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Review of the Families
Tanypezidae and
Strongylophthalmyiidae,
with a Revision of
Neotanypeza Hendel
(Diptera: Schizophora)

Owen Lonsdale

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ABSTRACT

Lonsdale, Owen. Review of the families Tanypezidae and Strongylophthalmyiidae, with a revision of *Neotanypeza* Hendel (Diptera: Schizophora). Smithsonian Contributions to Zoology, number 641, vi + 60 pages, 92 figures, 5 tables, 2013. The families Tanypezidae and Strongylophthalmyiidae are reviewed, including *Neotanypeza* Hendel and *Tanypeza* Fallén in the former and *Nartshukia* Shatalkin and *Strongylophthalmyia* Heller in the latter. *Neotanypeza* is revised, and Tanypezidae is analyzed phylogenetically. *Scipopeza* Enderlein, syn. nov., *Polphopeza* Enderlein (syn. Hennig (1936)), *Tritanypeza* Enderlein, syn. nov., and *Tripolphopeza* Enderlein, syn. nov., are treated as junior synonyms of *Neotanypeza*. The species *Scipopeza dimorpha* Hennig and *S. grandis* Enderlein are subsequently treated as *Neotanypeza* for the first time. Twenty-five extant species of *Neotanypeza* are recognized, 10 of which are described here as new: *N. alopecia*, sp. nov., *N. argentia*, sp. nov., *N. leucothrix*, sp. nov., *N. marshalli*, sp. nov., *N. micans*, sp. nov., *N. nigrithrix*, sp. nov., *N. plotoplax*, sp. nov., *N. posthos*, sp. nov., *N. symmetros*, sp. nov., and *N. vexilla*, sp. nov. *Neotanypeza claripennis* (Schiner), stat. reinst., and *N. abdominalis* (Wiedemann), stat. reinst., are resurrected from synonymy. *Neotanypeza flavitibia* Hennig, syn. nov., is included as a junior synonym of *N. elegans* (Wiedemann); *Tritanypeza rufiventris* Enderlein, syn. nov., as a synonym of *N. flavibasis* (Enderlein); *Polphopeza elegantina* Enderlein, syn. nov., as a synonym of *N. apicalis* (Wiedemann); *Tanypeza flavohirta* Enderlein, syn. nov., as a synonym of *N. ornatipes* (Bigot); and *Tritanypeza cubitofusca* Enderlein, syn. nov., and *N. nigripalpis* Hennig, syn. nov., as synonyms of *N. callitarsis* (Rondani). Twelve lectotypes are designated for the following species (original combinations): *Tanypeza abdominalis* Wiedemann, *Tanypeza apicalis* Wiedemann, *Tritanypeza cubitofusca* Enderlein, *Tanypeza claripennis* Schiner, *Tanypeza dallasi* Shannon, *Tanypeza elegans* Wiedemann, *Tritanypeza flavibasis* Enderlein, *Tritanypeza rufiventris* Enderlein, *Polphopeza montana* Enderlein, *Tritanypeza ochrifemur* Enderlein, *Taenaptera pallidipennis* Bigot, and *Tanypeza rutila* Wulp.

Cover images (left to right): *Strongylophthalmyia angustipennis* Melander, male and female in copula; *Neotanypeza claripennis*, tentatively included male; *Tanypeza longimana* Fallén, female.

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Review of the Families Tanypezidae and Strongylophthalmyiidae, with a Revision of *Neotanypeza* Hendel (Diptera: Schizophora)

INTRODUCTION

The Tanypezidae, or stretched-foot flies of von Tschirnhaus (2008), is a readily recognizable family of acalyprate Diptera (Schizophora). The position of this family in the Schizophora has been and still is somewhat uncertain, but there is consensus that the Tanypezidae and Strongylophthalmyiidae are sister groups, leading some authors (Griffiths, 1972; McAlpine, 1997b) to justifiably include the latter as a subfamily. Although both share a number of external synapomorphies and have highly similar male and female genitalia, the general habitus of each is distinctive and conservative, leading most authors to keep them separate. Although there has arguably been an unnecessary proliferation of family group names for several small clusters of genera in an already family-rich Schizophora, the separation of these two families is maintained here, mostly for the practical purpose of diagnostics, as discussed below.

The species of Tanypezidae have silvery stripes on the body, a relatively robust thorax, long slender legs, and a large head that is flattened posteriorly (Figures 2–6). Additional features include an apical convergence of veins R_{4+5} and M_1 (Figures 25–33), dorsal setulae on vein R_1 , and a variably tomentose “ocellar disc” behind the ocelli (Figure 7). The species of Strongylophthalmyiidae are comparatively more slender in appearance, have reduced chaetotaxy on the frons and thorax, and have a globose sepsid-like head with pronounced ocellar bristles and a deep depression behind the ocelli (Figures 1, 34).

Within the Acalyptratae (Brachycera: Schizophora), McAlpine (1989) relegated the sister families Tanypezidae and Strongylophthalmyiidae to a basal position in the Diopsoidea (=Nothyboidea of Hennig, 1958). The remaining Diopsoidea, including Somatiidae, Psilidae, Nothybidae, Megamerinidae, Syringogastridae, and Diopsidae, were defined by a bare vein R_1 (here treated as plesiomorphic in all diopsoid families), loss of the anterior notopleural bristle, and loss of the presutural intra-alar bristle. Conversely, McAlpine (1997b) found tanypezids to be more similar in morphology to certain taxa in the Nerioidae, particularly those in the Cypselosomatidae, and suggested a possible relationship with that superfamily. In an earlier paper (McAlpine, 1997a), he made similar statements regarding the family Megamerinidae, which he moved with more confidence from the Diopsoidea to the Nerioidae, following his earlier classification in McAlpine (1966). The classification of McAlpine (1989) is maintained here, however, and will be thoroughly discussed in a future publication (Lonsdale et al., unpublished). Other parallels with the

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neroid families Neriidae and Micropezidae have been frequent in the literature since long legs and convergent R_{4+5} and M_1 veins occur in all three families. An alternative to these classifications was proposed by Griffiths (1972), which was discussed by McAlpine (1985) and is not considered further here.

TANYPEZIDAE

Tanypeza Fallén was described for the Holarctic *T. longimana* Fallén (Figure 2) by Fallén (1820). A number of *Neotanypeza* Hendel and one micropezid (*Taeniptera melanopus* Bigot) have been placed in it since, but the genus is here considered to contain only the type species and the Nearctic *T. picticornis* Knab and Shannon.

Hendel (1903) proposed *Neotanypeza* as a subgenus in *Tanypeza* for the South American species with reduced ocellar and postvertical bristles (as in Figures 7, 8). Enderlein (1913) then described *Polphopeza* Enderlein and *Scipopeza* Enderlein for species with differing numbers of frontal orbital bristles. Enderlein (1913) also treated *Myrmecomymia* Robineau-Desvoidy (= *Cephalia* Meigen, Ulidiidae) and *Tetradiscus* Bigot (= *Chyliza* Fallén, Psilidae) as tanypezids, but these were removed by Hennig (1936), who also synonymized *Polphopeza* with *Neotanypeza*, which was given full generic status. Enderlein (1936) immediately resurrected *Polphopeza* and again added two more new genera, *Tripolphopeza* Enderlein and *Tritanypeza* Enderlein, both of which have three pairs of dorsocentral bristles.

In the present revision it has been found that the phylogeny of the Tanypezidae is best represented by a two-genus classification, including *Tanypeza* and *Neotanypeza*, with all of Enderlein's genera reduced to synonyms of the latter. A similar system is presented in Apigian and Thompson (2010), although Enderlein's genera *Polphopeza*, *Tritanypeza*, and *Tripolphopeza* are recognized as subgenera, albeit only tentatively. The bulk of the family's diversity is in the neotropical *Neotanypeza*, which has 25 species. This genus is here keyed, illustrated, and analyzed phylogenetically, including all *Tanypeza*, *Nartshukia* Shatalkin, several *Strongylophthalmyia* Heller, and a number of neroid and diopsoid exemplars as out-groups.

The species of *Neotanypeza* vary subtly in morphology and can be difficult to diagnose and delimit; an example of the difficulties involved in species circumscription is detailed in the comments section for *N. claripennis*. The numerous other species-level problems are discussed in the comments sections for those relevant species. As a result of these difficulties, the present estimate of species number has remained conservative, despite describing a number of new taxa. It must therefore be stressed that the species limits presented here must be considered tentative and should be revisited at a later date when additional data more sensitive to species boundaries are available.

STRONGYLOPHTHALMYIIDAE

The Strongylophthalmyiidae is also represented by two genera: *Nartshukia* (known from a single Vietnamese female; Figure

34) and the widespread and diverse *Strongylophthalmyia*. Contrasting the predominantly New World Tanypezidae, this group has a mostly East Asian distribution (see Shatalkin, 1996), although two species (*S. angustipennis* Melander [Figure 1] and *S. pengellyi* Barber) are restricted to the Nearctic and several species extend into, or are restricted to, the Australian region. The only two species described from the Afrotropics were transferred to the Clusiidae by Barraclough (2000). Shatalkin (1996) included the genus *Longinasus* Frey in the family, but Steyskal (1968) found this genus to be a junior synonym of *Ozaenina* Enderlein, a genus in the tephritoid family Richardiidae.

TAXONOMIC TREATMENTS

The two species of *Tanypeza* were keyed by Steyskal (1965), and the two Nearctic *Strongylophthalmyia* were keyed by Barber (2006). The Strongylophthalmyiidae of the Old World, of which there are 44 described species, have most recently been treated by Steyskal (1971), Krivosheina (1981), Shatalkin (1981, 1993, 1996), Iwasa (1992, 1998), Yang and Wang (1992, 1996), and Papp et al. (2006). The neotropical Tanypezidae was last treated in 1936 by Hennig, followed by Enderlein, and the first fossil representative of the family, *Neotanypeza dominicana* Lonsdale and Apigian from Dominican amber dating to 17–20 MYA, was described by Lonsdale and Apigian (2010). An excellent overview of the Tanypezidae was provided by Roháček (1998).

LIFE HISTORY

ADULTS. Very little is known about the life history of adult Tanypezidae and Strongylophthalmyiidae, although thorough records of the biology of the two Nearctic *Strongylophthalmyia* species were provided by Barber (2006), who detailed ecology, biology, and behavior. *Tanypeza longimana* adults have been found in low vegetation in humid deciduous woods in Europe, usually at low altitudes in floodplains and submontane areas and often around running water (Roháček, 1998). Unpublished records report the collection of *Strongylophthalmyia* from *Alocasia* leaves in Australia and ant-like behavior on banana leaves in a New Guinea species (Evenhuis, 1989).

LARVAE AND PUPARIA. Palaearctic *Strongylophthalmyia* species have been reared from under the bark of rotting birch, elm (*S. stackelbergi* Krivosheina), and aspen (*S. pictipes* Frey, *S. ustulata* (Wahlberg)); larvae were common in the lower layers of the bark, whereas puparia were found in the outer layers (Krivosheina, 1984). Nearctic *S. angustipennis* were also reared from aspen bark, where it was presumed they overwintered as mature or nearly mature larvae; the puparia are characterized by biramous anterior spiracles similar to those found in *S. ustulata* (Barber, 2006). *Tanypeza longimana* was also speculated to live in rotting wood as larvae (Chandler, 1975). There is only one documented case of an unsuccessful attempt to rear the young of *T. longimana*, which were thoroughly described in the same paper (Foote, 1970): presumably saprophagous third instar maggots derived from a gravid female swept from yellow

skunk cabbage (*Lysichitum americanum*) were fed decaying watermelon rind and pulp.

EGGS. Eggs are approximately 2.3 times longer than wide in the Tanypezidae, known from *Neotanypeza elegans* and *Tanypeza longimana* (Figures 87, 88), and approximately four times longer than wide in *Strongylophthalmyia angustipennis* (Figure 89). The micropyle is minute and not strongly raised from the egg surface. The surface is covered with minute shallow tubercles in *Strongylophthalmyia* that are grouped within elongate hexagonal cells. Eggs in the Tanypezidae are more roughly tuberculate, without a pattern of cells and with several longitudinal furrows converging apically.

MATERIALS AND METHODS

To discover synapomorphies for the Tanypezidae and Strongylophthalmyiidae and to polarize characters, out-group representatives at the National Museum of Natural History of Diopsoidea and Neriioidea were examined, the two superfamilies to which the family has been allied. Most of these taxa were included in the phylogenetic analysis (see Table 1): *Megamerina annulifera* Bigot (Megamerinidae), *Sphyracephala subbifasciata* Fitch (Diopsidae), *Centrioncus prodiopsis* Speiser (Diopsidae), *Loxocera collaris* Loew (Psilidae), *Somatia aestiva* (Fabricius) (Somatiidae), *Nothybus triguttatus* Bezzi (Nothybidae), *Gobrya* sp. (Gobryidae), *Syringogaster rufa* Cresson (Syringogastridae), *Formicosepsis tinctipennis* Meijere (Cypselosomatidae), and *Pseudopomyza antipoda* (Harrison) (Pseudopomyzidae). The single male *Centrioncus* available was not dissected; male genitalic data were taken from Feijen (1983). Data for *Nartshukia*, known only from the female holotype of *N. musiva* Shatalkin (Zoological Museum, Moscow), were taken from Shatalkin (1994) and photographs provided by A. Shatalkin.

Most of the terminology used by Steyskal (1987), Roháček (1998), and Barber (2006) is maintained for structures of the male genitalia. Deviations from these norms, illustrated in Figures 35–46, are as follows: the “paramere” of Steyskal (1987), the “arch-like sclerite of the hypandrium” of Barber (2006), and the pregonite of Roháček (1998) are here treated as the postgonite. The “postgonite” of Barber (2006) is treated as a process of the hypandrium. Barber’s (2006) “basiphallus” is possibly an elongate basal section of the distiphallus, with the basiphallus proper comprising a basal sclerotized ring in this structure, but the homology of this region is still partially unclear. The male pregenitalic segments are treated as sternites 6, 7, and 8 only. The supra-alar bristle of McAlpine (1989) is treated as the intralar. “Fronto-orbital bristle” is used preferentially over “orbital bristle,” as is “phallapodeme” over “aedeagal apodeme.” Abdominal sclerites referred to in the text will belong to the male unless stated otherwise. The male cerci are fused and are always referred to in the plural.

Male and female genitalia were prepared by macerating the abdomen in hot potassium hydroxide (10% solution) for 10–13 minutes, dissolving the soft tissue, followed by washing in glacial

acetic acid and water. Genitalia were dissected and then illustrated using a camera lucida while in glycerol. Abdomens were placed in genitalia vials pinned with the specimens following examination. Illustrations of the male abdomen, detailing components of the genitalia, are provided for one species of *Tanypeza* (*T. longimana*; Figures 41–45) and *Strongylophthalmyia* (*S. angusticollis* Frey; Figures 35–40); the simpler female terminalia of these genera are not redrawn as excellent illustrations are already provided in Roháček (1998) and Barber (2006), with the exception of a *Tanypeza* ventral receptacle (Figure 51), which is added for comparison to that of *Neotanypeza* (Figure 50). Eggs and wings were permanently mounted on slides in euparal.

Phylogenetic hypotheses for the species of Tanypezidae were produced through analysis of the character matrix in Table 2 using PAUP* version 4.0b10 (Phylogenetic Analysis Using Parsimony; Swofford, 2003); a heuristic analysis was performed using 100 replicate random addition sequences with tree bisection and reconnection (TBR). The character matrix was compiled using DELTA (Dallwitz et al., 2000). All characters were treated as unordered and unweighted. Trees were drawn, and characters were optimized (ACCTRAN optimization) with the aid of MacClade (Maddison and Maddison, 2005) and Winclada (Nixon, 2002). Because *N. grandis* exhibits sexual dimorphism in chaetotaxy, external characters coded for in the matrix (Table 1) were taken solely from the male. Character numbers are listed in square brackets in the following phylogenetic discussion.

Material was borrowed from or deposited in the following institutions:

AMNH	American Museum of Natural History, New York
BMNH	Natural History Museum, London
CASC	California Academy of Sciences, San Francisco
CBFC	Colección Boliviana de Fauna, La Paz
CNC	Canadian National Collection of Insects, Arachnids and Nematodes, Ottawa, Ontario
CSCA	California State Collection of Arthropods, California Department of Food and Agriculture, Sacramento
DEBU	University of Guelph Insect Collection, Guelph, Ontario, Canada
EMUS	Entomological Museum of Utah State University, Logan
INBio	Instituto Nacional de Biodiversidad, Santo Domingo de Heredia, Costa Rica
INPA	Coleção Sistemática da Entomologia, Manaus, Brazil
MRSN	Museo Regionale de Scienze Naturali, Turin, Italy
NMW	Naturhistorische Museum, Vienna
PAN	Museum and Institute of Zoology, Polish Academy of Sciences, Warsaw
QCAZ	Universidad Católica del Ecuador, Quito
SMT	Staatliches Museum für Tierkunde, Dresden, Germany
TAMU	Texas A&M University, College Station
TAU	Tel Aviv University, Tel Aviv, Israel

TABLE 1. Morphological character list for use in the phylogenetic analysis.

Character	Character states (treated as unordered)	Character	Character states (treated as unordered)
1. Head	Back of head flat to shallowly rounded Orbicular, back of head rounded, with deep depression behind ocelli	17. Fronto-orbital number	Three or more Two One None
2. Frons, posterior margin	Grading onto back of head Flat, strongly delimited	18. Outer vertical bristle	Present Absent
3. Frons	Shiny or with thin pilosity Velvety, at least in part	19. Ocellar bristle	Small to absent Long, many times length of ocellar tubercle
4. Male frons	As broad as female frons Strongly narrowed medially, more so than female	20. Postvertical bristle	Well developed, nearly as long as vertical bristle Minute to absent Of moderate length and longer than tubercle
5. Reflective anterolateral triangles on frons	Absent Reaching midpoint of frons or beyond Short, not much longer than wide	21. Postvertical bristle	Vertical to reclinate or absent Slightly to distinctly anterocline
6. Ocellar tubercle	On posterior margin of frons (closer to level of inner vertical) Near midpoint of frons (closer to level of anterior fronto-orbital)	22. Postpronotal bristle	Present Absent
7. Postocellar region	Shining With tomentose patch, sometimes enclosed in disc	23. Presutural intra-alar	Present Absent
8. Ocellar disc	Absent Present, fully tomentose (sometimes shining immediately behind ocelli) Present, pilosity reduced to medial spot	24. Supra-alar bristle	Present (i.e., three bristles in posterolateral corner of scutum) Absent (i.e., two bristles in posterolateral corner of scutum)
9. Occiput	Pile short Pile long, yellow Pile long, white	25. Dorsocentral number	One or none Two Three or more
10. First flagellomere	Variable, shorter than three times length of pedicel Narrow, longer than three times length of pedicel Thick, width at least half length, longer than three times length of pedicel Thick, infuscated apically (at least), longer than three times length of pedicel	26. Lateral scutellar bristle number	One None
11. Clypeus	Narrow, band-like or not as below Thick, at least infuscated apically	27. Proepisternal bristle	Present Absent
12. Palpus	Brown Yellow	28. Notal setulae	Very short, usually brown Long, yellow
13. Buccal cavity	Narrow Wide	29. Thorax	Without reflective tomentose patches With broad silvery tomentose stripes
14. Prosternum	Narrow, small Wide, broadly separating coxae Wide, separating coxae and fused to pleuron	30. Meron	Entirely shining Shining with posterior margin tomentose Entirely tomentose
15. Hind tibia	Straight or evenly bent Deviated subbasally	31. Long pile	Absent (some evident on anepisternum and katepisternum in <i>Megamerina</i>) Present on postpronotum, anepisternum, anepimeron and katepisternum
16. Fore tarsal claws	Similar to claws on mid and hind legs Broad with surrounding region strongly setose	32. Hind basotarsomere	Narrow at base With swollen protuberance at base
		33. Male hind trochanter and femur	With pale indistinct setulae With dark, long, stout bristles
		34. Greater ampulla	Absent Present
		35. Dark bristles extending to base of knob on halter	Absent or hairs weak and white Present, well developed

TABLE 1. (Continued)

Character	Character states (treated as unordered)	Character	Character states (treated as unordered)
36. Wing	Clear Dusky, at least apically Variably patterned with distinct spots	54. Hind tibia	Yellow Entirely brown With basal and subapical bands Brown on basal half
37. Subcostal break	Absent Present	55. Fore basotarsomere	Base yellow Base brown
38. Subcosta	Complete Incomplete	56. Mid basotarsomere	Base yellow Base brown
39. Vein R ₁	Bare dorsally Setose dorsally	57. Hind basotarsomere	Base yellow Base brown
40. Veins R ₄₊₅ and M ₁	Parallel to slightly convergent Strongly convergent	58. Abdomen	Entirely brown or only bicolored along lateral margins Yellow on tergite 2 at least
41. CuA ₂	Shallowly bent or straight Strongly bowed	59. Abdomen	Setulose, sometimes smooth, never “pebbled” Without setulae, with “pebbled” texture (pronounced posteriorly)
42. Cell dm	Posterior margin straight or nearly so Posterior margin slightly pointed at dm-cu Posterior margin strongly pointed at dm-cu (see arrow, Figure 26)	60. Sternite 2	Anterior margin straight, entire Anterior margin with short separate sclerite with two posterior emarginations
43. Calypter (upper)	Linear, nearly absent; sometimes shallowly lobate Large, broadly rounded	61. Tergite 2	Anterolateral bristles neither long nor thick Anterolateral bristles long and thick
44. Pile on calypter (upper)	Short, color variable Long, pale Long, brown	62. Male tergite 1	Lateral bristles brown to black Lateral bristles yellow
45. Calypter (lower)	Hairs pubescent, relatively sparse Hairs short, dense, and “furry”	63. Male sternite 6	Symmetrical or nearly so Asymmetrical
46. Scutum	Entirely dark or with pale shoulder or posterolateral spot With thick yellowish medial stripe	64. Male sternite 6	Both sides evenly sclerotized With heavily sclerotized left sublateral band
47. Fore femur	Entirely yellow With inner distal spot; sometimes also with outer distal spot Brown apically or predominantly brown	65. Male sternite 7	Well developed, distinct Atrophied, indistinct
48. Mid femur	Yellow Brown apically Brown on distal third or more	66. Male sternites 7 and 8	Encircling abdomen on vertical axis; short Encircling abdomen obliquely; elongate
49. Meron, pilose anteromedial margin	Absent Present	67. Male sternite 8	Smooth or pebbled texture Wrinkled
50. Postcoxal bridge	Absent Present	68. Male sternite 8	Setulose Silvery tomentose
51. Hind femur	Yellow Brown medially Brown apically	69. Surstylus	Separate from epandrium Fused to epandrium on posterior half Entirely fused to epandrium
52. Fore tibia	Yellow Brown on basal half or more	70. Surstylus	Narrower and shorter than epandrium Large and broadly rounded, as large as epandrium (seen laterally)
53. Mid tibia	Yellow or only brown apically Entirely brown With basal and apical bands Brown on basal half	71. Surstylus, setulae on outer posterior margin	Narrow, curved, not different from surrounding setulae Stout, straight, spine-like
		72. Bifid hypandrial process	Absent Present
		73. Hypandrium	Aedeagal guides (hypandrial lobes) separate anteromedially Aedeagal guides nearly meeting medially

(continued)

TABLE 1. (Continued)

Character	Character states (treated as unordered)	Character	Character states (treated as unordered)
74. Number of hypandrial bristles	Many One None	81. Female sternite 8	Entire Divided or at least desclerotized medially
75. Postgonite	Lobate, usually separate, but sometimes fused to hypandrium along margin Elongate, band-like, curved, and fused to hypandrium	82. Female intersegmental membrane (segments 7 and 8)	Short At least two times longer than segment 8
76. Basiphallus	Distinct, articulating phallapodeme and distiphallus Indistinct, fused to base of distiphallus	83. Sternite and tergite 10	No more than two times longer than wide Several times longer than wide
77. Epiphallus	Small, lobate (if present) Large, plate-like, composed of two articulating sclerites; distal sclerite small Large, plate-like, composed of two articulating sclerites; distal sclerite large	84. Female sternite 10 with internal process	Absent Present
78. Distiphallus	Variable, but not as below Elongate, with heavy sclerite in membranous apex Elongate with apical sclerotized section Membranous medially or sublaterally, sides toothed; usually not much longer than wide	85. Female cerci	Subcylindrical, round in cross section Curved in cross section
79. Female tergite 6	Widest basally or apically Widest medially	86. Spermatheca number	Three Two, well developed Two, with one highly reduced
80. Female segment 7	Sternite and tergite separate Sternite and tergite partially fused Sternite and tergite forming complete sclerotized tube	87. Spermatheca	Surface smooth Surface papillose
		88. Spermatheca	Base not telescoped Base telescoped
		89. Female genital chamber	Entirely membranous With vaginal sclerite
		90. Ventral receptacle	Various, but not as below Transversely lobate with surrounding dome
		91. Spermathecal ducts	Entirely separate Fused near base

UMO	Oxford University Museum of Natural History, Oxford, UK
USNM	National Museum of Natural History, Washington, D.C.
UZMC	Zoological Museum, University of Copenhagen, Copenhagen
ZMHU	Museum für Naturkunde der Humboldt, Berlin
ZMUM	Zoological Museum of Moscow University, Moscow

MORPHOLOGY OF TANYPEZIDAE AND STRONGYLOPHTHALMYIIDAE

DIAGNOSIS

Gena with long straight hairs; occiput bulging and with long, dense yellow to white pile. Antenna slightly to strongly elbowed. Zero to two (0–2) fronto-orbital bristles. Vibrissa absent.

Proepisternal and katepisternal bristles absent. Ocellar tubercle usually removed from posterior margin of frons. Prosternum connected to pleuron laterally (completely fused to pleuron in Strongylophthalmyiidae), not separated from pleuron by broad membranous region (compare Figure 11 to Figures 9 and 10). Calypter broad and lobe-like, with marginal hairs long. Legs long and slender. Surstylus completely fused to epandrium (Figures 35, 43, 52). Postgonite long, flexible, band-like, with several apical setulae, and fused to inner face of hypandrium basally (Figures 39, 44, 56). Female segments 6–10 distinctly narrowed and elongate, forming slender tubular ovipositor; female cerci long, curved in cross section, and largely fused (Figures 47–49); sternite 10 with elongate, well-sclerotized, narrow clavate internal process extending into segment 8 (Figures 47, 48).

DESCRIPTION

HEAD. Predominantly black, although antenna, face, gena, and occiput frequently paler. Antenna at least slightly

elbowed (pronounced in Tanypezidae, with first flagellomere narrower and elongate; Figures 7, 8). Arista subbasal, short plumose to bare. Antennae closely spaced, usually touching. Chaetotaxy: 0–2 reclinate fronto-orbital bristles; 1 ocellar bristle (divergent); 1 postvertical bristle (divergent); 1 inner vertical bristle; 0–1 short outer vertical bristle; 1–2 subgenal bristles; vibrissa absent. Frons with row of minute lateral setulae on orbital plate and with large space between ocellar tubercle and posterior margin. Occiput with long pile; gena narrow and with short, dense setulae.

THORAX. Black, occasionally with yellowish spots. Chaetotaxy: 0–1 postpronotal bristle; 2 notopleural bristles; 0–1 presutural intra-alar bristle; 1 postsutural intra-alar bristle; 2 supra-alar bristles; 1–3 dorsocentral bristles; 1 apical scutellar bristle (cruciate); 0–1 lateral scutellar bristle; 1 or more anepisternal bristles; proepisternal and katepisternal bristles absent. Scutum setulose with bare to sparsely setulose regions above wing and on large, distinct postpronotum. Prosternum broad, reaching proepisternum. Fore and mid coxae widely separated by katepisternum.

WING. Usually clouded apically, sometimes clear or more elaborately patterned (Figures 24–34). Subcosta complete (Tanypezidae) or fading apically (Strongylophthalmyiidae); subcostal break absent (Tanypezidae) or present (Strongylophthalmyiidae); costa reaching vein M_1 . Anal cell and cell bm short and closed. $A_1 + CuA_2$ nearly attaining wing margin. Calypter with long marginal hairs. Halter white with dorsal setulae on stalk sometimes dark and pronounced (Tanypezidae).

LEGS. Yellow in base color, variably pigmented. Long, slender, evenly setulose, and with few outstanding bristles, including several ventroapically on mid tibia.

ABDOMEN. Black with anterior tergites sometimes variably yellow. Evenly setulose and setose with longer bristles on posterior margin of tergites; sternites 3–5 and posterior margin of sternite 2 bare medially in *Strongylophthalmyia*. Tergite 1 fused to tergite 2 with suture evident laterally (Figure 49). Pleural membrane widely separating tergites and sternites and enclosing spiracles; minutely trichose (more dense and shaggy in *Strongylophthalmyia*).

MALE ABDOMEN. Spiracles 1–6 below respective tergites (Figures 40, 45); seventh spiracle ventral, lateral to inner distal margin of sternite 8 (Figure 42). Sternite 8 dorsal, setose; sternite 7 left lateral and fused to sternite 8; sternite 6 subrectangular, ventral, and usually with right margin receding and left margin produced (Figures 35, 36, 45). Epandrium setose and dome-like (Figures 35, 37, 41–43, 52–53). Surstylus setose and fused to epandrium with suture absent. Cerci large, lobate, setose, and fused along most of length. Subepandrial sclerite long, narrow, and poorly sclerotized medially. Phallapodeme long, widest apically, and with medial process abutting hypandrium. Epiphallus composed of 2 sclerites that articulate with posterior margin of hypandrium and base of phallus; unfolds when phallapodeme slides distally through hypandrium to project

distiphallus from abdomen (compare Figures 38 and 57 to Figure 44). Basiphallus absent or fused to distiphallus. Pregonite absent. Postgonite long, flexible, and band-like, with several apical setulae (sometimes bare); fused to inner surface of hypandrium at base, extends with apex of epiphallus when unfolded. Distiphallus minutely spinulose or with variable texturing, linear and short to very long, with membranous and sclerotized components. Ejaculatory apodeme small and narrow with base bulbous (Figure 39).

FEMALE ABDOMEN. Segments 6–10 distinctly narrowed and elongate, forming tubular, slender ovipositor that is partially retractable (Figures 47–49). Tergite and sternite on segment 8 entirely divided longitudinally; tergite and sternite 7 partially (Strongylophthalmyiidae) to entirely (Tanypezidae) divided. Tergite and sternite 10 narrow; sternite 10 with elongate, narrow clavate internal process extending into segment 8 (Figures 47, 48). Cerci short to relatively long and conical, curved in cross section and connected along length by membrane and fused along distoventral margin. Ventral receptacle small and pouch-like. Spermathecae (2) broadly ovate, well sclerotized, and pigmented. Also see Roháček (1998) and Barber (2006).

RESULTS AND DISCUSSION

FAMILY LEVEL SUPPORT

The majority rule bootstrap tree (100 replicates; maximum trees retained 10,000; TBR branch swapping) recovered the Strongylophthalmyiidae with a value of 90 and the Tanypezidae and *Tanypeza* with a value of 100. Tanypezidae + Strongylophthalmyiidae (bootstrap value 63) and *Neotanypeza* (bootstrap value 62) were moderately supported, and no sister group relationships were well supported within *Neotanypeza* (Figure 90). A heuristic search resulted in 45 trees that are 286 steps in length (Consistency Index = 0.41; Retention Index = 0.76); the strict consensus is presented in Figure 90. The optimized tree used here (Figure 91, top) is four steps longer than the most parsimonious cladograms and is discussed in the *Neotanypeza* section. See Tables 3–5 for a summary of the characters interpreted as synapomorphic for the family level groups, with departures from the phylogeny explained in the tables.

A sister group relationship between the Tanypezidae and Strongylophthalmyiidae was recovered in all trees, being moderately supported in the analysis by a number of synapomorphies [9, 14, 43, 74, 75, 77, 79, 84, 85, 90; and tentatively 42, 69, 76], most of which were male and female genitalic. There were relatively few external synapomorphies to unite the two families, and all of these are regularly seen elsewhere in the Acalyptratae, making them somewhat impractical for diagnosis. Furthermore, the two families together were not as well defined as each family was by itself: Tanypezidae: [2–5, 7–9, 11, 13, 16, 18, 19, 22, 24, 29, 30, 31, 35, 37–41, 45, 60, 61, 64, 68, 74, 77, 87];

TABLE 3. Synapomorphies of Tanypezidae and Strongylophthalmyiidae.

Character no.	Synapomorphic state
9	Occiput with long pile
14	Prosternum wide, reaching proepisternum
42	Cell dm extending to a point at point of attachment to dm-cu ^a
43	Calypter large and lobe-like
69	Surstylus fused to epandrium ^a
74	One hypandrial bristle (although state often variable)
75	Postgonite elongate, band-like, setulose apically, and fused to hypandrium at base ^b
76	Basiphallus indistinct, fused to base of distiphallus (reversed in <i>N. rutila</i>) ^a
77	Epiphallus plate-like and made up of two articulating sclerites
79	Female tergite 6 widest medially
84	Female sternite 10 with elongate internal process ^b
85	Female cerci curved in cross section and largely to completely fused
90	Ventral receptacle with numerous lobes covered by dome

^aCharacters only tentatively assigned to the Tanypezidae + Strongylophthalmyiidae (recovered as synapomorphies of the dubious clade Tanypezidae + Strongylophthalmyiidae + *Loxocera* in the analysis).

^bComplex characters also found in *Formicosepsis*.

Strongylophthalmyiidae: [1, 14(2), 21, 26, 28, 34, 59, 66, 72, 78, 80, 82, 83, 86, 88, 89, 91]. The increased character support for the separate lineages, combined with the increased number of external diagnostic features, makes it more useful to retain the two families as separate entities, although recognizing their sister group relationship. A key to the genera of Tanypezidae and Strongylophthalmyiidae is presented below in light of these reevaluated characters.

A convergence of veins R₄₊₅ and M₁ near the wing apex [40] may be another synapomorphy of the two families since it is present in both the Tanypezidae and *Nartshukia* (Shatalkin, 1993), but a revision of the Strongylophthalmyiidae will be necessary to determine whether this state is independently derived in the latter. A convergence of these veins is also seen in putatively related out-groups (possibly a result of a reduction in wing size), as well as in the Micropezidae and Neriidae, which were not included in the analysis. An enlarged and expanded prosternum [14] is also synapomorphic for the two families, although a similar state is seen in the Nothybidae. *Strongylophthalmyia* was not supported as monophyletic, but the analysis was not designed to test this hypothesis and should be treated separately in a future study.

TABLE 4. Synapomorphies of Strongylophthalmyiidae.

Character no.	Synapomorphic state
1	Head orbicular; back of head concave above foramen
14	Suture between prosternum and proepisternum absent
21	Postvertical bristle anteroclinate
26	Lateral scutellar bristles absent
28	Notal setulae long, erect, and yellow
34	Greater ampulla lost
59	Epandrium, surstylus, and sternites 7 and 8 without setulae; surface with “pebbled” texture
66	Male sternites 7 and 8 strongly oblique
72	Hypandrium with bifid process ventrally
78	Distiphallus long, segmented, with spinulose membrane and apical sclerotized section
80	Female segment 7 forming complete sclerotized tube
82	Female segments 7 and 8 widely separated by membranous region
83	Female segment 10 elongate
86	Only one well-developed spermatheca
88	Base of spermatheca telescoped
89	Vaginal sclerite present
91	Spermathecal ducts fused near base

Of the out-groups examined, the morphology of *Nothybus* Rondani (the only genus in the family Nothybidae) was the most interesting, as this taxon shared a number of features otherwise only found (or predominantly found) in the Tanypezidae and Strongylophthalmyiidae. The prosternum, like those in the latter two families, is large and plate-like, fully extending to the proepisternal margin; the ocellar tubercle is located near the midpoint of the frons (also found in the Megamerinidae and some Diopsidae; reversed in *Nartshukia*), and the surstylus is partially fused to the epandrium. Furthermore, like the Tanypezidae, *Nothybus* has an elbowed antenna with a long first flagellomere, the lateral margin of the face is tomentose, the hind basotarsomere has a slight ventrobasal swelling, some species have a reflective stripe (slightly purple iridescent) extending from the anterolateral margin of the scutum to the posterior margin of the pleuron, and there are velvety purple patches on the anterolateral margin of the frons (a silvery tomentose postocellar patch, more similar to that of the Tanypezidae, is also found in the Megamerinidae). Although these characters suggest a relationship between the Tanypezidae and Strongylophthalmyiidae, the modified prosternum is likely convergent because of the drastic modification of the thorax, and the absence of many of these states in the Strongylophthalmyiidae suggests that these characters have been independently derived.

TABLE 5. Synapomorphies of the Tanypezidae (color characters excluded).

Character no.	Synapomorphic state
2–5, 7, 8,	“Tanypezidae-type” frons
9	Occiput with long white pile
11	Clypeus long and narrow but flat and broad anteriorly
13	Buccal cavity large
16	Fore tarsal claws larger than those on mid or hind legs
18	Outer vertical bristle absent
19	Ocellar bristle reduced
22	Postpronotal bristle present (reversed in some species)
24	Supra-alar bristle present (reversed in some species)
29	Thorax with broad silvery tomentose stripes
30	Posterior margin of meron tomentose
31	Thorax with long pile on postpronotum, anepisternum, anepimeron, and katepisternum
35	Strong row of dark bristles on stalk of halter extending to base of knob (few weak scattered brown bristles near base of stalk in <i>Nothybus</i> ; many Diopsoidea with long row of white hairs)
37	Subcostal break absent
38	Subcosta complete
39	Vein R ₁ setulose dorsally
40	Veins R ₂₊₃ and M ₁ converging apically
41	Vein CuA ₂ strongly bowed
45	Lower calypter with hairs short, dense, and “furry”
60	Sternite 2 transversely divided; posterior margin of anterior sclerite with two emarginations
61	Tergite 2 with long, stout anterolateral bristles
64	Male sternite 6 with narrow, shining, left sublateral sclerotization
68	Male sternite 8 silvery tomentose
74	Loss of all hypandrial bristles (one pair recovered in some <i>Neotanypeza</i>)
77	Epiphallus composed of two large folding plates
87	Spermatheca papillose

Of additional interest were the examined representatives of the superfamily Nerioidea in the families Cypselosomatidae (coded for in the matrix) and Pseudopomyzidae, which are quite divergent in external appearance but have similar terminalia. Males have a long, band-like postgonite fused to the inner posteroventral margin of the hypandrium [75], and females have a rodlike internal process on sternite 10 [84] that is longer and more strongly sclerotized in the Tanypezidae and Strongylophthalmyiidae. These complex genitalic features are strongly suggestive of a much closer relationship with families

in the Nerioidea, as previously posed by McAlpine (1997b), and preliminary analyses show them to be common throughout the superfamily. To investigate these and other similarities, further studies of family level relationships in the Nerioidea and Diopsoidea are currently being developed by the author.

STATUS OF ENDERLEIN'S GENERA

On the basis of the present analysis, none of Enderlein's genera—*Polphopeza* (synonymized by Hennig), *Scipopeza*, syn. nov., *Tripolphopeza*, syn. nov., or *Tritanypeza*, syn. nov.—reflect the evolutionary history of the family, and they are here treated as junior synonyms of *Neotanypeza*. In fact, very few sister group relationships were well supported within the genus at all. Furthermore, the monotypic *Tripolphopeza* appears to be defined on a misdiagnosed character, as *N. elegantina* (= *N. apicalis*) has two pairs of dorsocentrals, not three, and the type species of *Scipopeza* (*N. grandis*) is polymorphic for its defining feature (number of fronto-orbital bristles).

TANYPEZA

Tanypeza was recovered as monophyletic and the sister group to *Neotanypeza* in all trees. It was supported by stout black bristles on the hind trochanter and hind femur of the male [33], a medial pruinose stripe on the scutum [46], a large, broadly rounded surstylus [70], swollen, medially touching aedagal guides on the hypandrium [73] (Figure 42), and a characteristic phallus [78] (Figure 44).

NEOTANYPEZA

Neotanypeza was heavily supported as monophyletic in all trees derived from the analysis. Contrasting this strong support for monophyly of the genus, none of the internal nodes had greater than 50% bootstrap support, as there was a paucity of consistent synapomorphies. As a result, most species were grouped on the basis of the relatively more numerous superficial and highly variable color characters, so a slightly longer tree (four steps longer; Figure 92) was selected as the working phylogenetic hypothesis since it instead favored chaetotaxy and other structural characters. A straight (not deviated) hind tibia [15] and stout postverticals [20] are interpreted as ancestral and result in the basal placement of the fossil *N. dominicana*. *Neotanypeza* is now defined by a wide first flagellomere [10] (variably modified), a bent hind tibia [15] (excluding the fossil *N. dominicana*), two dorsocentral bristles [25] (one or three bristles secondarily derived in several species), an entirely tomentose meron [30], a swollen basal protuberance on the hind basotarsomere [32], a strongly pointed posterior margin of cell dm (not a straight line from one end to the other) [42], stout, pointed setulae on the surstylus [71] (lost in several species), and a small, medially membranous and laterally spinulose distiphallus [78] (state unknown in *N. dominicana*).

KEY TO THE WORLD GENERA OF TANYPEZIDAE AND STRONGYLOPHTHALMYIIDAE

1. Head globose and approximately as high as long [Figures 1, 34]. Frons shining, without raised disc behind tubercle. Clypeus band-like. Occiput shining with pile yellow. Outer vertical bristle present. Lateral scutellar bristle absent. Thorax long and narrow, without silvery tomentose stripes. Subcosta incomplete. Subcostal break present [Figure 24]. Vein R_1 bare. Veins R_{4+5} and M_1 usually parallel apically but convergent in *Nartshukia* [Figure 34]. Vein CuA_2 slightly bent. Greater ampulla absent. Tergite 2 without outstanding lateral bristles. Sternite 2 entire. Male sternite 8 not tomentose. Epandrium and surstylus without setulae, only strong bristles, and surface with “pebbled” texture [Figures 35–37]. Female tergite and sternite 7 fused, with sternite 7 narrowly divided (unknown for *Nartshukia*). One well-developed spermatheca.
 STRONGYLOPHTHALMYIIDAE, 2
 Head higher than long and back of head flat [Figures 7–9]. Frons extensively tomentose and velvety with tomentose disk-like shelf behind tubercle. Anterior margin of clypeus broad. Occiput tomentose with pile white. Outer vertical bristle absent. Lateral scutellar bristle present. Thorax stout and broad with silvery tomentose stripes [Figures 2–6]. Subcosta complete [Figure 26]. Subcostal break absent. Vein R_1 setulose. Veins R_{4+5} and M_1 strongly converging to apex. Vein CuA_2 strongly curved. Greater ampulla present. Tergite 2 with long, stout anterolateral bristles. Sternite 2 usually divided transversely near anterior margin. Male sternite 8 silvery tomentose. Epandrium and surstylus with setulae and not textured as above [Figures 41–43]. Tergite and sternite 7 separate and strongly divided longitudinally. Two well-developed spermathecae [Figure 50]. TANYPEZIDAE, 3
2. Ocellar tubercle positioned near center of frons. Ocellar bristle usually at least twice length of ocellar tubercle. Veins R_{4+5} and M_1 parallel apically [Figure 24]. Australian, Nearctic, Oriental, and Palaearctic regions.
 *Strongylophthalmyia* Heller
 Ocellar tubercle near posterior margin of frons. Ocellar bristle as long as ocellar tubercle. Veins R_{4+5} and M_1 convergent apically [Figure 34]. Oriental region. *Nartshukia* Shatalkin
3. Postvertical bristle as thick as inner vertical and at least $\frac{2}{3}$ length. One dorsocentral bristle [Figure 2]. Scutum with wide, light, central tomentose stripe. Meron shining with posterior margin pruinose. Base of hind basotarsomere only barely swollen. Hind tibia entirely straight. Male with stout black bristles on posterior face of trochanter and posterior base of hind femur. Surstylus as long and broad as epandrium (seen laterally), without spine-like setulae [Figures 41–43]. Distiphallus much longer than wide [Figure 44]. Nearctic and Palaearctic regions. *Tanypeza* Fallén
 Postvertical thin and minute, sometimes not much longer than tubercle (well developed in fossil species). One, two, or three dorsocentral bristles [Figures 3–6]. Scutum variably patterned but rarely with central tomentose stripe. Meron covered with dense pruinosity. Base of hind basotarsomere with swollen ventral protuberance. Hind tibia with subbasal bend (straight in fossil species). Male without stout black bristles basally on hind legs. Surstylus relatively short and narrow, often with minute spine-like setulae along outer posterobasal margin [Figures 52, 53]. Distiphallus approximately two times longer than wide, sometimes slightly longer [Figure 56]. Neotropical region. *Neotanypeza* Hendel

SYSTEMATICS

***Neotanypeza* Hendel, 1903**

- Neotanypeza* Hendel, 1903:203 [as subgenus]. Type species, *Tanypeza elegans* Wiedemann, by subsequent designation (Enderlein, 1913:225).
 Hendel, 1935:54; Hennig, 1936:32 [as genus]; Enderlein, 1936:41; Steyskal, 1967:1, 1987:774; Griffiths, 1972:132; Roháček, 1998:170.
- Scipopeza* Enderlein, 1913:228. Type species, *Scipopeza grandis* Enderlein, by original designation. Hennig, 1936:37; Enderlein, 1936:40; Steyskal, 1967:2, 1987:774; Roháček, 1998:170. Syn. nov.
- Polphopeza* Enderlein, 1913:226. Type species, *Polphopeza quadrisetosa* Enderlein, by original designation. Syn. Hennig, 1936:32; Enderlein, 1936:40 [resurrection]; Steyskal, 1967:1 [as subgenus].
- Tritanypeza* Enderlein, 1936:42. Type species, *Tritanypeza cubitofusca* Enderlein, by original designation. Steyskal, 1967:2 [as subgenus]. Syn. nov.

Tripolphopeza Enderlein, 1936:41. Type species, *Polphopeza elegantina* Enderlein, by original designation. Steyskal, 1967:2 [as subgenus]. Syn. nov.

DIAGNOSIS

Thorax with pruinose and silvery tomentose patches; stripe extending from notopleuron to meron (Figures 3–6; only extending to katepisternum in *Tanypeza*, Figure 2). Frons velvety, black to purplish black, with silvery anterolateral reflective stripe and variably tomentose ocellar disc. Postvertical bristle small and thin (long and relatively stout in fossil species; Figures 7, 8). One to three dorsocentral bristles (only 1 in remainder of family). Base of hind basotarsomere with swollen ventral protuberance. Hind tibia with subbasal bend (straight in fossil species and remainder of family). Distiphallus composed of single segment with lateral spinulose texturing.

DESCRIPTION

HEAD. Back of head and ocellar disc (variably tomentose) black; frons velvety black to purple medially and silvery tomentose anterolaterally, blending onto dark tomentose parafacial laterally (Figures 12–23). Male frons narrowed medially with sides converging at midpoint (Figure 12; compare to Figure 17). Foramen large, nearly $\frac{1}{3}$ width of back of head and almost reaching buccal cavity. Face slightly convex (more pronounced below antennal base), grading smoothly into buccal cavity; pale with dark stripes laterally and dorsomedially (fading ventrally). Gena and occiput silvery tomentose with long, white pile. Scape small; pedicel not much longer than wide at apex; first flagellomere strongly downturned (i.e., antenna elbowed), length more than twice width, shape ovate to narrow and subrectangular (Figures 7, 8). Clypeus long and narrow with apex broad and sharply curved. Postocular bristle reduced to few indistinct dorsolateral hairs. Inner vertical bristle well developed, outer vertical absent. Postvertical bristle usually small and hairlike (well developed in fossil species). Ocellar bristle as long as ocellar tubercle. Zero to two (0–2) fronto-orbital bristles, positioned medially near midpoint of frons. Pedicel with dominant dorsal marginal bristle. Vibrissa absent; genal bristles reduced. Two (2) subgenal bristles. Remainder of head tomentose or velvety.

THORAX. Black, sometimes with yellowish spots (Figures 3–6). Chaetotaxy: 0–1 postpronotal bristles; 2 notopleural bristles; 0–1 presutural intra-alar bristles; 1 postsutural intra-alar bristle; 2 supra-alar bristles; 1–3 dorsocentral bristles; 1 apical scutellar bristle (cruciate); 1 lateral scutellar bristle; 1 strong anepisternal bristle, often accompanied by a number of weaker marginal bristles; proepisternal and katapisternal bristles absent. Notum covered with reflective pruinosity, with pronounced silvery tomentose patches on posterior margin of scutum and laterotergites (excluding anterior half of katatergite) and with stripe extending from lateral margin of notopleuron to anepisternum, katapisternum, and meron. Greater ampulla present (present in all Tanypezidae, not absent, as noted in Apigian and Thompson, 2010).

WING. Usually clouded distally, sometimes clear or more elaborately patterned (Figures 26–33). Subcosta complete and subcostal break absent. Calypter with long yellow or brown marginal hairs. Vein CuA_2 strongly bowed. R_{4+5} and M_1 strongly convergent. Cell dm strongly pointed at $dm-cu$. Vein R_1 setulose dorsally. Stalk of halter with dark dorsal setulae.

LEGS. Yellow in base color and variably pigmented. Long, slender, evenly setulose, and with few outstanding bristles: mid tibia with several ventroapical bristles. Fore tarsal claws larger than those on mid or hind legs. Hind tibia usually bowed at base (straight in fossil species). Hind basotarsomere with swollen ventrobasal protuberance.

ABDOMEN. Black, sometimes with anterior tergites variably yellow. Bristles usually black, sometimes yellow on anterior tergites or entirely yellow. Evenly setulose and setose, with long, stout anterolateral bristles on tergite 2. Anterior section of sternite 2 usually differentiated into short, wide separate sclerite with 2 deep posterolateral emarginations (Figure 55).

MALE ABDOMEN. Sternite 8 dorsal, silvery tomentose; sternite 7 left lateral and sometimes indistinct (Figure 52). Sternite 6 rectangular, usually with right margin receding and left margin produced (sometimes symmetrical) and sometimes with narrow, shining, left sublateral sclerotization (Figure 54). Epandrium setose and dome-like (Figures 52, 53). Surstylus setose and fused to epandrium with suture absent. Cerci large, lobate, setose, and fused along most of length. Subepandrial sclerite narrow and band-like. Phallapodeme long and clavate with medial process abutting hypandrium (Figures 56, 57). Basiphallus U shaped with narrow anterior bridge, fused to base of distiphallus. Epiphallus composed of 2 large folding sclerites that articulate with posterior margin of hypandrium and base of phallapodeme; unfolds when phallapodeme slides distally through hypandrium to project distiphallus from abdomen. Pregonite absent. Postgonite long, flexible, band-like, with several apical setulae and fused to inner face of hypandrium at base; extends with apex of epiphallus when unfolded. Distiphallus minutely spinulose and membranous with sclerotized medial and lateral bands (sometimes fused); length usually twice width, sometimes longer. Ejaculatory apodeme small and narrow with base flattened.

FEMALE ABDOMEN. On the basis of dissections of *N. elegans* (Figures 47–50) and *N. montana*. Spiracles in lateral membrane on segments 1–7. Segments 6–10 distinctly narrowed and elongate, forming slender tubular ovipositor with long membranous intersegmental regions (minutely trichose on basal half) between segments 6 and 7 and segments 7 and 8. Tergite 6 widest before midpoint (not at base). Tergites and sternites on segments 7 and 8 entirely divided longitudinally; setose on segment 7 and with several minute setulae on segment 8; membrane on segment 7 with numerous longitudinal wrinkles on distal half and minutely trichose on basal half. Segment 9 absent. Tergite 10 narrow, pointed at apex, tapering to base and with 1 pair of apical bristles; sternite 10 subtriangular with lateral wrinkles, 2 apical bristles, and with elongate, narrow, spoon-shaped internal process extending into segment 8. Cerci short to relatively long and conical; curved in cross section, connected along length by membrane, and nearly fused along distoventral margin. Spermathecae (2) dark, spherical, and covered with minute papillae (excluding apex). Spermathecal ducts with separate attachment to genital chamber, weakly sclerotized, clear, tapered at base and apex, and approximately 3 times length of spermathecae. Ventral receptacle lightly pigmented with thin dome covering transverse series of small lobes.

KEY TO THE EXTANT SPECIES OF *NEOTANYPEZA*

Note: *Neotanypeza grandis* is removed in the first couplet due to a sexual dimorphism in chaetotaxy.

1. Wing with single strong black stripe along anterior margin to level of subcostal cell [Figures 5, 28]. Large species (9.9–12.1 mm). Face orange in ground color [Figure 22]. *N. grandis* (Enderlein)
Wing clear, with anterodistal infuscation or with shorter brown apical stripe(s); if dark along anterior margin, dark band not extending past vein r-m [see Figure 29]. Body length usually less than 9.0 mm. Face yellow to white in ground color. 2
2. One dorsocentral bristle. Postvertical bristle minute [Figures 7, 8]. Postpronotal bristle usually absent. 3
Two dorsocentral bristles. Postvertical bristle minute [Figures 7, 8]. Postpronotal bristle present [Figure 8]. 8
Three dorsocentral bristles. Postvertical bristle very thin and slightly longer than tubercle. Postpronotal bristle present [Figure 8]. 15
3. Wing with wide oblique stripe in male [Figure 31], dark on distal ¼ in female [Figure 30]. Hind basotarsomere light yellow with brown apex. *N. dimorpha* (Hennig)
Wing, if patterned, with shorter and paler apical stripes (usually much faded to absent). Hind basotarsomere dark brown or only yellowish at base. 4
4. Fronto-orbital bristles absent. Wing dusky to strongly patterned. Distiphallus short with deep, clear distomedial emargination [Figure 72]. 5
One pair of fronto-orbital bristles. Wing clear or with anterodistal infuscation. Distiphallus long to relatively short, but always dark. 6
5. Wing dusky with anterodistal margin darker. Fore tibia and distal half of fore and mid femora black. Sternite 6 with long left lateral sclerotized bar and short basal right lateral spot [Figure 70]. Surstylus almost entirely bare on outer face and slightly constricted at base [Figure 71]. Sides of distiphallus straight, slight converging apically and with lateral sclerotized bands meeting medially; with floating medial plate between lobes of hypandrium [Figure 72]. *N. plotoplax*, sp. nov.
Wing with small spot around apex of R₂₊₃, sometimes in addition to light stripes along distal veins [Figure 32]. Fore tibia yellow, at least medially, and femora at most with dark narrow markings at apex. Sternite 6 with narrow left lateral band [as in Figure 54]. Surstylus setulose with posterior marginal setulae stout and pointed; not constricted basally [Figure 85]. Distiphallus bowed laterally and with lateral sclerotized bands widely separated; hypandrium without floating medial sclerite [Figure 86]. *N. vexilla*, sp. nov.
6. Abdomen yellow with narrow brown stripes medially and posteriorly on tergites. First flagellomere narrow and light yellow. Mid and hind basotarsomeres yellow basally. Male sternite 6 asymmetrical and with dark sublateral sclerotized band on left side. *N. leucothrix*, sp. nov.
Abdomen entirely dark brown or pigment over entire body faded. First flagellomere broadly rounded and extensively pigmented. Mid and hind tarsi entirely dark brown. Male sternite 6 symmetrical (or nearly so), without dark band on left side. 7
7. Body length 9.0 mm. Palpus brown and male calypter hairs brown to golden. Mid and hind femora usually brown at apex. Fore tarsi usually entirely brown, sometimes with basal segment partly yellow. Surstylus broadly rounded, evenly setose, and with stout, pointed posterior marginal setulae [Figure 74]. Distiphallus with relatively broad, smooth medial section [Figure 75]. *N. posthos*, sp. nov.
Body length 7.5 mm. Palpus and male calypter hairs yellow. Mid and hind femora brown on distal half with apex pale. Fore tarsi light yellow with apical segment and apex of penultimate segment brown. Surstylus more abruptly tapered on distal half, setose posterodorsally and without pointed setulae along posterior margin [Figure 83]. Distiphallus with very narrow, smooth medial section [Figure 79]. *N. symmetros*, sp. nov.
8. Ocellar disc shining with central tomentose spot [as in Figure 20]; sometimes also with very narrow marginal tomentose band. 9
Ocellar disc usually entirely tomentose; rarely shiny medially or along anterior margin. 10
9. Frons velvety anteromedially. Tomentose spot on ocellar disc longer than wide [as in Figure 20]. Clypeus and palpus dark brown. *N. elegans* (Wiedemann)
Frons shining anteromedially. Tomentose spot on ocellar disc as wide as long [Figure 19]. Clypeus and palpus yellowish. *N. micans*, sp. nov.
10. Hairs on calypter brown. 11
Hairs on calypter yellow. 12

11. Fronto-orbital bristle absent. Fore tibia entirely light yellow. Anterior margin of ocellar disc shining. *N. nigrithrix*, sp. nov.
 Fronto-orbital bristle present. Basal half of fore tibia brown. Ocellar disc entirely tomentose. *N. quadrisetosa* (Enderlein)
12. Clypeus yellow, at least in part, and palpus usually also yellow. South of Mexico, specimens with thorax yellow, at least on scutellar margin, and with male frons densely golden haired and with deep central sulcus [Figure 14]. Lateral bristles on male tergite 1 yellow to light brown. *N. apicalis* (Wiedemann)
 Palpus, clypeus, and thorax entirely dark brown (clypeus and palpus rarely yellowish). Male frons dark to silvery tomentose and never with open central sulcus. Lateral abdominal hairs sometimes yellow on male tergite 1, occasionally extending to tergite 2 or 6. 13
13. Frons and thorax (excluding anterior margin) silvery tomentose [Figure 23]. Two pairs of fronto-orbital bristles. Femora and tibiae entirely yellow. *N. argentia*, sp. nov.
 Frons and thorax with silvery tomentose regions reduced to discrete patches. Usually 1 pair of fronto-orbitals. Femora and tibiae brown in part. 14
14. Distal $\frac{2}{5}$ (or more) of fore and mid femora dark brown; apex of hind femur dark. Tibiae dark brown with fore tibia yellow on inner distal face. Hind coxa brown (yellow in Mexican specimens). Frons (excluding reflective patches) black. Antenna black with base of first flagellomere orange. Abdominal bristles sometimes yellow laterally on tergites 1 and 2. Distiphallus longer than surstylus [Figure 68]. *N. marshalli*, sp. nov.
 Femora entirely yellow with apices sometimes brown. Fore tibia light yellow to brownish at base and mid and hind tibiae with yellow and brown bands. Hind coxa yellow. Frons (excluding reflective patches) purple or black with purple tint. Antenna orange to yellow, sometimes with apex of first flagellomere infuscated; pedicel rarely brown in Peruvian males. Abdominal bristles sometimes yellow along entire length of pregenitalic tergites laterally. Distiphallus not much longer than wide. *N. montana* (Enderlein)
15. Palpus brown. 16
 Palpus yellow. 19
16. Ocellar disc shining with medial tomentose spot [Figure 20]; rarely only with anterior margin shining around ocellar tubercle. Anterolateral tomentose triangle on frons not extending much past ptilinal suture. *N. alopecia*, sp. nov.
 Ocellar disc predominantly or entirely tomentose. Anterolateral tomentose triangle on frons extending nearly to level of anterior fronto-orbital or beyond. 17
17. Mid tibia yellow. Fore femur entirely yellow or with inner distal spot. Ocellar disc usually with shining region posterior to tubercle as long as diameter of ocellus. *N. callitarsis* (Rondani)
 Mid tibia brown, at least faintly on basal half. Fore femur often with inner distal spot and sometimes with outer distal spot. Ocellar tubercle at most with narrow shining stripe along anterior margin. 18
18. Mid and hind tibiae usually yellow on distal half or more, rarely banded, and never entirely brown. Mid and hind tarsi dark brown with basal half or more of basal segment yellow (sometimes gradually fading to yellow). Fore femur almost always yellow on inner surface. First flagellomere variable in shape and color. *N. claripennis* (Schiner)
 Mid and hind tibiae always with dark distal band (often fainter on mid leg), sometimes entirely dark brown [Figure 4]. Mid and hind tarsi entirely dark brown but usually yellowish to base on hind leg. Fore femur usually with inner distal spot or complete apical band. First flagellomere broadly rounded and apically infuscated; rarely narrow and orange (some Central American specimens). *N. dallasi* (Shannon)
19. Abdominal tergites entirely brown. 20
 At least abdominal tergite 2 yellow. 22
20. Anterolateral tomentose triangle on frons not extending much past ptilinal suture [Figure 21]. Bristles on abdomen dark brown, with lateral bristles on female tergite 1 sometimes yellow.
 *N. flavicalx* (Enderlein)
 Anterolateral tomentose triangle on frons extending at least to level of anterior fronto-orbital. Pale abdominal bristles always present, at least laterally on first tergite. 21
21. Pale lateral abdominal bristles restricted to first tergite. Mid tibia yellow. Mid and hind basotarsomeres yellow to base. Ocellar disc with small, shining spots lateral to posterior ocelli. *N. ochrifemur* (Enderlein)
 Pale abdominal bristles found along length of abdomen laterally. Mid tibia usually with basal band and sometimes also with distal band. Mid and hind basotarsomeres usually entirely brown. Ocellar disc entirely tomentose [Figures 16, 17]. *N. ornatipes* (Bigot)
22. Anterolateral tomentose triangle on frons not extending much past ptilinal suture (dorsal portion as long as wide at widest point, as in Figure 21) or ending before level of anterior fronto-orbital. Fore femur always with strong, dark inner distal

- spot. Abdomen dark brown with only lateral regions of tergites 1 and 2 (anterior half) yellow. *N. flavibasis* (Enderlein) Anterolateral tomentose triangle on frons extending to level of anterior fronto-orbital or further [Figure 18]. Fore femur entirely yellow, sometimes with dark inner distal spot. Abdomen with yellow spots at least on tergites 2 and 3. 23
23. Male with anterolateral reflective triangle on frons white and not extending past level of posterior fronto-orbital [Figure 18]. Male postvertical bristle brown. Female thorax dark brown. Prosternum brown or yellow. Clypeus dark brown, sometimes yellow medially. Hind tibia with 1 pair of brown distolateral spots. Face with distinct dark lateral and dorso-medial stripes. Distiphallus short, undivided, and fused to basiphallus [as in Figure 56]. *N. abdominalis* (Wiedemann)
- Male with anterolateral reflective triangle on frons tan colored and extending past posterior fronto-orbital [Figure 15]. Male postvertical bristle yellow. Female pleuron and notum with large yellow spots. Prosternum yellow. Clypeus yellow. Hind tibia yellow on distal half. Dark lateral and dorsomedial stripes on face very faint. Distiphallus long, bifid, and separate from basiphallus [Figure 78]. *N. rutila* (Wulp)

DESCRIPTIONS OF EXTANT *NEOTANYPEZA* SPECIES***Neotanypeza abdominalis*
(Wiedemann), stat. reinst.**

FIGURE 18

Tanypeza abdominalis Wiedemann, 1830:529.

Tanypeza (Neotanypeza) abdominalis.—Enderlein, 1913:225.

Neotanypeza abdominalis.—Hennig, 1936:33.

Polphopeza abdominalis.—Enderlein, 1936:40; Steyskal, 1967:2 [as synonym of *apicalis* Wiedemann].

MALE (FIGURE 18). Body length 5.5–6.9 mm. Anterolateral tomentose triangle on frons extending to level of anterior fronto-orbital. Ocellar disc fully tomentose. Anterior fronto-orbital relatively stout and $\frac{2}{3}$ length of posterior fronto-orbital. Postvertical bristle minute. First flagellomere narrow and light yellow to relatively thick and orange. Clypeus dark brown and palpus yellow. Postpronotal and presutural intra-alar bristles present. Three dorsocentral bristles. Anepisternum with only 1 dark, dominant bristle. Calypter hairs pale. Wing clear. Legs yellow with mid coxa brown, fore tibia light yellow, mid tibia brown on basal half, and hind tibia with dark basal band and faint to distinct distal band; tarsi dark brown with basotarsomeres yellow on basal $\frac{2}{3}$. Abdominal bristles dark brown with lateral bristles on tergite 1 yellow; abdomen dark brown with tergites 1 and 2 (excluding lateral spot) and anterior half of tergite 3 yellow with narrow medial stripe.

VARIATION. Nontype males sometimes with yellow lateral stripes on tergite 3 and anterior half or more of tergite 4. Bolivian male smaller (5.3 mm), with wing infuscated distally, mid and hind tibiae with dark basal and apical bands, basal $\frac{2}{3}$ of fore basotarsomere light yellow, mid and hind basotarsomeres dark brown and lateral bristles on tergite 2 yellow. Reinhartz specimen from Brazil (UZMC) with anterolateral stripe on frons extending past posterior fronto-orbital, mid tibia entirely yellow, abdomen entirely yellow, excluding brown tergite 6, epandrium, and surstylus, and may represent an undescribed species.

MALE GENITALIA. Epandrium, cerci, and surstylus as described for *N. claripennis*, although stout setulae along posterior margin of surstylus only evident in CNC male. Phallus as described for *N. claripennis* except distiphallus more transparent and slightly tapered at apex.

FEMALE. As described for male except as follows: body length 6.7–7.8 mm; first flagellomere rounded on anterior margin and distally infuscated; anterolateral tomentose triangle on frons slightly longer; clypeus sometimes yellow medially; prosternum sometimes yellow; tergites 2–4 variably yellow but always brown medially.

DISTRIBUTION. Bolivia, Brazil, Mexico, Paraguay.

LECTOTYPE. BRAZIL. “Mus., Westerm.,” “TYPE” [red label], “T. abdominalis, Wied., Brasils, Lund” (1♂, UZMC).

ADDITIONAL MATERIAL EXAMINED. BOLIVIA. La Paz: Chulumani, Apa Apa Reserve, 2000 m, 16°21'15"S, 67°30'21"W, 1.iv.2001, S. A. Marshall (1♂, DEBU). BRAZIL. “Sele[?] Lagoas, Reinhartz” (1♂, UZMC), “S. Paulo” [illegible], “x.30” (1♀, USNM), “S. Paulo, V.CRLS [?], Bromalho, X-39” (1♂, USNM), Maracajú, Mato Grosso, Brasil, ServicoFebre, Amarela, M. E. S. Bras., v.1937 (5♀, USNM), vii.1937 (2♀, USNM), vi.1937 (1♀, USNM), Nova Teutonia, 27°11'N, 52°23'W, 300–500 m, F. Plaumann, 2.xii.1959 (1♀, CNC), x.1964 (1♂, CNC), 2.xii.1959 (1♀, CNC), 5.ii.1959 (1♀, CNC), 21.xii.1959 (1♂, CNC), São Paulo: São Jose dos Campos, E. R. DePaula, 23–30.viii.1997 (1♀, EMUS), 30.viii–6.ix.1997 (1♀, EMUS), 22–29.x.1999 (1♀, EMUS), PR, Terra Boa, 27.xii.1983, J. A. Rafael (1♂, INPA). MEXICO. Morelos: Cuernavaca, 5 mi. N, 15.viii.1954, 7500'[ft], J. G. Chillcott (1♂, CNC), Porterillos, Sin., 15 mi W El Palmito, 8.vii.1964, 5000 ft, J. F. McAlpine (1♀, CNC). PARAGUAY. Cazaapá, Hermosa, San Rafael Res[erve], prop.[erty of] Lopez family, 26°18'29"S, 55°45'03"W, 80 m, FIT, 1–3.xii.2000, Z. H. Falin (1♀, DEBU), Villarica, F. Schade, i.1937 (1♂, USNM), v.1937 (1♀, USNM), ix.1937 (1♀, USNM).

COMMENTS. Steyskal (1967) classified *Neotanypeza abdominalis* as a synonym of *N. apicalis* in his catalog without comment. This species is here recognized as valid, although its distinctness from other taxa with a yellow palpus and pale abdominal spots should be considered tentative because of a

relative lack of reliable autapomorphies, particularly those of the male genitalia. There are also several “intermediate” phenotypes described below under *N. rutila* that somewhat agree with the above description. The color of the abdomen and the shape of the reflective triangle on the frons are the most useful features to characterize this species as currently defined.

Neotanypeza abdominalis was described from an unstated number of specimens from Brazil in the university collection in Lund, and the sex was given as female. Currently, there is a single male in Copenhagen, where the Lund material was deposited, which is here designated as the lectotype.

Neotanypeza alopecia, sp. nov.

FIGURES 6, 20

MALE. Body length 5.9–7.6 mm. Reflective anterolateral triangle on frons with dorsal portion not much longer than wide at widest point. Ocellar disc shining with relatively large tomentose spot that is usually widest posterior to midpoint (spot often narrower in Brazilian specimens and usually larger than that found in similar species such as *N. elegans*); 1 pair of minute tomentose anterolateral spots rarely present. Anterior fronto-orbital smaller than posterior fronto-orbital. Postvertical bristle slightly longer than ocellar tubercle (sometimes as long as disc) and thin. First flagellomere very narrow and light yellow. Clypeus and palpus dark brown. Postpronotal and presutural intralar present. Three dorsocentral bristles. Anepisternum with 1 dark, dominant bristle. Calypter hairs brown. Wing clear with distal third very lightly infuscated. Legs yellow with mid coxa brown, fore femur dark brown on distal $\frac{2}{3}$, fore tibia light yellow, hind femur usually with narrow brown band past midpoint, and mid and hind tibiae brown on basal half with 1 pair of faint to distinct lateral subapical spots on hind leg; tarsi dark brown with basal $\frac{2}{3}$ of first segment yellow. Abdominal bristles dark brown; abdomen dark brown.

MALE GENITALIA. As described for *N. claripennis* except as follows: sternite 6 with sclerotized band extending transversely near distal margin.

FEMALE (FIGURES 6, 20). As described for male except as follows: body length 6.1–7.6 mm; reflective anterolateral triangle on frons barely extending past ptilinal suture; frons sometimes with shining medial spot behind reflective anterolateral triangles; calypter hairs yellow; first flagellomere thicker and infuscated along margins; band on hind femur sometimes faded, disappearing posteriorly; brown pigment on mid tibia and/or distal brown band on hind tibia sometimes faint to absent.

VARIATION. If outer surface of fore femur yellow in females, band on hind femur faded to absent, distal half of hind tibia entirely yellow, and mid tibia usually with band faded to absent. One Brazilian female with fore femur entirely yellow. One Peruvian female with left anterior dorsocentral duplicated. One tentatively included Bolivian female (DEBU) with pilosity on ocellar disc widened, frons largely shining, with reflective

anterolateral stripe reduced medially, femora and tibiae yellow, fore tarsi light yellow with terminal 3 segments becoming browner distally, and wing with dark subapical spot in second radial cell. Three Peruvian females (nontypes) with ocellar disc tomentose excluding shining region around tubercle; distal $\frac{1}{3}$ of fore femur brown (except apex), band on hind femur distinct to faint, basal half of hind tibia brown, and mid tibia yellow. Three females from Bolivia and Peru (nontypes) with ocellar disc shining, with 1 pair of lateral tomentose stripes; frons shining anteromedially; band on hind tibia light brown; fore femur yellow with light inner distal spot; hind femur and mid tibia entirely yellow.

ETYMOLOGY. The specific epithet is derived from the Greek for “loss of hair,” denoting the largely shining ocellar disc.

DISTRIBUTION. Bolivia, Brazil, Colombia, Ecuador, Paraguay, Peru.

HOLOTYPE. ECUADOR. Napo: Res. Ethnica Warorani, 1 km S Onkone Gare Camp, Trans. Ent., 10.ii.1996, 220 m, 00°39'10"S, 76°26'W, T. L. Erwin et al., insecticidal fogging of mostly bare green leaves, some with covering of lichenous or bryophytic plants in terre firme [sic] forest, Project MAXUS, at trans. 10, sta. 9, lot 1499 (1♂, USNM, for eventual deposit in Ecuador).

PARATYPES. BOLIVIA. S. Inicua Riv., Alto Beni, 15–18.i.1976, 1100 m, L. E. Pena (1♀, CNC), La Paz: Mapiri (5 km W; 15°17.8'S, 68°15.6'W, 750 m), 16.iii.2001, A. Freidberg (1♀, USNM), Guanay (8 km E, 15°30.3'S, 67°50.8'W, 510 m), 13.iii.2001, A. Freidberg (1♀, USNM), 1 km E Guanay, 580 m, 15°30.2'S, 69°52.3'W, 14.iii.2001, S. D. Gaimari (1♀, USNM), 5 km W Mapiri, Arroyo Tuhiri, 750 m, 15°17.8'S, 68°15.6'W, 18.iii.2001, S. D. Gaimari (1♀, USNM), Arroyo Tuhiri, GPS 15°17.458'S, 68°15.487'W, 10.iv.2001, A. L. Norrbom (1♀, USNM), Cochabamba: Villa Tunari, Hotel Los Tuscanes, 16°58.39'S, 65°23.79'W, 323 m, 4.ix.2000, S. D. Gaimari, ex. along trail, on vegetation (1♀, USNM), La Paz, Heath River Wildlife Centre, ~21 km SSW Puerto Heath, 12°40'S, 68°42'W, 29.iv–12.v.2007, S. A. Marshall (1♀, DEBU), La Paz, Arroyo Tuhiri W Mapiri, 15°17'27"S, 68°15'29"W, 10.iv.2001, S. A. Marshall (1♀, DEBU; 1♀, CBFC). BRAZIL. Bahia, v.1929, Rock. Found. Lab., Shannon (1♀, USNM), São Sebastião, 12–13.x.1976, J. Kugler (1♀, TAU), Minas Gerais: nr. Timoteo, 19–26.xi.1997, E. R. DePaula (1♀, EMUS), Rio de Janeiro: x.1937–i.1938, R. C. Shannon (1♀, USNM), Rio de Janeiro, Dist. Federal, Servico Febre, Amarela, M. E. S. Bras., x.1937 (3♀, USNM), xii.1937 (1♀, USNM), vi.1938 (1♀, USNM), vii.1938 (8♀, USNM), viii.1938 (1♀, USNM), ix.1938 (2♀, USNM), Rio de Janeiro, viii.1938, R. C. Shannon (3♀, USNM), R. Janeiro, ii.1940, R. C. Shannon (1♀, USNM), R[io]. d[e]. Janeiro, Yel. Fev. Serv., M. E. S. Bras., R. C. Shannon, ix.1938 (1♀, USNM), x.1938 (2♀, USNM), “obs. 27” [country not stated, but morphology similar to that of Brazilian females] (1♀, USNM), Rondonia: Ouro Preto do Oeste, Igarapé Mandi, 6–12.vii.1995, Arm. Malaise, J. A. Rafael & J. Vidal (1♂, INPA). COLOMBIA. Cundina-marca, Finca Bella Vista, nr. Saisaima, 7.vi.1965, F. R. & D. L. Craig (1♀, CASC). ECUADOR. Zamora, 1500 m, 27–31.viii.1965, L. E. Pena (1♀, CNC), Napo: Misahualli nr. Tena, C. Brammer, 27.iv–2.v.2003 (1♀, EMUS),

6–19.x.2001, Mal. Tr. (1♀, EMUS), Yasuni Res. Sta., 0°40.566'S, 76°23.851'W, 250 m, 30.ix–11.x.2002, M.T., C. Brammer (1♀, EMUS), Coca, Napo R., v.1965, 250 m, L. Pena (1♀, CNC), Res. Ethnica Waorani, 1 km S Onkone Gare Camp, Trans. Ent., 10.x.1994, 220 m, 00°39'10"S, 76°26'W, T. L. Erwin et al., insecticidal fogging of mostly bare green leaves, some with covering of lichenous or bryophytic plants in terre firme forest, Project MAXUS, At trans. 3, sta. 7, lot 936 (1♀, USNM), 10.x.1994, at trans. 4, sta. 3 lot 942 (1♀, USNM), 4.x.1994, at trans. 2, sta. 3, lot 862 (1♀, USNM), 10.ii.1996, at trans. 10, sta. 2, lot 1492 (1♀, USNM), 30.vi.1995, at trans. 8, sta. 10, lot 1080 (1♂ 1♀, USNM), 30.vi.1995, at trans. 8, sta. 8, lot 1078 (1♀, USNM), 21.vi.1994, at 9 x-trans, 82 m mark, lot 716 (1♂, USNM), 26.vi.1996, at trans. 8, sta. 3, lot 1593 (1♂, USNM), 2.x.1996, at trans. 6, sta. 1, lot 1711 (1♂, USNM), 4.ii.1996, at trans. 2, sta. 3, lot 1413 (1♂, USNM), Orellana, Res. Ethnica Waorani, 1 km S Onkone Gare Camp, Trans. Ent., 216.3 m, 00°39'25.7"S, 76°27'10.8"W, T. L. Erwin et al., insecticidal fogging of mostly bare green leaves, some with covering of lichenous or bryophytic plants in terre firme forest, Project MAXUS, 12.ii.1996, lot 1513 (1♀, USNM), 23.vi.1996, at trans. 10, sta. 9, lot 1679 (1♀, USNM), 19.i.1994, at trans. 6, sta. 5, lot 574 (1♂, USNM), Depto. Orellana: Tiputini Biodiversity Station, 00°37'55"S, 76°08'39"W, 220–250 m, T. L. Erwin et al., insecticidal fogging of mostly bare green leaves, some with covering of lichenous or bryophytic plants in terre firme forest, 5.ii.1999, trans. 9, sta. 5, lot 2085 (1♀, USNM), 9.ii.1999, at trans. 2, sta. 4, lot 2013 (1♀, USNM). **PARAGUAY.** Inst. Agr. Nac. Caoupe, Depto. Cordillera, 12.xii.1980 (1♀, USNM). **PERU.** 40 mi E Tingo Maria, 12.xii.1954, E. I. Schlinger and E. S. Ross (1♀, CASC), Monson Valley, Tingo Maria, E. I. Schlinger and E. S. Ross, 23.ix.1954 (3♀, CASC), 26.x.1954 (1♀, CASC), 11.xii.1954 (1♀, CASC), 23.xii.1954 (2♀, CASC), Huanuco, vic. Tingo Maria, 1–5.vi.1999, W. Hanson and S. Keller (2♀, EMUS), Chauchainago, 6.viii.1948, "1200," J. Schuuke (1♀, CNC), Avispas, Madre de Dios, 400 m, L. Pena, 20–30.ix.1962 (2♀, CNC), 1–15.x.1962 (5♀, CNC), Madre de Dios, Manu, Rio Manu, 250 m, Pakitza, 12°7'S, 70°58'W, 9–23.ix.1988, A. Freidberg (6♀, USNM), Madre de Dios, Manu, Rio Manu, Cocha Salvador, 240 m, 14.ix.1988, W. N. Mathis (1♀, USNM), A. Freidberg (1♀, USNM), Quincemil, Cuzco, 1–15.xi.1962, 700 m, L. Pena (2♀, CNC), 15–30.x.1962 (1♀, CNC), Quincemil, Cuzco, 13–31.viii.1962, 780 m, L. Pena (1♀, CNC), Chanchamayo, Dp. Junin, 1200 m, 26.iv.1918, J. M. Schuuke (1♀, USNM).

ADDITIONAL MATERIAL EXAMINED. Country unknown. [illegible] (1♂, USNM).

MATERIAL WITH MEDIALY SHINING OCELLAR DISC. **BOLIVIA.** Huachi Beni, W. M. Mann, ix, "Mulford Bio. Expd. 1921–22" (1♀, USNM), Sta. Cruz, Buena Vista, 26.ii–8.iii.1999, Mal. Tr., F. Parker (1♀, EMUS). **PERU.** Avispas, Madre de Dios, 1–15.x.1962, 400 m, L. Pena (1♀, CNC).

MATERIAL WITH PREDOMINANTLY TOMENTOSE OCELLAR DISC. **PERU.** Quincemil, Cuzco, 13–31.viii.1962, 780 m, L. Pena (3♀, CNC).

COMMENTS. *Neotanypeza alopecia* is a widespread and relatively common South American species characterized by three pairs of dorsocentral bristles, a predominantly shining ocellar disc, a short anterolateral pilosity on the frons, and often a medial band on the hind femur. Whereas females of this species are regularly collected near the ground, virtually every male was collected by canopy fogging.

The specimens from Peru with a largely tomentose ocellar disc blur the specific boundaries between *Neotanypeza alopecia* and *N. callitarsis*, although the color of the legs (particularly the hind femur) allows for tentative placement in the former. Although *N. alopecia* is usually distinct from congeners in coloration and tomentosity, specimens such as these and others without bands on the hind femur or mid tibia suggest that refinement of species boundaries is appropriate when additional data are available.

Neotanypeza apicalis (Wiedemann)

FIGURES 14, 33, 58–60

Tanypeza apicalis Wiedemann, 1830:529.

Tanypeza (*Neotanypeza*) *apicalis*.—Enderlein, 1913:225.

Polphopeza elegantina Enderlein, 1913:227. Syn. nov.

Neotanypeza apicalis.—Hennig, 1936:33; Steyskal, 1967:2.

Neotanypeza elegantina.—Hennig, 1936:34.

Polphopeza apicalis.—Enderlein, 1936:40.

Tripolphopeza elegantina.—Enderlein, 1936:39.

Neotanypeza (*Polphopeza*) *apicalis*.—Steyskal, 1967:2.

Neotanypeza (*Tripolphopeza*) *elegantina*.—Steyskal, 1967:2.

MALE (*T. APICALIS* LECTOTYPE; FIGURE 33). Body length 8.6 mm. Frons, pedicel, and scape with thick yellow tomentosity and long yellow pile, with pilosity extending around margins of ocellar disc; ocellar disc entirely tomentose; frons with deep central sulcus surrounded by long yellow incurved bristles. Anterior fronto-orbital bristle absent and posterior fronto-orbital between sulcus and tubercle. Postvertical bristle minute. First flagellomere narrow and light yellow to white. Face white. Palpus yellow and clypeus dark brown. Presutural scutum yellow tomentose excluding anterior margin and central stripe. Postpronotal bristle present and presutural intralar bristle absent. Two dorsocentral bristles. Anepisternum with 1 dark, dominant bristle. Wing dark along distal margin to M_1 , with slight extension along R_{4+5} . Calypter hairs yellow. Legs yellow with basotarsomeres yellow and second tarsomere becoming yellow toward base. Abdominal bristles dark brown with lateral bristles on first tergite yellow; abdomen yellow anterior to tergite 6 with posterior margin brown on tergites 3–5; sternites yellow, becoming brownish closer to terminalia.

VARIATION: MALES (FIGURE 14). Nontype males differ as follows: body length 7.0; tomentose field on frons extending posteriorly between fronto-orbitals to surround anterior margin of ocellar tubercle; clypeus yellow; wing clear with distal

¼ lightly clouded (fading posteriorly); scutellum brown with margin yellowish; scutum brown with notopleuron, postpronotum and supra-alar region yellow and without large transverse tomentose patches; pleuron yellow with faint brown mottling on anepimeron, meron, and sutures of anepisternum and with dark spot on venter of greater ampulla; abdomen yellow from tergite 1 to posterior ⅓ of tergite 3 and with narrow central stripe on tergites 2 and 3; tergite 2 brownish on posterior ¾ of USNM specimen; posterior margin of tergite 2 brown in DEBU male, which is also yellow anterolaterally on tergites 4 and 5.

MALE GENITALIA (FIGURES 58–60). Externally as described for *N. claripennis* except as follows: sternite 6 with deep distal emargination to right side and without sclerotized sublateral band; sternite 7 narrow and with single dorsal bristle; surstylus more broadly rounded and with long pronounced field of stout pointed setulae along posterior margin; hypandrium bare; distiphallus short and weakly sclerotized medially past base, with 1 pair of pointed basolateral extensions and long apical membranous lobe.

FEMALE (*P. ELEGANTINA* HOLOTYPE). Chaetotaxy as described for male. Body length 8.2 mm. Ocellar disc entirely tomentose. Frons black with purple tint, with yellowish to white reflective tomentose anterolateral triangle that almost reaches level of fronto-orbital. First flagellomere light yellow with orange tint. Wing only lightly pigmented along anterodistal margin. Palpus and clypeus yellow. Thorax mostly dark brown, with postpronotum and anterolateral margin of scutum yellow, scutum with long floating medial yellowish stripe, scutellum yellowish, and pleuron with faint yellowish mottling. Legs yellow with basal half of mid and hind tibiae dark brown; tarsi dark brown with fore basotarsomere light yellow on basal half and mid and hind basotarsomeres yellowish to base. Abdominal bristles and abdomen dark brown.

VARIATION: FEMALES. DEBU and USNM females differ from *P. elegantina* type as follows: tomentose triangle on frons reaching level of fronto-orbital; clypeus brown laterally in DEBU female; USNM female with lateral margin of scutum yellow to alar base and with most of pleuron yellow with brown pattern as described above for nontype males; medial stripe on scutum absent; abdomen yellowish with segments 6 and 7 and lateral and posterior margins of anterior tergites dark (much darker in DEBU female). CNC female from Bolivia differs as follows: ocellar disc shining along midline; frons (excluding reflective anterolateral patch) nearly shining, only sparsely setulose; first flagellomere narrow and light yellow; palpus brown; clypeus yellowish; thorax brown with postpronotum lighter, margin of scutellum yellow, and prosternum and pleuron with yellowish mottling; mid coxa mostly yellow.

DISTRIBUTION. Bolivia, Brazil.

LECTOTYPE [*APICALIS*]. BRAZIL. “S. Catharina”: Lüderwaldl S. (1♂, UZMC).

HOLOTYPE [*ELEGANTINA*]. BRAZIL. Santa Catharina [from description]: “Mus., Wester.”, “TYPE” [red label], “T. apicalis, Wied., Brasil, Lund” (1♀, PAN).

ADDITIONAL MATERIAL EXAMINED. BOLIVIA. S. Inicua Riv., Alto Beni, 15–18.i.1976, 1100 m, L. E. Pena (1♀, CNC), La Paz: Caranavi, ca.[~]10 km NW, road to Entel Tower, 1400 m, 15°46'35"S, 67°35'48"W, 13.iv.2001, S. A. Marshall (1♀, DEBU). BRAZIL. Pico de Tijuca, D. Federal, “8-12-1940”, R. C. Shannon (1♀, USNM), Rio de Janeiro: Dist. Federal, 23.iii.1940, R. C. Shannon (1♂, USNM), R.D.J., florestal de Tijuca, Agudeida Solidao, 23.i.1990, S. A. Marshall (1♂, DEBU).

COMMENTS. *Polphopeza elegantina* is here treated as a junior synonym of *Tanypeza apicalis*, as they both now appear to belong to a single morphologically variable species with a particularly pronounced dimorphism between the sexes, with the extreme phenotypes (represented by the primary types) blending together when additional specimens are taken into account. This synonymy is only tentatively applied here, however, and should be corroborated using additional data, preferably behavioral and/or molecular data.

Of particular significance in this new synonymy is the color of the wings, thorax, and abdomen. Whereas the wing of the *Tanypeza apicalis* lectotype is strongly marked apically (Figure 33), the other males (which have the same unique frons) have wings more similar to that of the holotype of *Polphopeza elegantina*. These other males also have the yellow clypeus, marginally yellow scutellum, and partially yellow pleuron found in that female lectotype. The DEBU and USNM nontype females are even more similar in appearance to the lectotype in having a predominantly yellow pleuron with brownish patches on the katepisternum, anepimeron, and meron, as well as a strong spot on the venter of the greater ampulla. These females also have a laterally brown clypeus, similar to that found in the *T. apicalis* lectotype male, as well as the partially yellow abdomen found in all males.

This newly defined species can be diagnosed on the basis of an entirely tomentose ocellar disc (medially shiny in CNC female, which may not be conspecific), two dorsocentral bristles, an absence of the anterior fronto-orbital, a male frons with a deep central sulcus surrounded by long yellow incurved hairs, yellow calypter hairs, a yellow palpus (dark brown in CNC female), a yellow clypeus (sometimes brown laterally), basally yellow basotarsomeres (entirely yellow on fore leg in males), a narrow, pale first flagellomere, yellow femora, and a dark brown abdomen that sometimes has yellow spots.

Tanypeza apicalis was described from an unstated number of males from Brazil in the university collection in Lund. Currently, there is a single male in Copenhagen (where the Lund material was deposited) that is here designated as the lectotype.

***Neotanypeza argentia*, sp. nov.**

FIGURE 23

MALE (FIGURE 23). Body length 8.0 mm. Frons entirely silvery tomentose, excluding spot between ocelli and around base of vertical bristle. Only posterior fronto-orbital present. Postvertical bristle minute. First flagellomeres, wings,

and lower half of head largely missing, with remaining portion of wing clear. Postpronotal bristle present and presutural intralar bristle absent. Two dorsocentral bristles. Anepisternum with 1 dark, dominant bristle. Calypter hairs pale. Thorax dark brown with scutellum and mottling on prosternum and anepimeron yellow; scutum and scutellum silvery tomentose, excluding postpronotum and anterior margin of scutum. Legs yellow with posterior half of mid coxa brown and tarsi dark brown, excluding basal half of first segment. Abdominal bristles dark brown with lateral bristles on tergite 1 yellow; abdomen dark brown.

MALE GENITALIA. Not dissected; concealed under dirt.

FEMALE. Unknown.

ETYMOLOGY. The specific epithet is derived from the Latin for silver (*argentum*), referring to the unique silvery appearance of the head and notum.

DISTRIBUTION. Brazil.

HOLOTYPE. BRAZIL. Chapada, "S. W. Williston collection" (1♂, AMNH).

COMMENTS. Although the genitalia of the single known specimen are not visible and the head is partially destroyed, *Neotanypeza argentia* is here described as a new species because it has a highly unique, dense silver coating on most of the frons and notum that easily distinguishes it from congeners.

Neotanypeza callitarsis (Rondani)

Tanypeza Callitarsis Rondani, 1850:181.

Neotanypeza nigripalpis Hennig, 1936:36. Syn. nov.

Tritanypeza nigripalpis.—Enderlein, 1936:44.

Tritanypeza cubitofusca Enderlein, 1936:44. Syn. nov.

[Unplaced] *callitarsis*.—Steyskal, 1967:3.

Neotanypeza (Tritanypeza) cubitofusca.—Steyskal, 1967:2.

Neotanypeza (Tritanypeza) nigripalpis.—Steyskal, 1967:2.

MALE. Body length 6.5–8.4 mm. Reflective anterolateral triangle on frons extending to level of anterior fronto-orbital. Ocellar disc tomentose; type males with shining spots posterolateral to tubercle. Anterior fronto-orbital bristle shorter than posterior bristle. Postvertical bristle slightly longer than ocellar tubercle and thin. First flagellomere very narrow and light yellow. Clypeus and palpus dark brown. Postpronotal and presutural intra-alar bristles present. Three dorsocentral bristles. Anepisternum with 1 dark, dominant bristle. Calypter hairs yellow. Wing clear, sometimes with distal third very lightly infuscated. Legs yellow with mid coxa brown, fore femur with broad inner subapical spot and faint to absent outer subapical spot, fore tibia light yellow, and hind tibia brown on basal half and with 1 pair of faint distolateral spots (often absent, including in *T. callitarsis* and *T. cubitofusca* types); tarsi dark brown with basal half of first segment yellow. Abdominal bristles dark brown with lateral hairs on tergite 1 yellow; abdomen dark brown.

VARIATION. Brazilian and Costa Rican males with reflective anterolateral patch on frons extending to level of posterior fronto-orbital bristle, and postvertical bristle as long as

ocellar disc. Brazilian male also with tibiae and femora entirely yellow. Mexican males with tibiae and femora yellow, excluding nearly vestigial spot on fore femur. Mexican and Guatemalan males with first flagellomere slightly thicker and infuscated past base.

MALE GENITALIA. External genitalia, phallus, and postgonite as described for *N. claripennis*.

FEMALE. As described for male types except as follows: body length 5.3–7.9 mm; dorsal portion of anterolateral reflective stripe on frons not much longer than wide; ocellar disc always fully tomentose; first flagellomere slightly thickened and infuscated distally and along margins; wing nearly clear; fore femur entirely yellow; hind tibia yellow on distal half.

DISTRIBUTION. Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, Guatemala, