TWO NEW SPECIES OF *POTAMANAXAS* (HESPERIIDAE: PYRGINAE: ERYNNINI)—ONE OF THEM, *P. MELICERTES* OF EVANS, WAS MENTIONED BUT NOT NAMED BY GODMAN AND SALVIN

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Abstract – When primary type specimens are not available for analysis by a reviser, mistakes may occur. Examination of the *Potamanaxas melicertes* (Godman & Salvin, 1895) holotype and the original description suggest that the species W. H. Evans mistook for it is new, described here from Colombia (type locality) and Ecuador as *P. tschotky*, **sp. nov.** It differs from *P. melicertes* in the shape and extent of discal white band on both wings as well as the details of its submarginal pattern. This species (from Ecuador) was apparently mentioned but not named by Godman and Salvin just prior to the description of *P. melicertes* (from Panama). Yet an additional new species with restricted white band on the hindwing, described here as *P. okroogly*, **sp. nov.**, is found in Peru (type locality) and Bolivia. Its male genitalia imply close relationship with *P. thoria* (Hewitson, 1870). Primary types of relevant taxa are illustrated.

Resumen – Cuando espécimenes de tipo primario no están disponibles para ser analizados por un revisor, pueden ocurrir errores. La inspección del holotipo de *Potamanaxas melicertes* (Godman y Salvin, 1895) y su descripción original sugiere que la especie con la que W. H. Evans la confundió es nueva, se describe aquí desde Colombia (tipo de localidad) y Ecuador como *P. tschotky*, **sp. nov.** Se diferencia de *P. melicertes* tanto en la forma y la extensión de la banda blanca discal en ambas alas como en los detalles del patrón submarginal. Esta especie (de Ecuador), según parece, fue mencionada (pero no nombrada) por Godman y Salvin justo antes de su descripción de *P. melicertes* (de Panamá). Una otra especie nueva con una banda blanca restringida en las alas posteriores, descrito aquí como *P. okroogly*, **sp. nov.**, se halla en Perú (tipo de localidad) y Bolivia. Su genitales masculinos implican estrecha relación con *P. thoria* (Hewitson, 1870). Especímenes de tipo primario de taxones relevantes son ilustrados.

Key words: taxonomy, skipper butterfly, Neotropics, cryptic species, genitalia.

The monumental world-wide treatment of all known Hesperiidae taxa by Evans (Evans 1937, 1949, 1951, 1952, 1953, 1955) culminating his lifelong research and accomplished within a remarkably short time-frame remains the primary and unsurpassed reference for all future studies of the group. To complete his works in time, Evans did not have an opportunity to seriously study specimens outside the British Museum, and as the titles of his books indicate, the work largely relied on the vast and almost comprehensive holdings in what is known today as the Natural History Museum, London (BMNH). Therefore, it is not surprising that many of Evans's decisions about the taxa either absent in the BMNH collection, or whose primary types are not in BMNH have been proven incorrect. These inevitable mistakes are being rectified with time. While examples of such corrections are many, two will suffice. In both examples, primary type specimens are in the National Museum of Natural History, Smithsonian Institution, Washington, DC (USNM) and apparently were not seen by Evans. Not knowing the type of *Lychnucoides* [sic!] *frappenda* Dyar, 1920, Evans (1955: 253) left this species in the genus *Lychnuchoides* Godman, 1901, a default decision that Burns (1982) corrected to *Atrytonopsis frappenda*. With an "identity uncertain" comment, Evans (1953: 66) placed *Ebrietas lachesis* Dyar, 1918 as a subspecies of *Morvina falisca* (Hewitson, 1878), which Mielke (2004, 2005) and Burns & Janzen (2005) finally corrected to *Eracon lachesis*, a species-level taxon placed in *Eracon* Godman & Salvin, 1894. When the type specimens were not in BMNH, Evans mostly depended on species descriptions and illustrations for identification. Analysis of drawings is not a proper substitute for inspection of primary types (Mielke & Warren 2004); even very good illustrations, such as those from Godman and Salvin (1879–1901), do not show all the subtle details needed to render optimal taxonomic decisions.

In his key, Evans (1953: 138) defined one group of *Potamanaxas* Lindsey, 1925 species by the absence of a pale spot distad of the discal pale band in cell M_3-Cu_1 (=space 3 of Evans). This group was further divided into two subgroups based on markings in postdiscal area of dorsal forewing, i.e. pattern in cells distad of the discal pale band: species with vague to absent paler brown spots and species with paler streaks between darker vein. The streaks are defined as spindle-shaped narrow and long patches of paler scales in cells (one patch per cell) particularly around the apex (Plate XII, Fig. 13). These patches have diffuse boundaries, and around the edges they are not well separated from darker background. The spots are defined as rounder and not as long patches of paler scales. Some apical spots may be elongated (e. g. Plate XI, Figs. 4 & 6), but they are never as long as streaks (e. g. Plate XII, Fig. 14) and have more distinct and rounded basal and distal boundaries.

The first subgroup is exemplified by *P. thoria* (Hewitson, 1870) (male syntype in BMNH, Plate XIII, Figs. 15–16; Plate XIV, Fig. 37) with its subjective synonym (Mielke 2005) *P. pammenes* (Godman & Salvin, 1895). The sole *P. pammenes* syntype, female curated in BMNH (Plate XIII, Figs. 17–18), a specimen that according to its label is figured to supplement the original description (Godman & Salvin 1895: 392, Pl. 86, Figs. 2–3, here reproduced as Plate XIII, Figs. 19–20), lacks the distal half of abdomen. A female specimen with wing pattern similar to the syntype is illustrated here (Plate XIII, Figs. 21–22). While it is attractive, as Evans did, to view *P. pammenes* (described from Nicaragua) as a female of *P. thoria* (described from Ecuador) (Evans 1953: 139), it is possible that these names refer to different species and future studies are needed.

The second subgroup includes *Potamanaxas hirta* (Weeks, 1901) as the oldest taxon. Evans described *P. paphos* (Plate XII, Figs. 13–14; Plate XIV, Fig. 34) as a subspecies of *P. hirta* and the species status for *P. paphos* was proposed by Grishin (2013b). Treating related taxa, which he considered allopatric, as subspecies despite significant differences in male genitalia was characteristic of Evans, and is seen in other groups of *Potamanaxas* as well (Grishin 2013a).

