(UCDC). 1♂, 1♀ "CHILE: Termas de Chillan 15.i.1985 I.D. Gauld 1600m., Nothofagus"; 2♀♀ "CHILE: Trata Victoria. 24.iii.1961. A. Kovacs. B.M. 1964-193."; 1♂ "CHILE: [Biobío] Lago Laja 19.i.1985 I.D. Gauld" (BMNH). 1♂ "MUSEUM PARIS CHILI [Chile] VALPARAISO R. MARTIN 1992/ OCTOBRE"; and 1♀ "Chile EC Reed/Ophion luteus/Ophion bilineatus Say det. C.W. Hooker IV.2.1909" (USNM).

29. *Alophopion chavinaensis* new species

(Fig. 137, 158, 164, 203)

Diagnosis.- This species can be recognized by this combination of the features: propodeum with the transverse carinae well develop and fore wing with ramulus present.

Description.- ♀: **Head.** Face (Fig. 137) 1.1 x as wide as long; smooth with punctures separated by 1–2x a puncture width; median portion weakly convex. Clypeus with upper 2/3 slightly convex, smooth with shallow punctures separated by 2–3x a puncture width; and lower 1/3 flat, imbricate with shallow punctures separated by 2–3x a puncture width; median portion weakly convex; apical edge straight centrally, slightly convex laterally. Compound eyes 0.6x as wide as face. Malar space 0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 158), 0.7x as wide as compound eyes; smooth with shallow punctures separated by 1–2x a puncture width. Frons imbricate softly striate between central ocelli and toruli. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.3x ocellar diameter; distance between ocelli 0.7x ocellar diameter. Antenna with 56 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 5.6:3.5:3.1:2.9:2.8:2.7:2.6. Ratio of length/width of pre-apical flagellomeres: 1.8x.

Mesosoma.- Pronotum softly striate with shallow punctures separated by 3–4x a puncture width. Mesoscutum smooth with punctures separated by 3–4x a puncture width. Notaulus extending 0.5x length of mesoscutum. Mesoscutellum smooth with punctures separated by 3x a puncture width; lateral carina reaching 0.2x to posterior margin of mesoscutellum. Mesopleuron (Fig. 164) smooth with punctures separated by 1–2x a puncture width; lower edge of speculum finely scrobiculate; mesopleural furrow absent. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of pronotum. Metapleuron smooth with punctures separated by 3–4x a puncture width.

Fore wing with CI=0.4; ICI=0.4; SDI=1.6; 1m-cu softly curved; ramulus present; Rs+M softly sinuate; marginal cell apically glabrous; sub-basal cell glabrous. Hind wing with 7 hamuli on R1 distally; NI=0.8; cu-a slightly curved. Propodeum (Fig. 203) with shallow punctures separated by 3–4x a puncture width; anterior transverse carina present between lateral longitudinal carinae, centrally strongly curved; posterior transverse carina present, reaching pleural carinae; lateromedian carinae faint, present behind posterior transverse carina; lateral longitudinal carinae faint before posterior transverse carinae, well defined after posterior transverse carina; smooth between punctures; pleural carina present.

Metasoma.- First tergite 4.9x as long as apical width. Tergite II with spiracle located at 0.5x of tergite.

Color.- Testaceous except following: face laterally, gena, frons laterally, vertex, collar, lateral edges of mesoscutum, two longitudinal stripes at the level of notaulus, central-apically spot on mesoscutum, mesoscutellum and subalar prominence yellowish colored; and, ovipositor brownish. Wings hyaline.

♂: unknown.

Comments.- This species was described with a single specimen, because it occurs in the same locality as *A. capacyupanquii*, *A. huascari*, *A. yupanquii* and *A. wiracochai*, this will help to avoid confusing it with species distributed in the same locality.

Etymology.- The specific epithet is based on Chaviña the type locality.

Holotype: ♀ "PERU: AY. [Ayacucho] Ayacucho, Chaviña, 14°54'21.49"S/73°53'55.78"W, 4153m. 05-12.iv.2010. Bosque de Polylepis. N. Martinez Leg. [Light trap] (MUSM).

30. *Alophophion chilensis* (Spinola 1851)

(Figs. 118, 140, 162, 202)

Ophion chilensis Spinola, 1851: 515. [description]; Dalla Torre, 1902: 188 [listed]; Hooker, 1912: 39. [translation of original description, key]; Morley, 1912: 55. [description, key];

Alophophion chilensis Cushman, 1947: 440 [genotype, generic transfer]; Townes & Townes, 1966: 171 [listed]; Yu & Horstmann, 1997: 730 [listed].

Diagnosis.- This species is easy to distinguish by the presence of the areas superomedia and dentipara enclosed by carinae, and body predominantly olive green colored with the legs ferruginous.

Description.- ♀: **Head.** Face (Fig. 118) 1.0 x as wide as long; smooth with punctures separated by 1–1.5x a puncture width; median portion weakly convex. Clypeus slightly convex; upper half smooth with punctures separated by 5x a puncture width; lower half imbricate with punctures separated by 3–5x a puncture width; apical edge straight centrally, curved laterally. Compound eyes 0.6x as wide as face. Malar space 0.1–0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 140), 0.6–0.7x as wide as compound eyes, smooth with punctures separated by 3–4x a puncture width. Frons striate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.2x ocellar diameter; distance between ocelli 0.6x ocellar diameter. Antenna with 48–54 flagellome-

res. Ratio of length/width from first to seventh flagellomeres: 3.7–4.2:2.4–2.4:2.1–2.3:2.0:1.9–2.0:1.8–1.9:1.7–1.9. Ratio of length/width of pre-apical flagellomeres: 1.5–1.7x.

Mesosoma.- Pronotum in upper half smooth with punctures separated by 1–1.5x a puncture width; lower half striate-carinate; lower half of collar striate. Mesoscutum with punctures separated by 1–2x a puncture width, rarely imbricate between punctures in posterior half. Notaulus extending 0.3x length of mesoscutum, finely scrobiculate basally. Mesoscutellum evenly convex, smooth with punctures separated by 2–3x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 162) with upper half smooth and lower half imbricate with punctures separated by 1.5–2x a puncture width; lower edge of speculum usually with texture as upper half of mesopleuron, in some specimens with anterior half of speculum softly scrobiculate; mesopleural furrow absent or small and rarely reaching to posterior lower mesopleuron. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of pronotum. Metapleuron punctate, smooth between punctures, some specimens with punctate-rugulose texture in the lower half. Fore wing with CI=0.4–0.5; ICI=0.7; SDI=1.4; 1m-cu straight; ramulus present; Rs+M curved; marginal cell basally cover by setae; sub-basal cell glabrous. Hind wing with 7 hamuli on R1 distally; NI=0.7–1.0; cu-a curved. Propodeum (Fig. 202) with anterior and posterior transverse carina present; lateral longitudinal carinae present, faint; lateromedian longitudinal carinae between transverse carinae present and well defined; area petiolaris and area posteroexterna continuous, longitudinally striate; area spiracularis and area lateralis continuous, transversally striate; area basalis smooth with punctures separated by 1–1.5x a puncture width; pleural carinae present.

Metasoma.- First tergite 4.3–4.4x as long as apical width. Tergite II with spiracle located at 0.6x of tergite.

Color.- Olive green to light straw yellow except following: antennae, frons centrally, mesosternum, legs, lateral and apical metasomal tergites III to VI, and ovipositor sheath ferruginous.

♂: Similar to female, face slightly wider 1.1x as wide as long.

Comments.- Bigger specimens usually are greener and mesopleural furrow extending longer than smaller specimens; instead of having smooth texture as in small specimens, they have imbricate texture in the bigger specimens.

Hooker (1912) re-described the species and mentioned that the localization of the type was unknown for him; Townes & Townes (1966) in their catalogue and reclassification of the Neotropical Ichneumonidae also mentioned that the type was lost; Casorali & Casorali Moreno (1980) assembled a catalogue of the Hymenoptera types of Massimiliano Spinola and in that document *A. chilensis* is not listed; therefore the type specimen is considered lost. Here is not designed a neotype, the species is easily differentiable from the rest of species of this species-group by the feature mentioned in the diagnosis.

Hooker (1912) translated the original description of the species; and studied numerous specimens from "Largo Blanco Valle, Chubut Territory, Patagonia, Argentina". He determined them as *A. chilensis*, mentioning that there were some variations in the color, the size and presence of ramulus. I revised this material and none of them belong to *A. chilensis*, there are at least four

species between them are *A. politus*, *A. carcanchoi* new species, *A. diaguita* new species and an undetermined species.

Spinola (1851) mentioned as locality Chili. *Alophophion chilensis* is distributed in the Chilean regions of Atacama, Coquimbo and Valparaíso. This provides a more accurate distribution for the species, previously known only as Chile; the range of elevation where it is distributed ranges from sea level to 1600 m.

Non type examined material: 3♂♂, 38♀♀, 2??: labeled as follows: CHILE: 2♀♀, 2♂♂ “Huasco, Atacama Pr. [Province], x.20-22.57 [20-22.x.1957], Chile L Pena [Peña] Guzman [Guzmán]”; 4♀♀ “S. Pedro de Quile [San Pedro de Quiles], Coquimbo [Región], nov. 16-17, 1961 [16-17.x.1961], Luis Pena [Luis Peña]”; 3♀♀ “El Pangue, Coquimbo [Región], Chile, xi.4 1961 [4.xi.1961], Luis Peña; 1♀ “El Pangue, Coquimbo [Región], Chile, x.23 1961 [23.x.1961], Luis Peña; 3♀♀ “El Pangue, Coquimbo [Región], Chile, xi.3-5 1961 [3-5.xi.1961], Luis Peña; 14♀♀ “Rio Los Choros, Coquimbo [Región], Chile, x.29-30 1961 [4.xi.1961], Luis Peña; 3♀♀ “Vicuna [Vicuña]/Pangue, Coquimbo [Región], Chile, xi.2-3.61 [2-3.xi.1961], Luis Peña; 1♂ “Rivadavia, Elqui Valley, Coquimbo [Región], x.28-29.57 [28-29.x.1957], Chile, L Pena [Luis Peña] Guzman”; 1♀ “CHILE: Prov. [Province] Elqui Choros Bajos 25.X.1988 [25.x.1988] JEBarriga [J.E. Barriga]”; 1♀ “Rivadavia, Elqui Valley, Coquimbo [Region], v.16.53 [16.v.1953], Chile, L Pena [Luis Peña] Guzman”; 1♀ “Q.[Quebrada] Chañaral, Coquimbo [Region] 300 m, x.23.57 [23.x.1957], Chile, L Pena [Luis Peña] Guzman”; 2♀♀ “Rio Blanco, Aconcagua [Valaparaíso Region], Chile, Dec. 5-8, 1961 [5-8.x.1961], Luis Peña; 1♀ “Piscicultura, Chile, R. [Río] Blanco, Aconcagua, XI.10.64 [10.xi.1964], 1600 m. Luis E. Peña” 1♀ “Los Molles, [Valparaíso Region], XI.20.65 [20.xi.1965], Chile, Luis Peña” (AEIC) and 1♀,2?? [metasoma lost] “Chili, 28 08 [reverse of label, 28 in the line and 08 below]” (BMNH). 1♀ “CHILE: Prov. [Province] Elqui Choros Bajos 25.X.1988 JEBarriga [J.E. Barriga]” (UCDC).

31. *Alophophion chiquiyane* new species

(Figs. 136, 153, 182, 201)

Diagnosis.- This species is the only one in the Species-group C that has the propodeal carinae lamellate. It is quite similar to *A. trauco* new species but can be distinguish of them by the presence of a glabrous area in the marginal cell next to pterostigma, beside of the head proportions.

Description.- ♀: **Head.** Face (Fig. 136) 1.0 x as wide as long; smooth with punctures separated by 1–1.5x a puncture width; median portion weakly convex. Clypeus convex; imbricate with punctures separated by 2–3x a puncture width; apical edge centrally straight, laterally slightly convex. Compound eyes 0.6–0.7x as wide as face. Malar space 0.1–0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 153), 0.7–0.8x as wide as compound eyes; smooth with punctures separated by 1–3x a puncture width. Frons smooth, slightly striate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.3–0.4x ocellar diameter; distance between ocelli 0.9–1.0x ocellar diameter. Antenna with 50–54 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.7–4.8:2.3:2.1–2.2:2.1:2.0–2.1:1.9–2.1:1.8–2.0. Ratio of length/width of pre-apical flagellomeres: 1.6–1.7x.

Mesosoma.- Pronotum in upper half smooth with punctures separated by 1–1.5x a puncture width; lower half carinate; collar striate. Mesoscutum smooth laterally and imbricate centrally with punctures separated by 1–1.5x a puncture width Notaulus extending 0.3x length of mesoscutum, scrobiculate. Mesoscutellum evenly convex, without lateral carina; smooth with punctures separated by 2–4x a puncture width. Mesopleuron (Fig. 182) imbricate with punctures separated by 1–1.5x a puncture width, except smooth between punctures upper epicnemial carina; lower edge of speculum finely scrobiculate; mesopleural furrow scrobiculate-rugulose reaching to posterior edge. Epicnemial carina curved to meet anterior margin of mesopleuron at lower third of pronotum; forming an angulation between mesopleuron and mesosternum. Metapleuron rugulose. Fore wing with CI=0.6–0.8; ICI=0.8; SDI=1.3–1.6; 1m-cu straight; ramulus present, small, sometimes only as an angulation; Rs+M slightly curved; marginal cell basally glabrous next to vein Rs+2r and pterostigma; sub-basal cell glabrous with a row of setae next to 1A. Hind wing with 6 hamuli on R1 distally; NI=0.8–1.4; cu-a slightly curved. Propodeum (Fig. 201) shiny, slightly carinate texture except areas basalis and externa smooth with punctures separated by 2–3x a puncture width; carinae lamellate; transverse carinae present reaching pleural carinae; longitudinal carinae present; lateromedian longitudinal carinae confluent behind posterior transverse carina; pleural carina present.

