

New species and records of *Anacis*
(Hymenoptera: Ichneumonidae: Cryptini)
from tropical and temperate Andean South America

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Abstract. Descriptions are given of the new species *Anacis ignifera* and *A. flammigera* from Mérida State, Venezuela and of *A. umbrifera* from Machu Picchu, Perú. These belong to a tropical Andean lineage with strongly projecting propodeal cristae and pictured wings. *Anacis hercana* Porter, a Chilean species long known only from the holotype taken at El Canelo near Santiago, now is documented by a second specimen from nearby Río Clarillo. *Biconus* Townes (1969) is synonymized under *Anacis* Porter (1967a). *Anacis apoeca* (Porter), *A. atrorubra* (Townes), and *A. subflava* (Porter) are new combinations in *Anacis*. The South American species of *Anacis* are keyed.

Resumen. Se describen las especies nuevas *Anacis ignifera* y *A. flammigera*, del Estado de Mérida en Venezuela y *A. umbrifera* de Machu Picchu, Perú. Pertenecen éstas tres a un linaje propio de la pluviselva altoandina tropical, el cual tiene muy grandes y proyectadas las crestas del propodeo, y las alas con extensas manchas oscuras. *Anacis hercana* Porter, antes conocida sólo del holotipo colectado en El Canelo cerca de Santiago de Chile, se cita ahora de la vecina Reserva Natural de Río Clarillo. *Biconus* Townes (1969) se considera sinónimo de *Anacis* Porter (1967a), siendo nuevas las combinaciones: *Anacis apoeca* (Porter), *A. atrorubra* (Townes), y *A. subflava* (Porter). Se proporciona una clave de las especies sudamericanas de *Anacis*.

Introduction

Anacis Porter (1967b, 1987) is a large South American and Australian genus of the ichneumonid Tribe Cryptini (=Mesostenini *sensu* Townes, 1969). It belongs to the Subtribe Ischnina established by Townes for a generic group including also such well known taxa as *Trachysphyrus* (Andino-Patagonian), *Chromocryptus*, *Comsocryptus*, and *Lanugo* (Neotropic and Nearctic), in addition to the Holarctic, Afrotropical and Oriental *Cryptus* (= *Itamoplex sensu* Townes), and the cosmopolitan *Ischnus*. Within this context, *Anacis* may be recognized by the following combination of characters:

(1). Female flagellum delicately filiform, often as long as the body; its 1st segment very long, 5.2-10.0 as long as deep at apex.

(2). Male flagellum with tyloids only on 3-4 segments or sometimes without tyloids.

(3). Areolet large, broad, 0.7-1.3 as wide as high; intercubiti gently to strongly convergent above.

(4). Mediella gently to strongly arched, never straight.

(5). Brachiella often short and evanescent at about 0.5 the distance to posterior margin of hind wing, sometimes vestigial.

(6). Axillus close to and paralleling anal margin of hind wing.

(7). Propodeal spiracle round or short-oval, 1.0-2.0 as long as wide.

(8). Basal transcarina traceable throughout, straight or sometimes curved forward mesad, always well removed from base of propodeum (ending at proximal 0.4-0.3 of dorsal face).

(9). Apical transcarina often traceable throughout, sometimes strong, or sometimes absent except for its sublateral cristae, usually well removed from the basal transcarina.

(10). Propodeal cristae varying from low subconate or crescentic to strongly projecting ligulate or conical.

(11). First gastric segment without distinctly projecting baso-lateral tooth or rounded flange.

(12). Ovipositor with sheathed portion 0.20-0.44 as long as fore wing, its dorsal valve on tip usually with a weakly to moderately raised nodus that bears on its crest a tiny notch, ventral valve on tip usually with fine, well spaced, inclivously oblique ridges, or occasionally with both valves depressed toward apex and the ridges vertical; tip 0.14-0.40 as high at notch as long from notch to apex.

Unfortunately, not all of the above characters hold for all species presently included in *Anacis*. Porter (1967b, 1987) established the genus *Dochmidium* for the Neantarctic *A. camponotus* and *A. syntoma* because in these the 2nd recurrent vein is inclivous, an unusual feature among the Cryptini. Townes (1969) synonymized *Dochmidium* under *Anacis*, concurrently proposing the genus *Biconus* for several Andean cloud forest species having large, much projecting, conical or ligulate propodeal apophyses, but, with more material at hand, it can be seen that the size and shape of the apophyses may vary within a species (in small males of *A. flammigera* they are reduced to subconical swellings). Gauld (1984) notes also that in the Australian fauna, which includes *Cryptus exul* Turner (1919) and 55 undescribed species, "there appears to be no real distinction between *Biconus* and *Anacis*." Indeed, it was Townes (1969) who first assigned *C. exul* to *Anacis*, although this species has strong, ligulo-cuneate propodeal cristae.

Assuming that its Australian and South American species are truly congeneric (only a phylogenetic study can answer this question), *Anacis* emerges as a trans-antarctic taxon, roughly comparable in geographic distribution to such plant genera as *Araucaria* (Gymnospermae: Araucariaceae) and the angiosperms *Nothofagus* (Fagaceae) and *Eucryphia* (Eucryphiaceae), or to several other primitive ichneumonid genera, such as *Certonotus* and *Labena* (Porter 1981) or *Meringops* (Gauld 1984).

