A NEW GENUS AND FIVE NEW SPECIES OF NEOTROPICAL LETHAEINI (HETEROPTERA: LYGAEOIDEA: RHYPAROCHROMIDAE)

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ABSTRACT

Neopetissius, new genus, with type species *Neopetissius slaterorum*, new species, from Brazil, British Honduras (Belize), Colombia, Ecuador, El Salvador, Guatemala, Mexico, Panama, Surinam, Trinidad and Venezuela, is described. Four additional species are described and figured: *Neopetissius froeschneri*, new species, from Bolivia, Brazil, Panama and Peru; *Neopetissius immanis*, new species, from Brazil; *Neopetissius perplexus*, new species, from Bolivia and adjacent Brazil; and *Neopetissius variegatus*, new species, from the West Indies. Morphological characters are discussed in a phylogenetic context.

Key Words: Rhyparochromidae, Lethaeini, Neotropics

RESUMEN

El nuevo genero, *Neopetissius*, con especie tipo *Neopetissius slaterorum*, nueva especie, de Brasil, Honduras Inglesa (Belice), Colombia, Ecuador, El Salvador, Guatemala, México, Panamá, Surinam, Trinidad y Venezuela, es descrita. Cuatro especies adicionales son descritas e ilustradas: *Neopetissius froeschneri*, nueva especie, de Bolivia, Brasil, Panamá y Perú; *Neopetissius immanis*, nueva especie, de Brasil; *Neopetissius perplexus*, nueva especie, de Bolivia y Brasil adyacente; y *Neopetissius variegatus*, nueva especie, de las antillas caribeñas. Características morfológicas son descritas en un contexto filogenético.

This paper describes new Neotropical Lethaeini in order to make names available for a large paper on the West Indian lygaeid (sensu lato) fauna in preparation by J. A. Slater and R. M. Baranowski. It is surprising that these large, apparently widespread bugs have not yet been described, given the amount of material in museum collections. They have long been an enigmatic group, as evidenced by the various determination labels attached to specimens over the years by respected students of the (then) Lygaeidae. Examples of these include: "*Lethaeus*, det. Barber;" "Lethaeini nr. *Petissius,* det. Ashlock;" "*Petissius assimilandus*, det. Ashlock;" "*Petissius* sp., det. Barber;" "*Gonatoides* n.sp. #1 and #3, det. Sweet;" and "*Cistalia* sp.???, det. Ashlock." This confusion over identity is also a testament to the difficulty in establishing generic limits in the Lethaeini, despite my earlier attempt (O'Donnell 1986) to do so.

My decision to describe a new genus for these new species, even though generic limits are ambiguous, is based on the fact that they show a number of features that seem to preclude them from inclusion in any existing genus. Of the four described genera listed above, *Lethaeus* is easy to eliminate. It is strictly an Old World genus, with a double, striated iridescent spot on the top of the head. The new species described herein all have a single, non-striated spot, as do species in the other three genera listed above. They are all part of the "one-spot clade" a monophyletic unit within Neotropical lethaeines that includes *Cryphula, Paragonatas* and *Rhaptus* in addition to *Cistalia*, *Gonatoides* and *Petissius* (O'Donnell 1986). *Rhaptus* is a monotypic genus with autapomorphies (somewhat dorsoventrally flattened, greatly enlarged fore femora) that easily eliminate it from further consideration as a congener of the new species.

It is not as easy to dismiss placement of the new species in some of the other "one-spot" genera. There are several reasons. First, phylogenetic relationships among genera of this clade remain unsatisfactorily resolved: *Paragonatas* is polyphyletic, and *Petissius* and *Gonatoides* paraphyletic, in my (1986) phylogenetic analysis. Second, polarization of the defining synapomorphy (possession of a single median iridescent spot as apomorphic) is itself equivocal. Third, although the single spot occurs only in the New World, some of the characters that appear apomorphic in the one-spot clade also occur in taxa from other zoogeographic regions—a clear indication that revision of generic limits should proceed at the world level.

Therefore, *Neopetissius*, new genus, is circumscribed by the following putative synapomorphies: 1. Broadly explanate lateral pronotal margins. The margins characteristic of *Neopetissius* are flared upward slightly, and are expanded nearly equally for their entire lengths; in addi-

tion, a prominent transverse pronotal impression imparts a partially concave, often even sinuate, lateral edge (see below). The explanate lateral pronotal margins of *Petissius*, by contrast, are narrowed anteriorly and become almost obsolete posteriorly. The lateral edge is smoothly convex, hardly, if at all, indented between the anterior and posterior pronotal lobes. The lateral pronotal margins of *Gonatoides*, while broadly expanded, are not strongly differentiated from the remainder of the pronotum and are also smoothly convex. *Paragonatas* and *Cistalia* have carinate, but not explanate, lateral pronotal margins. 2. Transverse impression. Species of *Neopetissius*, in contrast to all other neotropical Lethaeini of the one-spot clade, have a prominent transverse impression that divides the pronotum into distinct anterior and posterior lobes. Some species also have a marked longitudinal impression, an unusual feature not only for lethaeines but for rhyparochromids in general. 3. Pronotal collar. *Neopetissius* has a prominent, triangular pronotal collar, set off from the remainder of the pronotum by a groove of punctures. This condition is found in several apparently otherwise unrelated Old World genera, but is not found elsewhere in the one-spot clade.

The following additional features may be of generic significance. 1. Tuberculate femoral hairs. These are short hairs set on oblique tubercles, covering the postero-ventral surface of at least one femur. They are not as apparent on females. 2. Swollen venter of head. The underside of the head is swollen on either side of the labium, especially in males. This swelling takes various forms, but again, evaluation of character states needs to proceed across hemispheres because Old World taxa also exhibit several states, and homology is uncertain.

The male genitalia, in general so useful for establishing generic limits in the Lethaeini, are of limited value in the one-spot clade, and especially among the new species. They are among the most complicated and asymmetrical of any in the tribe, and seem to combine features of several genera (complete arcuate extension; corrugations, sleeve and wings, all present). In fact, the male genitalia of one species (*N. immanis*, n.sp.) are different enough that status as a separate genus may be warranted in the future. This group is yet another case where insect species quite alike in external appearance have very different male genitalia. It is likely that additional species will be discovered as more material becomes available for dissection and zoogeographic analysis.

Materials and Methods

Specimens were borrowed from and/or deposited in the following collections: American Museum of Natural History, New York, NY (AMNH); The Natural History Museum, London, UK (BMNH); Carnegie Museum, Pittsburgh, PA (CARN); California Academy of Sciences (CAS); Instituto Nacional de Pequisas de Amazonia, Manaus, Brazil (INPA); Institut Royal des Sciences Naturelles de Belgique, Brussels, Belgium (IRSN); James A. Slater Collection, University of Connecticut, Storrs, (JAS); Rijksmuseum van Natuurlijke Histoire, Leiden, Netherlands (LEID); National Museum of Natural History, Smithsonian Institution, Washington, DC (NMNH); David Rider, North Dakota State University, Fargo, ND (RIDER); Museu Nacional, Rio de Janeiro, Brazil (RIO); Richard M. Baranowski, University of Florida, Homestead, FL (RMB); Snow Entomological Museum, University of Kansas, Lawrence, KS (SNOW); Merrill Sweet, Texas A&M University, College Station, TX (SWEET); Texas A&M University, College Station, TX (TAMU); University of Missouri, Columbia, MO (UMC); University of California, Davis (UCD); University of Michigan, Ann Arbor, MI (UMAA); University of Connecticut, Storrs, CT (UCMS); Universidad Central de Venezuela, Maracay, Venezuela (VENZ).

Techniques for dissecting genitalia follow O'Donnell (1991), with the following modifications: specimens were relaxed in boiling water instead of relaxing fluid; spermathecae were stained with BioQuip's double stain to render lightly sclerotized areas more readily visible; and dissected genitalia were positioned on a bed of 0.25 mm glass beads immersed in 70% ethanol, which held the pieces steady for drawing. Names of colors follow Smithe (1975, 1981). All measurements are in millimeters.

Neopetissius O'Donnell, **New Genus**

Medium to large, elongate oval (males) to broadly oval (females). Surface dull to subshining. Head with one basal median iridescent spot dorsally, presumably composed of pegs. Lateral pronotal margins explanate, carinate, with trichobothrium on anterior third; pronotal collar triangular, well-defined, set off from remainder of pronotum by groove of closely spaced punctures; collar impunctate (*N. slaterorum* n. sp., *N. variegatus* n. sp.) or punctate (other species); transverse pronotal impression well developed, longitudinal impression variable. Field of tuberculate hairs present posteroventrally on femora. Clasper usually compressed on outer surface of outer projection. Sperm reservoir variable, with sleeve prominent and separate from vesical seminal duct (except *N. immanis*, n. sp.). Spermatheca with broad duct.

Type species: *Neopetissius slaterorum*, new species.

Etymology. "Neo-" meaning "new" with "*Petissius*" its close relative. Masculine.

Distribution. Widely in the Neotropics.

KEY TO SPECIES OF *NEOPETISSIUS*

1	Underside of head of male swollen (Fig. 1) into a forward-projecting tubercle (only males are known)	*immanis*, n. sp.
1'	Underside of head of male not swollen into a forward-projecting tubercle	2
2	Labium extending posteriorly beyond hind coxae, onto second abdominal segment in males, or third abdominal segment in females	*variegatus*, n. sp.
2'	Labium not extending posteriorly beyond hind coxae	3
3	Evaporative area on mesopleuron extending toward dorsal margin as a wide "tongue" (Fig. 2)	*slaterorum*, n. sp.
3'	Evaporative area on mesopleuron extending toward dorsal margin as a narrow tongue (Fig. 3)	4
4	Pronotal calli with fine punctures	*perplexus*, n. sp.
4'	Pronotal calli impunctate	*froeschneri*, n. sp.