Metasoma.- First tergite 4.4–4.5x as long as apical width. Tergite II with spiracle located at 0.4–0.5x length of tergite.

Color.- Testaceous except following: surrounding area of compound eyes, between ocelli, vertex and in some specimens subalar prominence yellowish. Wings grayish hyaline; veins brownish and pterostigma fulvous.

♂: Unknown.

Comments.- *Alophophion chiquiyane* new species was considered in the Species-group C, but seems to be closely related with *A. trauco* new species. They share the same structure of the propodeal carinae, lamellate. Beside, its distribution overlaps with the other two species. This species is distributed in the Argentinean region of Neuquen and the Chilean region of Araucania.

Etymology.- The species epithet "chiquiyane" refers to the nomadic tribe Chiquiyanes that inhabited the central area of the present territory of Chile, highlands between Los Andes and Chillán and in the Argentinean province of Mendoza. It is treated as a noun in apposition.

Holotype: ♀ “Pino Hachado [Paso de Pino Hachado] Lonquimay, Mal. [Malleco] II.18.80 [18.ii.1980] Chile 1600m. L. Peña” (AEIC).

Paratypes: 3♀♀ labeled as follows: **ARGENTINA:** 1♀ “Pto. [Puerto] Aqua, L. [Lago] Traful Neuquen, Argentina January 30, 1968 [30.x.1968] L & J Stange” (AEIC). **CHILE:** 2♀♀ “Curacautín, Malleco II.'64 [ii.1964] R. [Río] Blanco Chile Luis E. Peña” (AEIC).

32. *Alophophion coquimboensis* new species

(Figs. 138, 159, 165, 204)

Diagnosis.- This species can be recognized by this combination of features: propodeum with area superomedia not well defined,

fore wing with marginal cell basally glabrous next to proximal half of Rs+2r and predominantly light straw yellow colored.

Description.- ♀: Head. Face (Fig. 138) 1.1x as wide as long; median portion weakly convex; imbricate with punctures separated by 0.3–0.6x a puncture width. Clypeus imbricate with punctures separated by 1.0–2.0x a puncture width; upper half convex and lower half flat; apical edge slightly curved. Compound eyes 0.6x as wide as face. Malar space 0.1–0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 159), 0.7x as wide as compound eyes, softly imbricate with shallow punctures separated by 2.0–3.0x a puncture width. Frons imbricate, softly striate between central ocelli and toruli. Lateral ocellus separated from compound eye by 0.3x ocellar diameter; distance between ocelli 0.8x ocellar diameter. Antenna with 48–50 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.8:2.8–2.7:2.4:2.3:2.2:2.1:2.0. Ratio of length/width of pre-apical flagellomeres: 1.5–1.4x.

Mesosoma.- Pronotum on the upper half smooth with punctures separated by 1.0–1.5x a puncture width; lower half scrobiculate and lower collar striate. Mesoscutum smooth with punctures separated by 0.5–1.0x a puncture width. Notaulus extending 0.3x length of mesoscutum. Mesoscutellum evenly convex, smooth with punctures separated by 2.0–3.0x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 165) smooth on upper half and imbricate on lower half with shallow punctures separated by 0.5–1.0x a puncture width; speculum smooth with punctures separated by 2.0–3.0x a puncture width; lower edge of speculum softly scrobiculate; mesopleural furrow rugulose, short reaching to anterior third of mesopleuron. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of pronotum. Metapleuron imbricate with punctures separated by 0.5–1.0x a puncture width. Fore wing with CI=0.5–0.6; ICI=0.5–0.6; SDI=1.5–1.7; 1m-cu slightly curved; ramulus present; Rs+M curved; marginal cell basally glabrous next to proximal half of Rs+2r; sub-basal cell usually without setae, at most with one seta. Hind wing with 7–8 hamuli on R1 distally; NI=0.9–1.0; cu-a softly curved. Propodeum (Fig. 204) with wavy-longitudinal carinate texture, except area externa smooth with punctures separated by 1.0–2.0x a puncture width; anterior transverse carina present between lateral longitudinal carinae; posterior transverse carina present between pleural carinae; longitudinal carinae present, well defined before anterior transverse carina and faint between transverse carinae, and defined after posterior transverse carina; pleural carina present.

Metasoma.- First tergite 4.2–4.3x as long as apical width. Tergite II with spiracle located at 0.5x length of tergite.

Color.- Light straw yellow except following: mandibles, frons, antennae, occiput, a lateral spot (surrounded by a light straw yellow) and one between notauli to 3/4 of mesoscutum, mesopleuron, legs and metasoma testaceous.

♂: Similar to female except following: mesopleural furrow absent and texture of propodeum smoother than in females.

Comments.- There are variations in the structure of latero-median longitudinal carinae behind posterior transverse, some specimens have the two carinae independent straight or wavy and/or has an additional carina between them.

Etymology.- The specific epithet is based on Coquimbo the type locality. **Holotype:** ♀ “Río Los Chores [Los Choros], Coquimbo, Chile X.29-30 1961 [29-30.x.1961] Luis Peña”

Paratypes: 3♂♂, 19♀♀: labeled as follows: **CHILE:** 3♂♂, 9♀♀ “[CHILE: Coquimbo, Valle de Elqui, Las Hediondas [Las Hediondas] I.10-11.66 [10-11.i.1965] Chile Luis Peña”; 2♀♀ “Río Los Chores [Los Choros], Coquimbo, Chile X.29-30 1961 [29-30.x.1961] Luis Peña”; 2♀♀ “Rivadavia Elqui valley Coquimbo X.28-29.57 Chile L Pena Guzman [Peña Guzmán]”; 1♀ “Río Turbio Prov. Coquimbo CHILE 1600m. Oct. 29, 1957 [29.x.1957] L.E Pena [Peña]”; 1♀ “Copiapó, Atac. [Atacama] X.3.80 [03.x.1980] Chile Luis Peña”; 1♀ “El Canelo Santiago Chile XI-1950 L. Pena [Peña]”; 1♀ “[Biobío, Ñuble] Las Trancas, Chile XII.1-15.75 [01-15.xii.1975] Chillán Luis Peña” and, 2♀♀ “El Marchan, Chile III.1971 [iii.1971] Chillán Luis Peña” (AEIC).

33. *Alophophion huascari* new species

(Figs. 132, 147, 176, 195, 210)

Diagnosis.- This species can be recognized by this combination of the features: propodeum with the posterior transverse carina present only laterally, ramulus present, face smooth and brownish colored.

Description.- ♀: Head. Face (Fig. 132) 1.1x as wide as long; smooth with punctures separated by 1.5–2x a puncture width, except on area below toruli imbricate with punctures separated by 0.5x a puncture width; median portion weakly convex. Clypeus with upper half convex, smooth with punctures separated by 2–3x a puncture width; and lower half flat, imbricate with punctures separated by 0.5–1x a puncture width; apical edge centrally slightly concave. Compound eyes 0.5–0.6x as wide as face. Malar space 0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 147), 0.7x as wide as compound eyes, smooth with punctures separated by 2–3x a puncture width. Frons smooth, softly striate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.5–0.6x ocellar diameter; distance between ocelli 0.8x ocellar diameter. Antenna with 51–53 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 5.3:2.9–3.0:2.4–2.6:2.4–2.6:2.2:2.2:2.2. Ratio of length/width of pre-apical flagellomeres: 1.3–1.6x.

Mesosoma.- Pronotum smooth with punctures separated by 1.5–2x a puncture width. Mesoscutum smooth with punctures separated by 1–2x a puncture width. Notaulus extending 0.2x length of mesoscutum, punctate. Mesoscutellum evenly convex, smooth with punctures separated by 4–5x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 176) smooth with punctures separated by 1.5–2x a puncture width; speculum smooth with punctures separated by 3–4x a puncture width; mesopleural furrow scrobiculate, small, usually not reaching to mid mesopleuron, rarely absent. Epicnemial carina not reaching anterior margin of mesopleuron. Metapleuron smooth with punctures separated by 4–5x a puncture width. Fore wing (Fig. 210) with CI=0.5; ICI=0.5; SDI=1.3–1.4; 1m-cu slightly sinuate; ramulus present; Rs+M slightly curved; marginal cell apically glabrous next to Rs+2r vein and pterostigma; sub-basal cell glabrous except api-

cally with isolate setae. Hind wing with 6 hamuli on R1 distally; NI=0.9–1.0; cu-a slightly curved. Propodeum (Fig. 195) smooth with punctures separated by 1–2x a puncture width; anterior transverse carina present, faint laterally; posterior transverse and lateromedian longitudinal carinae absent; lateral longitudinal carina present only apically; pleural carina present.

Metasoma.- First tergite 5.7–5.8x as long as apical width. Tergite II with spiracle located at 0.5–0.6x length of tergite.

Color.- Brownish except following: surrounding area of compound eyes, face centrally, gena, collar, lateral edges of mesoscutum, two longitudinal stripes at the level of notaulus, a longitudinal stripe at the center reaching to 2/3 length of mesoscutum, mesoscutellum laterally, subalar prominence, a diagonal stripe of mesopleuron, apical half of metapleuron, apical edge of tergites III–VII and legs brownish-cream colored. Wings hyaline, apically infuscate; veins and pterostigma brownish.

♂: Similar to female; except some variation in face proportions 1.0–1.2x as wide as long.

Comments.- *Alophophion huascari* new species is similar in appearance to *A. capacypanquii* new species. They can be distinguished by the presence of anterior transverse carinae in *A. huascari* new species. This species was collected in *Polylepis* forest.

Etymology.- The species epithet "huascari" refers to Huascar the twelfth ruler of the Tawantinsuyu.

Holotype: ♀ "PERU: AY. [Ayacucho] Ayacucho, Chaviña, 14°54'21.36"S/73°53'56.87"W, 4170m. 06-10.iv.2010. Bosque de Polylepis. Pan trap [yellow]. N. Martinez Leg." (MUSM).

Paratypes: 3♂♂, 1♀ labeled as follows: **PERU:** 3♂♂ "PERU: AY. [Ayacucho] Ayacucho, Chaviña, 14°54'21.49"S/73°53'55.78"W, 4153m. 05-12.iv.2010. Bosque de Polylepis. N. Martinez Leg. [Light trap]"; and 1♀ "PERU: AY. [Ayacucho] Ayacucho, Chaviña, 14°54'21.36"S/73°53'56.98"W, 4170m. 07-10.iv.2010. Bosque de Polylepis. N. Martinez Leg. [Light trap]" (MUSM).

34. *Alophophion huaynacapaci* new species

(Fig. 139, 160, 183, 205)

Diagnosis.- This species can be recognized by this combination of the features: gena, in lateral view, narrow, 0.6x as wide as compound eyes; and lateral ocellus separated from compound eye by 0.4x ocellar diameter.

Description.- ♀: **Head.** Face (Fig. 139) 1.0x as wide as long; smooth with shallow punctures separated by 2.0x a puncture width; median portion weakly convex; punctate-striate before toruli and next to compound eyes. Clypeus with upper 2/3 slightly convex, smooth with shallow punctures separated by 4.0x a puncture width; and lower 1/3 flat, imbricate with shallow punctures separated by 4.0x a puncture width; median portion weakly convex; apical edge straight centrally, slightly convex laterally. Compound eyes 0.6x as wide as face. Malar space less than 0.1x as long as basal width of mandible. Gena, in lateral view (Fig. 160), 0.6x as wide as compound eyes, smooth with shallow punctures separated by 4x a puncture width. Frons imbricate, slightly convex between central ocelli and toruli. Vertex with texture as gena. Lateral ocellus separated from compound

eye by 0.4x ocellar diameter; distance between ocelli 0.8x ocellar diameter. Antenna with 47 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 5.1:2.7:2.4:2.3:2.1: 2.0:1.9. Ratio of length/width of pre-apical flagellomeres: 1.9x.

Mesosoma.- Pronotum in upper half smooth with shallow punctures separated by 4x a puncture width; lower half imbricate with shallow punctures separated by 3–4x a puncture width. Mesoscutum with shallow punctures separated by 4x a puncture width. Notaulus extending 0.3x length of mesoscutum. Mesoscutellum evenly convex; punctate; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 183) softly imbricate with shallow punctures separated by 1.0–3.0x a puncture width; lower edge of speculum with proximal half finely scrobiculate; epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of pronotum; mesopleural furrow absent. Metapleuron softly imbricate with shallow punctures separated by 1–3x a puncture width. Fore wing with CI=0.5; ICI=0.4; SDI=1.4; 1m-cu softly sinuate; ramulus absent; Rs+M softly sinuate; marginal cell apically glabrous next to pterostigma and Rs+2r; sub-basal cell with isolated setae distributed in the apical quarter. Hind wing with 6 hamuli on R1 distally; NI=0.8; cu-a slightly curved. Propodeum (Fig. 205) with softly rugose, shiny; anterior transverse carina present between lateral carinae, stronger centrally and faint laterally; posterior transverse carina complete reaching pleural carina, faint; lateral longitudinal carinae faint; lateromedian longitudinal carinae absent.

Metasoma. First tergite 4.2x as long as apical width. Tergite II with spiracle located at 0.5x of tergite.

Color.- Brownish except following: face, gena, frons laterally, vertex, collar, anterior-lateral of pronotum, lateral edges of mesoscutum, two longitudinal stripes at the level of notaulus, central-apically spot on mesoscutum, mesoscutellum, subalar prominence, a diagonal stripe on mesopleuron from the anterior edge to the middle, apical half of metapleuron, area coxalis yellowish colored; and antennae and frons centrally testaceous. Wings hyaline.

♂: Unknown.

Comments.- This species was described with a single specimen, because it occurs in the same locality as *A. maytacapaci*, *A. lloqueypanquii* and *A. pachacutii*, this will help to avoid confusing it with species distributed in the same locality.

Etymology.- The species epithet "huaynacapaci" refers to Huayna Cápac the eleventh ruler of the Tawantinsuyu.