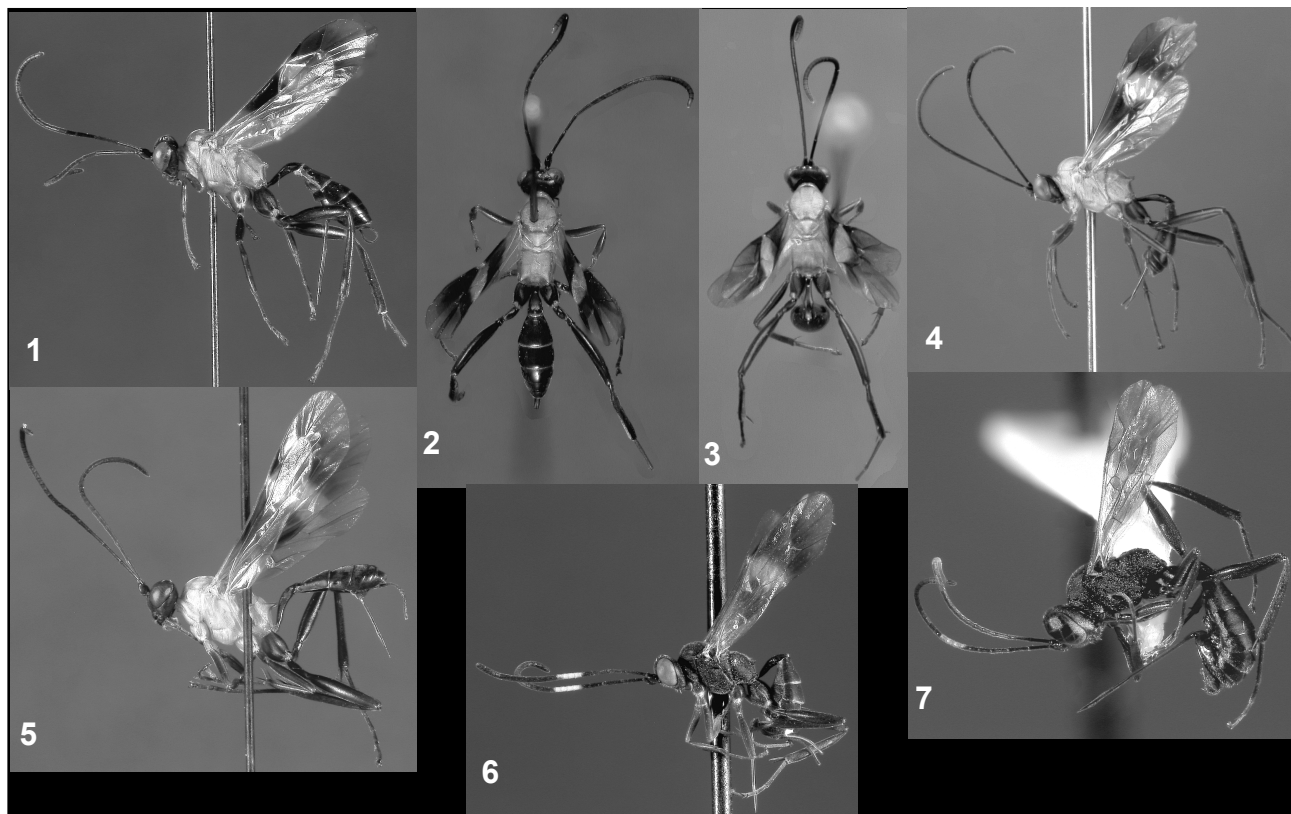
Within South America, *Anacis* inhabits temperate and tropical wet forests and gallery woodlands along the Andes from Chile and Argentina north to Venezuela, with a disjunction at intermediate latitudes between the not very closely related Neotropic and Neantarctic species groups.

Most tropical cloud forest species belong to a single lineage (= *Biconus* Townes): *A. ignifera* Porter and *A. flammigera* Porter are in the Andes of Venezuela between 1500-2200 m altitude; *A. atrorubra* (Townes 1969), *A. subflava* (Porter 1986), and *A. umbrifera* Porter are known from similar habitats, the first from Ecuador and the others from Perú (Machu Picchu), but *A. apoeca* (Porter 1986) occurs on the arid west Andean slopes of Peru in gallery woods along permanent watercourses. *Anacis tucumana* Porter (1973), which ranges from northwest Argentina to Ecuador, is a distinctive species of wet montane forests and humid grasslands (Páramo), not closely related to the "*Biconus*" group (propodeal cristae subcrescentic) but perhaps distantly akin to the Neantarctic *A. festiva* as suggested in the key to species.

On the west Andean slopes and in the Coastal Desert of Perú, cloud forest species of *Anacis* (Porter 1986) drop out below 15 or 16 degrees South Latitude, as forests are replaced by arid scrub and steppe communities (Prepuna, Puna). Indeed, *Anacis* is unknown also from the north Chilean regions of Tarapacá, Antofagasta, and Etacama (18-23 degrees South Latitude).