Not having an opportunity to study the holotype of *P. melicertes* (Godman & Salvin, 1895) in the collection of Museum für Naturkunde, Berlin, Germany (ZMHB), Evans had to rely on its description (Plate XII, Fig. 12) and illustration (Plate XII, Fig. 11). Neither indicated any streaks in postdiscal area of dorsal forewing. Therefore, Evans placed *P. melicertes* in the first subgroup, together with *P. thoria*. However, inspection of *P. melicertes* holotype (Plate XII, Figs. 9–10) reveals the presence of such streaks, although not as prominent as in the *P. paphos* [holo]type (per Mielke 2005: 660) (Plate XII, Figs. 13–14), but nevertheless noticeable, particularly near the apex in cells between veins R_2 and M_2. Moreover, the spot-pattern in this area of the wing, while obvious in *P. thoria* and *P. pammenes* syntypes (Plate XIII, Figs. 15, 17) is clearly lacking in *P. melicertes* holotype (Plate XII, Fig. 9). Evans's visionary arrangement of species in his keys that mostly matches our current view of their phylogeny and his remarkable ability to suggest synapomorphic characters for species groups should not be underestimated. My preliminary analysis of *Potamanaxas* specimens agrees with Evans's assessment about the phylogenetic importance

of the streak vs. spot patterns. Thus, *P. melicertes* belongs in the subgroup with streaks, together with *P. paphos*, rather than in the subgroup with spots, with *P. thoria*.

The two males (Plate XI, Figs. 3–6) and the three females in the BMNH collection listed by Evans under *P. melicertes* (Evans, 1953: 139) have been misidentified. In addition to the presence of spots and the absence of streaks, these specimens don't even match some characters listed in the original description of *P. melicertes* (Plate XII, Fig. 12), obvious from the illustration (Plate XII, Fig. 11). Being translated from Latin, the description states: "the band on wings extending up to forewing costa" (Godman & Salvin 1895: 393). Indeed, in the *P. melicertes* holotype, this band almost reaches the costa, but in male specimens considered to be *P. melicertes* by Evans, the band is widely separated from the costa by at least half of the costal cell width on both dorsal and ventral sides of the forewing. Additionally, these two male specimens don't match any other *Potamanaxas* species described to date (photographs in Warren *et al.* 2013) and therefore are a new species to be described below.

MATERIALS AND METHODS

Potamanaxas specimens were examined in the following collections: McGuire Center for Lepidoptera and Biodiversity, Gainesville, FL (MGCL); American Museum of Natural History, New York, NY (AMNH); Natural History Museum, London, UK (BMNH); National Museum of Natural History, Smithsonian Institution, Washington, DC, USA (USNM); Museum für Naturkunde, Berlin, Germany (ZMHB); Carnegie Museum of Natural History, Pittsburgh, PA (CMNH); Academy of Natural Sciences Philadelphia Collection, Philadelphia, PA (ANSP); Senckenberg Museum für Tierkunde, Dresden, Germany (MTD); Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany (DEI); and Texas A&M University Insect Collection, College Station, TX (TAMU). Standard entomological techniques were used for dissection (Robbins 1991), i.e. adult abdomen was broken off, soaked for 40 minutes (or until ready) in 10% KOH at 60ºC (or overnight at room temperature), dissected and subsequently stored in a small glycerol-filled vial on the pin under the specimen. Genitalic and wing venation terminology follows Steinhauser (1981). Length measurements are in metric units and were made from photographs of specimens taken with a scale and magnified on a computer screen. Photographs of specimens and dry genitalia were taken by the author with Nikon D200 or D800 cameras through a 105 mm f/2.8G AF-S VR Micro-Nikkor lens; dissected genitalia were photographed in glycerol with Nikon D200 camera without lens through microscopes. Images were assembled and edited in Photoshop CS5.1. Dissected genitalia photographs were taken in several focus planes and stacked in Photoshop to increase apparent depth of field.

RESULTS AND DISCUSSION

Godman & Salvin (1895: 392) write: "A species closely allied to *P. pammenes* occurs in Ecuador, differing in having the white band of the secondaries more restricted and not continued to the inner margin". However, they did not name this species, proceeding to describe *P. melicertes* (from Panama) in the next paragraph. It is possible that the specimen from Ecuador shown in Plate XI, Figs. 3–4, which bears the Godman & Salvin collection label, might have been the one they had in mind. Close to 120 years after its mention, this species, which was misidentified by Evans (who didn't examine the holotype in ZMHB collection) as "*P. melicertes*" (Evans 1953: 139) is named herein.

Potamanaxas tschotky Grishin, **new species**
(Plate XI, Figs. 1–8; Plate XIV, Figs. 31–33)

Description.– *Male* (Plate XI, Figs. 1–8): left forewing length = 16 mm in holotype. Forewing twice as long as wide, rounded at apex and tornus, costa convex at the base and apex, slightly concave mediad, outer margin convex. Dorsal forewing dark, chocolate-brown; cream discal band from the middle of costal cell or Sc vein to inner wing margin, narrowing towards and rounded near costa, widening to a quarter of cell length in Cu_2-2A cell and slightly narrower near inner margin; band entire, not separated into spots by veins except in some specimens near costa and band may be constricted along 2A vein, edges of the band mostly evenly curved, only slightly irregular; band yellower towards inner margin, and along veins; some cream scales on the costa anteriad of the band; faint subapical (mostly in three cells between R_3 and M_1 veins) and postdiscal (mostly in two cells between M_3 and Cu_2 veins) slate spots composed of a few separate scales on evenly curved, slightly paler than background, postdiscal brown band; similarly colored brown submarginal band. Ventral forewing similar to dorsal in color and pattern, but overscaled with slate scales at the base, and discal band barely wider (mostly distad), particularly in 2A cell, where edges are not well-defined and overscaled with slate, subapical pale spots more conspicuous. Hindwing nearly triangular, slightly longer than wide, rounded at apex and tornus, outer margin weakly convex. Dorsal hindwing dark, chocolate-brown; mostly white discal band a third of the wing width from costa to vein 1A, band entire, not separated into spots by veins, edges of the band evenly curved, very sharply defined, band slightly constricted in Sc+R_1-Rs cell, evenly oval posteriad, yellower near costa and along veins, wing overscaled with hair-like slate scales in discal area. Ventral hindwing similar to dorsal, but mostly slate basad of the discal band and posteriad to anal margin, the band fused with slate area in cell 1A-2A, posteriad Cu_2 vein slate scales invading only slightly distad of the distal band margin, up to about a third of brown marginal area, not reaching the wing outer margin. Fringes brown, the same color as wing margins above and below everywhere, except where the pale band reaches the inner margin of forewing and costa of hindwing, and along anal margin ventrad fringes cream-white and slate. Head and palpi chocolate-brown with small white spots above, between and behind the eyes and dispersed slate scales on palpi, slate with brown scales below, cheeks cream, antennae brown with some slate scales at joints beneath and anteriad, more prominent near the base, club pale-brown to dark-yellowish beneath, a very prominent cream spot anteriad at the base of the club, spot about a third of the club in length. Thorax and abdomen chocolate-brown above, slate below, pectus cream-yellow; legs with brown, slate and cream-yellow scales, largely brown dorsally, mostly cream-yellow ventrally, forelegs with the distal half of tibia mostly white and with a prominent white ring near the distal end of tarsus (3rd and 4th tarsomeres). *Male genitalia* (Plate IV, Figs. 31–33): tufts of hair-like scales near the bases of valvae dark-brown in distal half and some on the exterior, pale yellow-brown (wheat color) at the bases (best seen when expanded); tegumen without prominent dorsal projection; uncus divided, arms claw-like, typical for the genus; gnathos divided, set apart from the uncus by about its length, spiculose on its surfaces caudad; valva rounded, "height" (dorso-ventral) about half of its length (anterior-posterior) from the base to beginning of cucullus, costa-ampulla almost straight, evenly curved, cucullus short, as long as "high", weakly unturned towards its blunt caudal end where it appears truncated and somewhat rounded to the obtuse and wide point, serrated, more sclerotized and angled dorsally, rounder ventrally, at the base near ampulla on the dorsal margin with a small thick thorn-shaped tooth directed anteriordorsad; sacculus with a long (about uncus arm in length) thumb-shaped style at the base.