Holotype: ♀ "PERU: AY [Ayacucho], Laramate 14°50'44.1"S/ 74°44'13.4"W. 2100m. 14.ii.2009 Light Trap. L Figueroa" (MUSM)

35. *Alophophion incarocai* new species

(Figs. 122, 143, 168, 187, 207)

Diagnosis.- This species can be recognized by the presence of a row of setae parallel to the M+Cu in sub-basal cell of fore wing, and the propodeum with the anterior transverse carina present centrally.

Description.- ♀: **Head.** Face (Fig. 122) 1.0x as wide as long; imbricate with punctures separated by 0.3–0.8x a puncture wi-

dth; median portion weakly convex. Clypeus convex; imbricate with punctures separated by 0.5–1x a puncture width; apical edge almost truncate, laterally slightly convex. Compound eyes 0.6x as wide as face. Malar space 0.3x as long as basal width of mandible. Gena, in lateral view (Fig. 143), 0.9x as wide as compound eyes; imbricate with punctures separated by 1x a puncture width. Frons imbricate, striate between central ocelli and toruli. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.5x ocellar diameter; distance between ocelli 0.8x ocellar diameter. Antenna with 59 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 6.3:3.4:3.0:2.8:2.6:2.5:2.4. Ratio of length/width of pre-apical flagellomeres: 1.8x.

Mesosoma. Pronotum imbricate with punctures separated by 0.5–1x a puncture width; lower half softly striate. Mesoscutum imbricate with punctures separated by 0.5–1x a puncture width. Notaulus extending 0.2x length of mesoscutum. Mesoscutellum evenly convex, imbricate with punctures separated by 1–1.5x a puncture width; lateral carina reaching 0.2x to posterior margin of mesoscutellum. Mesopleuron (Fig. 187) imbricate with punctures separated by 0.3–0.8x a puncture width; mesopleural furrow absent. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of pronotum. Metapleuron imbricate with punctures separated by 0.5–1x a puncture width. Fore wing (Fig. 207) with CI=0.5; ICI=0.6; SDI=1.4; 1m-cu straight; ramulus absent; Rs+M slightly curved; fenestra with comma shape; marginal cell cover by setae; sub-basal cell with a row of setae parallel to the M+Cu vein and triangular area formed by 1A and cu-a cover by setae. Hind wing with 6 hamuli on R1 distally; NI=0.6; cu-a slightly curved. Propodeum (Fig. 187) imbricate with punctures separated by 0.3–0.8x a puncture width, softly striate longitudinally; anterior transverse carina present centrally; posterior transverse carina absent centrally, laterally present; longitudinal carinae present apically; pleural carina present.

Metasoma. First tergite 5.4x as long as apical width. Tergite II with spiracle located at 0.5x of tergite.

Color. Reddish brown except following: surrounded area to compound eyes and between ocelli cream colored.

♂: Similar to female except following: hind wing with 5–6 hamuli on R1 distally; gena, occiput, tegula, lateral edges of mesoscutum, two longitudinal stripes at the level of notaulus, central-apically spot on mesoscutum and mesoscutellum cream colored; and, lateral longitudinal carinae longer, almost reaching anterior transverse carina.

Comments. One male has same color as female. *Alophophion incarocai* new species has similar appearance than *A. yabuarhuacaci* new species in structure both have the propodeum with the anterior transverse carina present centrally, the ramulus absent and the mesopleural furrow absent, but they can be distinguished by the presence of a row of setae parallel to the M+Cu vein in sub-basal cell of fore wing in *Alophophion incarocai* new species. All the specimens were collected in *Polylepis* forest; most of the specimens were collected using light traps.

Etymology. The species epithet "incarocai" refers to Inca Roca the sixth ruler of the Tawantinsuyu and first inca.

Holotype: ♀ "PERU: AY. [Ayacucho] Ayacucho, Chaviña,

14°54'21.49"S/73°53'55.78"W, 4153m. 05-12.iv.2010. Bosque de Polylepis. N. Martinez Leg. [Light trap]" (MUSM)

Paratypes: 7♂♂, labeled as follows: 6♂♂; "PERU: AY. [Ayacucho] Ayacucho, Chaviña, 14°54'21.49"S/73°53'55.78"W, 4153m. 05-12.iv.2010. Bosque de Polylepis. N. Martinez Leg. [Light trap]" (2♂♂MUSM, 1♂ AEIC, 1♂ BMNH, 2♂♂ SEMC); and 1♂ "PERU: AY. [Ayacucho] Ayacucho, Chaviña, 14°54'21.00"S/73°53'56.48"W, 4070m. 05-12.iv.2010. Bosque de Polylepis. T. [Trap] Malaise 1. N. Martinez Leg." (MUSM).

36. *Alophophion larseni* (Enderlein, 1912)

(Figs. 119, 141, 163, 184)

Ophion larseni Enderlein, 1912:41. [description]; Townes & Townes, 1966:170. [listed].

Ophion occidentalis Morley, 1912: 57. [description, key].

Alophophion occidentalis Townes & Townes, 1966:171. Lectotype ♀ BMNH [generic transfer, lectotype designation, list]; Gauld & Lanfranco, 1987:263. [generic transfer]; Gauld & Lanfranco, 1987:263. [synonymized with *A. larseni*]; and

Alophophion larseni Gauld & Lanfranco, 1987:263; Yu & Horstmann, 1997: 730 [listed].

Diagnosis. *Alophophion larseni* has transverse carinae faint, lateral longitudinal carinae absent but lateromedian longitudinal carinae well defined.

Description. ♀: **Head.** Face (Fig. 119) 1.1–1.2 x as wide as long; median portion weakly convex; centrally smooth and laterally imbricate, with punctures separated by 0.5–1x a puncture width. Clypeus slightly convex; centrally smooth and laterally imbricate, with punctures separated by 1–1.5x a puncture width apical edge straight. Compound eyes 0.4–0.5x as wide as face. Malar space 0.3x as long as basal width of mandible. Gena, in lateral view (Fig. 141), 0.7x as wide as compound eyes, smooth with punctures separated by 2–3x a puncture width. Frons finely striate. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.2–0.3x ocellar diameter; distance between ocelli 0.7–1.0x ocellar diameter. Antenna with 51–56 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.3–4.7:2.2–2.4:2.0:1.9:1.8–1.9:1.7–1.8:1.7. Ratio of length/width of pre-apical flagellomeres: 1.4–1.6x.

Mesosoma. Pronotum in upper half smooth with punctures separated by 0.5–1x a puncture width and lower half and dorsal to collar striate. Mesoscutum smooth with punctures separated by 1x a puncture width. Notaulus extending 0.5x length of mesoscutum, finely scrobiculate. Mesoscutellum evenly convex; smooth with punctures separated by 1–2x a puncture width; lateral carina reaching 0.2x to posterior margin of mesoscutellum. Mesopleuron (Fig. 163) smooth with punctures separated by 1–2x a puncture width; speculum smooth with punctures separated by 2–3x a puncture width, with proximal half finely scrobiculate; mesopleural furrow short, rugulose. Epicnemial carina curved to meet anterior margin of mesopleuron at lower third of pronotum. Metapleuron smooth with punctures separated by 1–2x a puncture width, except posterior half softly carinate. Fore wing with CI=0.4; ICI=0.8; SDI=1.3–1.4; 1m-cu slightly curved; ramulus present, sometimes small; Rs+M curved; marginal cell homogeneously cover by setae; sub-basal

cell with setae apically, distributed in a triangular area next to the intersection between veins 1A and cu-a. Hind wing with 7 hamuli on R1 distally; NI=0.9–1.0; cu-a slightly curved. Propodeum (Fig. 184) smooth with punctures separated by 2–4x a puncture width, except area superomedia, postero-externa and petiolaris with longitudinal wavy carinate texture; anterior and posterior transverse carina present centrally and laterally defined, between longitudinal carinae complete or faintly indicated; area superomedia well enclosed; lateral longitudinal carinae faint or absent between transverse carinae; posterior transverse carina reaching pleural carina; areas behind posterior transverse carina not well defined, with longitudinal carinate texture; pleural carina present.

Metasoma.- First tergite 4.7–4.8x as long as apical width. Tergite II with spiracle located at 0.5x length of tergite.

Color.- Fulvous except following: surrounding area of compound eyes, vertex, gena, subalar prominence, a diagonal stripe in mesopleuron, mesoscutellum and apically metapleuron yellowish.

♂: Similar to female

Comments.- All the material studied suggests that there is only one species of *Alophophion* in Falkland Island; there is no doubt that *A. occidentalis* (Morley, 1912) is a synonym of *A. larseni* (Enderlein, 1912). *Alophophion larseni* was rear from an unknown Noctuid (Gauld & Lanfranco, 1987).

Type material examined.- **Lectotype of *Alophophion occidentalis* (Morley, 1912):** 1♀ “East I. [East Falkland], Falkland Is. [Island], Nov.08.-Feb.09. [xi.1908-ii.1909], Col. [collector] A. M. Reid., 1909-277.” (BMNH).

Non type examined material: 11 ♂♂, 8 ♀♀: labeled as follows: **FALKLAND ISLANDS (ISLAS MALVINAS):** 1♂, 6♀♀ “Falkland Is [Island], ex [extracted] blowfly?, May 1979, Vet. Officer coll., No. 1, CIE a.11226”; 1♀, 4♂♂ “Falkland Is [Island]: Port Stanley, i-ii.1984, I.J. Strange; E. [East] Falkland: Port Stanley, III.1983 [iii.1983], N. Prendergast”; 2♂♂ “Falkland Island: -Elliot. [Maggie Elliot Rock], B.M. 1934-526”; 2♂♂, 1♀ “Falkland Is [Island]: Stanley [Port Stanley], A. G. Bennett., 1920-199; 1♀ “East I. [East Falkland], Falkland Is. [Island], Nov.08.-Feb.09. [xi.1908-ii.1909], Col. [collector] A. M. Reid., 1909-277.”; 1♀ “Falkland Isl [Island], [reverse of label, 74 in the line and 49 below]”; 1♂ “Falkland Is [Island], 20.12.60 [20.xii.1960], I. Stange [in a second labe 1961-443]; Falklands Island, Stanley, vi.2010, Coll. [collector] P. Cornell, at night, FERA 21015606”; 1♂ “unlabelled-data presumably same as specimens eifler side: [Det. G. Broad 2012]” (BMNH).

37. *Alophophion lloqueyupanquii* new species

(Figs. 126, 155, 172, 191)

Diagnosis.- This species can be recognized by this combination of the features: the speculum with same texture as the mesopleuron, the mesopleural furrow absent, and the lateral longitudinal carina faint between the transverse carinae.

Description.- ♀: **Head.** Face (Fig. 126) 1.1 x as wide as long; imbricate with punctures separated by 0.5x a puncture width; median portion weakly convex. Clypeus with upper half convex and lower half flat; imbricate with punctures separated by 0.5–1x a puncture width; apical edge convex.

Compound eyes 0.6x as wide as face. Malar space 0.1–0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 155), 0.8x as wide as compound eyes, imbricate with punctures separated by 1–1.5x a puncture width. Frons imbricate striate between central ocelli and toruli. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.3x ocellar diameter; distance between ocelli 0.6–0.8x ocellar diameter. Antenna with 54–55 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.3–4.7:2.6–2.7:2.5:2.2:2.2:2.1–2.2. Ratio of length/width of pre-apical flagellomeres: 1.6–1.7x.

Mesosoma.- Pronotum on the upper half smooth with punctures separated by 0.5–1x a puncture width; lower half rugulose-striate and lower half of collar striate. Mesoscutum smooth with punctures separated by 1–1.5x a puncture width. Notaulus extending 0.3x length of mesoscutum, scrobiculate. Mesoscutellum evenly convex, with texture as that of mesoscutum; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 172) smooth with punctures separated by 0.5–1.0x a puncture width; mesopleural furrow absent; speculum smooth with punctures separated by 1–2x a puncture width. Epicnemial carina curved to meet anterior margin of mesopleuron at lower third of pronotum. Metapleuron smooth with punctures separated by 0.5x a puncture width. Fore wing with CI=0.5; ICI=0.8–0.9; SDI=1.5; 1m-cu slightly sinuate; ramulus present; Rs+M curved; marginal cell cover by setae; sub-basal cell usually with isolate setae apically or without setae. Hind wing with 7–8 hamuli on R1 distally; NI=0.8; cu-a curved. Propodeum (Fig. 191) area superomedia, coxalis and posteroexterna rugulose, and areas basalis, spiracularis, lateralis and dentipara imbricate with punctures separated by 1–1.5x a puncture width; anterior transverse carina present between lateral longitudinal carinae; posterior transverse carina present between pleural carinae; posterior transverse carina between lateral longitudinal carinae with “M” shape; lateral longitudinal carinae faint between transverse carinae; lateromedian longitudinal carinae faint; lateromedian longitudinal carinae after posterior transverse carinae convergent, fused to form a single median longitudinal carina; pleural carina present.

Metasoma.- First tergite 4.0–4.3x as long as apical width. Tergite II with spiracle located at 0.5x length of tergite.

Color.- Brownish fulvous except following: head (except frons centrally fulvous), collar, lower half of pronotum, apical edge of mesoscutum, notauli, mesoscutellum, tegula, subalar prominence, speculum, a diagonal stripe in mesopleuron, apical half of metasternum, dorsal view of coxae light straw yellow. Wings hyaline; veins brownish and pterostigma fulvous.

♂: Unknown.

Comments.- *Alophophion lloqueyupanquii* new species is quite similar to *A. ofeliae* new species, beside the differences mentioned in the key; *A. lloqueyupanquii* new species has darker brownish color than *A. ofeliae* new species.

Etymology.- The species epithet “lloqueyupanquii” refers to Lloque Yupanqui the third ruler of the Tawantinsuyu.

Holotype: ♀ “PERU: AY [Ayacucho], Laramate 14°50'44.1"S/ 74°44'13.4"W. 2100m. 14.ii.2009 Light Trap. L Figueroa” (MUSM)

Paratypes: 7♀ same as holotype (3♀ MUSM, 1♀ AEIC, 1♀ BMNH, 2♀ SEMC).