On the wetter east side of the Andes and associated mountain chains, *Anacis* is well represented in Bolivia and reaches 28 degrees So. in the Selva Tucumano-Boliviana of northwest Argentina (Porter 1973), but south of Tucumán there are no more wet forests along the Andes until northwest Neuquén Province at 38 degrees South, where the temperate Neantarctic (or Valdivian) forest, dominated by *Nothofagus*, covers much of Chile and a narrow strip in southwestern Argentina. This community has 8 species of *Anacis*, whose north to south distributions are expressed with reference to Chilean localities: *Anacis festiva* Porter ranges from Talca Province to subantarctic Magallanes; *A. rubripes* (Spinola) from Santiago to Magallanes; *A. varipes* may be restricted to the Pehuenar or *Araucaria* woods in the Cordillera de Nahuelbuta of Arauco Province; *A. stangeorum* Porter (1970) is in Valdivian Forest in Neuquén Province (Argentina); *A. rufipes* (Havrylenko and Winterhalter) is in Valdivian Forest in Chile (Linares, Malleco) and Argentina (Neuquén); *Anacis hercana* Porter is in riparian sclerophyll woods near Santiago; *A. camponotus* Porter occurs from Talca to Arauco, *A. syntoma* Porter from Santiago to Arauco.

The Neantarctic *Anacis* represent several lineages. *Anacis camponotus* and *A. syntoma* have the 2nd recurrent vein inclivous (cf. *A. umbrifera* and *A. ignifera*). In *A. hercana*, as in the foregoing species, the wings are light and dark marked and the mesosoma is granularly microreticulate, but here the notauli are only 0.3 the length of mesoscutum, the mesopleuron is less setose, the areolet broader, and the 2nd recurrent vein is weakly reclivous. *Anacis rubripes* and *A. stangeorum* agree in their shining, finely punctate mesoscutum and broad female postpetiole (1.0-1.7 as wide at apex as long from spiracle to apex). *Anacis festiva* is distinctive in its mat, finely granular mesoscutum, combined with elongate female postpetiole (0.8-0.9 as wide at apex as long) and dense setae on female 2nd gastric tergite. *Anacis rufipes* (Porter 1967a) stands apart because of its nasute clypeus, some coarse rugae on mesoscutum, projecting propodeal cristae, and depressed ovipositor tip with vertical ridges on ventral valve.



Figures 1-7. *Anacis ignifera*, female holotype. Lateral view of entire insect. Note pale apical bands on gastric tergites 1-3; 2. *Anacis ignifera*, female holotype. Dorsal view of entire insect. Note that basal transcarina of propodeum curves forward medially; 3. *Anacis flammigera*, female paratype. Dorsal view of entire insect. Note that basal transcarina of propodeum is straight; 4. *Anacis flammigera*, female paratype. Lateral view of entire insect. Note the almost complete absence of pale apical bands of tergites 1-3; 5. *Anacis flammigera*, female paratype. Enlarged lateral view of whole insect; 6. *Anacis umbrifera*, female holotype. Entire insect in lateral view; 7. *Anacis hercana*, female specimen in FSCA. Entire insect in lateral view.

Anacis rufipes parasitizes the lasiocampid moth *Macromphalia chilensis* (Havrylenko and Winterhalter 1949) and unidentified Australian *Anacis* (Gauld 1984) were reared from *Coleophora* (Lepidoptera: Coleophoridae) and the pupa of a lymantriid moth. No other host records are available for this genus.

Key to the South American species of *Anacis* (based on females)