Female: unknown or unrecognized. The three female specimens in BMNH identified by Evans as *P. melicertes* differ in details from this new species, e. g. the forewing discal band comes close to the costa and hindwing discal band is more elongated and not spot-like, with its distal edge being more irregular. It does not seem likely that these female belong to either taxon.

Types.– Holotype male, with the following four rectangular labels: white, printed and handprinted: || COLOMBIA: Valle del Cauca; | Rio Anchicayá 1150 m. | 18 / I / 1975 | No. CH-473 Coll. | by S. R. y L. M. Steinhauser || ; white, handprinted and printed: || Potamanaxas | melicertes G. & S. | ♂ | Det: S. R. Steinhauser || ; white, printed || A. C. Allyn | Acc. 1975-17 || ; red, printed: || HOLOTYPE ♂ | Potamanaxas | tschotky Grishin || (Plate XI, Figs. 1–2). Two paratypes, males, from Ecuador (no specific locality given), specimen numbers BMNH(E)#1054120 (Plate XI, Figs. 3–4) and BMNH(E)#1054138 (Plate XI, Figs. 5–6). The holotype is in the collection of the McGuire Center for Lepidoptera and Biodiversity, Florida Museum of Natural History, Gainesville, FL. Both paratypes are in the collection of the Natural History Museum, London, UK.

Type locality.– Colombia: Valle del Cauca, Rio Anchicayá, elevation 1150 m. This locality is apparently near Cali and is the same as the type locality of *Urbanus dubius* Steinhauser, 1981 and *Ouleus candidus* Steinhauser, 1989. Types for both of these species were collected there the same year, but approximately a month later (Steinhauser 1981 & 1989).

Etymology.– "tschotky" (чёткий, pronounced similar to "chot-key" with the stress on the first syllable, i.e. "cho"[as in chop]-"t"-"ki"[as in kid]-"y"[first

sound in yes], or /ˈt͡ɕotkʲɪj/ in International Phonetic Alphabet) is a Russian word for crisp or clear-cut and refers to sharply defined edges of the white patch on dorsal hindwing of this species. The spelling of the name is chosen to increase the chances it would be pronounced correctly in different languages. The name is a non-latinized adjective.

Distribution.– The species is known from western Colombia and Ecuador. In addition to three type specimens, photographs of several live individuals of this species from Colombia: Chocó department, Las Tangaras Nature Reserve, 4- and 5-Oct-2012 (by Kim Garwood, Plate XI, Figs. 7–8) and Antioquia department, near Medellin, El Viao, Santuario, 1900 m, 25-Jun-2010 (by Juan Guillermo) were examined. These individuals were not collected, therefore they are excluded from the type series.

Variation. - The forewing cream band starts either at Sc or from the middle of costal cell; it may be separated by veins into spots anteriad of discal cell and constricted at vein 2A. However, the forewing band is not seen to reach costa and is always separated from it by at least half of the costal cell width, which is chocolate-brown. The hindwing white band varies in shape somewhat; it can be narrower (more band-like) or oval and patch-like, and is variously constricted between and at Sc+R_1 and Rs veins. Distal margin of this hindwing patch may be very even and smooth, or slightly scalloped at veins but not as scalloped as in *P. paphos* (Plate XII, Fig. 13). However, the dorsal hindwing white patch is always somewhat rounded and its edges are sharply defined, and the patch is not observed to cross the vein 1A on dorsal side, thus the area of the wing between 1A and anal margin is monotone chocolate-brown.

Diagnosis: This new species belongs to *Potamanaxas* because it possesses the characters listed for the genus by Evans (1953), including a tuft of hair-like scales at the base of each valva (Plate XIV, Figs. 31, 32a), which I consider to be synapomorphic for the genus. Using Evans's (1953) *Potamanaxas* key, the new species keys out to *P. melicertes*, for which Evans mistook it. The holotype of *P. melicertes* (Plate XII, Figs. 9–10), on the contrary, keys out to *P. hirta paphos* Evans 1953 (Plate XII, Fig. 13–14), because its dorsal forewing "discal area [is] marked with pale streaks between the dark veins" and its ventral hindwing "dark border ... [is] narrow followed by small whitish spots before termen" (Evans 1953: 139, step 6a) and its dorsal forewing does not have "some faint brown spots on the discal area between the central band and the termen, but not in the form of streaks between the dark veins" (Evans 1953: 139, step 3c). However, this latter step 3c characterizes the new species, which also does not have "whitish spots before termen" on ventral hindwing. According to Evans, *P. tschotky* **n. sp.** (i.e. "melicertes" *sensu* Evans) (Plate XI, Figs. 1–8; Plate XIV, Figs. 31–33) differs from *P. thoria* (Plate XIII, Figs. 15–22; Plate XIV, Figs. 37–38) in that its dorsal hindwing discal "band ends sharply mid space 1c [=at 1A vein of Steinhauser (1981)]" and in having "inner face of cuiller [=cucullus of Steinhauser (1981)] pointed at each end" (Evans 1953: 139, step 5). In *P. thoria*, dorsal hindwing "band [is] continued by white scaling from mid space 1c to tornus" and "inner face of cuiller [is] straight and serrate" (Evans 1953: 139, step 4).

More precisely, *P. tschotky* **n. sp.** is distinguished from all other *Potamanaxas* species by its short (not longer than high at the base), blunt, truncated-looking and slightly upturned cucullus in male genitalia (Plate XIV, Figs. 31–33). In facies (Plate XI, Figs. 1–8), it is uniquely characterized by dorsally chocolate-brown wings with cream-white discal band that **(1)** has sharply defined evenly curved edges; **(2)** narrows to a rounded point towards the forewing costa, not reaching it and terminating before or at the middle of costal cell; **(3)** ends abruptly at 1A vein on hindwing, and is shaped more like an oval dorsal hindwing patch rather than a band. In addition, its males have **(4)** a contrasting white spot at the front of antennal club and **(5)** a white ring on foreleg tarsus, both characters easily noticeable in live individuals (Plate XI, Figs. 7–8).

P. tschotky **n. sp.** seems to be closest to the following three species: *P. thoria*, *P. melicertes* and *P. paphos*. It differs from *P. melicertes* (Plate XII, Figs. 9–12) and *P. paphos* (Plate XII, Figs. 13–14) in having: **(a)** postdiscal faint roundish spots on the forewing, rather than streaks between veins; **(b)** forewing band not reaching costa and separated from it by at least half of the brown costal cell; vs. either fusing with costa on ventral surface or coming very close it; **(c)** dorsal hindwing white patch not extending beyond 1A vein, sharp edges of the patch, its distal margin evenly curved, not scalloped (or slightly scalloped) at veins; vs. white patch "leaking" posteriad of vein 1A, edges more diffuse and its distal margin scalloped at veins; **(d)** ventral hindwing with broader brown margin that does not contain submarginal pale spots and slate scales near tornus (in cells between vein 1A and anal margin) that do not reach outer margin and are separated from it by a wide brown area; vs. narrower brown margin that has paler roundish marginal spots (at least near the apex), and slate scales between vein 1A and anal margin which almost reach outer margin or are separated from it by a narrow belt of brown scales (compare Plate XI, Fig. 2; Plate XII, Figs. 10 & 14).

P. tschotky **n. sp.** differs from *P. thoria* (Plate XIII, Figs. 15–22; Plate XIV, Figs. 37–38) in having: **(a)** dorsal hindwing sharp-edged white patch not extending beyond 1A vein; vs. a band that narrows all the way to tornus, and with more diffuse edges; **(b)** cucullus of male genitalia short and blunt, not longer than high and much shorter than the body of valva basad of cucullus; vs. very long cucullus, at least as long as the rest of the valva; **(c)** well-developed thumb-like basal process off sacculus in genitalic valva; vs. process lacking or vestigial; **(d)** no prominent dorsal bulge on tegumen at the base of uncus (compare Plate XIV, Figs 32c and 38 for the last three characters).

In an attempt to understand the confusion between *P. melicertes* and *P. tschotky* **n. sp.**, and comparing these species to *P. paphos* and to *P. thoria* with its subjective synonym *P. pammenes*, I found four specimens scattered in three collections that, while being quite similar to each other, did not visually match any of known taxa. Further and more careful analysis suggested that these specimens may represent yet another new species, which is very close to *P. thoria* on the basis of male genitalia. This species is named herein.

Potamanaxas okroogly Grishin, **new species**
(Plate XIII, Figs. 23–30; Plate XIV, Figs. 35–36)

Description.– *Male* (Plate XIII, Figs. 23–30): right forewing length = 14 mm in holotype. Forewing twice as long as wide, rounded at apex and tornus, costa convex at the base and apex, straighter mediad, outer margin convex. Dorsal forewing dark, chocolate-brown; cream discal band from near costa to inner wing margin, separated from costa by a narrow belt of chocolate-brown scales, slightly narrowing towards costa, widening to less than a half of cell length in Cu_1-Cu_2 cell (reaching the base of Cu_1 vein and only little distad of Cu_2 vein origin), then narrowing towards inner margin; band entire, not separated into spots by veins; basal band margin close to straight, rounded at wing both margins; distal band margin concave around Sc and R_1 veins, bulging outwards towards Cu_2 vein and convex to straight towards 2A vein; band mostly uniform in color, slightly yellower along veins; some cream scales on the costa anteriad of the band; very faint subapical (mostly in three cells between R_3 and M_1 veins) and postdiscal (mostly in two cells between M_3 and Cu_2 veins) cream spots composed of a few separate scales on evenly curved, very faint postdiscal brown band; also, a scarcely defined and similarly colored brown submarginal band. Ventral forewing similar to dorsal in color and pattern, but overscaled with slate scales at the base, and discal band barely wider (mostly distad), particularly in mostly slate basad 2A cell, band edges not well-defined in 2A cell and overscaled with slate; band sometimes reaching costa, or separated from cream-colored costal area by very narrow line of pale brown scales. Hindwing nearly triangular, slightly longer than wide, rounded at apex and tornus, somewhat concave around M_2 and Cu_2 veins and convex between these veins. Dorsal hindwing dark, chocolate-brown; a mostly white discal band a quarter to a third of the wing width runs from costa to vein 1A, sometimes invading into 1A-2A cell, but clearly constricted and narrower at 1A vein; band entire, not separated into spots by veins, margins of the band somewhat irregular, distal margin slightly diffuse with brown scales invading the band; wing overscaled with hair-like slate-violet scales along the band towards tornus. Ventral hindwing similar to dorsal, but the white band is broader distad, the wing mostly slate basad of the discal band and posteriad to anal margin, the band fused with slate area in cell 1A-2A, posteriad Cu_2 vein slate scales invading only very slightly distad of the distal band margin, up to about a quarter of brown marginal area, not reaching the wing outer margin; sometimes a submarginal row of pale-brown spots, one in each cell. Fringes brown, the same color as wing margins above and below everywhere, except where the pale band reaches the inner margin of forewing and costa of hindwing, and along anal margin ventrad fringes cream-white and slate. Head and palpi chocolate-brown with small white spots above, between and behind the eyes and dispersed slate scales on palpi and collar, slate with brown scales below, cheeks cream, antennae brown with some slate scales at joints anteriad, a very prominent cream spot anteriad at the base of the club, spot more than half of the club length. Thorax and abdomen chocolate-brown above, slate below; legs with brown, slate and cream-yellow scales, largely brown dorsally, mostly cream ventrally. *Male genitalia* (Plate XIV, Figs. 35–36): very similar to *P. thoria* (Plate XIV, Figs. 37–38); tegumen with a dorsal hump-like projection in the middle; uncus divided, arms rather straight; gnathos divided, set apart from the uncus by about its length, spiculose

on its surfaces caudad; penis as long as tegumen with uncus, no cornuti; valva elongated, "height" (dorso-ventral) about half of its length (anterior-posterior) from the base to beginning of cucullus, costa-ampulla angled, almost triangular in lateral view, cucullus twice as long as "high", almost straight, wedge-shaped, weakly unturned towards the caudal end and bent inwards narrowing to a sharp point, cucullus dorsal margin serrated with small irregular teeth, at the base near ampulla with a Tasajillo shoot-shaped projection directed anteriordorsad, rounded at the tip and armed with small teeth; sacculus without a style-like projection at the base.

Female: unknown or unrecognized. The three abovementioned female specimens in BMNH (misidentified by Evans as *P. melicertes*) from Ecuador: Esmeraldas Prov., San Lorenzo, San Javier de Cachabí, near 1.07° -78.78°, about 50 m, appear similar in wing patterns to this species. However, the locality and elevation for them is different, so more confident assessment awaits discovery of Ecuadorian males or DNA analysis on these specimens.