38. *Alophophion ofeliae* new species

(Figs. 125, 154, 171, 190, 206)

Diagnosis.- This species can be recognized by this combination of the features: light straw yellow colored, propodeum with longitudinal carinae present delimiting the area dentipara and the gena 0.7x as wide as the compound eyes.

Description.- ♀: Head. Face (Fig. 125) 1.1x as wide as long; smooth with punctures separated by 0.5x a puncture width; median portion weakly convex. Clypeus upper half convex and lower half flat, imbricate with punctures separated by 1–2x a puncture width; apical edge slightly curved. Compound eyes 0.5–0.6x as wide as face. Malar space 0.1–0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 154), 0.7x as wide as compound eyes; smooth with punctures separated by 2–3x a puncture width. Frons smooth, slightly striate between toruli and central ocelli. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.1–0.2x ocellar diameter; distance between ocelli 0.6–0.7x ocellar diameter. Antenna with 54–56 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.2–4.3:2.5–2.4:2.1–2.2:2.0:1.8–2.0:1.7–1.9:1.7–1.9. Ratio of length/width of pre-apical flagellomeres: 1.3–1.6x.

Mesosoma.- Pronotum in upper posterior half smooth with punctures separated by 1–2x a puncture width; lower half and next to collar scrobiculate. Mesoscutum smooth with punctures separated by 3–4x a puncture width. Notaulus extending 0.2x length of mesoscutum, finely scrobiculate in apical half. Mesoscutellum evenly convex, smooth with punctures separated by 2–3x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 171) smooth with punctures separated by 1–2x a puncture width; lower edge of speculum scrobiculate, becoming finer to posterior end; mesopleural furrow absent. Epicnemial carina curved to meet anterior margin of mesopleuron at lower third of pronotum. Metapleuron smooth with punctures separated by 1–2x a puncture width, upper–anteriorly with punctures closer separated by 1x a puncture width. Fore wing (Fig. 206) with CI=0.5–0.6; ICI=0.9; SDI=1.5; 1m-cu straight; ramulus present; Rs+M curved; marginal cell glabrous next to upper half of Rs+2r; sub-basal cell glabrous. Hind wing with 8 hamuli on R1 distally; NI=0.7; cu-a curved. Propodeum (Fig. 190) rugulose, except: area superomedia longitudinally carinate and area basalis smooth with punctures separated by 0.5–1.5x a puncture width; anterior and posterior transverse carinae present, faint; anterior transverse carina not reaching pleural carina; longitudinal carinae present, except on anterior area; lateromedian longitudinal carinae faint between transverse carinae; lateromedian longitudinal carinae after posterior transverse carina convergent, fused to form a single median longitudinal carina; pleural carina present.

Metasoma.- First tergite 4.0–4.5x as long as apical width. Tergite II with spiracle located at 0.5x of tergite.

Color.- Light straw yellow except following: vertex, antennae and three stripes on mesoscutum fulvous.

♂: Unknown

Comments.- Big specimens have slightly rugulose texture next to epicnemial carina. This species has the same appearance as *A. sofiae* new species; they were collected together, but can be easily differentiate by the proportion of the head. This species has the face wider face and gena. This species was collected at the western slope of the Andes.

Etymology.- Named in honor of Ofelia Carranza.

Holotype: ♀, “PERU: MO [Moquegua], General Sánchez Cerro, La Capilla, 71°20'56"W/ 16°45'37"S, 2739 m. 16.iv.2011. C. Carranza” (MUSM).

Paratypes: 2♀, same data as holotype (MUSM).

39. *Alophophion pachacutii* new species

(Figs. 7, 130, 148, 177, 196, 211)

Diagnosis.- This species can be recognized by this combination of the features: propodeum with the anterior and posterior transverse carina present and the longitudinal carinae faint; sub-basal cell of the fore wing glabrous; and body with light straw yellowish coloration.

Description.- ♀: Head. Face (Fig. 130) 1.1–1.2 x as wide as long; smooth with punctures separated by 1–1.5x a puncture width; median portion weakly convex. Clypeus with upper half convex and lower half flat; smooth with punctures separated by 1.5–2x a puncture width; apical edge slightly convex. Compound eyes 0.6x as wide as face. Malar space 0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 148), 0.7–0.8x as wide as compound eyes, smooth with punctures separated by 1.5–2x a puncture width. Frons smooth, softly striate between central ocelli and toruli. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.2x ocellar diameter; distance between ocelli 0.5–0.7x ocellar diameter. Antenna with 43–48 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 3.5–3.7:2.1–2.2:1.9–2.1:1.7–1.8:1.7:1.6–1.7:1.6–1.7. Ratio of length/width of pre-apical flagellomeres: 1.3–1.4x.

Mesosoma.- Pronotum in upper half imbricate with punctures separated by 1–1.5x a puncture width; lower half striate. Mesoscutum smooth with punctures separated by 0.5–1.5x a puncture width. Notaulus extending 0.3x length of mesoscutum, scrobiculate. Mesoscutellum evenly convex, smooth with punctures separated by 3–4x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 177) smooth with punctures separated by 0.5–1x a puncture width; lower edge of speculum finely scrobiculate; speculum smooth with punctures separated by 1–2x a puncture width; mesopleural furrow scrobiculate or softly weakly development. Epicnemial carina curved to meet anterior margin of mesopleuron at lower third of pronotum. Metapleuron anterior half smooth with punctures separated by 1–1.5x a puncture width, posterior half softly rugulose. Fore wing (Fig. 211) with CI=0.4–0.5; ICI=0.5–0.6; SDI=1.6; 1m-cu straight; ramulus present; Rs+M slightly curved; marginal cell apically glabrous next to proximal half of pterostigma and Rs+2r vein; sub-basal cell glabrous. Hind wing with 6–8 hamuli on R1 distally; NI=0.8–0.9; cu-a slightly curved. Propodeum (Fig. 196) carinate wavy-rugulose texture, except: areas basalis and externa punctate smooth with punctures separated by 1x a puncture width and area dentipara with softly wavy-rugulose texture; anterior

transverse carina present, faint laterally; posterior transverse carina weak centrally, carina wavy-rugulose; longitudinal carinae present, faint; pleural carina present.

Metasoma.- First tergite 3.5–3.9x as long as apical width. Tergite II with spiracle located at 0.4–0.5x length of tergite.

Color.- Light straw yellow.

♂: Similar to female except propodeal carinae straight and well develop and mesopleural furrow generally absent, rarely softly weakly development. One specimen with lateromedian longitudinal carina present behind posterior transverse carina well defined and straight.

Comments.- One female has the propodeum with the carinae faint and the lower edge of speculum with same the texture as rest of the mesopleuron.

This species was collected at the western slope of the Andes. This species has light straw yellow coloration as *A. sofiae* new species and *A. ofeliae* new species, also distributed in the western slope of the Andes in Peru but apparently their distribution does not overlap. *Alophophion pachacutii* new species were collected during most part of the year.

Etymology.- The species epithet "pachacutii" refers to Pachacuti the ninth ruler of the Tawantinsuyu.

Holotype: ♀ "PERU: AY [Ayacucho], Laramate 14°50'44.1"S/ 74°44'13.4"W. 2100m. 14.ii.2009 Light Trap. L Figueroa" (MUSM).

Paratypes: 5♂♂, 6♀♀: labeled as follows: PERU: 3♂♂, 4♀♀ same data as holotype (2♂♂, 2♀♀ MUSM; ♂, 2♀♀ SEMC); 1♀ "PERU: IC. [Ica] Ica, Fdo. [Fundo] Yolanda 14°09'17.4"S/ 75°40'27.7"W 434m 22.iv.2011. Ligth trap. L. Salinas Leg." (AEIC); 1♀ "PERU: IC. [Ica] Ica, Fdo. [Fundo] Yolanda 14°09'17.4"S/ 75°40'27.7"W 434m i.2011. Malaise trap. L." (BMNH). and 2♂♂ "PERU: IC. [Ica] Ica, Fdo. [Fundo] Yolanda 14°09'17.4"S/ 75°40'27.7"W 434m viii.2010. Light trap. L. Salinas Leg." (♂ MUSM, ♂ BMNH).

40. *Alophophion pincoya* new species

(Figs. 133, 150, 179, 198)

Diagnosis.- This species can be recognized by clypeus with ventral-lateral edges angulate giving a square appearance.

Description.- ♀: **Head.** Face (Fig. 133) 1.0x as wide as long; imbricate with punctures separated by 1–1.5x a puncture width; median portion weakly convex. Clypeus convex; apical edge straight centrally, angulated laterally; imbricate with punctures separated by 4–6x a puncture width. Compound eyes 0.6x as wide as face. Malar space 0.1–0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 150), 0.6–0.8x as wide as compound eyes; imbricate with punctures separated by 2–4x a puncture width. Frons concave between toruli and compound eyes; between toruli and ocelli imbricate-striate. Lateral ocellus separated from compound eye by 0.3–0.4 x ocellar diameter; distance between ocelli 0.6x ocellar diameter. Antenna with 46–47 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.1–4.2:2.4–2.2:2.0–2.1:1.9:1.9–1.8:1.8:1.8. Ratio of length/width of pre-apical flagellomeres: 1.3–1.5x.

Mesosoma.- Pronotum with upper half smooth with punctures separated by 1–2x a puncture width; lower half striate; lower half of collar striate. Mesoscutum smooth with punctures separated by 2–4x a puncture width. Notaulus extending 0.3x length of mesoscutum; scrobiculate. Mesoscutellum evenly convex; lateral carina reaching 0.3x to posterior margin of mesoscutellum; with punctures separated by 4–6x a puncture width. Mesopleuron (Fig. 179) on upper half smooth and lower half imbricate with punctures separated by 0.5–1.5x a puncture width; lower edge of speculum finely scrobiculate, smooth with punctures separated by 2–3x a puncture width; mesopleural furrow absent. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of pronotum. Metapleuron imbricate with punctures separated by 1–1.5x a puncture width. Fore wing with CI=0.4; ICI=0.8–0.9; SDI=1.4–1.5; 1m-cu straight; ramulus present; Rs+M curved; marginal cell glabrous next to pterostigma and Rs+2r vein; sub-basal cell with or without setae apically. Hind wing with 6–7 hamuli on R1 distally; NI=0.6–0.9; cu-a slightly curved. Propodeum (Fig. 198) softly rugulose except areas externa and basalis imbricate with punctures separated by 1.5–2x a puncture width; anterior transverse carina present between lateral longitudinal carinae, convex; posterior transverse carina present between pleural carinae, between lateral longitudinal carinae with "M" shape; lateral longitudinal carinae faint between transverse carinae.

Metasoma.- First tergite 4.0x as long as apical width. Tergite II with spiracle located at 0.5x length of tergite.

Color.- Testaceous except following: head (except frons centrally Testaceous), collar, lower half of pronotum, apical edge of mesoscutum, notauli, mesoscutellum, tegula, subalar prominence, speculum, a diagonal stripe in mesopleuron, apical half of metasternum, apical half of propodeum, coxae apically and dorsally light straw yellow.

♂: Unknown.

Comments.- There is one specimen, from Pino Hachado, that is light straw yellow. All the specimens were collected in February during the wed season.

Etymology.- The species epithet "pincoya" refers to a female mythologic character "water spirit" of the Chilotan Seas. It is treated as a noun in apposition.

Holotype: ♀ "Curacautín, Malleco II.'64 [ii.1964] R. Blanco Chile Luis E. Peña" (AEIC).

Paratypes: 9♀♀: labeled as follows: CHILE: 7♀♀ same data as holotype; y 2♀♀ "Pino Hachado [Paso de Pino Hachado] Lonquimay, Mal. II.18.80 [18.ii.1980] Chile 1600m. L. Peña" (AEIC).

41. *Alophophion porculatus* (Morley, 1912)

(Figs. 120, 161, 166, 185)

Ophion porculatus Morley, 1912: 55. Holotype [Morley use of "type" is herein regarded as an original holotype designation (ICZN 1999: Art. 73.1.1)] [description, key].

Alophophion porculatus Townes & Townes, 1966:171. [generic transfer, list]; Yu & Horstmann, 1997: 730. [listed].

Diagnosis.- This species can be distinguish by the lateral ocellus separated from the compound eye by 0.4x ocellar diameter, the mesopleural furrow absent and the body olive green colored.

Description.- ♀: Head. Face (Fig. 120) 1.3 x as wide as long; smooth with punctures separated by 2–4x a puncture width; median portion convex. Clypeus convex; smooth with punctures separated by 3–4x a puncture width; apical edge slightly curved. Compound eyes 0.4x as wide as face. Malar space 0.3x as long as basal width of mandible. Gena, in lateral view (Fig. 161), 0.7x as wide as compound eyes; smooth with punctures separated by 5–7x a puncture width. Frons imbricate, slightly striate between antennae and median ocellus. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.4x ocellar diameter; distance between ocelli 1.0x ocellar diameter. Ratio of length/width of first flagellomere: 4.4x.

Mesosoma.- Pronotum smooth with punctures separated by 2.5–4x a puncture width; collar striate. Mesoscutum smooth with punctures separated by 3–5x a puncture width. Notaulus extending 0.5x length of mesoscutum, finely scrobiculate basally. Mesoscutellum evenly convex, smooth with punctures separated by 4–6x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 166) smooth with punctures separated by 6–7x a puncture width; speculum with proximal half scrobiculate; mesopleural furrow absent. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of pronotum. Metapleuron smooth between punctures. Fore wing with CI=0.6; ICI=0.9; SDI=1.4; 1m-cu slightly curved; ramulus present; Rs+M slightly curved; marginal cell basally glabrous next to pterostigma and Rs+2r; sub-basal cell with setae distributed in the apical quarter. Hind wing with 7 hamuli on R1 distally; NI=1.0; cu-a curved. Propodeum (Fig. 185) smooth with punctures separated by 6–8x a puncture width, surrounding area of carinae with softly carinate texture; anterior and posterior transverse carina present; longitudinal carinae present, except before anterior transverse carina; lateromedian longitudinal carinae after posterior transverse carinae faint; pleural carina present.

Metasoma.- First tergite 2.7x as long as apical width. Tergite II with spiracle located at 0.5 of tergite.