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| <p>1. Mesoscutum mat, finely granular or reticulo-punctate 2</p> <p>1'. Mesoscutum shining, silky, with more or less well developed fine punctation 13</p> <p>2. Propodeal cristae low, cuneate or crescentic, not much protruding; apical transcarina of propodeum rather well developed mesad of cristae, often percurrent 3</p> | <p>2. Cristae strongly projecting, more or less ligulate or conical; apical transcarina indistinct or absent between cristae 7</p> <p>3. Second recurrent vein strongly inclivous; radial cell 2.2-2.6 as long as wide; mesopleural disc in female with long, shaggy silver vestiture; fore wing dusky, more or less contrastingly paler toward apex 4</p> <p>3'. Second recurrent vertical, gently inclivous, or sometimes rather strongly inclivous; radial cell 2.7-3.9 as long as broad; mesopleural disc without shaggy silver vestiture; fore wing hyaline or dusky but if banded, then with a pale median area as well as pale toward apex 5</p> <p>4. Gaster sometimes with white or very pale tan on apex of 3rd and on most of succeeding tergites; areola longer than wide in position; postpetiole of female 1.0-1.4 as wide at apex as long from spiracle to apex <i>Anacis camponotus</i> (Porter)</p> |
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4. Gaster black with at most faint brownish staining on apical tergites; areola wider than long in position; postpetiole 1.6 as wide apically as long from spiracle to apex .. *Anacis syntoma* (Porter)
5. Fore wing dusky, becoming gradually paler toward apex, and with a large postmedian hyaline band; mesoscutum black; first flagellomere 4.7 as long as deep at apex; notaulus traceable only on basal 0.3 of mesoscutum; apical transcarina of propodeum sharp throughout, higher than basal transcarina and strongly bowed forward medially; sheathed portion of ovipositor 0.40 as long as fore wing *Anacis hercana* (Porter)
- 5'. Fore wing dark to hyaline but without contrasting light and dark areas; mesosoma largely red or reddish brown; first flagellomere 5.9-10.0 as long as deep at apex; notauli impressed on basal 0.5-0.7 of mesoscutum; apical transcarina not as strong as basal transcarina, often weakened mesad, where it is at most gently curved forward; sheathed portion of ovipositor 0.20—0.30 as long as fore wing 6
6. Gaster black with white apical bands on tergites; flagellum with a white annulus; hind tarsomeres 2-4 white; first flagellomere 8.5-10.0 as long as deep at apex; postpetiole weakly expanded, 0.8-0.9 as wide apically as long from spiracle to apex *Anacis festiva* Porter
- 6'. Gaster reddish brown with variably developed white apical bands on tergites; no white on flagellum or hind tarsomeres; first flagellomere 6.2-7.3 as long as deep at apex; postpetiole 1.3-1.4 as wide as long *Anacis tucumana* Porter
7. Mesosoma black; wings moderately and uniformly infumate; clypeus nasute, in profile strongly raised, asymmetric ally pyramidal; mesoscutum on disc with contrastingly coarser wrinkling rearward between notauli and more broadly in space distad of notauli; ovipositor tip depressed with ridges on ventral valve almost vertical *Anacis rufipes* (Havrylenko & Winterhalter)
- 7'. Mesosoma often extensively orange, yellow, or red, but sometimes black; wings contrastingly light and dark banded; clypeus not much raised, symmetrically or asymmetrically convex in profile; mesoscutal disc mat with delicate puncto-reticulation and sometimes with a few strong longitudinal wrinkles in front of prescutellar depression; ovipositor tip not depressed, ridges on ventral valve inclivously oblique 8
8. Mostly black; notauli weak, reaching scarcely 0.4 length of mesoscutum; mesopleuron finely reticulate but with strong horizontal wrinkles for a short distance along prepectal carina and more broadly so in its upper hind quadrant in front of speculum; second recurrent vein quite strongly inclivous (cf. *A. camponotus*); basal transcarina of propodeum strongly curved forward on its median 0.3 *Anacis umbrifera* Porter, n.sp.
- 8'. Mostly yellow, orange, or red species; notauli finely impressed for more than 0.5 the length of mesoscutum 9
9. Mesosoma uniformly pale brownish yellow, yellow, or orange, without dark markings 10
- 9'. Mesosoma reddish with black markings on at least mesoscutum, tegula, and most of scutellum 12
10. Flagellum with a white annulus; fore wing with a single brown blotch centered in basal half of disco-cubital cell and first brachial cell; mesosoma and gaster uniformly yellowish; mesopleuron with much fine, sharp, horizontally biased wrinkling; propodeum distad of basal transcarina with strong reticulate wrinkling; postpetiole short, strongly expanded apicad, 1.3-1.5 as wide at apex as long from spiracle to apex *Anacis subflava* (Porter)
- 10'. Flagellum uniformly dark in color; fore wing with two large dark brown blotches, one premedian and the other preapical; mesosoma bright pale orange; gaster mostly black; mesopleuron almost throughout with fine reticulo-punctation; propodeum finely puncto-rugose, without strong wrinkles; postpetiole long and slender, weakly expanded toward apex, 0.5—0.9 as wide at apex as long from spiracle to apex 11
11. Second recurrent vein inclivous; ramellus long; basal transcarina of propodeum curved forward on its median 0.3 *Anacis ignifera* Porter, n.sp.
- 11'. Second recurrent nearly vertical; ramellus absent; basal transcarina straight, not curved forward mesad on propodeum *Anacis flammigera* Porter, n. sp.
12. Flagellum without a white band; mesosoma with black markings restricted to mesoscutum, scutellum, and tegula; coxae mostly reddish; hind face of propodeum laterad strongly trans-rugose but mesad less strongly wrinkled, sometimes smooth and shining, its cristae ligulate, not decurved at apex *Anacis apoeca* (Porter)
- 12'. Flagellum with a white band; mesosoma with black on pronotum, subalarum, mesosternum, and basal part of propodeum, as well as on mesoscutum, scutellum, and tegula; coxae mostly black; hind face of propodeum finely wrinkled, its cristae subconic and a little decurved at apex *Anacis atrorubra* (Townes)
13. Mesosoma with profuse white markings; all gastric tergites with a complete white apical hand; apical margin of clypeus with a small, sub-

- dentate median projection; humeral margin of pronotum not grooved
 *Anacis stangeorum* (Porter)
- 13'. Mesosoma with white at most on anterior margin of pronotum, tegula, and subalarum; not all gastric tergites with a white apical band; no median projection on apical margin of clypeus; humeral margin of pronotum with a well impressed submarginal groove 14
14. Legs mostly black with white markings; gaster black with white on apex of 1st tergite, sometimes restrictedly on 2nd and 3rd tergites, and on broad apical bands of tergites 4-7; sheathed portion of ovipositor 0.50-0.60 as long as fore wing; nodus of ovipositor tip with an unusually large and deep notch *Anacis varipes* (Porter)
- 14'. Legs mostly orange; gaster black with white at most on tergites 5-8 and only on 7 sometimes with a complete white apical band; sheathed portion of ovipositor 0.20-0.40 as long as fore wing; nodus of ovipositor tip with a small notch *Anacis rubripes* (Spinola)