Neopetissius froeschneri O'Donnell, **New Species**
Figs. 3, 4, 10, 11, 18

Medium size. Total length 6.4. Maximum width, at level of apex of clavus, 2.5. Dorsal surface subshining. Head, anterior pronotal lobe, first antennal segment, most of scutellum and all of femora very dark grayish brown. Most of remainder of dorsum, antennal segments II-IV and tibiae chestnut.Third antennal segment slightly paler distally but without a distinct pale annulus. Dorsum marked with buff yellow as follows: pronotal collar except laterally; lateral pronotal margins; anterior half of posterior pronotal lobe except at middle; humeri; small spot at posterior pronotal margin midway from midline to humeral angle; elongate dash on clavus near apex of scutellum; lateral corial margins; corial veins proximally and distally (somewhat darkened across middle of corium); and spot at basal angle of Cu and R + M. Two obscure pale spots present between M and Cu. Inverted-heart shaped distal corial macula, veins and obscure apical macula on membrane cream color. Venter nearly uniformly dark grayish brown, shining on thorax, subshining on abdomen. Labium buff yellow.

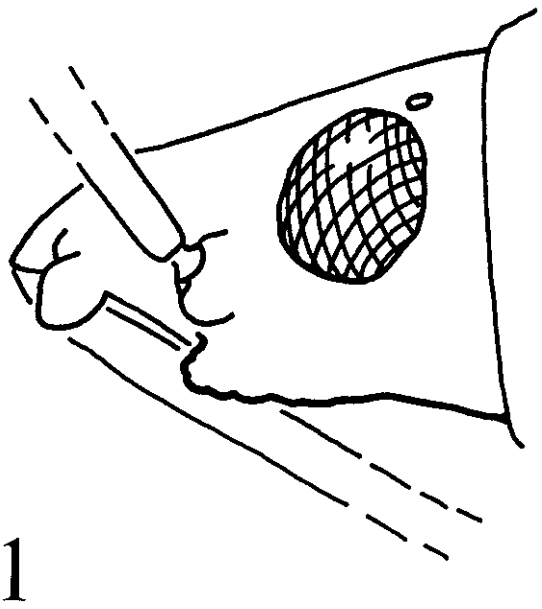

Fig. 1. *Neopetissius immanis*, n. sp., head, lateral view. Scale line equals 0.10 mm.

Head porrect, flat across vertex; eyes large. Length head 0.75; preocular length 0.42. Width head 1.10; interocular width 0.58. First antennal segment incrassate, diameter greater than that of other segments, exceeding apex of tylus by half its length; 2 setae present proximally on inner surface. Antennal segments II-IV terete, with scattered upstanding hairs shorter than diameter of segment in addition to decumbent pubescence. Length antennal segments I 0.72; II 0.92; III 0.80; IV 1.00. Venter of head strongly swollen from level of apex of antenniferous tubercle to middle of eye; heavily and evenly coarsely punctate. Labium just reaching metacoxae; first segment reaching level of middle of eye. Length labial segments I 0.80; II 0.70; III 0.87; IV 0.57.

Pronotum with anterior margin shallowly concave; posterior margin essentially straight; lateral margins sinuate, broadly explanate, notched at posterior corner of humeri. Trichobothrium level with posterior edge of punctures defining collar at meson. Anterior lobe with prominent triangular collar that broadens mesally, set off by a row of closely-spaced punctures laterally and a broader band of punctures mesally. Anterior lobe with calli impunctate except for scattered punctures along inner margin of explanate lateral margins; transverse impression well-developed, especially laterally; longitudinal furrow very prominent along middle third of meson; posterior lobe with coarse, widely-spaced punctures at transverse impression grading to finer, more closely-

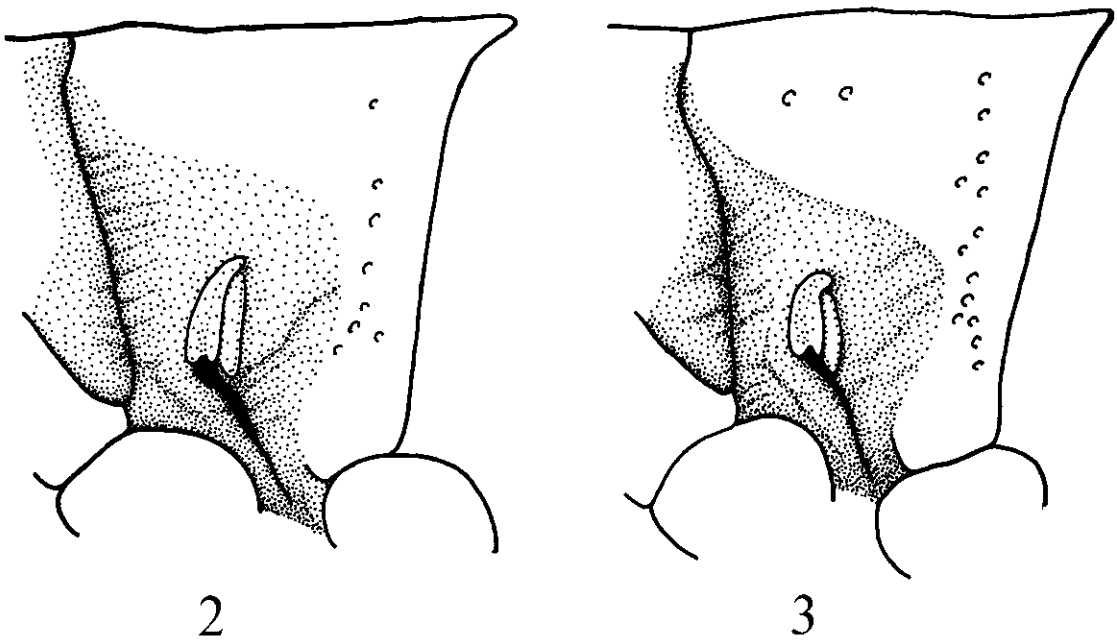

Fig. 2. *Neopetissius slaterorum*, n. sp., metathorax, lateral view. Fig. 3. *Neopetissius froeschneri*, n. sp., metathorax, lateral view. Scale line equals 0.10 mm.

spaced punctures posteriorly; humeri raised, prominent, impunctate, extending nearly to transverse impression. Length pronotum 1.30; posterior width 2.22; width across trichobothria 1.50. Scutellum elevated anteriorly and along lateral margins, depressed mesally; impunctate on lateral elevations, otherwise shallowly punctate anteriorly, more coarsely mesally and along lateral margins. Length scutellum 1.20; width 1.20. Hemelytron macropterous; clavus with 3 regular and 2 irregular rows of punctures. Corium with lateral margins explanate, sinuate; Cu bent sharply laterad just posterior to level of apex of scutellum; corial fracture mesal to R + M, ending at level of claval apex; R + M strongly raised to end of corial fracture; membrane slightly exceeding apex of abdomen, veins distinct; one crossvein each between Sc and R and R and M. Length claval commissure 0.75; midline distance apex clavus-apex corium 1.30. Metathoracic scent gland with ostiolar peritreme slightly raised above metapleuron, remote from dorsal margin of evaporative area; long axis of peritreme paralleling meso-metapleural junction, apex bent at 45 degree angle; elevated lobe present on posterior side of auricle. Evaporative area rugose, covering all of mesoepimeron, extending narrowly along meso-metapleural suture nearly to dorsal margin of mesopleuron; occupying ventral ⅔ of metapleuron, also extending dorsally but not as far as on mesopleuron; dorsal margin on metapleuron sloping strongly ventrad posteriorly. Legs with all femora densely covered with decumbent hairs, set on tubercles postero-ventrally on profemur; these tubercles inconspicuous on mesofemur. Fore femur the most swollen, armed below with 4 (right leg, 3 on left leg) stout spines distally and 3 elongate hair-spines in same row proximally; hind femur with row of widely-spaced short, semidecumbent spines on upper surface and one longer spine near distal end ventrally. Fore tibia spinose on posterior surface only; tibiae and tarsi covered with decumbent pubescence.