Types.– Holotype male, with the following three labels: rectangular, white (deteriorated to beige rose color), written: || Marcapata || ; square, white, printed near the top: || G967 || ; rectangular, red, printed: || HOLOTYPE ♂ | Potamanaxas | okroogly Grishin || (Plate XIII, Figs. 23–24). Genitalia of the holotype on a slide with white red-framed label written in black ink and glued to the slide on the right: || G967 | Potamanaxas | pammenes | Godman + | Salvin | Peru. || (Plate XIV, Fig. 35). Apparently, the holotype was collected in Peru (southeast): Cusco Region, Quispicanchi Province. Three paratypes, males: Peru (central): Junín Region, Chanchamayo Province, La Merced, 760-1060 m, {Oct, Nov}-1919, leg. C. Watkins, specimen number BMNH(E)#1054137 (Plate XIII, Figs. 29–30); Peru (southeast): Puno Region, Carabaya Province, Chaquimayo [approx. 13° 25' S 70° 27' W, per Emerson & Banks (1965)], 760 m, Apr-1912, leg. H. & C. Watkins, specimen number BMNH(E)#1054118 (Plate XIII, Figs. 25–26); Bolivia: Yungas de La Paz, 1000 m, 1902 (Plate XIII, Figs. 27–28). Bolivian paratype lacks abdomen and carries determination label "Potamanax near melicertus [sic!] ?" by Schaus. Paratype BMNH(E)#1054137 lacks caudal end of the abdomen with genitalia. The holotype is in the collection of the American Museum of Natural History, New York, NY. Two paratypes from Peru are in the collection of the Natural History Museum, London, UK, and the paratype from Bolivia is in the collection of the National Museum of Natural History, Smithsonian Institution, Washington, DC.

Type locality.– Peru: Cusco Region, Quispicanchi Province, Marcapata.

Etymology.– "okroogly" (округлый, pronounced similar to "accrue-glee" with the stress on the second syllable of the word ('crue) and hard "l", which makes the word phonetically similar to "ack-roog-weigh", i.e. "acr"[as in across]-"oogl"-[as in google]-"li"[as in lip or limb, not leap] - "y"[first sound in yes], or /ɐˈkrugɬij / in International Phonetic Alphabet) is a Russian word for "roundish" and refers to the oblong shape of the dorsal hindwing white patch in this species, in contrast to this patch being extended to a band and almost reaching anal wing margin in the closely related *P. thoria*. To emphasize the roundness, the name is spelled with three "o" letters. The name is a non-latinized adjective.

Distribution and phenology.– This species is recorded from central and southeastern Peru and western Bolivia at elevation 750-1000 m, collected in April and October or November.

Variation.– Exact contour of the forewing discal cream band varies somewhat, in particular near wing margins defining differences in band width; however the band is only slightly narrower at the costa than at the inner margin and is as wide as in *P. tschotky* **n. sp.** and wider than in *P. thoria*. Dorsal hindwing discal white band varies in the extent of "leaking" over 1A vein into 1A-2A cell, but the band does not fully reach 3A vein—only hair-like slate-violet scales are present near the anal fold. Expression of paler brown submarginal spots is variable on the ventral hindwing.

Diagnosis: This new species belongs to *Potamanaxas* because it possesses the characters of the genus given by Evans (1953) and is very similar to *P. thoria* in male genitalia (Plate XIV, Figs. 35–36 vs. 37–38). Using Evans's (1953) *Potamanaxas* key, it keys out to "*P. melicertes*", which, as explained above, is actually *P. tschotky* **n. sp.**, and not *P. melicertes* described by Godman & Salvin (1895: 393) (Plate XII, Figs. 9–12). For the same reasons given above in the first paragraph of *P. tschotky* **n. sp.** diagnosis, *P. okroogly* **n. sp.** is distinct from either *P. melicertes*, or *P. paphos*. The characters distinguishing them are the same as those listed in the diagnosis to distinguish *P. tschotky* **n. sp.**, except that in *P. okroogly* **n. sp.** dorsal hindwing band reaches or almost reaches costa (i.e. character **(b)** does not hold), dorsal hindwing patch may extend narrowly posteriad of 1A vein and ventral hindwing brown margin may contain pale spots.

P. okroogly **n. sp.** (Plate XIII, Figs. 23–30; Plate XIV, Figs. 35–36) differs from *P. tschotky* **n. sp.** (Plate XI, Figs. 1–8; Plate XIV, Figs. 31–33) in having: **(a)** dorsal hindwing white band with more diffuse edges and sometimes extending slightly posteriad of 1A vein, and a belt of slate-violate hair-like scales from the posterior end of the band to tornus; vs. sharp-edged white patch not extending beyond 1A vein and no clear belt of slate hair-like scales all the way to the tornus; **(b)** forewing cream band either fusing with costa on ventral surface or coming very close it; vs. band not reaching costa and separated from it by at least half of the brown costal cell; **(c)** very long cucullus of male genitalia, at least as long as the rest of the valva; vs. cucullus short and blunt, not longer than high and much shorter than the body of valva basad of cucullus; **(d)** process off sacculus in genitalic valva lacking or vestigial; vs. well-developed and thumb-like; **(e)** dorsal bulge on tegumen at the base of uncus (compare Plate XIV, Figs 32c and 35c for the last three characters).

P. okroogly **n. sp.** differs from its apparent sister species *P. thoria* (Plate XIII, Figs. 15–22; Plate XIV, Figs. 37–38) in having: **(a)** dorsal hindwing white band not reaching the tornus and barely extending past 1A vein; vs. a band that narrows all the way to tornus; **(b)** dorsal forewing cream band broader (i.e. reaching and past the origin of Cu_2 vein), either fusing with costa on ventral surface or coming very close to it; vs. band narrower (i.e. ends basad the origin of Cu_2 vein), further separated from the costa by brown scales; **(c)** dorsal bulge on tegumen at the base of uncus smaller, not knob-like; **(d)** cucullus shorter and broader, serrations along its dorsal margin finer, especially near the base (compare Plate XIV, Figs 35–36 vs. 37–38 for the last two characters). Since two out of four *P. okroogly* **n. sp.** type series specimens lacked abdomens, variation in genitalia was not explored and further analysis may reveal exceptions to the genitalic characters listed above and may add additional more reliable characters.

ACKNOWLEDGEMENTS

I am grateful to Andrei Sourakov and Andrew D. Warren (McGuire Center for Lepidoptera and Biodiversity, Gainesville, FL), Andrew Johnston, David A. Grimaldi and Suzanne Rab Green (American Museum of Natural History, New York, NY), Blanca Huertas, John Chainey and David Lees (Natural History Museum, London, UK), Robert K. Robbins, John M. Burns and Brian Harris (National Museum of Natural History, Smithsonian Institution, Washington DC), Wolfram Mey (Museum für Naturkunde, Berlin, Germany), Matthias Nuss (Museum für Tierkunde, Dresden, Germany), Christian Kutzscher (Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany), John Rawlins (Carnegie Museum of Natural History, Pittsburgh, PA), Jason Weintraub (Academy of Natural Sciences Philadelphia Collection, Philadelphia, PA), Edward G. Riley (Texas A&M University Insect Collection, College Station, TX) for granting access to the collections under their care and stimulating discussions; to Kim Garwood for the photographs of live individuals and discussions; to Bernard Hermier for the images of *P. melicertes* holotype, many enlightening discussions, critical review of the manuscript and numerous very helpful suggestions; to Brian Banker for much needed edits to the manuscript and corrections.