***Anacis ignifera* Porter, new species**
 (Figs. 1, 2)

DESCRIPTION: FEMALE. Color: antenna black with brownish below on scape and toward apex on flagellum; head black with dull brown on antennal scrobes and weakly on clypeus toward apex, with pale yellowish on mandibular condyle and on much of mandible except for black staining near base and shining black grading apicad into reddish brown on teeth; mesosoma bright pale orange; fore wing contrastingly light and dark banded: yellowish hyaline on basal 0.3 of median and on basal 0.5 of submedian cell; with a broad dark brown band on apical 0.7 of median cell, apical 0.6 of submedian cell, basal 0.2 of discocubital cell, basal 0.5 of 1st brachial cell, and in anal cell except near base and apex, dark band followed by a subtly golden-yellow hyaline band on dorsal apex of median cell, median 0.6 of discocubital cell, basal 0.5 of 2nd discoidal cell, apical 0.5 of 1st brachial cell, apical 0.1 of anal cell, and basal 0.3 of 2nd brachial cell, followed abruptly distad by a second dark brown band covering most of radial cell, apical 0.2 of discocubital cell, areolet, apical 0.5 of 2nd discoidal cell, median 0.3 of 2nd brachial cell and extending less intensely into basal 0.5 of 3rd cubital cell and of 3rd discoidal cell; fore wing distad of second dark band with fainter dusky staining through to apex; hind wing hyaline, weakly dusky on its apical 0.3; wing veins in great part dusky but pale yellow on prestigma and basal 0.3 of pterostigma and yellowish hyaline in the pale areas of fore wing as well as toward base on costa of hind wing; gaster black with narrow whitish apical bands on tergites 1-3, vaguely brownish on thyridium and apicad on tergite 7; fore leg with coxa light orange, tro-

chanter and trochantellus dusky brown, femur blackish with sordid brown staining that becomes dull orange posteriorly and ventrad, tibia and tarsus blackish with pale brown staining; mid leg similar to fore leg but blackish in part on coxa and on other segments blackish with more or less brown staining; hind leg blackish with obscure brown staining, except dull white on apex of coxa and paler brown on tarsus.

Length of fore wing: 7.1 mm. First flagellomere: 6.0 as long as deep at apex. Clypeus: in profile weakly convex with highest point a little below middle; apical margin gently convex, impressed, with a weak tubercle on each side of middle. Malar space: 0.85 as long as basal width of mandible. Temple: 0.35 as long as eye in dorsal view; gently rounded off and strongly receding. Fore leg: tibia stout, somewhat swollen; 4th tarsomere deeply emarginate on apex. Pronotum: dorsal margin not swollen; epomia sharp in scrobe, weakly prolonged below onto anterior margin of pronotum. Mesoscutum: notauli fine, shallow, extending about 0.5 length of mesoscutum; surface mat, minutely reticulo-punctate except for some strong longitudinal wrinkles in front of prescutellar depression; with dense, short setae throughout. Mesopleuron, surface mat with minute reticulo-punctation almost throughout. Lower metapleuron: very finely reticulo-punctate, mat. Wing venation: radial cell 2.8 as long as wide; areolet large, 1.1 as wide as high, intercubiti strongly convergent above, 2nd abscissa of radius 0.70 as long as 1st intercubitus; 2nd recurrent distinctly inclivous, straight; discocubitus broadly angled at basal 0.4, from which there arises a long ramellus; mediella moderately arched; axillus close to and paralleling posterior margin of hind wing; brachiella short. Propodeum: rather long but high in profile with basal face weakly convex, gently sloping rearward and apical face steeply declivous, almost vertical, 0.7 as long as basal face; spiracle 2.0 as long as wide; basal transcarina near proximal third of propodeum, strong throughout, not straight but turned forward on its median 0.3; apical transcarina absent, except developed sublaterally into large, strongly projecting ligulo-conic apophyses; areola not defined; no lateral longitudinal carina or pleural carina; surface mat, minutely puncto-rugose, with some stronger trans-biased wrinkling below on apical face. First gastric tergite: without a baso-lateral tooth; petiole very long and slender, weakly flattened on dorsum; postpetiole elongate, 0.9 as wide apically as long from spiracle to apex; ventrolateral carina weak on petiole, more distinct on postpetiole; dorsolateral carina obsolete on petiole, sharply defined on postpetiole from spiracle to apex; dorsal longitudinal carinae not defined. Gaster: rather elongate fusiform; 2nd tergite dully shining with very fine microreticulation and numerous tiny, shallow punctures which emit short but dense much overlapping setae; thyridium large, ovoid; succeeding tergites progressively with more delicate aciculation than on 2nd, more shining, and with setae becoming sparser on tergites 6-8. Ovipositor: sheathed portion 0.31 as long as fore wing, stout, somewhat compressed, nodus low with a tiny notch, profile of dorsal valve declining in a nearly straight line from

notch to apex; ventral valve on tip with fine, inclivously oblique ridges; tip 0.23 as high at notch as long from notch to apex.

MALE. Unknown.

TYPE MATERIAL. Holotype, female. VENEZUELA, Mérida State, 19 km NW Las Cruces, Ruta 4, tropical cloud forest, 25-VI-1991, C. Porter, L. Stange. In FSCA.

RELATIONSHIPS. This species, with its bright orange mesosoma, black head and gaster, twice dark banded fore wing, strongly projecting ligulo-conic propodeal cristae and slender 1st gastric tergite, with the postpetiole longer than wide and scarcely expanded at apex, much resembles the sympatric *A. flammigera* Porter, from which it may be distinguished by its inclivous 2nd recurrent vein, prominent rarnellus, and by having the basal transcarina of the propodeum bowed toward the middle and the dorso-lateral longitudinal carina of the postpetiole sharply defined from spiracle to apex.