Color.- Olive green.

♂: unknown

Comments.- The collecting information only mentions Argentina, and this species is only known by the holotype. This species has small ocelli, a feature usually found in diurnal species.

Type material examined.- Holotype: ♀ labeled as follows: "Type/ B.M. TYPE HYM. 3b.2009 [handwritten]/ "Argentina. Fitzgerald. 99 124." / Named by Claude Morley porcellanus type [handwritten]/ Ophion porculata Morl [handwritten] J.F. Perkins 1958 [last number handwritten] type [handwritten]" (BMNH).

42. *Alophophion teushen* new species

(Figs. 134, 151, 180, 199)

Diagnosis.- This species can be recognized by this combination of the features: propodeum with the posterior transverse carina present, lower edge of the speculum softly scrobiculate and the lateromedian longitudinal carinae converge behind posterior transverse carina.

Description.- ♀: Head. Face (Fig. 134) 1.1x as wide as long; smooth with punctures separated by 2–4x a puncture width, upper half of face between toruli with imbricate; median portion weakly convex. Clypeus slightly convex; apical edge straight centrally, curved laterally; upper half smooth and lower half imbricate with punctures separated by 2–4x a puncture width. Compound eyes 0.6–0.7x as wide as face. Malar space 0.1x as long as basal width of mandible. Gena, in lateral view (Fig. 151), 0.6–0.7x as wide as compound eyes smooth with isolates punctures. Frons smooth, softly striate dorsal toruli. Lateral ocellus separated from compound eye by 0.2–0.3x ocellar diameter; distance between ocelli 0.7–0.9x ocellar diameter. Antenna with 48–52 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.1–4.4:2.7:2.3–2.4:2.2–2.3:2.2–2.3:2.1–2.3:2.0–2.1. Ratio of length/width of pre-apical flagellomeres: 1.5–1.6x.

Mesosoma.- Pronotum smooth with punctures separated by 6–8x a puncture width, collar with imbricate texture. Mesoscutum smooth with punctures separated by 4–6x a puncture width. Notaulus extending 0.3x length of mesoscutum, basally scrobiculate. Mesoscutellum evenly convex, smooth with punctures separated by 4–5x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 180) smooth with punctures separated by 4.0–5.0x a puncture width; lower edge of speculum softly scrobiculate; mesopleural furrow absent. Epicnemial carina weaker at join with anterior margin of mesopleuron to pronotum; joining on anterior margin of mesopleuron at lower quarter of pronotum. Fore wing with CI=0.7–0.8; ICI=0.5–0.6; SDI=1.3–1.4; 1m-cu straight; ramulus present; Rs+M curved; marginal cell basally glabrous next to proximal half of pterostigma and Rs+2r; sub-basal cell with isolate setae in the apical half, only distributed dorsally. Hind wing with 7–8 hamuli on R1 distally; NI=0.6–0.7; cu-a curved. Propodeum (Fig. 199) smooth with isolate punctures, shiny; anterior transverse carina present centrally; posterior transverse carina complete, reaching pleural carina; lateral longitudinal carinae absent; lateromedian longitudinal carinae present between transverse carinae, faint sometimes absent; lateromedian longitudinal carinae after posterior transverse carinae convergent, fused to form a single median longitudinal carina, rarely separate.

Metasoma.- First tergite 3.7–3.8x as long as apical width. Tergite II with spiracle located at 0.5x length of tergite.

Color.- Olive green to light straw yellow except following: antennae, palpi, mandibles, two lateral vittae distributed from ¼ to posterior edge of mesoscutum, a central vittae distributed from anterior edge to ½ of mesoscutum, a spot between central vittae and posterior edge of mesoscutum, scuto-scutellar groove, axilla, posterior half of speculum, lower edge of subalar prominence, mesosternum, basal half of metasternum, basal half ventrally coxae, basal half of propodeum, a spot distributed from spiracles to pre-apical apical end of tergite I, tergites II–VII except lateral and posterior margins and ovipositor sheath fulvous.

♂: unknown

Comments.- Some specimens have metasoma brownish instead of olive green, this variation in the color was obtained probably because the killing method.

Etymology.- The species epithet "teushen" refers to the Teushen, an indigenous hunter-gatherer people of Patagonia in Argentina. It is treated as a noun in apposition.

Holotype: ♀ “Villa Regina Argentina Rio Negro X.7.61[07.x.1961] Luis Peña” (AEIC).

Paratypes: 4♀♀: labeled as follows: 2♀♀ “Cipolleti Rio Negro IX.29.57 [29.ix.1957] Argent. [Argentina] F.H. Walz”; and 2♀♀ same data as holotype (AEIC).

43. *Alophophion waca* new species

(Figs. 124, 145, 170, 189)

Diagnosis.- This species can be recognized by this combination of the features in the propodeum: the presence of anterior and posterior transverse carinae; and striate-punctate texture behind anterior transverse carina.

Description.- ♀: **Head.** Face (Fig. 124) 1.1 x as wide as long; imbricate with punctures separated by 0.5–1x a puncture width; median portion weakly convex. Clypeus convex; imbricate with punctures separated by 1–1.5x a puncture width; apical edge almost truncate, laterally slightly convex. Compound eyes 0.5x as wide as face. Malar space 0.2–0.3x as long as basal width of mandible. Gena, in lateral view (Fig. 145), 0.7–0.9x as wide as compound eyes; smooth with punctures separated by 0.5–1x a puncture width. Frons imbricate, softly striate between central ocelli and toruli. Lateral ocellus separated from compound eye by 0.3–0.4x ocellar diameter; distance between ocelli 0.7–0.8x ocellar diameter. Antenna with 51 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.9–5.0:2.7–2.8:2.6:2.3–2.5:2.3–2.4:2.2:2.1. Ratio of length/width of pre-apical flagellomeres: 1.4x.

Mesosoma.- Pronotum with upper half imbricate with punctures separated by 0.5x a puncture width; lower half striate; lower half of collar striate. Mesoscutum smooth with punctures separated by 0.5–1x a puncture width; notaulus extending 0.2x length of mesoscutum. Mesoscutellum evenly convex, smooth with punctures separated by 0.5–1x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 170) smooth with punctures separated by 0.5x a puncture width; speculum smooth with punctures separated by 1–1.5x a puncture width; lower edge of speculum finely scrobiculate; mesopleural furrow softly rugulose, short, reaching to the anterior third of mesopleuron. Epicnemial carina weak laterally, joins to anterior margin of mesopleuron at lower third of pronotum. Metapleuron imbricate with punctures separated by 0.5x a puncture width. Fore wing with CI=0.4–0.5; ICI=0.8; SDI=1.5; 1m-cu straight; ramulus present, small; Rs+M slightly curved; marginal cell cover by setae; sub-basal cell glabrous with two setae apically. Hind wing with 6 hamuli on R1 distally; NI=0.9–1.0; cu-a slightly curved. Propodeum (Fig. 189) wavy-carinate texture except basal area imbricate with punctures separated by 0.5–1x a puncture width; anterior transverse carina present between lateral longitudinal carinae; posterior transverse carina weak centrally, carina wavy-rugulose; lateral longitudinal carinae faint; lateromedian longitudinal carinae weak between transverse carinae, faint behind posterior transverse carina; pleural carina present.

Metasoma.- First tergite 5.4–5.5x as long as apical width. Tergite II with spiracle located at 0.5x of tergite.

Color.- Rufo-testaceous except following: around to compound eyes and between ocelli yellowish.

♂: Similar to female, except face smooth between punctures.

Comments.- *Alophophion waca* new species is the only species collected in Bolivia.

Etymology.- The species epithet “waca” refers to the Quechua name of Vacas, the locality where this species was collected. It is treated as a noun in apposition.

Holotype: ♀ “Vacas BOLIVIA Dep. [Departamento] Cochabamba 3000m Feb. 15, 1950 [15.ii.1950] Coll: [colector] L.E. Pena [Peña]” (AEIC).

Paratypes: 1♂, 2♀♀: labeled as follows: **BOLIVIA:** 1♂, 2♀♀ “N. E. Sacaba Cocha. [Cochabamba] Bolivia I.28.76 [28.i.1976] 3300m Luis Peña” (AEIC).

44. *Alophophion wiracochai* new species

(Figs. 129, 146, 175, 194, 209)

Diagnosis.- This species can be recognized by this combination of the features: propodeum with the anterior and posterior transverse carina present and the longitudinal carinae faint; fenestra thin; the sub-basal cell of the fore wing with setae; and body with olive green coloration.

Description.- ♀: **Head.** Face (Fig. 129) 1.2–1.3 x as wide as long; coarsely punctate, smooth with punctures separated by 0.5x a puncture width; median portion weakly convex. Clypeus with upper half convex and lower half flat; imbricate with punctures separated by 0.5x a puncture width; apical edge straight centrally, curved laterally. Compound eyes 0.4x as wide as face. Malar space 0.3x as long as basal width of mandible. Gena, in lateral view (Fig. 146), 0.9–1.0x as wide as compound eyes, smooth with punctures separated by 1–2x a puncture width. Frons and vertex with texture as gena. Lateral ocellus separated from compound eye by 0.3x ocellar diameter; distance between ocelli 0.6x ocellar diameter. Antenna with 46–51 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 4.9–5.0:3.0:2.6–2.5:2.4–2.3:2.2–2.1: 2.2–1.9:2.2–1.9. Ratio of length/width of pre-apical flagellomeres: 1.2–1.3x.

Mesosoma.- Pronotum coarsely punctate, smooth with punctures separated by 1–2x a puncture width. Mesoscutum smooth with punctures separated by 1–2x a puncture width. Notaulus extending 0.3x length of mesoscutum; basally coarsely punctate, smooth between punctures. Mesoscutellum evenly convex, smooth with punctures separated by 2–3x a puncture width; lateral carina reaching 0.3x to posterior margin of mesoscutellum. Mesopleuron (Fig. 175) smooth with punctures separated by 1x a puncture width; lower edge of speculum finely scrobiculate; mesopleural furrow shallowly scrobiculate, small, rarely absent. Epicnemial carina curved to meet anterior margin of mesopleuron at lower third of pronotum. Metapleuron smooth with punctures separated by 1–2x a puncture width. Fore wing (Fig. 209) with CI=0.5; ICI=0.6–0.9; SDI=1.5–1.6; 1m-cu straight; ramulus present, small; Rs+M curved; marginal cell basally cover by setae; sub-basal cell with a row of setae at center, parallel to the M+Cu vein and apically with setae between row of setae and 1A. Hind wing with 6 hamuli on R1 distally; NI=0.6; cu-a slightly curved. Propodeum (Fig. 194) with anterior and posterior transverse carina present, reaching to pleural carina; longitudinal carinae faint; areas superomedia and

petiolaris with longitudinal carinate texture; rest of propodeum smooth between punctures; pleural carinae present.

Metasoma.- First tergite 4.6–5.1x as long as apical width. Tergite II with spiracle located at 0.5x length of tergite.

Color.- Olive green to light straw yellowish except following: two lateral vittae distributed from ¼ to posterior edge of mesoscutum, central vittae distributed from anterior edge to ½ of mesoscutum; mesosternum; and metasomal laterotergites.

♂: Similar to female except by sub-basal cell with setae covering a bigger area; some specimens with anterior transverse carina faint.

Comments.- All the specimens were collected in *Polylepis* forest; most of the specimens were collected using light traps. This is the only species olive green colored collected in this type of forest.

Etymology.- The species epithet "wiracochai" refers to Wiracocha the eighth ruler of the Tawantinsuyu.

Holotype: ♀ "PERU: AY. [Ayacucho] Ayacucho, Chaviña, 14°54'9.12"S/73°53'55.77"W, 4120m. 07-10.iv.2010. Bosque de Polylepis. Pitfall trap. N. Martinez Leg." (MUSM).

Paratypes: 9♂♂, 1♀, 1? "PERU: AY. [Ayacucho] Ayacucho, Chaviña, 14°54'21.49"S/ 73°53'55.78"W, 4153m. 05-12. iv.2010. Bosque de Polylepis. N. Martinez Leg. [Ligth trap]" (2♂♂ BMNH, 2♂♂ SEMC, 2♂♂ AEIC, 3♂♂ MUSM).

45. *Alophophion yahuarhuacaci* new species

(Figs. 123, 144, 169, 188, 208)

Diagnosis.- This species can be recognized by having the anterior transverse carina of the propodeum present centrally; and the sub-basal cell with setae restricted to a triangular area formed by 1A and cu-a.

Description.- ♀: **Head.** Face (Fig. 123) 1.0x as wide as long; imbricate with punctures separated by 0.5x a puncture width; median portion weakly convex. Clypeus convex; imbricate with punctures separated by 0.3–0.5x a puncture width; apical edge slightly convex. Compound eyes 0.5–0.6x as wide as face. Malar space 0.2–0.3x as long as basal width of mandible. Gena, in lateral view (Fig. 144), 0.7–0.9x as wide as compound eyes, imbricate with punctures separated by 1–1.5x a puncture width. Frons imbricate, softly striate between central ocelli and toruli. Vertex imbricate with punctures separated by 0.5–1x a puncture width. Lateral ocellus separated from compound eye by 0.5x ocellar diameter; distance between ocelli 1.0x ocellar diameter. Antenna with 59–62 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 5.1–5.4:2.8–3.3:2.3–2.8:2.3–2.7:2.2–2.5: 2.2–2.5: 2.2–2.5. Ratio of length/width of pre-apical flagellomeres: 1.7–2.0x.