Sterna covered with long, decumbent, silvery, widely-spaced hairs, somewhat denser along dorsal margin. Male clasper (Fig. 10) with inner projection very broadly rounded; outer projection indented on dorsal aspect; shank very short, nearly obsolete, with flange. Sperm reservoir (Fig. 11) with sleeve only moderately sclerotized; vesical seminal duct strongly sclerotized, coiling thickly and asymmetrically distally as it exits sleeve before becoming flat, with a thickened edge at transition point; wings, large, quadrate in lateral view; arcuate extension complete but faint across middle of bulb; corrugations present; holding sclerites absent. Spermatheca (Fig. 18) mushroom-shaped, with bulb sitting directly on narrow distal flange; duct diameter about ⅓ diameter of bulb; proximal flange lightly sclerotized, especially on distal edge, very asymmetrical, split on proximal side, flaring bell-like opposite split; duct offset. (A small sclerite proximal to proximal flange may be part of the spermatheca itself, or a

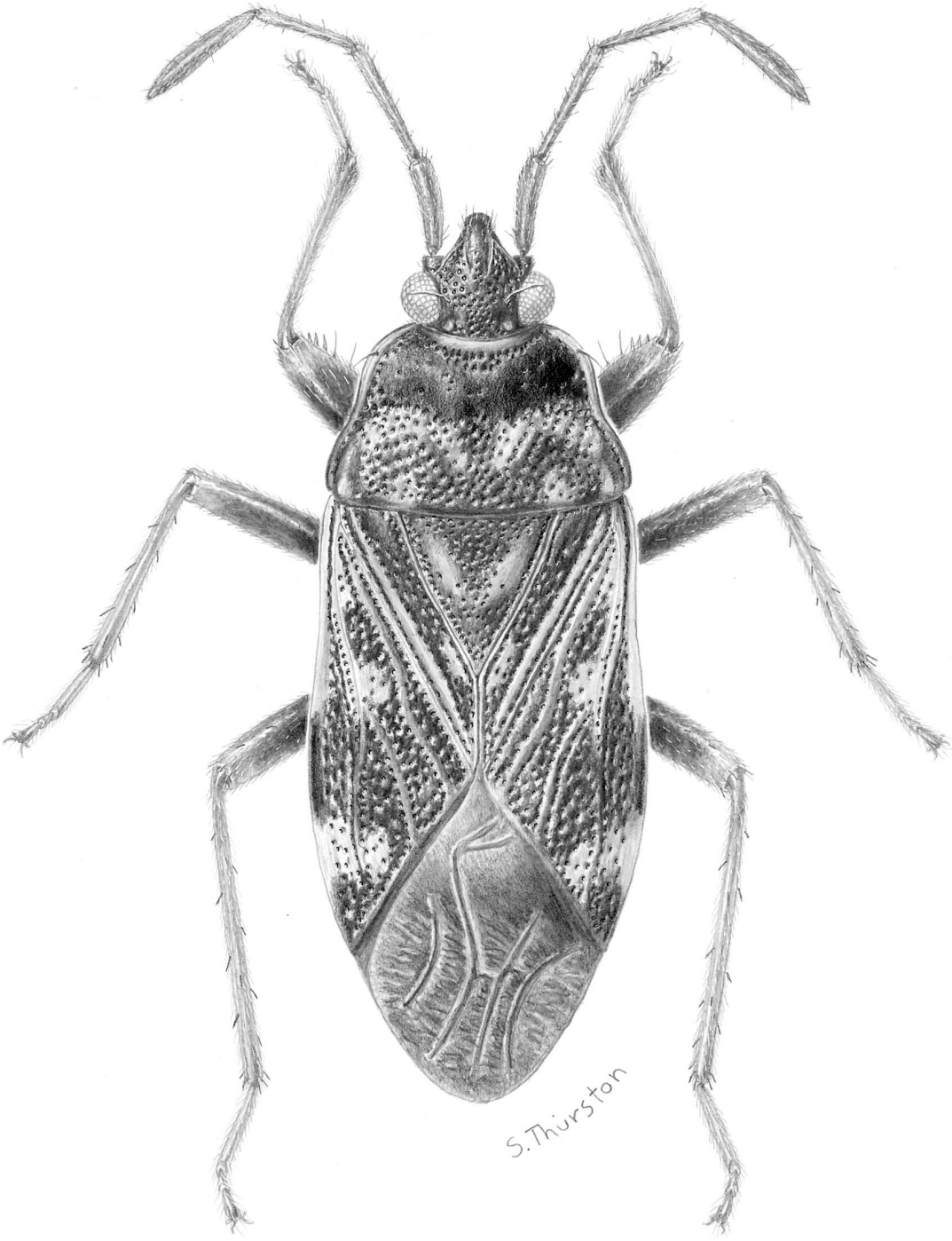

Fig. 4. *Neopetissius froeschneri*, n. sp., dorsal view. Scale line equals 0.10 mm.

piece of male genitalia that has broken off inside the female.)

Holotype: ♂, BRAZIL, Piracicaba, S. P., 13-III-1966, C. A. Triplehorn, blacklight (AMNH).

Paratypes: 1 ♂, same data as holotype except 25-XI-1965 (JAS); 2 ♂♂, 3 ♀♀, same data as holotype except 2-XII-1965 (one of each sex dissected and illustrated) (JAS,UCMS); 1 ♂, same

data as holotype except 19-XII-1965 (JAS); 3 ♂♂, 1 ♀, same data as holotype except 3-II-1966 (JAS, UCMS).

Additional Material Examined: BOLIVIA: 3 ♂♂, 3 ♀♀, Puerto Suarez, J. Steinbach, 150 m (CARN); BRAZIL: 3 ♂♂, 10 ♀♀, Bahia, Encruzilhada, XI-1972, M. Alvarenga, 960 m (AMNH); 1 ♂, 2 ♀♀, Santa Catarina, Nova Teutonia, 27°11'N, 52°23'W, 11-X-1961, Fritz Plaumann (SWEET); 2 ♂♂, 6 ♀♀ same except 11-X-1960 (JAS); 1 ♂, 1 ♀, same except III-1972 (VENZ); 2 ♀♀, same except II-1973 (VENZ); 1 ♀, same except 8-X-1963, no coordinates given (JAS); 1 ♀, same except 6-VII-1957 (JAS); 1 ♀, same except 6-X-1962 (JAS); 1 ♂, 1 ♀, same except 27-IX-1957 (JAS); 1 ♂ same except VI-1977, 300-500 m, 27°11'B, 52°23'L (UNAM); COSTA RICA: 2 ♀♀, Puntarenas, nr. Monteverde, 31 May 1988, J. O'Donnell, at light (UCMS); PANAMA: 3 ♂♂, 4 ♀♀, Canal Zone, Barro Colorado Island, XII-1946-II-1947, J. Zetek (NMNH); 1 ♂, same except I & II 1945 (NMNH); 1 ♂, El Real, 8-VIII-1952, F. S. Blanton (NMNH); 1 ♀, Las Cumbres, 7-I-1975, L. B. O'Brien, at night (JAS); PERU: 1 ♀, Loreto, km 3 Tournavista Rd., 34 km W Pucallpa, 17-XII-1971, R. T. & J. C. Schuh, 300 m, at light (AMNH); 1 ♀, same except 23-XII-1971 (AMNH).

Etymology: Named for Dr. Richard C. Froeschner, Curator Emeritus at the National Museum of Natural History, Smithsonian Institution, in recognition of his long and productive career as a heteropterist.

Neopetissius immanis O'Donnell, **New Species**

Medium sized, ovoid. Total length 7.60. Maximum width, at level of apex of clavus, 2.70. Body surface subshining, clothed above with short, cream color hairs arising from punctures. Head, anterior pronotal lobe, scutellum, first antennal segment and all femora dusky brown to dark grayish brown; posterior pronotal lobe, most of hemelytra, and remaining antennal segments chestnut; explanate lateral pronotal and corial margins buff yellow; tibiae buff yellow with tinges of chestnut at both ends. Hemelytron marked with cream color as follows: elongate dash along inner half of claval margin; two spots between R + M and Cu, and veins adjacent to posterior of these; small spots on apical corial margin at junction with clavus and at Cu; and inverted, subapical heart-shaped macula. Membrane almost uniformly chestnut, veins slightly paler. Venter dusky brown, becoming chestnut at posterior margins of pro- and metapleura and last 2 abdominal segments. Labial segment 1 predominantly cream color but tinged with chestnut; segments 2 and 3 cream color; segment 4 chestnut.

Head quadrate, porrect, tylus reaching slightly less than half way to end of first antennal segment; area just ventrad of antenniferous tubercle expanded into a cone-shaped protruberance (Fig. 1), extending as far anteriorly as end of antenniferous tubercle. Length head 1.10; width 1.32; interocular 0.65; preocular 0.70. Pronotum with anterior margin concave; triangular collar well defined by deep punctures; calli raised, with sparse, shallow punctures; transverse impression pronounced; longitudinal furrow deep; posterior lobe evenly and coarsely punctate, humeri prominent; posterior margin straight; lateral margins broadly explanate, sinuate, notched at humeri; trichobothrium located one-third of the way along lateral margin. Length pronotum 2.08; width 2.60. Scutellum with impunctate v-shaped elevation; length scutellum 1.20; width 1.25. Length claval commissure 0.88. Hemelytron macropterous, with widely explanate lateral corial margin tapering at level of claval apex. R + M strongly elevated, carinate. Clavus with 3 regular and 2 irregular rows of punctures; membrane reaching end of abdomen, with 4 prominent longitudinal veins and 2 cross veins between Sc and R. Midline distance apex clavus-apex corium 1.55. Metathoracic scent gland auricle hook-shaped; evaporative area covering ventral half of metapleuron, extending narrowly along meso-metapleural junction nearly to dorsal margin; dorsal margin of evaporative area sinuate. Labium extending between hind coxae, first segment just reaching base of head. Length labial segments I 1.30; II 1.20; III 1.18; IV 0.62. Antennae with first segment abruptly thickened beyond apex of tylus. Length antennal segments I 1.00; II 1.40; III 1.10; IV 1.40. Fore femur with a row of 5 short stout subdistal spines and several elongate hair-spines proximally; outer surface of all femora with tuberculate, distally-directed hairs. Upper surface of all femora with a row of erect spines about the size of tibial spines. Spines on hind tibiae separated by a distance greater than length of a spine.

Sterna covered with long, cream color decumbent hairs. Male clasper (Fig. 8) with large, pointed inner projection; inner point of projection recurved toward reduced shank; outer projection truncate, not prominently indented on outer (dorsal) surface; area of attachment flanged. Sperm reservoir (Fig. 15) with vesical seminal duct broad, loosely coiled, not encased by sleeve; holding sclerites long, curving, prominent and heavily sclerotized; wings arrow-shaped, prominent; arcuate extension forming a complete, wide bridge across bulb; area of insertion of vesical seminal duct into bulb rotated so that it appears opposite wings; corrugations absent.