HABITAT NOTES. The unique female was collected near Mérida, Venezuela in Andean Cloudforest at about 2000 m altitude, where it was swept from undergrowth near the forest edge. These perennially wet and cool forest habitats receive between 1500 and 2500mm of rainfall each year. Floristically, they are characterized (Hoyos F. 1987) by the presence of tree ferns (*Cyathea*) and of diverse arborescent spermatophytes among which may be mentioned the gymnosperm *Podocarpus* (Podocarpaceae) along with many angiosperm genera, including *Alnus* (Betulaceae), *Brosimum* (Moraceae), *Brunnelia* (Brunneliaceae), *Cinchona* (Rubiaceae), *Clusia* (Guttiferae), *Didymopanax* and *Oreopanax* (Araliaceae), *Eschweillera* (Lecythiadaeae), *Gyranthera* (Bombacaceae), *Hesperomeles* and *Polylepis* (Rosaceae), *Myrica* (Myricaceae), *Nectandra* and *Ocotea* (Lauraceae), *Sapium* (Euphorbiaceae) and *Weinmannia* (Cunoniaceae). Some conspicuous understory plants often seen along trails in this forest community are herbs of the genus *Begonia* spp. (Begoniaceae) and woody vines in the genus *Passiflora* (Passifloraceae).

SPECIFIC NAME. *Ignifer* (-*fera*, -*ferum*) is a Latin adjective which means "fiery" or "fire-bearing", chosen in reference to the bright orange mesosoma of this species. It is used here with the feminine ending -*a* to agree in gender with *Anacis*, which is a latinized Greek feminine noun.

Anacis flammigera Porter, new species (Figs. 3-5)

DESCRIPTION: FEMALE. Much as described for *A. ignifera* but with the following distinctive characters: Color: mostly black on face, clypeus, and mandible; with yellow on pterostigma only at its extreme base; gastric tergites 1-3 inconspicuously and narrowly dull brown on apex, thyridium black, 7th gastric tergite dull brownish white dorso-apically; fore leg bright orange on trochanter and trochantellus; coxa of mid leg uniformly orange; hind coxa with a large but poorly defined basolateral whitish orange blotch.

Length of fore wing: 8.8 mm. First flagellomere: 6.8 as long as deep at apex. Fore tibia: weakly swollen, more slender than in *A. ignifera*. Wing venation: 2nd recurrent nearly vertical; discocubitus weakly bent at basal 0.4, without a ramellus; brachiella long, sclerotized over 0.8 the distance to anal margin of hind wing. Propodeum: basal transcarina strong and nearly straight throughout, not bowed forward on median 0.3 of propodeum; cristae even larger than in *A. ignifera*, elongately conical, spike-like; pleural carina sharply defined throughout. Postpetiole 0.8 as wide apically as long from spiracle to apex; its dorsolateral carina defined only near apex. Ovipositor: sheathed portion 0.23 as long as fore wing; tip 0.17 as high at notch as long from notch to apex.

MALE. Differs from female as follows: Color: antennae black; gaster black with dull orange on basal 0.3 of 1st tergite and more briefly on base of 2nd, also weakly brownish on thyridium and narrowly on apex of tergites 1-3; fore leg mostly light orange with some dusky staining, especially on tarsus; mid leg similar to fore leg, except with dusky staining in part on femur and tibia as well as on tarsus.

Length of fore wing: 7.4 mm. First flagellomere: 6.2 as long as deep at apex; throughout with many dull whitish linear sensilla; other flagellomeres with similar minute sensilla but without tyloids. Malar space: 0.82 as long as basal width of mandible. Temple: 0.41 as long as eye in dorsal view. Fore tibia: slender. Mesoscutum: notauli traceable on its basal 0.6. Wing venation: radial cell 2.5 as long as wide; areolet 1.1 as wide as high; 2nd abscissa of radius 0.7 as long as 1st intercubitus. Propodeum: longer than in female, more gently curved in profile, apical face weakly distinct from basal; basal transcarina rather high, flange like, weakly crested sublaterally; pleural carina irregularly traceable throughout. Postpetiole long and slender, 0.62 as wide apically as long from spiracle to apex. Second gastric tergite: with setae longer and ever denser than in female.

TYPE MATERIAL. Holotype, female, VENEZUELA, Mérida State, 19 km NW Las Cruces, Ruta 4, tropical cloud forest, 5-VII-1991, C. Porter, L. Stange, in FSCA; allotype, male, same data as holotype, in FSCA; paratypes, 2 females and 24 males, VENEZU-

ELA, Mérida State, 19km NW Las Cruces, Ruta 4, tropical cloud forest, 25-VI-1991, 5-VII-1991; 15 km E Jaji, Ruta 4, tropical cloud forest, 24-VII-1988, C. Porter, L. Stange; Mucurubá, *Alnus stratum* of tropical cloud forest, 25-VI-1991; 18-23-VII-1988, C. Porter, L. Stange. In AEI, FSCA.