Mesosoma.- Pronotum imbricate with punctures separated by 0.5–1x a puncture width, lower half softly striate. Mesoscutum smooth with punctures separated by 1–1.5x a puncture width. Notaulus extending 0.2x length of mesoscutum. Mesoscutellum evenly convex; smooth with punctures separated by 1.5–2x a puncture width; lateral carina reaching 0.4x to posterior margin of mesoscutellum. Mesopleuron (Fig. 169) imbricate with punctures separated by 0.5–1x a puncture width;

mesopleural furrow absent. Epicnemial carina curved to meet anterior margin of mesopleuron at lower quarter of pronotum. Metapleuron imbricate with punctures separated by 0.5–1x a puncture width. Fore wing (Fig. 208) with CI=0.6; ICI=0.6; SDI=1.6; 1m-cu straight; ramulus absent; Rs+M slightly curved; fenestra in a bead shape; marginal cell cover by setae; sub-basal cell apically in triangular area formed by 1A and cu-a cover by setae. Hind wing with 6–7 hamuli on R1 distally; NI=0.7–0.8; cu-a slightly curved. Propodeum (Fig. 188) smooth with isolate punctures except area basalis softly imbricate with punctures separated by 0.5–1x a puncture width; anterior transverse carina present centrally, curve; posterior transverse carina absent centrally, laterally present; longitudinal carinae present apically; pleural carina present.

Metasoma.- First tergite 5.0–5.3x as long as apical width. Tergite II with spiracle located at 0.5x of tergite.

Color.- Reddish brown except following: surrounded area to compound eyes and between ocelli yellowish.

♂: Similar to female except longitudinal carinae present absent or small apically.

Comments.- This species is distributed at the north of Peru, probably overlapping its distribution with *A. atahualpai* new species but all the records *A. yahuarhuacaci* new species are at higher altitude. Morphologically are easily distinguished between them; *A. atahualpai* new species has the area superomedia of propodeum well develop while *A. yahuarhuacaci* new species lack of carinae behind anterior transverse carina.

Etymology.- The species epithet "yahuarhuacaci" refers to Atahualpa the seventh ruler of the Tawantinsuyu and first inca.

Holotype: ♀ "PERU: LL. [La Libertad] Bolivar, Condormarca Lag. [Laguna] Quishuar 77°32'15.13"W/7°36'17.33"S 3482m 28-30.iii.2011[.] Ligth trap. C. Carranza" (MUSM).

Paratypes: 5♂♂, 2♀♀: labeled as follows: 4♂♂, 1♀ same data as holotype (1♂, 1♀ MUSM; 1♂ AEIC; 1♂ BMNH; 1♂ SEMC) and 1♂, 1♀ "PERU, CA, Cajamarca, Potererillo, E795943/N9233538 [78°19'27"W/6°55'48"S], 3641 msnm, 20/ix/2006 [20.ix.2006], M. Alvarado" (MUSM).

46. *Alophophion yestay* new species

(Figs. 6, 135, 152, 181, 200)

Diagnosis.- This species can be recognized by this combination of features: lower edge of the speculum with the same texture as the mesopleuron, propodeum with the transverse carinae present and with rugulose texture except in the areas basalis and externa.

Description.- ♀: **Head.** Face (Fig. 135) 1.0–1.2x as wide as long; median portion weakly convex; smooth centrally and imbricate laterally with punctures separated by 1–2x a puncture width. Clypeus smooth centrally and imbricate laterally with punctures separated by 6.0x a puncture width; apical edge straight centrally, curved laterally. Compound eyes 0.4–0.6x as wide as face. Malar space 0.1–0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 152), 0.6–0.7x as wide as compound eyes, softly imbricate with shallow punctures separated by 6x a puncture width. Frons softly striate between central

ocelli and toruli. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.3–0.4x ocellar diameter; distance between ocelli 0.8–0.9x ocellar diameter. Antenna with 48–50 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 3.6–4.3:1.8–2.1:1.6–2.0:1.5–1.9:1.5–1.8:1.4–1.7:1.4–1.7. Ratio of length/width of pre-apical flagellomeres: 1.3–1.4x.

Mesosoma.- Pronotum on the upper half smooth with punctures separated by 1–2x a puncture width, and lower half rugulose; lower collar striate. Mesoscutum smooth centrally and imbricate laterally with punctures separated by 1–2x a puncture width. Notaulus extending 0.2x length of mesoscutum, finely scrobiculate. Mesoscutellum evenly convex, smooth with punctures separated by 5–7x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 181) smooth with shallow punctures separated by 3–4x a puncture width; lower edge of speculum and subalar prominence with the same texture as mesopleuron; mesopleural furrow absent. Epicnemial carina curved to meet anterior margin of mesopleuron at lower 0.4 of pronotum. Metapleuron smooth with punctures separated by 1–2x a puncture width. Fore wing with CI=0.4–0.5; ICI=0.7–0.9; SDI=1.3–1.4; 1m-cu straight; ramulus present; Rs+M curved; marginal cell basally glabrous; sub-basal cell usually without setae, at most with one seta. Hind wing with 7 hamuli on R1 distally; NI=0.8–1.0; cu-a straight. Propodeum (Fig. 200) rugulose, except areas basalis and externa punctate, smooth with punctures separated by 1–2x a puncture width; anterior transverse carina present between lateral longitudinal carinae; posterior transverse carina present between pleural carinae; lateromedian longitudinal carinae present, faint before anterior transverse carina; pleural carina present.

Metasoma.- First tergite 5.1–5.5x as long as apical width. Tergite II with spiracle located at 0.5x length of tergite.

Color. Olive green to light straw yellow except following: antennae, palpi, “M” form spot on mesosternum, metasternum, coxae basal-ventrally, trochanter, trochantellus, femurs ventrally and laterally, basally centrally on tergites II to III, laterotergites and ovipositor sheath rufo-testaceous to brownish.

♂: Similar to female except following: antenna with 43 to 53 flagellomeres. Rufo-testaceous spots on tergites II to III bigger, also sometime present basally centrally on tergites IV to VI.

Comments.- There is variation in the texture of the areas petiolaris and posteroexterna of the propodeum, being more or less rugulose between specimens. The specimens present some variation in texture of the lower edge of speculum, from smooth with punctures to shallowly scrobiculate.

This species is distributed in the Chilean regions Araucanía, Biobío, Libertador General Bernardo O’Higgins, Metropolitana de Santiago and Maule. All the species studied from Chile were collected between January and February.

Etymology.- The species epithet “yestay” refers to the name of the mythical creature with the guanaco shape; is the protector of wild animals that inhabit the arid territories north of Chile. It is treated as a noun in apposition.

Holotype: ♀ “Pino Hachado [Paso de Pino Hachado] Lonquimay, Mal. II.18.80 [18.ii.1980] Chile 1600m. L. Peña”

Paratypes: 7♂♂, 17♀♀: labeled as follows: **ARGENTINA:** ♂, 7♀♀ “Chubut Patagonia / From WFH Roseberg/ [identification label: *Ophion chilensis* Spinola det C.W. Hooker 3.12-18.1909]” (USNM); **CHILE:** 4♂♂, 7♀♀ same data as holotype; 1♂ “3 km. E. Las Trancas, Ñuble, Chile I.16.67 [16.i.1967] Lionel Stange”; 1♂, 1♀ “Las Trancas Chillán, Chile I.19-22.79 [19-22.i.1979] 1600m. L. Peña”, 1♀ “Cord. [Cordillera] Lonquimay, Chile I.1.1962 [01.i.1962] Luis Peña”; and 1♀ “Río Tinguiririca Colchagua, Chile II.17.78 [17.ii.1978] 1400m Luis Peña” (AEIC).

47. *Alophophion yupankii* new species

(Figs. 131, 149, 178, 197, 212)

Diagnosis.- This species can be recognized by this combination of the features: lateral ocellus separated from the compound eye by 0.4–0.6x the ocellar diameter and body with cream color with brownish spots.

Description.- ♀: **Head.** Face (Fig. 131) 1.1x as wide as long; median portion weakly convex; centrally smooth and laterally imbricate with punctures separated by 1–1.5x a puncture width. Clypeus slightly convex, smooth centrally and laterally with punctures separated by 2–3x a puncture width; apical edge straight centrally, curved laterally. Compound eyes 0.5–0.6x as wide as face. Malar space 0.2x as long as basal width of mandible. Gena, in lateral view (Fig. 149), 0.7–0.8x as wide as compound eyes, smooth with punctures separated by 3–5x a puncture width. Frons striate between central ocelli and toruli. Vertex with texture as gena. Lateral ocellus separated from compound eye by 0.4–0.6x ocellar diameter; distance between ocelli 0.6–0.7x ocellar diameter. Antenna with 47–49 flagellomeres. Ratio of length/width from first to seventh flagellomeres: 6.0–7.0:3.6–4.0:3.0–3.3:2.9–3.0:2.8–2.9:2.8–2.6:2.7–2.4. Ratio of length/width of pre-apical flagellomeres: 1.6–2.0x.

Mesosoma.- Pronotum on the upper half coarsely punctate, smooth with punctures separated by 1.5–2x a puncture width; lower half and lower collar striate. Mesoscutum centrally smooth and laterally imbricate with punctures separated by 1.5–2x a puncture width. Notaulus extending 0.3x length of mesoscutum, finely scrobiculate. Mesoscutellum evenly convex, smooth with punctures separated by 2–3x a puncture width; lateral carina reaching 0.1x to posterior margin of mesoscutellum. Mesopleuron (Fig. 178) smooth with punctures separated by 0.5–1x a puncture width; lower edge of speculum and subalar prominence with the same texture as mesopleuron; speculum smooth with punctures separated by 1–2x a puncture width; mesopleural furrow absent. Epicnemial carina curved to meet anterior margin of mesopleuron at lower 0.3 of pronotum. Metapleuron smooth with punctures separated by 1.5–2x a puncture width. Fore wing (Fig. 212) with CI=0.4–0.5; ICI=0.6; SDI=1.3–1.4; 1m-cu straight; ramulus present but small; Rs+M curved; marginal cell basally cover by setae; sub-basal cell usually without setae, at most with one to three setae. Hind wing with 6 hamuli on R1 distally; NI=0.7–1.2; cu-a straight. Propodeum (Fig. 197) softly rugulose except areas petiolaris and superomedia with softly longitudinal carinate texture and area basalis smooth with punctures separated by 4–5x a puncture width; anterior transverse carina present between lateral longitudinal carinae; posterior transverse carina absent centrally, reaching pleural carina; longitudinal carinae absent before trans-

verse carina; lateral longitudinal carinae faint between transverse carinae; pleural carina present.

Metasoma.- First tergite 4.5–5.0x as long as apical width. Tergite II with spiracle located at 0.5x length of tergite.

Color.- Cream color except following: antennae, palpi, mandibles, clypeus central-apically, surrounded area of anterior tentorial pit, vertex centrally, notauli, two lateral vittae distributed from 1/4 to posterior edge of mesoscutum, a central vittae distributed from anterior edge to 1/2 of mesoscutum, a spot between central vittae and posterior edge of mesoscutum, scuto-scutellar groove, axilla, surrounded area of speculum, mesosternum, basal half of metasternum, inner, anterior and posterior of pro and meso-coxae, a central vittae in external meso-coxae, basal-inner 3/4 of hind coxae, anterior of hind coxae, 1/2 basal posterior and external of hind coxae, trochanter, trochantellus, femur, tibia, tarsomeres, basal half of propodeum, a spot distributed from spiracles to pre-apical apical end of tergite I, tergite II except laterally, tergites II to III except laterally and in posteriorly and ovipositor sheath brownish.

♂: Similar to female except brownish spot smaller.

Comments.- In small specimens the ramulus is present as an angulation of the vein; propodeum with the carinae faint and with the brownish spot smaller than in the big specimens.

This is the only species that has cream color with brownish spots occurring in the *Polylepis* forest.

Etymology.- The species epithet "yupankii" refers to Túpaq Inka Yupanki, the tenth ruler of the Tawantinsuyu.

Holotype: ♀ "PERU: AY. [Ayacucho] Ayacucho, Chaviña, 14°54'21.49"S/73°53'55.78"W, 4153m. 05-12.iv.2010. Bosque de Polylepis. N. Martinez Leg. [Ligth trap]" (MUSM).

Paratypes: 2♂♂, 2♀♀: labeled as follows: 1♀ "PERU: AY. [Ayacucho] Ayacucho, Chaviña, 14°54'31.16"S/73°53'56.87"W, 4115m. 07-10.iv.2010. Bosque de Polylepis. Pitfall trap. N. Martinez Leg." (MUSM); and 1♂, 2♀♀ same data as holotype (1♂, 1♀ MUSM; 1♀ SEMC).

Species-group D

Diagnosis. Face at most 1x as long as wide; compound eyes at most 0.6x wide as face; head, in lateral view, gena at least 0.8x wide as compound eyes. Lateral ocellus separated from compound eye by 0.4–0.5x ocellar diameter, ocelli small. Mandible with upper margin more or less convex, without setae (Figs. 10–11). Notaulus reaching about 0.3x of length of mesoscutum. Mesopleural furrow absent. Body bright yellow colored with reddish or black spots; diurnal activity.

Included species. Two species are included in this species group: *A. diaguia* new species and *A. inti* new species.

Comments. The species of this species group are presumably diurnal. They are geographically isolated, *A. inti* new species is distributed in the highlands of Peru while *Alophophion diaguia* new species is restricted to Patagonia.