Holotype: ♂, SURINAM, Zanderij, 31.VII-3.VIII-1964, DCG, (LEID).

Paratypes: BRAZIL, 1 ♂, Para, 3-26-IX-1962, W. L. Brown (AMNH); 1 ♂, Para, Jacareacanga, V-1969 F. R. Barbosa (dissected and illustrated) (UCMS); 1 ♂, Amazonas, BR-174, KM 45, 2-IV-1982, E. L. Oliveira (INPA).

Etymology. From the Latin "immanis," an adjective meaning "immense" or "monstrous," in reference to the large protrusions on the venter of the head.

Neopetissius perplexus O'Donnell, **New Species**
Figs. 6, 13, 17

Total length 5.70. Maximum width, at claval commissure, 2.40. Dorsal surface glabrous, subshining. General coloration dusky brown, becoming burnt umber on posterior pronotal lobe, clavus and corium. Marked with cream color as follows: explanate pronotal margins and anterior half of corial margins, anterior pronotal margin, spot on posterior pronotal margin near junction of clavus and scutellum, elongate dash on clavus near apex of scutellum, 2 spots on corium between R + M and Cu, subapical inverted heart-shaped macula on corium, small irregular spots along veins of membrane, and small macula at apex of membrane. Antennal segment I burnt umber, segment II, proximal ⅗ of III and all of segment IV chestnut; distal ⅖ of segment III cream color. Venter uniformly dusky brown; femora except extreme distal ends burnt umber; labium, tibiae and tarsi cream color. Ventral surfaces of explanate pronotal and corial margins a strongly contrasting pale cream color.

Head moderately declivent, with numerous small, shallow punctures. Length head 0.80; preocular length 0.45; width 1.10; interocular 0.60. Tylus reaching ⅓ of way to apex of first antennal segment. First antennal segment gradually broadening distally, widest before distal end; segments II-IV terete, with upstanding hairs shorter than diameter of segment in addition to decumbent pubescence. Length antennal segments I 0.80; II 1.05; III 0.92; IV 1.07. Venter of head slightly raised and acinose on either side of midline. Labium reaching metacoxae, with first segment attaining base of head. Length labial segments I 0.85; II 0.72; III 0.90; IV 0.50.

Pronotum with anterior margin concave; collar area broad, delimited posteriorly by a groove of closely spaced punctures and otherwise punctate on posterior ⅔; lateral pronotal margins broadly explanate, sinuate; trichobothrium situated slightly anterior to level of collar at midline; posterior margin straight; transverse impression prominent, deepest near lateral margins and at midline where it meets longitudinal furrow. Pronotal calli sparsely and shallowly punctate; lateral margin of anterior lobe adjacent to explanate margin and entire posterior lobe coarsely and evenly punctate, with punctures becoming smaller toward posterior margin. Length pronotum 1.35; width across trichobothria 1.40; posterior width 2.20. Scutellum with depressed medial area and V-shaped elevation; with small shallow punctures anteriorly and deeper, coarser punctures mesally and laterally. Length scutellum 1.22; width 1.25. Hemelytron macropterous, with explanate lateral margins as wide as those of anterior pronotal lobe. Clavus with 2 regular and 3 irregular rows of punctures; length claval commissure 0.70; corium with R strongly raised, corial fracture extending along R to level of claval apex. Midline distance apex clavus-apex corium 1.30; membrane extending slightly beyond end of abdomen and with two prominent cross-veins, one between Sc and R and one between R and M. Metathoracic scent gland peritreme curving gently posteriorly, removed from dorsal margin of evaporative area by less than its length; evaporative area rugose, extending dorsally as a narrow tongue closer to dorsal margin on mesopleuron than on metapleuron; prominent elongate lobe present opposite auricle; dorsal margin of evaporative area on metapleuron sloping sharply ventrad posteriorly. Fore femora moderately incrassate, each armed below with 4 stout spines distally, 3 longer, more slender spines mesally, and several elongate hair-spines proximally (from paratype). All femora appearing "bumpy" but actually covered with silvery decumbent hairs set obliquely onto small tubercles. Tibial spines reduced in number and shorter than diameter of tibia.

Male clasper (Fig. 6) with a large, indented outer lobe, shank reduced; sperm reservoir (Fig. 13) with vesical seminal duct broad, strongly coiled, with a longitudinal split on distal half; sleeve prominent, extending to strong distal bend of sclerotized portion of vesical seminal duct; arcuate extension forming a complete, narrow bridge; wings quadrate, heavily sclerotized; corrugations apparent. Female genitalia with spermatheca (Fig. 17) mushroom-shaped, with bulb sitting directly on narrow distal flange; duct diameter about ⅓ bulb diameter; proximal flange strongly asymmetrical, flaring like a bell proximally; duct proximal to flange offset.

Holotype ♂, BRAZIL, Mato Grosso: Vila Vera, 55°30'long., 12°46'lat., IX-1973, M. Alvarenga (AMNH) (dissected).

Paratypes: BOLIVIA, 2 ♀♀, Santa Cruz, Prov. of San Esteban, Muyurina, 49 km N. of Santa Cruz. 1120 ft. elevation, 26-X-1959, R. B. Cumming, Blacklight Trap (1 dissected and illustrated) (RMB, UCMS); 1 ♀ same except 27-XII-1959 (RMB); 1 ♀, Santa Cruz, Saavedra, Dept. Santa Cruz Agr. Exp. Sta., R. B. Cumming, 27-XII-1959, Blacklight trap (RMB).

Additional Material Examined: BOLIVIA, 1♂, Santa Cruz, San Esteban Muyurina, 49 km N Santa Cruz, 1120 ft., 26-X-1959, R. B. Cumming, Blacklight Trap (dissected and illustrated) (UCMS).

Etymology. From the latin "perplexus"" an adjective, in reference to the confusing, entangled nature of the species relationships in the genus.

The only male from Santa Cruz has prominently expanded antenniferous tubercles and ap-

parently represents an aberrant phenotype. This specimen otherwise appears normal.

This species appears to be closely related to *N. froeschneri* on the basis of the shared, unique configuration of the spermatheca, despite the fact that the sperm reservoirs are quite different. These two species are also very similar in external appearance. *N. froeschneri* has an overall reddish cast to the dorsum, and a narrower, less distinct light annulus on the third antennal segment.

Neopetissius slaterorum O'Donnell, **New Species**
Figs. 2, 5, 9, 12, 16

Dorsum mottled, subshining, glabrous. Total length 6.10. Nearly parallel-sided, maximum width, at level of apex of clavus, 2.30. Head dusky brown; anterior pronotal lobe, most of scutellum, and dark markings on corium, especially distal half, sepia; irregular markings on posterior pronotal lobe and apex of scutellum brick red; 2 elongate dashes along raised area of scutellum and light parts of posterior pronotal lobe buff yellow. Dorsum cream color as follows: spot on either side of midline on pronotal collar; lateral pronotal margins; postero-lateral corners of humeri; ground of clavus and corium; veins of membrane and obscure lighter areas basally, laterally, and apically. Distal third of antennal segment III and prominent subapical corial spot almost white. Remainder of antenna sepia. Venter shining, deep maroon on head, becoming gradually lighter posteriorly, with abdominal sternum VII amber. Labium cream color. Femora amber, lighter distally; tibiae and tarsi buff yellow. Explanate pronotal and corial margins cream color beneath.

Head impunctate, subshining except for prominently shining juga; eyes large. Length head 0.75; preocular length 0.40. Width head 1.15; interocular 0.68. Antennae terete; segment I gradually expanded distally, with stout hairs basally and another ⅔ of distance from base; all segments covered with decumbent pubescence; segments III and IV with additional scattered upstanding hairs shorter than diameter of segment. Length antennal segments I 0.80; II 1.02; III 1.00; IV 1.10. Venter of head not swollen, with a few inconspicuous hair-bearing punctures. Labium reaching metacoxae, with first segment reaching base of head. Length labial segments I 0.90; II 0.85; III 0.98; IV 0.50. Pronotum with anterior margin very shallowly concave; posterior margin shallowly concave across scutellum; lateral margins broadly explanate, slightly sinuate at level of transverse impression, set off by a row of punctures; trichobothria set at level of middle of collar; anterior lobe with distinct collar that broadens mesally, set off by a row of punctures that are closely-spaced laterally but more widely-spaced mesally; calli impunctate, raised; transverse impression well-developed, especially laterally and mesally; posterior lobe except humeri and posterior margin evenly and coarsely punctate. Longitudinal furrow weakly developed on anterior lobe and at posterior margin, deeper and prominent at transverse impression. Length pronotum 1.35; posterior width 2.30; width across trichobothria 1.45. Scutellum elevated anteriorly, and with 2 raised, impunctate areas along lateral margins that join a weakly elevated, narrow, impunctate midline ridge at apex; otherwise finely and evenly punctate. Length scutellum 1.22; width 1.20. Hemelytron macropterous. Clavus with 2 straight, regular rows of punctures outlining edges, and 2 additional irregular rows. Corium with lateral margins explanate on proximal half; veins distinct, not strongly raised except for R; corial fracture mesal to R, extending to level of claval apex; Cu abruptly divergent from claval-corial suture at level of apex of scutellum. Membrane with cross veins present between Sc and R and R and M. Length claval commissure 0.70; midline distance apex clavus-apex corium 1.30. Fore femur slightly more swollen than either mid or hind femur; fore femur armed below with 4 short stout spines distally and strong hair-spines proximal to these; postero-ventral surface with a field of short hairs set on oblique tubercles; hind femur with 2 semidecumbent spines on upper surface and one longer spine on lower surface distally. Fore tibia with spines reduced but with short, erect, pale hairs present in addition to decumbent pubescence. Metathoracic scent gland (Fig. 2) with ostiolar peritreme not strongly elevated above evaporative area, curving evenly posteriorly to end in a blunt point; elongate lobe posterior to auricle narrow, ridge-like. Evaporative area covering all of mesoepimeron, extending broadly along meso-metapleural junction to dorsal margin of mesopleuron. Evaporative area covering ventral ⅔ of metapleuron, extending broadly dorsally but not to dorsal margin of metapleuron. Dorsal margin of evaporative area sinuate, broadly curved postero-dorsally.