VARIATION. FEMALE. Length of fore wing: 7.1-7.4 mm. First flagellomere 6.3-7.5 as long as deep at apex. Malar space: 0.86-0.90 as long as basal width of mandible. Temple: 0.33-0.40 as long as eye in dorsal view. Wing venation: radial 2.9-3.3 as long as wide; 2nd abscissa of radius 0.7-0.8 as long as 1st intercubitus, brachiella sometimes sclerotized all the way to anal margin of hind wing. Propodeum: cristae ligulo-conic to fully conical; pleural carina sometimes irregular but always traceable throughout. First gastric tergite: postpetiole 0.52-0.77 as wide at apex as long from spiracle to apex. Ovipositor: 0.20-0.23 as long as fore wing; tip 0.18 as high at notch as long from notch to apex. MALE. Color: mandible sometimes marked with yellow; 1st and 2nd gastric tergites more or less extensively orange basad, or sometimes uniformly black. Length of fore wing: 5.1-7.4 mm. First flagellomere: 6.2-8.5 as long as deep at apex. Malar space: 0.75-0.87 as long as basal width of mandible. Temple: 0.40-0.50 as long as eye in dorsal view. Wing venation: radial cell 2.5-2.8 as long as wide; areolet 1.1-1.4 as wide as high; 2nd abscissa of radius 0.7-0.8 long as 1st intercubitus. Propodeum: cristae as strongly developed as in female, but in small specimens often broadly subconic and weakly projecting. First gastric tergite: very elongate and slender, postpetiole 0.55-0.59 as wide apically as long from spiracle to apex.

RELATIONSHIPS. *Anacis flammigera* belongs to a species group characterized by its strongly projecting ligulo-conic or conical propodeal cristae (mesad of which the apical transcarina is absent) and in which the mesoscutum is mat with very fine reticulo-punctuation. This group occurs in the Andean region of South America from Bolivia and Perú north to Ecuador and Venezuela, where it is best represented in Tropical Cloud Forests at 1500-2500 m altitude with some extension into permanently watered river valleys on arid west Andean slopes bordering the Peruvian Coastal Desert.

Anacis flammigera may be recognized by its striking color pattern: mesosoma bright orange, head and gaster black, fore wing with two conspicuous dark brown cross bands. Only the sympatric *A. ignifera* is similarly colored, but it differs in having the 2nd recurrent vein inclivous, whereas in *A. flammigera*

the 2nd recurrent is nearly vertical. Both species also have the 1st gastric tergite unusually slender (postpetiole in females 0.8-0.9 as wide at apex as long from spiracle to apex and in males 0.5-1.2 as wide as long). This feature is paralleled only in the Peruvian *A. umbrifera* which also has the 2nd recurrent vein inclivous, but here the mesosoma is black and the mesopleuron has some coarse wrinkling (mesopleuron delicately reticulo-punctate in the two Venezuelan species).

HABITAT NOTES. This species occurs in the same cloud forest habitats already described for *A. ignifera*. A large series was taken at Mucurubá by sweeping grass and herbs along a trail near the upper limit of Tropical Cloud Forest where alders (*Alnus jorullensis*), an element of Holarctic affinities, begin to replace the more diverse Neotropical flora that predominates at intermediate altitudes in the Venezuelan Andes.

SPECIFIC NAME. From the Latin adjective *flammiger* (-gera, -gerum), which means "flame-bearing" or "fiery." The name was chosen in reference to the bright orange mesosoma of this species.

***Anacis umbrifera* Porter, new species**
(Fig. 6)

DESCRIPTION. FEMALE. Color: scape and pedicel black with some brown staining, especially below; flagellum black with a white annulus extending from apex of 4th to base of 9th segment, as well as light brownish below toward apex; head black with brown on clypeus and mandibles; mesosoma black; wings hyaline with 2 broad black bands on fore wing and weak dusky staining toward apex of hind wing, much as described for *A. flammigera*; gaster black with dull brown staining and with white narrowly on apices of tergites 1-4, as well as with a large quadrate white blotch on most of dorsum of tergite 5; legs blackish brown with a little white on coxal apices and well developed pale brown staining, especially below and in front on fore femur and tibia.

Length of fore wing: 5.6 mm. First flagellomere: 5.8 as long as deep at apex. Clypeus: weakly and asymmetrically convex in profile with highest elevation a little below middle; apical margin slightly convex, without distinct median tubercles. Malar space: 0.87 as long as basal width of mandible. Temple 0.57 as long as eye in dorsal view. Fore tibia: quite stout, moderately swollen. Mesoscutum: notauli weak, narrow, traceable scarcely 0.4 length of mesoscutum; surface mat and delicately punctoreticulate, with dense, short setae. Mesopleuron: mat, finely punctoreticulate except with strong longitudinal wrinkles briefly along prepectal carina and more extensively in the upper hind quadrant in front of speculum; speculum itself

finely sculptured, mostly mat. Wing venation: radial cell 3.1 as long as wide; areolet very large, 1.3 as wide as high, intercubiti moderately convergent above, 2nd abscissa of radius 0.75 as long as 1st intercubitus; 2nd recurrent rather strongly inclivous, straight; discocubitus broadly angled, without a ramellus; brachiella short, sclerotized on about 0.5 the distance to anal margin of wing. Lower metapleuron: on apical 0.6 with strong oblique wrinkles, becoming finely reticulopunctate toward base. Propodeum: spiracle nearly round, about 1.3 as long as wide; basal transcarina near proximal 0.3 of propodeum, strong throughout, rather strongly thrust forward on its median 0.3, subcristate laterally; apical transcarina represented only by its cristae, which are stout, strongly projecting, bluntly subconic in shape; surface mat, finely punctoreticulate, with short, very dense silvery setae. First gastric tergite: long, moderately slender, postpetiole only slightly widened toward apex, 0.9 as wide apically as long from spiracle to apex. Gaster: beyond 1st segment rather stout fusiform; 2nd tergite minutely puncto-aciculate and with short, densely overlapping setae; thyridium ovoid, very faint. Ovipositor: sheathed portion 0.35 as long as fore wing; stout, compressed; tip 0.20 as high at notch as long from notch to apex.

MALE: Unknown.

TYPE MATERIAL. Holotype, female. PERU, Cuzco, Machu Picchu, 1900 m, 1-19-IX-1964 C. Porter. Paratypes, 4 females, same data as holotype. In AEI, FSCA.

VARIATION. Color: white flagellar annulus on segments 4 or 5 through 9 or base of 10; gaster sometimes extensively dull brown; legs sometimes largely brownish with reduced blackish staining. Length of fore wing: 5.4 mm. First flagellomere 5.5 as long as deep at apex. Malar space: 1.0 as long as basal width of mandible. Notauli in some specimens traceable only on basal 0.2 of mesoscutum. Wing venation: radial cell 3.4 as long as wide; 2nd abscissa of radius 0.71 as long as 1st intercubitus. Propodeum: with some stronger wrinkling on its hind face toward apex. First gastric tergite: 0.77 as wide at apex as long from spiracle to apex.

RELATIONSHIPS. This species is distinctive because of its inclivous 2nd recurrent vein, short and weak notauli broad areolet presence of some strong wrinkles on the mesopleuron and lower metapleuron, basal transcarina of the propodeum bowed forward on its median 0.3, conical and strongly projecting propodeal cristae, slender postpetiole mostly black head and body, and subhyaline fore wing with 2 conspicuous black cross bands. In several of these characters,

particularly the inclivous 2nd recurrent vein, it seems closely related to the Neantarctic *A. camponotus* (Porter) and *A. syntoma* (Porter), which formerly were placed in a separate genus (*Dochmidium* Porter 1967b).

HABITAT NOTES. The type locality is in cool, moist Tropical Cloud Forest, where specimens of this species and of *A. subflava* Porter (1986) were swept from lush undergrowth along the railway tracks which parallel the Urubamba River.

SPECIFIC NAME. From the Latin adjective *umbri-fer* (*-fera*, *-ferum*) which means "shady" or "shadow-bearing". The name was chosen in reference to the dark-blotched fore wing of this species.

***Anacis hercana* (Porter)**
(Fig. 7)

MATERIAL EXAMINED. 1 female, CHILE, Santiago (Región Metropolitana), Reserva Río Clarillo, 17 km SE Puente Alto ca. El Principal, 2-III-4-IV-1989, Malaise Trap, L. Stange, Ch. González. FSCA.

VARIATION. I described this species (Porter 1967b) from a single female in the CNC, which was collected by L. E. Peña in XII-1952 at El Canelo in the Andean Precordillera near Santiago de Chile some 13 km east of Puente Alto on the road to San José de Maipo. It is not surprising that a second specimen should be taken in the same general area and habitat as the holotype but remarkable that thirty seven years elapsed between the first and second capture, especially because so much fieldwork has been done in this part of Chile.

The new specimen differs from the holotype as follows: Color: white band on flagellomeres 6-9. Length of fore wing: 2.8 mm. Notauli faintly defined on basal 0.3 of mesoscutum. Mesopleuron: with some strong, short wrinkles along prepectal carina behind. Wing venation: radial cell 2.3 as long as wide, areolet 1.4 as wide as high; 2nd recurrent vertical, straight. Propodeum: apical transcarina weaker than basal, almost effaced mesad of cristae; surface distad of basal transcarina not quite mat, sublustrous with stronger rugosities than in holotype. Ovipositor: tip 0.77 as high at nodus as long from nodus to apex.

RELATIONSHIPS. This is the only Chilean *Anacis* in which the fore wing has two dark bands (basal and postmedian) separated by a hyaline area. Other diagnostic features include its short, weak notauli; short

sternaulus; short radial cell; very broad areolet; round propodeal spiracle; and sparse setae on 2nd gastric tergite. It thus resembles the sympatric *A. camponotus* and *A. syntoma* with which it agrees also in its small size and mostly mat head and mesosoma, but in these latter the fore wing is fuscous with only its apex contrastingly a little paler, the 2nd recurrent vein is inclivous and the setae of the 2nd gastric tergite are more numerous.

HABITAT NOTES. Both specimens of *A. hercana* were collected in well watered river valleys with sclerophyll woodland.

Collections

- AEI American Entomological Institute, 3005 S.W. 56th Ave., Gainesville, FL 32608
- CNC Canadian National Collection. Biosystematics Research Institute, Agriculture Canada, K.W. Neatby Building, Ottawa, Ontario, CANADA K1A 0C6.
- FSCA Florida State Collection of Arthropods, Florida Department of Agriculture and Consumer Services, P.O. Box 147100, Gainesville, Florida 32614-7100.
- PORTER Collection of Charles C. Porter, currently housed at the FSCA.

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