Key to species of species-group D

- (1) Malar space 0.7–0.8x (Fig. 11) as long as basal width of mandible (Peru) *Alophophion inti* new species
 – Malar space 0.4x (Fig. 10) as long as basal width of mandible (Chile and Argentina) *Alophophion diaguia* new species

48. *Alophophion diaguia* new species

(Figs. 10, 213–217)

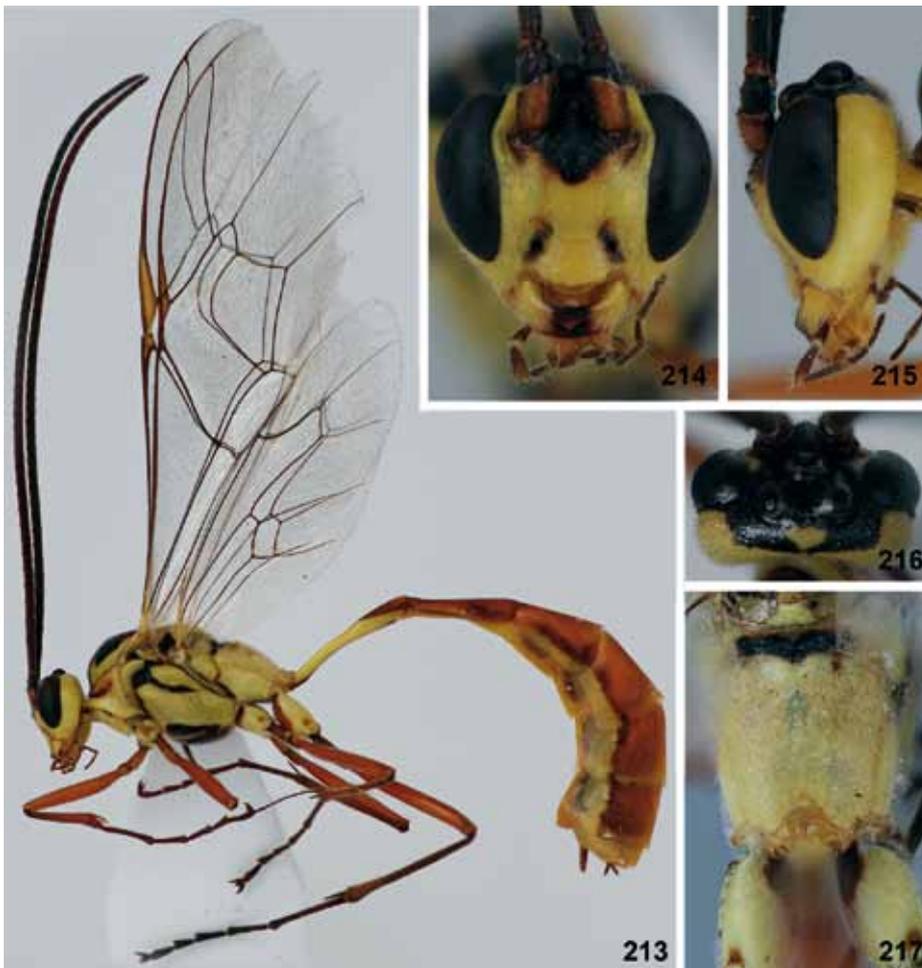
Diagnosis.- *Alophophion diaguia* new species can be distinguish of *A. inti* new species for its wider face and more robust body than in *A. inti* new species.

Description.- ♀: **Head.** Face (Fig. 214) 1.2–1.3x as wide as long, lateral margins almost parallel, smooth centrally and softly imbricate laterally with punctures separated by 0.5–1.5x a puncture width; median portion weakly convex. Clypeus evenly convex, with texture as that of face centrally; apical edge straight slightly convex. Mandible stout, very weakly narrowed apically, curved, with upper tooth slightly broader and slightly longer than the lower tooth; outer mandibular surface smooth between punctures in the upper 2/3 and coriaceous between punctures in the basal 1/3. Malar space 0.4x as long as basal width of mandible (Fig. 10). Gena, in lateral view (Fig. 215), 0.8–0.9x as wide as compound eyes; softly imbricate with punctures separated by 2–3x a puncture width. Vertex and frons with texture as that of gena. Lateral ocellus separated from compound eye by 0.4–0.5x ocellar diameter; distance between ocelli 1.0–1.3x ocellar diameter (Fig. 216). Antenna with 47–56 flagellomeres; Ratio of length/width from first to seventh flagellomeres: 3.8–3.6:2.5–2.1:2.1–1.8:2.0–1.8:2.0–1.7:1.9–1.7:1.9–1.7.

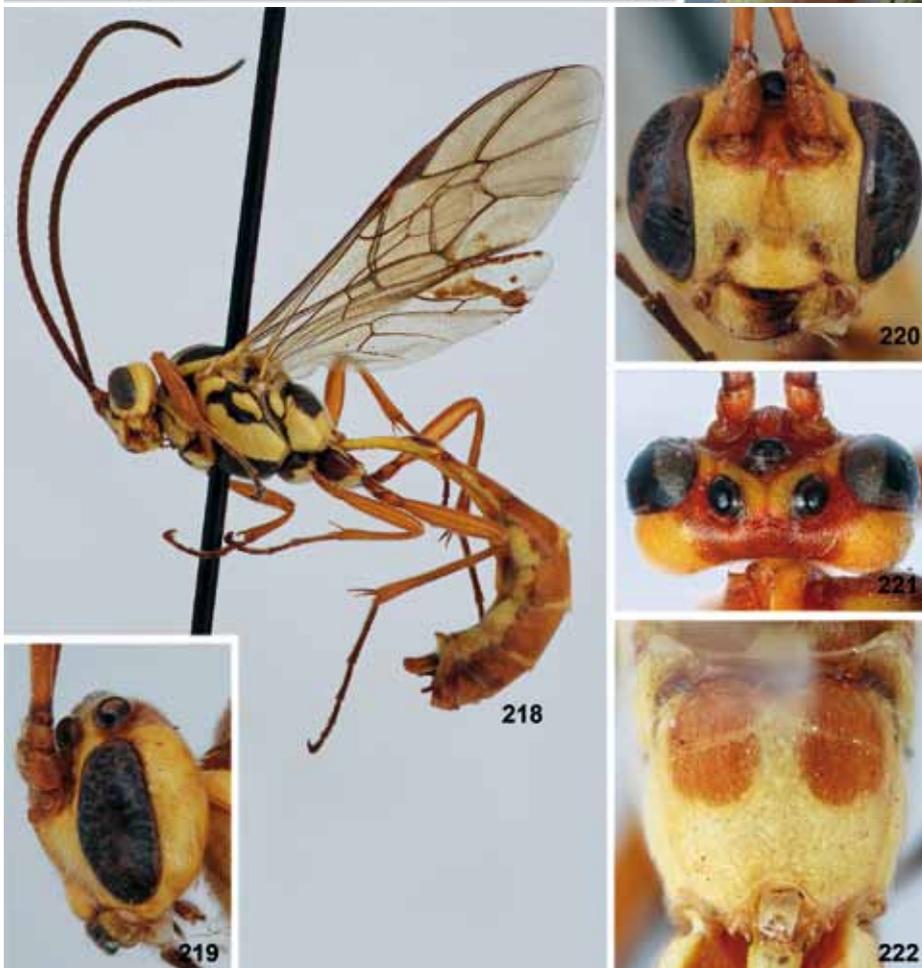
Mesosoma.- Pronotum and mesoscutum smooth with punctures separated by 2–3x a puncture width, centrally punctures centrally closer (separated by 0.5x a puncture width). Notaulus scrobiculate reaching ca. 0.2x to posterior margin of mesoscutellum. Mesoscutellum evenly convex, smooth with punctures separated by 2–3x a puncture width; lateral carina reaching ca. 0.2x to posterior margin of mesoscutellum. Mesopleuron weakly polished, smooth with punctures separated by 0.5–1x a puncture width; lower edge of speculum softly scrobiculate. Epicnemial carina curved to meet anterior margin of mesopleuron at lower third of the pronotum. Metapleuron with texture as mesopleuron; submetapleural carina complete. Fore wing with CI=0.3–0.6; ICI=0.6–0.7; SDI=1.1–1.2; 1m-cu centrally curved and with ramulus absent or 1m-cu centrally angulate and with ramulus present. Hind wing with 6 hamuli on R1; NI=0.6; cu-a curved. Propodeum (Fig. 217) with area anterior punctate smooth with punctures separated by 0.5–1x puncture diameter and area posterior with rugulose texture; with anterior and posterior transverse carina present, pleural carinae present.

Metasoma.- First tergite 4.2–4.5x as long as apical width. Tergite II with spiracle located at 0.5x length of tergite.

Color.- Head bright yellow except following: spot form around toruli and surrounded area of median ocellus, projected in front of toruli and facial tubercle by triangular expansions; dorsal part of vertex, behind lateral ocelli, with a "v" shape going to the occiput brownish red. Mesosoma bright yellow except following: upper transverse stripe in pronotum, three stripes in mesoscutum; axilla; a spot that runs from inferior edge of subalar prominence, speculum and anterior margin of mesopleuron; mesopleural suture; mesosternum; prosternum; metasternum; hind ring behind postscutellum and basal half of propodeum brownish red. Legs brownish red except coxae ventral-apically bright yellow; wings grayish hyaline; veins



Figures 213 – 217.
Alophophion inti new species
 (213) Habitus
 (214) face
 (215) head in lateral view
 (216) head in dorsal view
 (217) propodeum.



Figures 218 – 222.
Alophophion diaguia new species
 (218) Habitus
 (219) face
 (220) head in lateral view
 (221) head in dorsal view
 (222) propodeum.

basally yellowish, rest brownish black; pterostigma dorsally yellowish brown. Metasoma with first sternite brownish red, first tergite bright yellow except brownish red area behind spiracle; tergite II–VI yellowish brownish red except laterally to the spiracle with yellow band; tergite VII brownish red; ovipositor and valve brownish red.

♂: Fore wing length 9.5mm. Similar to female except by the spot not brownish red, dark brown. Antenna with 46 flagellomeres.

Comments.- The proportions of the head of *A. diaguita* new species varied within the population especially with the male, additionally there are differences in the coloration of the spots this seems to be intrinsic of the species. The specimen collected in Patagonia has the punctures in face more scattered than the other specimens. This species was collected below 1000m.

Etymology.- The species epithet "*diaguita*" refers to the group of South American indigenous people, called Diaguita-Calchaquí. It is treated as a noun in apposition.

Holotype: ♀, "Prov. Valdivia Valdivia-Chile 15.xi.81 E. Krahmer" (BMNH)

Paratypes: ♂, 5♀: labeled as follows: **ARGENTINA:** 1♀, "ARGENTINA. N.-W [NW] Patagonia. 1,000-3,000ft. [305-915m] Dec. 1919. H.E. Box"; 1♀ "CHILE [ARGENTINA]: Chubut, Rio Turbio. 25.i.1962. A. Kovacs. B.M. 1964-193." (BMNH). 1♀, "Chubut Patagonia / From WFH Roseberg/ [identification label: *Ophion chilensis* Spinola det C.W. Hooker 3.18.1909]" (USNM). **CHILE:** 1♂, 2♀: 1♂ "Curacautín, Malleco II.'64 [ii.1964], R. Blanco Chile Luis E. Peña"; 1♀ "Las Nieves XI.12.47 [12.xi.1947] Chile L. Pena Guzman", and 1♀, "Renco, Chile, nr. Santiago I.20.51 [20.i.1951] L. Peña" (AEIC).

49. *Alophophion inti* new species

(Figs. 11, 218–222)

Diagnosis.- *Alophophion inti* new species and *A. diaguita* new species are quite similar but *A. inti* new species is thinner and has the malar space wider.

Description.- ♀: **Head.** Face (Fig. 219) 1.1x as wide as long, lateral margins almost parallel; imbricate with punctures separated by 0.5–1x a puncture width, median portion weakly convex. Clypeus evenly convex, with texture as that of face; apical edge slightly convex. Mandible stout, very weakly narrowed apically, curved, with upper tooth slightly broader and slightly longer than the lower tooth; outer mandibular surface imbricate with punctures separated by 2x a puncture width. Malar space 0.7–0.8x as long as basal width of mandible (Fig. 11). Gena, in lateral view (Fig. 220), 0.8x as wide as compound eyes; imbricate with punctures separated by 2–3x a puncture width. Vertex and frons with texture as that of gena. Lateral ocellus separated from compound eye by 0.5x ocellar diameter; distance between ocelli 0.8–1.2x ocellar diameter (Fig. 221). Antenna with 48–49 flagellomeres; Ratio of length/width from first to seventh flagellomeres: 4.6–3.9:2.4–2.2:2.0–1.8:2.0–1.9:2.0–1.9:1.8–1.7:1.7.

Mesosoma.- Pronotum and mesoscutum softly imbricate with punctures separated by less than 0.5x puncture diameter.

Notaulus scrobiculate extending 0.2x length of mesoscutum. Mesoscutellum evenly convex, imbricate with punctures separated by 2–3x puncture diameter; lateral carina reaching ca. 0.2x to posterior margin of mesoscutellum. Mesopleuron weakly polished; softly imbricate with punctures separated by 1–2x puncture diameter, except speculum smooth, lower edge of speculum softly scrobiculate. Epicnemial carina curved to meet anterior margin of mesopleuron at lower third of the pronotum. Metapleuron softly imbricate with punctures separated by 1x puncture diameter; submetapleural carina complete. Fore wing with CI=0.4; ICI=0.7; SDI=1.2; 1m-cu centrally curved, ramulus absent. Hind wing with 6 hamuli on R1; NI=0.4; cu-a curved. Propodeum (Fig. 222) with area anterior punctate smooth with punctures separated by 0.5–1x puncture diameter and area posterior with rugulose texture; anterior transverse carina faint, centrally arcuate; pleural carinae present; other carinae absent.

Metasoma.- First tergite 4.4x as long as apical width. Tergite II with spiracle located at 0.6x length of tergite.

Color.- Head bright yellow except following: area of clypeal fovea and a spot form around inter-antennal tubercle, front centrally, area around ocelli and dorsal projection of posterior ocelli black; scape, mandibles teeth, maxillary and labial palpi yellowish brown; pedicel and flagellomere dark brown. Mesosoma bright yellow except following: a black transverse stripe in pronotum, three stripes in mesoscutum, axilla, a stain that runs from inferior edge of subalar prominence, speculum and anterior margin of mesopleuron, mesopleural suture, four stripes in mesosternum, prosternum, metasternum and hind ring behind postscutellum. Fore leg with coxae bright yellow; trochanter, trochantellus, femur and tibia yellowish brown; and, tarsomeres brown. Mid and hind leg with coxae dorsally bright yellow; coxae ventrally, trochantellus, femur and apical-ventral tibia yellowish brown; and trochanter, tibia and tarsomeres brown. Wings grayish hyaline; veins basally yellowish, rest brownish black; pterostigma dorsally yellowish brown; metasoma with first sternite brown, first tergite bright yellow except yellowish brown area behind spiracle; tergite II–VI yellowish brown, tergites III–VI with a lateral yellow spot; tergite VII bright yellow; ovipositor and valve yellowish brown.