Abdomen covered with long hairs ventrally. Male clasper (Fig. 9) with outer projection slightly indented**,** extending further along shank than inner projection; area of attachment with flange. Sperm reservoir (Fig. 12) with large bulb area, arcuate extension forming a complete, narrow bridge; wings and corrugations prominent; sleeve enclosing an asymmetrical, convoluted vesical seminal duct that is quite elaborate distad to sleeve, consisting of a flattened, thick curve and additional separate sclerites of uncertain homology that are unlike anything else in the tribe. Spermatheca (Fig. 16) with bulb sitting directly on broad distal flange; duct diameter about half the diameter of bulb; proximal flange with prominent perpendicular ring.

Holotype: ♂, PANAMA, Barro Colorado Island, 1-9-V-1964, WD and SS Duckworth. (NMNH).

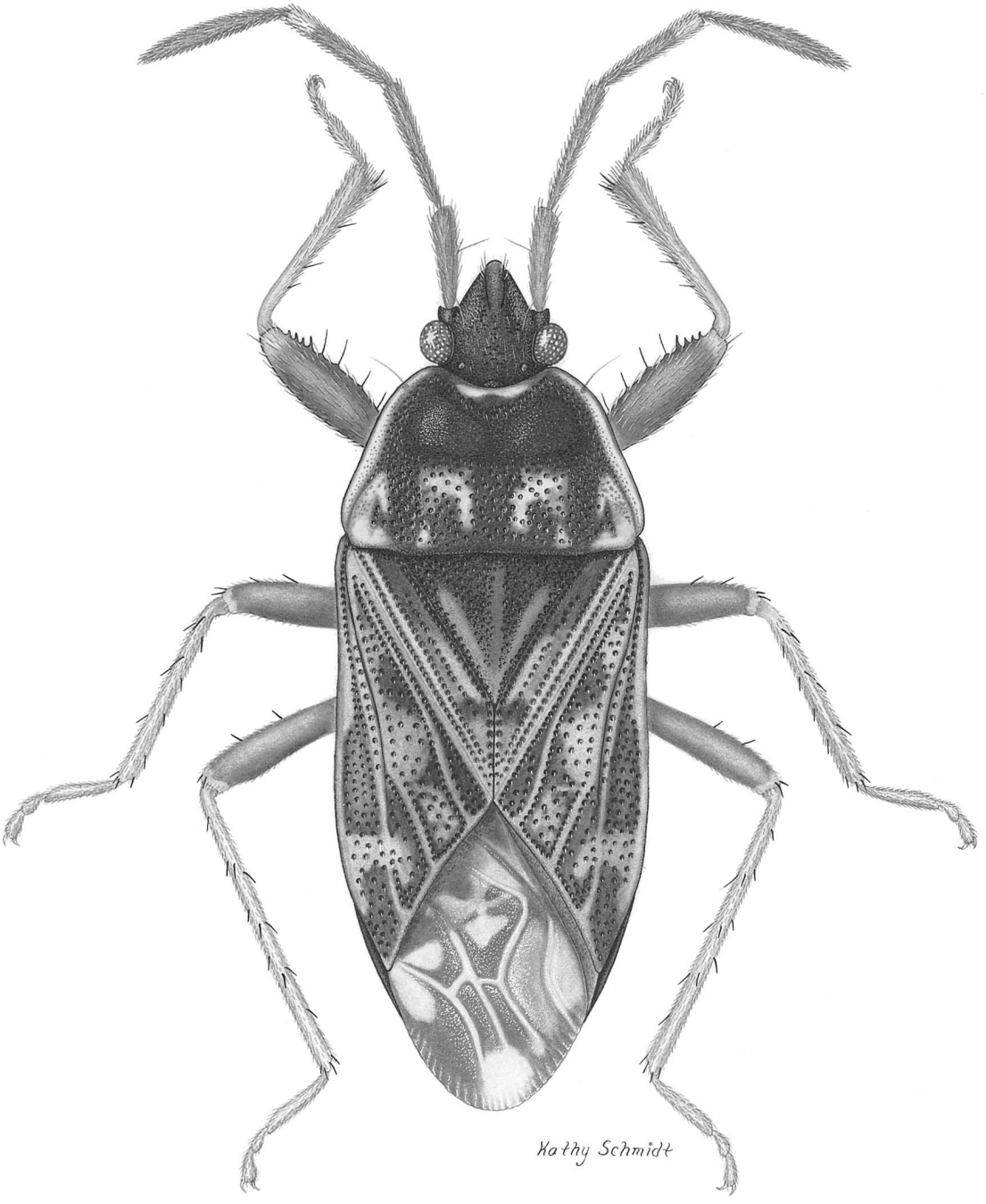

Fig. 5. *Neopetissius slaterorum*, n. sp., dorsal view. Scale line equals 0.10 mm.

Paratypes: 3 ♂♂, 6 ♀♀, same data as holotype (1 ♂ dissected and illustrated) (NMNH, UCMS); 1 ♀, same except 10-17-V-1964 (NMNH); 1 ♂, 1 ♀ same except 5-10-IV-1965 (♀ dissected and illustrated) (NMNH, UCMS); 1 ♀, same except 7-VIII-1967, C. W. & L. O'Brien, at light (JAS); 1♂, 1 ♀, same except 18-28-IV-1964 (NMNH); 2 ♂♂, 2 ♀♀, same except 28-30-IV-1964 (NMNH); 1♂, 1 ♀, same except 14-III-1956, Carl W. and Marian E. Rettenmeyer (SNOW); 1 ♀, same except 18-V-1973, D. Engleman (JAS); 1 ♀, same except 9-I-1929, C. H. Curran (AMNH); 1 ♂, same except