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TROPICAL LEPIDOPTERA
Research
VOLUME 23, NUMBER 2, SUPPLEMENT 1

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ASSOCIATION FOR TROPICAL LEPIDOPTERA
Founded 1989
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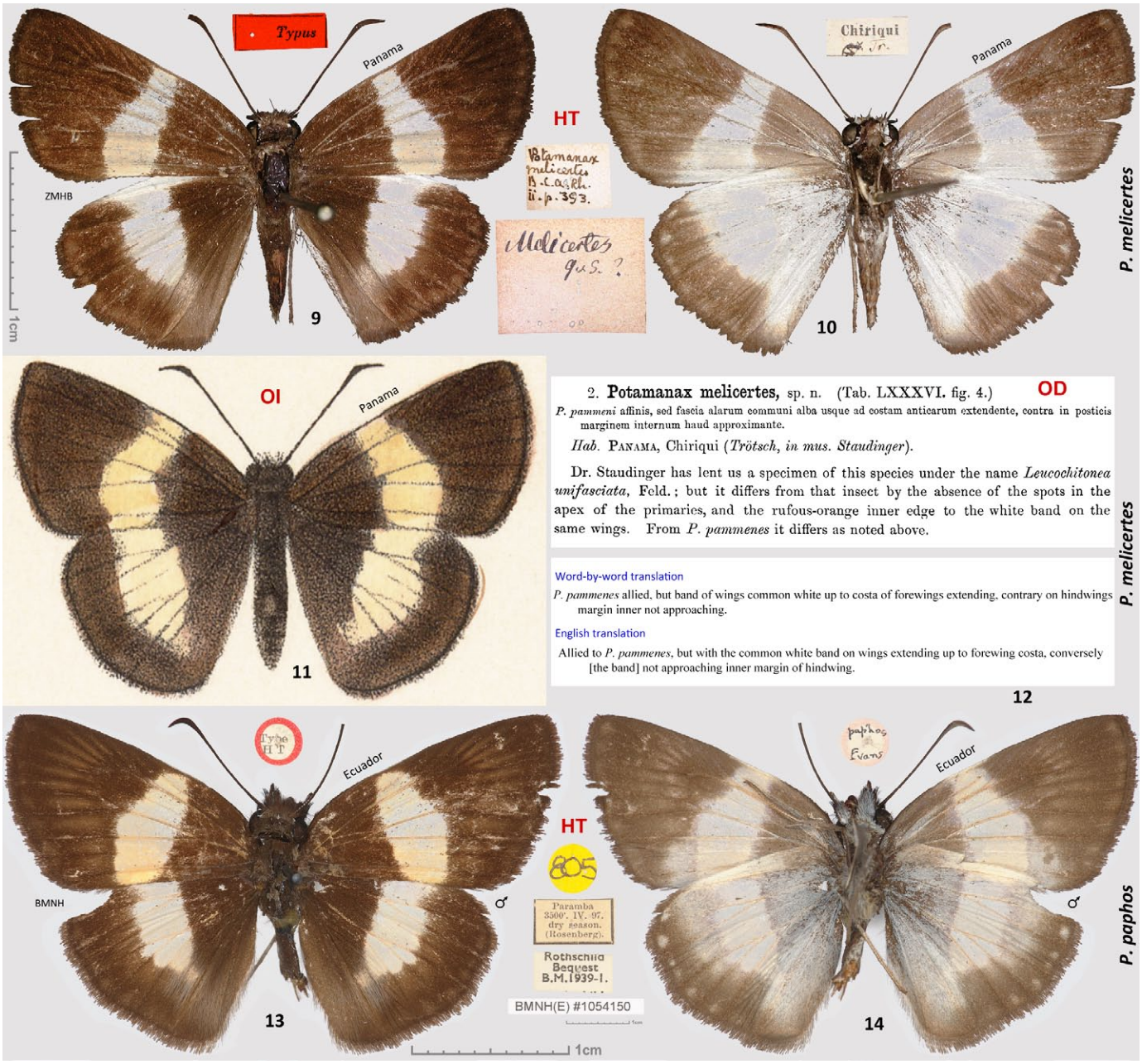
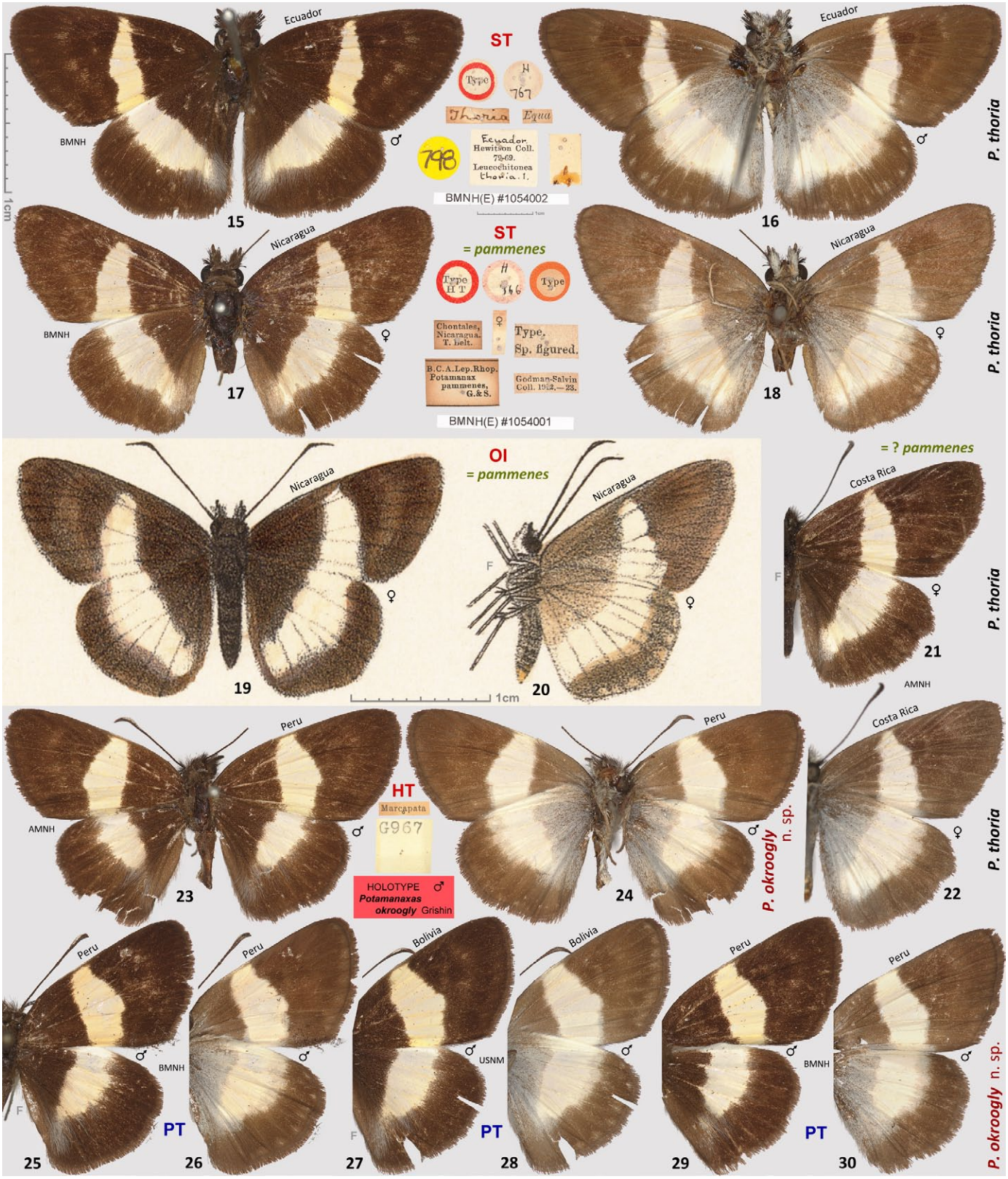
FRONT COVER
Top left: *Potamanaxas* cf. *serp* **n. sp.** and *bana*, Colombia: Antioquia department, near Medellin, San Félix, 2600 m, 9-Dec-2012, photographed by Juan Guillermo Jaramillo Velasquez (see pages 6–9). Other photographs are by Kim Garwood. **Top right:** *Potamanaxas* cf. *paphos*, Colombia: Antioquia department, Anorí, Arrierito Antioqueño Reserve, 1500 m, 19-Oct-2012. **Bottom left:** *P. tschotky* **n. sp.** Colombia: Chocó department, Las Tangaras Nature Reserve, 5-Oct-2012 (see pages 13–17); **Bottom right:** *P.* cf. *zagadka* **n. sp.** Colombia: West Andes, Risaralda department, Pueblo Rico, road to Montezuma Peak, 1500 m, 1-Sep- 2012 (see pages 10–12). More research is needed to clarify taxonomic identity of some of these species and to learn how to identify them in the field.