♂: Fore wing length 9.4mm. Similar to female except: four stripes in mesosternum wider forming "M" shape and claspers bright yellow.

Comments.- This species was collected in puna grassland over 4000 m, actively flying during the day; all the specimens were collected during the rainy season.

Etymology.- The specific epithet, *inti*, is the Quechua name of the sun. According to Incan mythology, Inti is the sun god, the main deity and also known as the Giver of Life. It is treated as a noun in apposition.

Holotype: 1♀, PERU: CU. Espinar, Qbra [Quebrada] Chaisamayo 14°59'46.15"S/ 71°16'25.93"W, 4167 m. 16-17. iii.2011. Pastizal. M. Alvarado (MUSM).

Paratypes: 1♂, 1♀: labeled as follows: 1♀, "PERU: AP. Cotabambas 72°23'19"W/ 13°56'18"S, 4030 m, pajonal, colecta manual [sweeping], iii.2007, M. Alvarado & E. Quispitupac" and 1♂, same data as holotype (MUSM).

Nomen dubium***Alophophion holosericeus* (Taschenberg, 1875)**

Ophion holosericeus Taschenberg, 1875: 427 Holotype ♀ ZMH [Taschenberg's use of "type" is herein regarded as an original holotype designation (ICZN 1999: Art. 73.1.1)] [description]. Dalla Torre, 1900: 192 [listed]; Hooker, 1912: 164 [translation of original description]; Morley, 1912: 57 [key].

Alophophion holosericeus (Taschenberg): Townes & Townes, 1966: 171 [generic transfer]; Yu & Horstmann, 1997: 730 [listed].

Description.- ♀: Based on the original description provided by Hooker (1912). Propodeum with anterior transverse carina present and well defined; posterior transverse carina weaker than anterior; lateral and lateromedian longitudinal carinae present before anterior transverse carina, faint after it. Fore wing with ramulus present in discosubmarginal cell. Reddish brown except following: head dorsally and mesoscutellum yellowish and apice of metasoma brownish (Hooker, 1912).

Comments.- The type specimen was collected in Parana, Brazil and was deposited in the Zoologischen Instituts und Zoologischen Museums der Universität Hamburg (ZMH). This collection was largely destroyed by Allied bombing during World War II. In the available catalogue of Hymenoptera from the University of Hamburg collections (Weidner 1972), any material not listed in is considered to have been destroyed during the war (Kai Schütte, pers. comm.).

According to the material examined there are three species of *Alophophion* occurring in Brazil: *A. flavorufus*, *A. alvarengai* new species, and *A. jujuye* new species. The last two are greenish while *A. flavorufus* has coloration similar to the description of *A. holosericeus*. However, *A. flavorufus* lacks the lateral and lateromedian longitudinal carinae which, according to Hooker (1912) description are present in *A. holosericeus*, so unlikely to be the same species.

Among the species occurring in Argentina *A. flicornis* cannot be *A. holosericeus* because it lacks a ramulus and according to the original description of the latter it is present. Similarly, *A. holosericeus* cannot be *A. caleuche* new species, *A. diaguita* new species, *A. viride* new species, and *A. teushen* new species because of the body coloration; and cannot be *A. politus*, *A. capayan* new species, *A. carcanchoi* new species, *A. chango* new species, *A. mallecoensis* new species, *A. ona* new species, *A. yagane* new species, *A. chiquiyane* new species, or *A. yestay* new species since they have the longitudinal carinae well defined (absent in *A. holosericeus* behind anterior transverse carina). None of the available species before me suitably match the description of *A. holosericeus* and so its identity will have to await extensive new collections from Parana.

Discussion

Species of *Alophophion* are not rare and there is an abundance of specimens deposited in collections. Nonetheless, only seven species have been described prior to the present revision and this despite the fact that many of these new taxa were already recognized from collections (e.g., Gauld 1985, Gauld & Lanfranco 1987, Baudino 2005). This situation begs the question

as to why the genus was never revised or these species at least described since Cushman established the genus in 1947. One reason may be that the type material was deposited in Europe while *Alophophion* is restricted to South America, a situation leaving local researchers without access to the material necessary for suitably identifying which species were those named and which were truly novel. Another reason may be that ophionines are not charismatic, as reality suggested by Gauld (1980). Indeed, most species have a relatively uniform morphology, reduced sculpture, slender bodies, elongate rather featureless appendages, and uniform fulvous coloration; and they lack the taxonomically useful differences in thoracic and abdominal sculpture, color, etc., that are so widely used to characterize genera and species of other ichneumonid subfamilies. Such uniformity means that species within the group are more challenging to distinguish. The combination of this difficulty in species recognition and lack of access to critical type material clearly resulted in a long stagnation of much needed taxonomic work.

The re-descriptions provided herein were necessitated by the poor status of earlier descriptions, which provided little morphological information. Earlier accounts used almost exclusively color as a discriminating feature and this is not necessarily a reliable feature, when taken in isolation from other traits, for ophionines. Moreover, body coloration can change depending on the sampling method used to kill specimens; specimens that were greenish in life could turn to yellowish or those yellowish in life turn to orange depending on the medium used to collect them. Coloration can be used, as was done herein, but must be evaluated carefully and placed in context with additional morphological traits.

The species of *Alophophion* were segregated into in four species groups herein. The features used were in the head morphology, particularly in the structure of the mandible. Species-group B has a diagonal groove extending from the upper corner to the middle of the mandible and bearing numerous, distinctly long setae. This structure was used as main feature to separate this species group from the others. Species-groups A and C also have a groove in the upper margin of the mandible and bearing setae but the groove is rather small, rarely reaching to the external surface of the mandible, and the setae are distinctly short and typically not as numerous. Species-group A has the compound eyes and ocelli larger than in the other groups and a narrower gena, while species-group C has a broader gena and face. Although these features were used to separate species-groups A and C, in some species these differences are somewhat vague or difficult to discern, such as in *A. chiquiyane* new species (species-group C) which is similar to (perhaps closely related?) *A. trauco* new species (in species-group A). Either such features are convergent between these two species (if the species groups are monophyletic), or one of the species groups is paraphyletic with respect to the others. *Alophophion chiquiyane* new species was placed in species-group C due to the proportions of the compound eyes and gena, thereby facilitating the identification keys. Species-group D has the upper surface of mandibles slightly convex; but the most striking characteristic is the bright yellow color, unique for them. The size of the ocelli was not considered alone to establish this species-group because the presence of small ocelli was found in other species like *A. porculatus* and *A. yupankii* new species. Gauld (1985) suggested that ophionines that have adopted a diurnal habit have small ocelli, particularly

in areas where competition with other Ichneumonidae is low, such as the top of high mountains, deserts, and remote islands; and this seem to be the case. Overall species-group A and C seem more similar between them than any other species group. Clearly all of this requires testing by a phylogenetic analysis.

Gauld (1985) mentioned that the *Ophion* genus-group originated in the temperate north and that the origin of *Alophophion* was in Patagonia. During the middle Miocene (about 10 million years ago), much of South America was covered by a seawater transgression inside the continent, ultimately dividing it into three portions of land corresponding to the Andes, Guayanan, and Brazilian shield (Peña 2004, Räsänen *et al.* 1995, Webb 1995). This arrangement of landmasses persisted until the beginning of the Pleistocene (about 5 million years ago) (Räsänen *et al.*, 1995, Webb, 1995). This transgression would have been one of the most important barriers to prevent the spread of *Alophophion* between these three high masses of land, and restricting it to the Andean region, only with subsequent opportunities for dispersal elsewhere after the sea levels had regressed sufficiently. Since the mountain ecosystems of the Andean region were formed in the early Pleistocene, several antarctic-austral elements are found in the highlands of the Andes. The Andes allowed the dispersion of these antarctic-austral elements northward into a cold environment and open plant formation which held to a certain similarity to the austral landscape (Moret 2005). The elevation of the Andes progressively increased the possibility of dispersal by creating cool and arid habitats near the equator (Michener 2000). These factors may have allowed the northward dispersion of species of *Alophophion*, particularly those treated herein in species-groups A, C, and D. *Alophophion atahualpai* new species is the species with the northernmost distribution and was collected through an elevational gradient (from ~1700 to 3100m) and was most abundant at the higher elevations where the habitat is cooler and most arid. *Alophophion* may prefer the habitats that are cooler, arid and higher regions of South America.

The afore mentioned distribution is not unique to *Alophophion*. The *Trachysphyrus-Aeliopotes* complex (Ichneumonidae: Cryptinae) is confined to subequatorial South America, with species ranging from Ecuador to Tierra del Fuego, and occurring in the Andean, subtropical, temperate, and Neantarctic habitats (Porter, 1985). Porter found that the species were confined to the Andean Puna and Altiplano (in Peru, Bolivia, northern Chile, and northwestern Argentina); on the western slopes of the Andes, they occur above 2800 m and more than 4000 m, however, and the eastward distribution of this complex is bounded by Andean peaks at 4000–6000 m elevation. *Aeglocryptus* (Cryptinae) is also a subequatorial genus; distributed from the central Peru to neantarctic Chile and through Bolivia, Uruguay and Argentina to the Strait of Magellan on the east. This genus is excluded from tropical wet forests and tropical deciduous forests, although it is represented in almost every habitat from sea level to 4000 m (Porter 1987). Another genus studied by Porter (1987) is *Thymebatis* (Ichneumoninae: Joppini). It has many species concentrated in the Andean, Neantarctic, and subtropical regions of South America. It is found also from sea level to 4000 m but generally inhabits cooler, higher, and more arid regions than those preferred by other Joppini, although some *Thymebatis* have invaded the subtropical wet forests of northern Argentina and southeastern Brazil (Porter 1980). There are other

genera of Ichneumonidae that inhabit cooler, arid, and higher regions of South America, as does *Alophophion*, that follow the same pattern of distribution.

The northern distribution of *Alophophion* seems to be limited by the equator. None of the specimens of *Alophophion* studied here were collected north of 3°S latitude, but the distribution is certainly wider than the 25°S latitude suggested by Gauld & Lanfranco (1987). A genus adapted to this cold and dry environments may give a rise to a species able to persist in humid habitats like seems to be the case of *A. mancocapaci* new species and *A. pedroi* new species, the only species found in the eastern slopes of the Andes.

Another factor that may be limiting the distribution *Alophophion* along the eastern slopes of the Andes is competition with *Enicospilus* Stephens, an extremely species-rich genus that is represented in tropical America and most diverse in lower montane tropical forests (Gauld & Lanfranco 1987). Along the western slopes of the Andes *Enicospilus* has few species in deserts and a restricted number in areas that have a pronounced dry season (Gauld 1985), a stark contrast to that of *Alophophion*.

The distributions of *A. chilensis*, *A. politus*, and *A. flavorufus* can be more fully characterized now, as each was previously known only from the type localities which only mentioned countries where were collected. For example, *A. chilensis* was known to be distributed in Chile, but seems to be restricted to the Chilean regions of Atacama, Coquimbo and Valparaíso. For *A. politus* was known to be distributed in Chile, but seems to be restricted to the Chilean regions of Araucanía, Biobío, Coquimbo, Los Ríos, Maule, Libertador General Bernardo O'Higgins Region, Metropolitana de Santiago and Valparaíso; and the Argentinian provinces of Chubut and Rio Negro. For *A. flavorufus* was known to be distributed in Argentina and Brazil, but seems to be restricted to the Argentinian provinces Catamarca, Buenos Aires, Mendoza, and San Juan; in Brazil it was only recorded from Rio Grande do Sul. For both *A. flicornis* and *A. porculatus* the type localities are in Argentina, but no other specimen of these species has been collected and so they remain poorly understood. This situation certainly inhibits our ability to ascertain what factors are influencing their distribution, such as an association with a particular vegetation, climate, or host species. Further collections are needed to help establish a more complete picture of the distribution of several species in *Alophophion*. The distribution of many species may be wider than presently understood since several are only known from one or two localities. With few locality records is difficult to determine to what degree they are endemic or tied to particular local factors.

More collections will not only help to establish the distribution of the species but will assuredly increase the number of species. For example, during the last six years 14 species were collected in Peru of which those only three had been previously sampled. Clearly when targeted collecting is undertaken the number of species has risen rapidly. Given that there are many suitable regions for *Alophophion* where no collecting efforts have been made; there will undoubtedly be new species to discover. Most importantly, modern collections are needed which have accurate geo-reference coordinates, elevation, habitat data, collecting methods employed, and dates and time

(for phenological information). Much of the material available is historical and lacks many of these important data elements, thereby hindering our ability to make inferences about the biology, ecology, and history of the lineage.

Unfortunately, there are no definitive host associations for any species of *Alophophion*. Beside that Baudino (2005) recovered undetermined species of *Alophophion* from larvae of the cutworms *Agrotis malefida* (Guenée), *Feltia gypaetina* (Guenée), and *Peridroma saucia* (Hübner) feeding on *Medicago sativa* L. (Fabaceae); no host-species and parasitoid-species relation was done. The species of *Alophophion* attaching these cutworms are unknown; as Baudino (2005) mentioned the main reason were the lack of revision for the *Alophophion* and that there were probably several new species, these were her two limitations to determine them to species. Certainly the lack of any previous means of identifying the species has hindered researchers working on possible hosts from positive host-parasitoid associations. Going forward it is hoped that the keys provided herein will permit researchers studying the biology of regional Lepidoptera to identify parasitoids when they are reared from caterpillars.

The present revision provides a significantly improved perspective of species diversity and distribution for *Alophophion* and sets the stage for future cladistic and biogeographic work on the lineage. The current study highlights that species of *Alophophion* face two potential problems: several of the species are distributed in endangered habitats such as *Polylepis* forest and puna grassland, and most are likely to be susceptible to changes in climate. It is predicted that the distribution of most insect species will shift towards the poles and to higher elevations as our current era of climate change plays out (Regniere 2009). Given that many species of *Alophophion* already inhabit these extremes, such as some of the highest portions of the Andes; it leaves one to wonder what recourse these taxa have as the climate shifts. Clearly the wasps and their hosts may be as endangered as, or more so, than the habitats in which they reside.

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