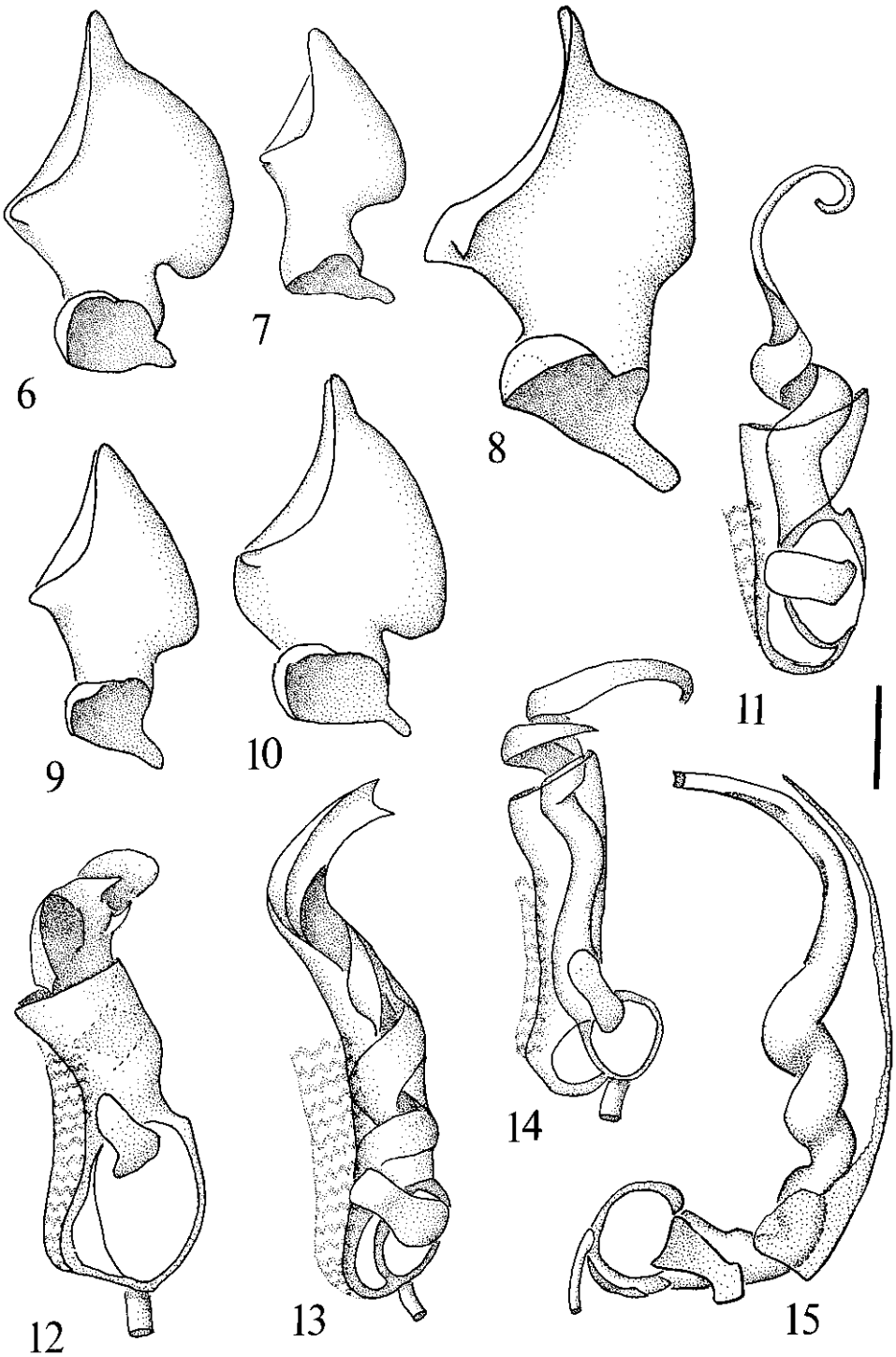

Fig. 6. *Neopetissius perplexus*, n. sp., ventral view left clasper. Fig. 7. *Neopetissius variegatus*, n. sp., ventral view left clasper. Fig. 8. *Neopetissius immanis*, n. sp., ventral view left clasper. Fig. 9. *Neopetissius slaterorum*, n. sp., ventral view left clasper. Fig. 10. *Neopetissius froeschneri,* n. sp., ventral view left clasper. Fig. 11. *Neopetissius froeschneri*, n. sp., lateral view, sperm reservoir. Fig. 12. *Neopetissius slaterorum*, n. sp., lateral view, sperm reservoir. Fig. 13. *Neopetissius perplexus,* n. sp., lateral view, sperm reservoir. Fig. 14. *Neopetissius variegatus*, n. sp., lateral view, sperm reservoir. Fig. 15. *Neopetissius immanis*, n. sp., lateral view, sperm reservoir. Scale line equals 0.10 mm for all drawings except Fig. 15, where it equals 0.13 mm.

Griswald (no date) (AMNH); 2 ♂♂, same except VIII-IX-1949, Zetek, Berlese funnel (NMNH); 1 ♀, same except IV-1945 (NMNH); 4 ♂♂, same except XII-1946-II-1947 (NMNH); 2 ♂♂, same except I-III-1944, Zetek (NMNH); 1 ♂, same except IX-X-1940, at light (NMNH); 1 ♂, same except 24-V-1940, at light (NMNH); 1 ♂, 1 ♀, same except V-1941 (NMNH); 1 ♂, 1 ♀, same except VII-VIII-1942 (NMNH); 1 ♀, same except X-XI-1941 (NMNH); 1 ♂, same except 14-IV-1937, S. W. Frost (NMNH); 1 ♀, same except 21-VI-1924, W. M. Wheeler (AMNH); 1 ♂, same except 24-VII-1924, N. Banks (AMNH); 1 ♂, same except 30-VIII-1974, H. Hespenheide (JAS); 1 ♂, same except 5-XI-1973, H. Wolda, light trap (JAS); 1 ♂, same except Snyder Molinos, XI-1973, H. Wolda (JAS); CANAL ZONE: 1 ♂, La Campana, II, III-1938, Jas Zetek, Fruit Fly Trap; 1 ♂, Coco Solo Hospital, 8-VI-1973, D. Engleman, light trap (JAS); 1 ♀, same except 15-VI-1973 (JAS); 1 ♂, same except 23-V-1972, 9°21'N, 79°37'W (JAS); 1 ♂, Fort Kobbe, 1-VII-1976, E. G. Riley (UMC); 1 ♂, same except 9-VI-1985, E. Riley, D. Rider (RIDER); 1 ♂, Gatun Spillway, 24-IV-1974, D. Engleman (JAS); 1 ♀, same except 16-I-1974, Slater & Harrington (JAS); 4 ♀♀ (one illustrated in dorsal view), Madden Forest Reserve, 9-I-1974, J. A. Slater, J. Harrington, adults in *Ficus* sp. litter (JAS); 1 ♂, 1 ♀, same except 17-I-1974 (JAS); 1 ♀, same except mi 2.5, 4-V-1973, 9°05'N, 79°37'W, H. Stockwell (JAS); MEXICO: 1 ♂, 2 ♀♀, Quintana Roo, 20 km N Felipe Carrillo Puerto, 12-14-VI-1983, E. Riley (RIDER); 1 ♀, Yucatan, Chichen Itza, 10-11-VI-1983, E. Riley (RIDER).

Additional Material Examined: TRINIDAD: 7 ♂♂, 4 ♀♀, Caura Valley Recreational Site, 5.6 mi post, 24-VIII-1982, J. A. & E. Slater, R. Clayton, M. Hassey (JAS); 2 ♂♂, Simla Biological Station (no date) M. Emsley, at light (JAS); 1 ♂, 1 ♀, Diego Martin, 3-IX-1941, E. McG. Callan, in cave (NMNH); 1 ♂, 1 ♀, St. George Co., Aripo Valley, Rapsey, 1-8-VIII-1978, R. M. Baranowski, malaise trap (RMB); 1 ♀, same except 4-11-X-1978 (JAS); 1 ♀, same except no date (JAS); 1 ♂, same except 7-14-VIII-1978 (JAS); 1 ♂, same except 27-IX-4-X-1978 (JAS); 1 ♂, Simla, Arima-Blanchisseuse Rd., 22-VII-1975, J. Price, blacklight trap, elev. 600 ft (RMB); 1 ♀, same except 21-IX-1983, R. M. Baranowski (JAS); 1 ♀, 14-VII-1902, Chipman (CAS); 1 ♀, Waller Field, 5 mi E Arima, 14-VI-1973, R. Baranowski, F. O'Rourke, V. Picchi, J. Slater (JAS); 1 ♂, Toco Rd., 20.74 mi post, 13-VIII-1975, R. M. Baranowski (JAS); 1 ♂, St. George Co., Curepe, Santa Margarita Circular Road, 10-VII-1978, F. D. Bennett (JAS); 1 ♀, same except 29-X-1975 (JAS); 2 ♂♂, 1 ♀, Simla, Arima Valley, 24-VIII-1978, M. Ramla, blacklight trap (JAS); 1 ♂, same except 20-IX-1978 (JAS); 1 ♂, same except 18-VIII-1978 (JAS); 2 ♀♀, Maracas Valley, 1 mi N St. Joseph, 9-IV-1979, L. Du Bruijn, blacklight trap (JAS); BRAZIL: Bahia: 23 ♂♂, 21 ♀♀, Encruzilhada, XI-1972, M. Alvarenga, 960 m (AMNH); 1 ♂, 1 ♀, same except 900 m (AMNH); 1 ♂, same except XI-1974, 960 m (AMNH); 1 ♀, Para, Jacareacanga, XII-1968, M. Alvarenga, at light (AMNH); 2 ♂♂, Pernambuco, Caruaru, V-1972, J. Lima, 900 m (AMNH); 1 ♂, Mogajuba, Mangabiera, IV-1953, Orlando Rego (RIO) 1 ♂, Amazonas, V-8, 19-V-1982, J. A. Rafael, malaise (INPA); 1 ♀, Santarem (F.A.O.), Diamintina 15-XII-1963, G. Marlier (IRSN); BRITISH HONDURAS (BELIZE): 1 ♂, Punta Gorda, 1931 (NMNH); 1 ♂, same except II-1932 (NMNH); 1 ♀, same except III-1931, J. J. White (NMNH); 1 ♂, San Antonio, VI-1931, J. J. White (NMNH); COLOMBIA: 1 ♂, Guajira, Manaure, 19-20-IX-1968, B. Malkin (AMNH); ECUADOR: 1 ♂, Pichincha, Rio Palenque, 29-IV-5-V-1987, B. Brown, L. Coote, malaise trap, rainforest, 120-160 m (UCMS); EL SALVADOR: 1 ♀, Rosario, 23-III-1955, M.S.V. (NMNH); GUATEMALA: 1 ♂, Altav. Paz., Cacao Trece Aguas, (no date), Barber & Schwartz (NMNH); 1 ♂, Peten Tikal, 8-IV-1956, Hubbel-Cantrall (UMAA); HONDURAS: 1 ♂, Guimas, 4-V-1923, T.H. Hubble (NMNH); MEXICO: Veracruz: 2 ♂♂, 5 ♀♀, 4 mi NW Sonte Comapan, 9-VI-1965, Burke, Meyer, Schaffner, at light (SWEET); 2 ♀♀, Rio Quezalapan, 2 mi E. Lalgo Catemaco, 12-VII-8-VIII-1964, J. R. Meyer, (SWEET); 1 ♂, near Montepio, UNAM Field Station los Tuxtlas, 10-16-VI-1981, W. R. Dolling, B. M. 1981-411, tropical rainforest, general collecting (BMNH); 1♂, Catemaco, 20-VII-1980, Schaffner, Weaver, Friedlander, at light (TAMU); 1 ♂, 1 ♀, 38 mi S. Acayucan, 17°57', 94°54', 2-III-1976 (no collector) (AMNH); 1 ♀, Lake Catemaco, 24-XI-1962, C. & P. Vaurie (AMNH); 1 ♂, Catemaca, 20-V-1964, J. C. & D. Pallister (AMNH); 1 ♀, same except 30-V-1964 (AMNH); 2 ♀♀, same except 31-V-1964 (AMNH); Yucatan: 2 ♀♀, Colonia Yucatan, 12-VII-1952, J. & D. Pallister (AMNH); 1 ♀, Chuminopolis, 6-VIII-1964, J. C. & D. Pallister (AMNH); 1 ♂, Chichen Itza, 24-V-1956, T. H. Hubble, at light (UMAA); Oaxaca: 1 ♂, Tehuantepec, 11-VI-1964, J. C. & D. Pallister (AMNH); Tamaulipas: 1 ♂, Boca Toma, 7 km SSE Gomez Farias, 5-7-I-1981, E. G. Riley (UMC); 1 ♂, Sotano de Gomez Farias, 1-VI-1964, J. Reddell et. al. (NMNH); Campeche: 1 ♀, Escarcega, 3-VI-1962, F. Islas S., light trap (NMNH); 1 ♂, same except 5-VI-1962 (NMNH); 1 ♂, same except 20-VI-1962 (NMNH); 2 ♀♀, same except 22-VI-1962 (NMNH); 1 ♂, 1 ♀, same except 24-VI-1962; 3 ♀♀, Escarcega, Forestry Research Station El Tormento, 17-21-VI-1981, W. R. Dolling, tropical rainforest at light (BMNH); SURINAM: 1 ♂, 1 ♀, P. H. v. Doesburg, Jr. (LEID); 1 ♀, Republiek, 10-V-1963, P. H. v. Doesburg, Jr. (LEID); 1 ♀, Brokopondo, 10-XII-1965, G. F. Men. (LEID); VENEZUELA: Aragua, El Limon, 14-V-1970, A. Namirez, 450 m (VENZ); 3 ♀♀, same except 17-18-II-1973, C. J. Rosales, 480 m, en trampa malaise (VENZ);