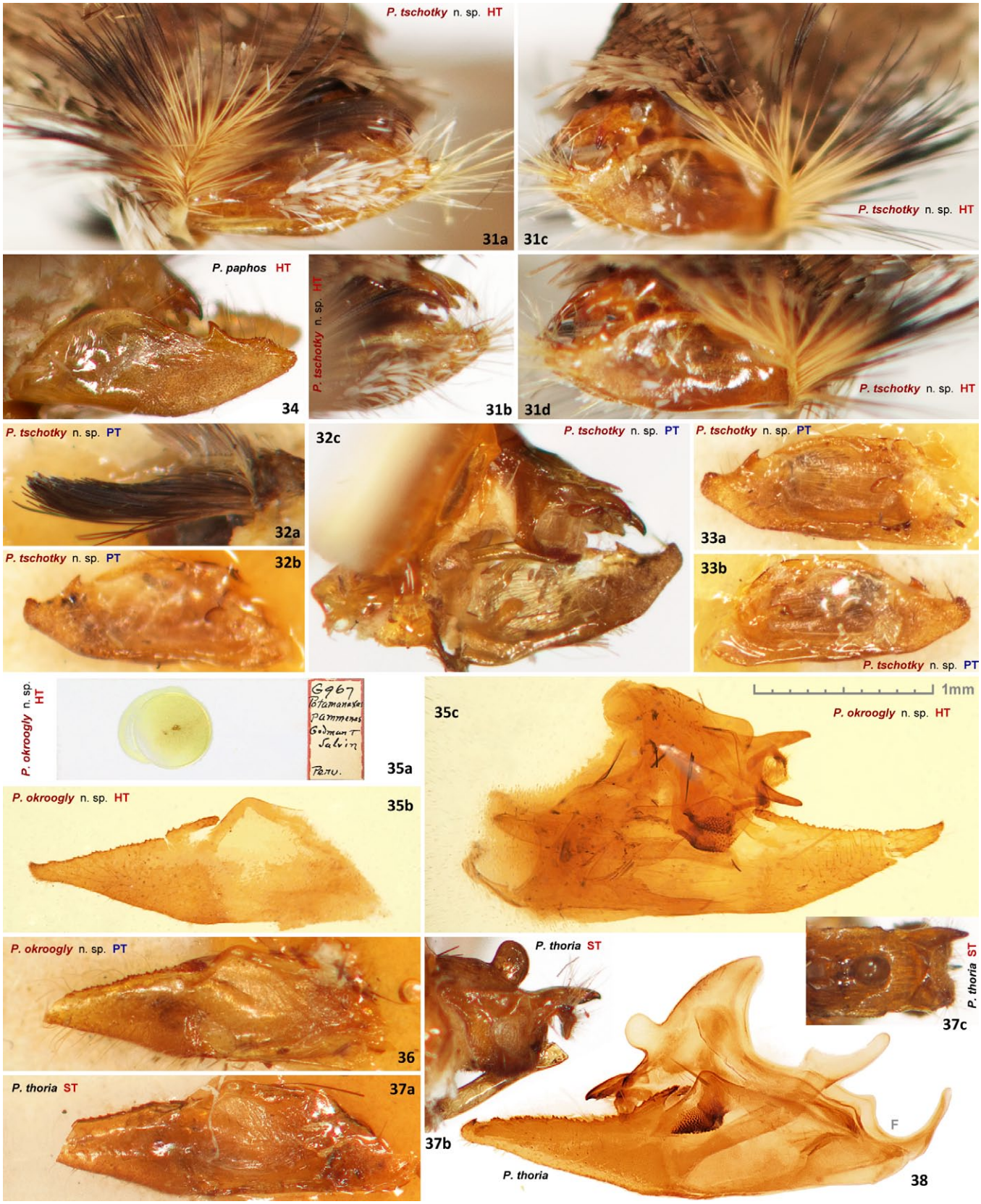
Figs. 1–8. ***Potamanaxas tschotky*** **n. sp. males.** **1–2**. - holotype, Colombia: Valle del Cauca, Rio Anchicayá, elevation 1150 m, 18-Jan-1975, No. CH-473, leg. S. R. & L. M. Steinhauser, A. C. Allyn Acc. 1975-17 [MGCL] (genitalia *in situ* Plate XIV, Fig. 31); **3–4**. - paratype, Ecuador, coll. Saunders, Godman-Salvin collection 1912–23, specimen No. BMNH(E) #1054120 [BMNH] (valvae Plate XIV, Fig. 33); **5–6**. - paratype, Ecuador, Hewitson collection 79-69, specimen No. BMNH(E) #1054138 [BMNH], inset shows a magnified view of the left foreleg tarsus distal end (genitalia Plate XIV, Fig. 32); **7–8**. - Colombia: Chocó department, Las Tangaras Nature Reserve, 5- and 4-Oct-2012, respectively, photographs by Kim Garwood. Dorsal and ventral surfaces are shown on odd- and even-numbered figures, respectively, except **8** is dorsal, inset shows a magnified view of the left foreleg tarsus. Labels are shown between the views of a specimen. Labels are reduced 2.5 times compared to specimens: small scale bar below the holotype labels refers to labels, and larger scale bars refer to specimens. Images **3–6** are copyright by the Trustees of the Natural History Museum, London; used with permission.