1 ♂, same except 22-II-1973 (VENZ); 1 ♀, same except 21-III-1973 (VENZ); 1 ♀, same except 28-III-1973 (VENZ); 1 ♀, same except 26-V-1976 (VENZ); 1 ♀, same except 20-VI-1973, 450 m (VENZ); 4 ♀♀, same except 25-VI-1973 (VENZ); 1 ♂, 1 ♀, same except 24-VI-1974 (VENZ); 1 ♂, same except 4-VII-1983, F. Fernandez Y., 450 m, lua negea (VENZ); 1 ♀, same except 30-V-1976, 450 m, luz de mercurio (VENZ); 1 ♂, same except 23-VII-1976 (VENZ); 1 ♂, same except 6-V-1977 (VENZ); 1 ♀, same except 16-V-1977 (VENZ); 1 ♀, same except 5-IV-1978 (VENZ); 1 ♀, same except 5-IV-1978 (VENZ); 1 ♀, same except 26-IV-1978 (VENZ); 1 ♂, La Isleta Choroni, 14-15-VII-1975, J. Salcedo, F. Fernandez, 200 m, en la luz (VENZ); 1 ♂, 1 ♀, Trujillo, Agua Viva, 9-VII-1977, E. Osuna (VENZ); 1 ♂, 1 ♀ Falcon, Las Dos Bocas, 7-VI-1969, R. Casares, J. B. Teran, M. Gelbez, 200 a 500 m (VENZ); 1 ♀, Falcon, Bocade Aroa, 1-3-IX-1976, C. Michelangelli, J. A. Clavijo, Luz de Mercurio (VENZ); 1 ♂, Monages, Uverito, 22-VI-1978, C. J. Rosales, en trampa malaise (VENZ); 1 ♀, same except 17-X-1979, en luz de neon (VENZ); 1 ♂, same except 19-VI-1978, trampa neon (VENZ); 1 ♀, same except 16-X-1978, C. J. Rosales and J. A. Gonzalez (VENZ); 1 ♂, same except 25-I-1979 (VENZ); 1 ♂, Monagas, Jusepianagas, 17-XI-1967, E. Osuna, A. Osutia (VENZ); 1 ♂, same except 10-IX-1965, F. Fernandez, C. J. Rosales (VENZ); 1 ♀, Cojedes, Galeras del Pao, 27-VII-1967, C. J. Rosales, R. Poole (VENZ); 1 ♀, Anzoategui, Clarines, 6 km N, 25-VIII-1975 (VENZ); 1 ♀, Aragua, Cagua, 27-XI-1957, E. Dosonte, 450 m (VENZ); 1 ♀, Zulia, Rio Ariguisa, 20-VIII-1979, E. Osuna (VENZ); 1 ♂, Zulia, Kasmerario, Yaaa Sierra de Perija, 22-IX-1961, C. J. Rosales, F. Fernandez, 250 m (VENZ); 1 ♀, Barinas, Calderas, 8-V-1972, J. & B. Bechyne, 1000 m (VENZ); Apure, Hato El Frio, Fundo Ceibote, 20-V-1975, C. J. Rosales, 100 m (VENZ); 1 ♂, Bolivar, Jabillal, Rio Cavra, 25-XI-1978, A. Chacon, 100 m (VENZ); 1 ♂, Bolivar, Rio Guaniamo, 25-28-V-1979, J. Clavillo, A. Chacon, G. Yepez, 160 m, N6°45', O66°01' (VENZ); 1 ♀, Bolivar, Guri, 16-XI-1966, J. & B. Bechyne, E. Osuna (VENZ); 1 ♀, Guasipati, 20-V-1975, B. Bechyne (VENZ); 1 ♂, Bolivar, Macagua, Gran Sabana, 17-XI-1966, J. Bechyne, E. Osuna, (VENZ); 1 ♀, Dto. Federal, Chichiriviche, Colonia, Tovar, 28-I-1977, C. J. Rosales, L. J. Joly, 10 km carret. (VENZ); 1 ♂, T. F. Amazonas, Pto. Ayacucho, 22-IV-1967, J. Anduce (VENZ);

Etymology: Named for James A. and Elizabeth A. Slater, in recognition of their many years together.

Neopetissius variegatus, O'Donnell, **New Species**

Dorsum variegated, covered with short, upstanding, silvery hairs, dull except for subshining head. Total length 5.40. Nearly parallel-sided; maximum width, just anterior to level of apex of clavus, 2.00. Head and anterior pronotal lobe except for collar and lateral margins dark grayish brown; posterior pronotal lobe, clavus and corium mostly chestnut, marked with buff yellow as follows: anterior pronotal collar on either side of middle; kidney-shaped spot near middle of posterior pronotal lobe and 2 equally-sized spots along posterior margin, one at humerus and one nearer meson; narrow, elongate, curving spot on clavus between anterior rows of punctures; linear spot between two posterior rows, connecting with previous spot mesally, and a small triangular patch along claval commissure; lateral margin of corium for 2/5 its length, 2 irregularly shaped spots between R + M and Cu in basal half of corium, and large, inverted-heart shaped spot subapically on corium; and 2 ovoid dashes laterally on scutellum. Membrane translucent raw umber, with veins, small indistinct spots between veins, and faint macula at apex cream color. First, second, basal 2/3 of third, and fourth antennal segments chestnut. Distal 1/3 of third antennal segment strongly contrasting cream color. Venter shiny maroon, becoming chestnut on coxal cavities, at posterior edges of thoracic segments, and distally on abdomen. Femora chestnut; tibiae buff yellow, suffused with chestnut on fore tibia and distally on mid and hind tibiae. Labium chestnut, becoming paler distally.

Head slightly declivent; tylus reaching middle of first antennal segment. Venter of head rugose, only slightly swollen on either side of midline. Length head 0.80; preocular length 0.50; width head 0.92; interocular 0.52. Antennae with first segment thickest, with inward curve and with a stout hair 1/3 of way along inner margin. Length antennal segments I 0.70; II 1.00; III 0.78; IV 0.90. Labium extending onto 3rd abdominal sternum, first segment slightly surpassing base of head. Length labial segments I 0.92; II 0.92; III 0.92; IV 0.48.

Anterior pronotal margin concave, with a well-defined collar set off by indistinct groove of small punctures. Posterior margin straight; lateral margin only slightly sinuate at junction of anterior and posterior lobes; explanate lateral margins narrower than width of collar at midline. Trichobothrium level with anterior-most punctures of collar groove at midline. Anterior lobe impunctate, slightly swollen, calli confluent; transverse impression deepest at sides, prominent even across middle; posterior lobe evenly and sparsely punctate. Width across trichobothria 1.22; posterior width pronotum 1.75; length 1.08. Scutellum with small shallow punctures in slightly depressed mesal area, a few larger punctures midway along lateral margin. Length scutellum 0.90; width scutellum 0.92. Clavus with 3 regular and 2 irregular rows of punctures. Length claval commissure 0.60. Corium with lateral margins explanate on anterior half, about as

wide as widest part of lateral pronotal margins, veins not strongly elevated; membrane with two cross-veins, one between Sc and R and one between R and M. Midline distance apex clavus-apex corium 1.05. Length apex corium-apex membrane 0.85. Scent gland peritreme elongate, narrow, gradually sloping posteriorly, not strongly elevated above evaporative area; evaporative area rugose, covering all of mesoepimeron and extending as a narrow tongue nearly to its dorsal margin, and covering more than half of metapleuron, extending as a wider tongue towards dorsal margin. Dorsal margin of metapleuron with a series of parallel vertical ridges. Fore femur moderately incrassate, armed below with 2 ranks of spines, an inner rank with several elongate hair-spines proximally, one longer, thicker tuberculate spine distad of these, and one large and three small, strong, stout, tuberculate spines; outer row, on postero-ventral surface of fore femur, with 5-6 hairs set on oblique, distally-directed tubercles; mid and hind femora only slightly swollen, with similar but less prominent rows of obliquely tuberculate spines. Hind femur with a spine near distal end ventrally.

Abdomen with venter shiny, sparsely clothed with long silvery hairs; sternum 4 with more numerous shorter appressed hairs. Male clasper (Fig. 7) stout, inner projection further from area of attachment than outer projection; outer surface of outer projection compressed. Sperm reservoir (Fig. 14) with a prominent, distally coiled sleeve; arcuate extension complete, broad in dorsal view; vesical seminal duct smoothly curving inside sleeve until spiral starts, then flattening and forming a thickened ridge at sharp distal bend; wings elongate, prominent, directed distally; holding sclerites absent; corrugations distinct. Spermatheca (Fig. 19) mushroom-shaped, with bulb sitting directly on very narrow distal flange; duct about ⅓ diameter of bulb, but nearly doubling in width proximally; proximal flange very lightly sclerotized except for heavy point on one side.

Holotype: ♂, BAHAMAS, Mayaguana Isl. 24-VIII-1963, C. Murvosh, Blacklight trap (AMNH).

Paratypes: 1 ♂, same data as holotype except 27-VIII-1963; 3 ♂♂, 2 ♀♀, same data as holotype except 28-VIII-1963; 1 ♀, same data as holotype except 26-VIII-1963; 2 ♀♀, same data as holotype except 3-VIII-1963 (JAS, RMB, UCMS).

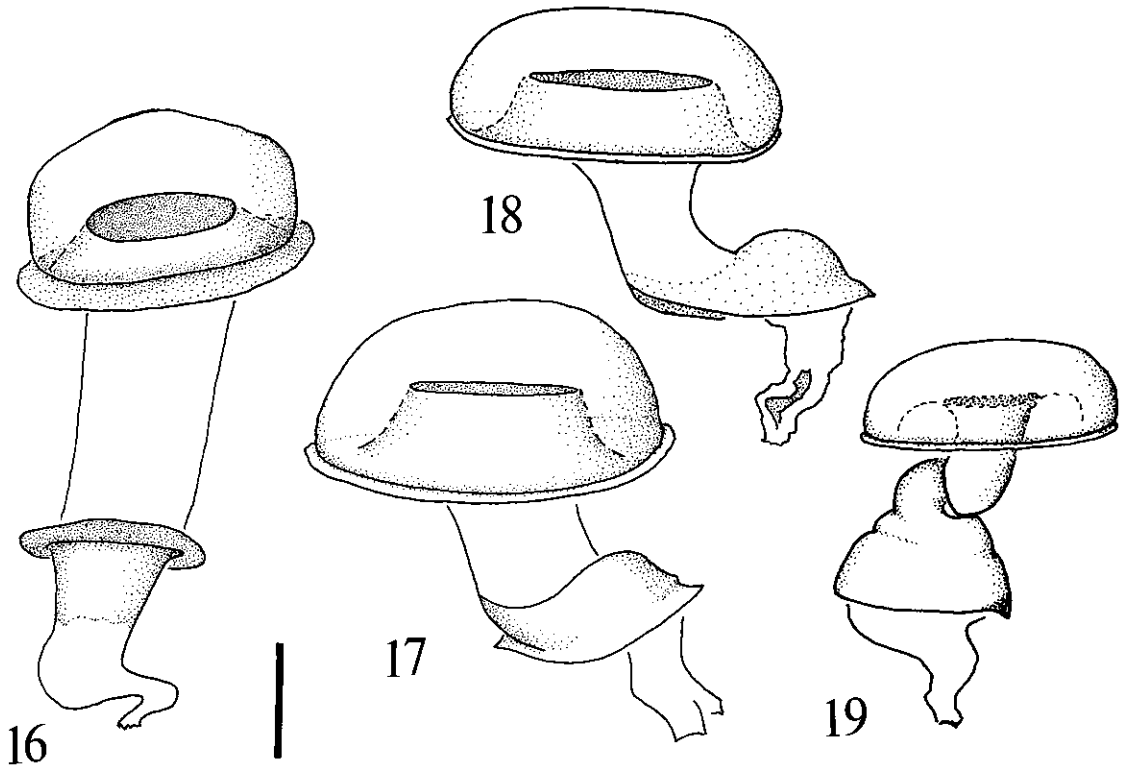

Fig. 16. *Neopetissius slaterorum*, n. sp., spermatheca. Fig. 17. *Neopetissius perplexus*, n. sp., spermatheca. Fig. 18. *Neopetissius froeschneri*, n. sp., spermatheca. Fig. 19. *Neopetissius variegatus*, n. sp., spermatheca. Scale line equals 0.10 mm.

Additional Material Examined: BAHAMAS: 2 ♂♂, 4 ♀♀, Eleuthera, Rainbow Bay, 1-9-VI-1984, R. & D. Wiley, blacklight trap (RMB); 1 ♀, Andros Is. Nicholls Town, 28-VI-1994, R. M. & H. V. Baranowski, blacklight trap (RMB); CUBA: Coast below Pico Turqueno, 26-30-VI-1936, Darlington (AMNH); DOMINICAN REPUBLIC: 1 ♂, 1 ♀, Dajabon, 9 km S Loma de Cabrera, 19-21N, 71-37W, 12-VII-1992, J. Rawlins, S. Thompson, C. Young, R. Davidson, 620 m, disturbed pastures in mesic woodland (CARN); La Altagracia: 1 ♀, Nisibon (Papagallo), 23-VI-1998, R. M. Baranowski and R. E. Woodruff, blacklight trap (RMB); 1 ♀, same except 16-19-VI-1998, R. E. Woodruff and P. H. Freytag (RMB); 1 ♀, 5 km W Nisibon, 17-VI-1998, R. E. Woodruff and P. H. Freytag (RMB); 2 ♀♀, La Romana, 3 km Casa de Campo, 15-VI-1998, R. E. Woodruff and P. H. Freytag (RMB); 1 ♂, El Seibo, Loma de Chivo, 7 km N Pedro Sanchez, 20-VI-1998, R. E. Woodruff and P. H. Freytag, 5000 ft., blacklight trap (RMB); 1 ♂, Monsenor Noel, nr. Bonao, Jacaranda Hotel, 1-VII-1999, R. E. Woodruff and R. M. Baranowski (RMB); Pedernales: 1 ♂, 24.5 km N Cabo Rojo, 5-VII-1998, R. M. Baranowski and R. E. Woodruff, 3200 ft., blacklight trap (RMB); 1 ♂, 23.5 km N Cabo Rojo, 18-06N, 71-39W, 13-19-VII-1990, L. Masner, J. Rawlins, C. Young, 540m deciduous forest, intercept trap (CARN); 1 ♀, 9.5 km N Cabo Rojo, 18-02N, 71-39W, 19-VII-1990, J. Rawlins, C.W. Young, S. A. Thompson, 35 m (CARN); 1 ♀, 13 km N Pedernales, Along Rio Mulito, 18-09N, 71-46W, 17-VII-1992, J. Rawlins, S. Thompson, C. Young, R. Davidson, 230 m, riparian woodland (CARN); 1 ♀, Hato Mayor, Parque Los Haitises, 3 km W Cueva de Arena, 18-04N, 69-29W, 7-9-VII-1992, R. Davidson, J. Rawlins, S. Thompson, C. Young, 20m (CARN); 1 ♂, Monte Cristi, 5 km NNE Botoncillo, 19-06N, 71-24W, 29-30-XI-1992. R. Davidson, M. Klinger, S. Thompson, J. Rawlins, 50 m, arid thornscrub (CARN); 1 ♂, La Toma, N of San Cristoban, 9-10-VI-1969, Flint & Gomez (NMNH); 1 ♂, Puerto Plata, 23-VIII-1967, L. H. Rolston (SWEET); 1 ♂, Santo Domingo, 12-VIII-1967, J. C. Schaffner, at black light (SWEET); 2 ♂♂ (one dissected and illustrated), 2 ♀♀ (one dissected and illustrated), 1 immature, Duarte, 6 km N Castillo. R. D. Schuster, 8-VIII-1978 (JAS, UCD, UCMS); HAITI: 1 ♀, Etang Lachaux, SW Peninsula, 26-27-XI-1934, Darlington, under 1000 ft (AMNH); JAMAICA: 1 ♂, Portland, near Millbank, along Rio Grande River, 18-V-1969, R. E. Woodruff, blacklight trap (RMB); 1 ♀, St. Andrew, Vi-1973, C. Griffith (JAS); PUERTO RICO: Rio Abajo, Forest Rd. #621, K.S.2., 1000 ft., 18°18' N, 66°04' W (NMNH); VIRGIN ISLANDS: St. Croix: 1♂, Hams Bluff, 27-I-1979, M. A. & L. L. Ivie (UCMS); St. John: 3 ♀♀, Estate Carolina, NW Coral Bay, 18-V-1984, W. B. Muchmore, 250 ft., litter (RMB); 1 ♀, Estate Adrain ruins, 25-II-1984, W. B. Muchmore, along walls (RMB); 1 ♂, top Bordeaux Mt., 15-V-1984, W. B. Muchmore, liter (RMB); TURKS AND CAICOS: 1 ♀, M. Caicos, Bambarra, 4-XII-1993, B. M. Riggs, blacklight trap (RMB); 1 ♂, same except 12-XII-1993 (RMB); 1 ♂, North Caicos Is., Pelican Beach Hotel, 31-V-1991, H. V. & R. M. Baranowski, blacklight trap (RMB).

Etymology: From the Latin, "variegat-", marked variously, an adjective in reference to the variegated dorsal coloration.

Females lack the prominent tuberculate hairs on the fore femur, and have longer beaks. Some specimens have three cross-veins in the membrane.

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REFERENCES CITED

O'DONNELL, J. E. 1986. Systematics of Western Hemisphere Lethaeini (Insecta: Hemiptera: Lygaeidae). Ph.D. Dissertation, University of Connecticut, Storrs, CT.

O'DONNELL, J. E. 1991. A survey of male genitalia in lethaeine genera (Heteroptera: Lygaeidae: Rhyparochrominae). J. New York Entomol. Soc. 99: 441-470.

SMITHE, F. B. 1975, 1981. Naturalist's Color Guide and supplement. The American Museum of Natural History, New York, NY, 8 color plates.