Figs. 9–14. *Potamanaxas melicertes* and *P. paphos*. 9–10. - *P. melicertes* holotype, Panama: "Chiriqui" [Chiriquí Prov., Chiriquí village on the highway, Pacific slope, about 12 km east of David, approx. 8° 23' N, 82° 20' W, per Selander & Vaurie (1962)], leg. Trötsch, Staudinger collection [ZMHB]; **11**. - illustration of *P. melicertes* holotype from the original description (Godman & Salvin 1895); **12**. - original description of *P. melicertes* by Godman & Salvin (1895: p. 393) with translations; **13–14**. - *P. paphos* [holo]type ♂, Ecuador: Paramba, dry season, Apr-1897, 3500', leg. Rosenberg, Rothschild Bequest B.M. 1939-1, specimen No. BMNH(E) #1054150 [BMNH] (genitalia *in situ* Plate XIV, Fig. 34). Dorsal and ventral surfaces are shown on odd- and even-numbered figures, respectively, except **12** is the description. Labels are shown between and above the views of a specimen. Round white type label is shown in dorsal and ventral views. Labels are reduced 2.5 times compared to specimens: small scale bar below the *P. paphos* [holo]type labels refers to labels, and larger scale bars refer to specimens. Photographs **9–10** are by Bernard Hermier and **13–14** are copyright by the Trustees of the Natural History Museum, London; used with permission.



Figs. 15–30. *Potamanaxas thoria* and *P. okroogly* n. sp. 15–16. - *P. thoria* syntype ♂, Ecuador, Hewitson collection 79-69, type H 767, specimen BMNH(E) #1054002 [BMNH] (genitalia Plate XIV, Fig. 37); **17–18**. - *P. pammenes* syntype ♀, Nicaragua: "Chontales" [Chontales or Río San Juan Departments, per Selander & Vaurie (1962)], leg. T. Belt, type specimen figured, Godman-Salvin collection 1912–23, type H 766, specimen BMNH(E) #1054001 [BMNH]; **19–20**. - illustration of *P. pammenes* syntype from the original description (Godman & Salvin 1895); **21–22**. - *P. thoria* ♀ specimen similar in pattern to *P. pammenes* syntype, Costa Rica: Heredia Prov., Sarapiqui Canton, Chilamate, approx. 6 km East of Selva Verde Lodge, 60 m, 28-Jul-1991, leg. G. E. Martinez, genitalia No. NVG130531-09 [AMNH]; **23–30**. - *P. okroogly* **n. sp.** type series, ♂♂: **23–24**. - holotype, Peru: Cusco Region, Quispicanchi Province, Marcapata, genitalia slide G967 [AMNH] (genitalia Plate XIV, Figs. 35); **25–26**. - paratype, Peru: Puno Region, Carabaya Province, Chaquimayo, approx. 13° 25' S 70° 27' W (per Emerson & Banks 1965), 760 m, Apr-1912, leg. H. & C. Watkins, specimen BMNH(E)#1054118 [BMNH] (valva Plate XIV, Fig. 36); **27–28**. - Bolivia: Yungas de La Paz, 1000 m, 1902 [USNM]; **29–30**. - Peru: Junín Region, Chanchamayo Province, La Merced, 760-1060 m, {Oct, Nov}-1919, leg. C. Watkins, specimen BMNH(E)#1054137 [BMNH]. Dorsal and ventral surfaces are shown on odd- and even-numbered figures, respectively. Labels are shown for primary types between the views of a specimen. If with text below, round white type labels are shown in dorsal and ventral views. Labels are reduced 2.5 times compared to specimens: small scale bar below the *P. thoria* syntype labels refers to labels, and larger scale bars refer to specimens. "F" indicates mirror image (left-right inverted). Images **15–18**, **25–26** & **29–30** are copyright by the Trustees of the Natural History Museum, London; used with permission.



Figs. 31–38. Male genitalia of *Potamanaxas*. 31. - *P. tschotky* **n. sp.** holotype: **a**–**b**. - left and **c**–**d**. - right lateral views of the abdomen caudal end (specimen and data Plate XI, Figs. 1–2); **32**. - *P. tschotky* **n. sp.** paratype: **a**. - genital tuft of scales and interior views of: **b**. - left valva and **c**. - complete genitalia with left valva removed (specimen and data Plate XI, Figs. 5–6); **33**. - *P. tschotky* **n. sp.** paratype: **a**. - left and **b**. - right valvae in interior views (specimen and data Plate XI, Figs. 3–4); **34**. - *P. paphos* [holo]type, left lateral view of the abdomen caudal end (specimen and data Plate XII, Figs. 13–14); **35**. - *P. okroogly* **n. sp.** holotype: **a**. - slide with genitalia and interior views of: **b**. - left valva and **c**. - complete genitalia with left valva removed (specimen and data Plate XIII, Figs. 23–24); **36**. - *P. okroogly* **n. sp.** paratype, left valva in interior view, caudal end broken off (specimen and data Plate XIII, Figs. 25–26); **37**. - *P. thoria* syntype, left valva in interior view, (caudal end broken off) and uncus, gnathos and distal parts of tegumen and penis in **b**. - left lateral and **c**. - dorsal (left uncus arm broken off) views (specimen and data Plate XIII, Figs. 15–16); **38**. - *P. thoria*, Ecuador: Imbabura Prov., Ruminahui, 37 km N. Pedro Vicente Maldonado, 0° 16.73'N 78° 59.9'W, 500 m, 9-Mar-2001, leg. D. H. Ahrenholz, genitalia NVG120922-44, lateral view, mirror image (left-right inverted, indicated by "F") [USNM]. **31**, **34**. - *in situ* on a specimen, scales brushed off; **35**. - mounted as a slide; **38**. - preparation in glycerol (vial); all others are dry mounts glued to carton cards. All images are to scale except **35a**. Copyright of images **32**–**34** & **36**–**37**: Trustees of the Natural History Museum, London (used with permission).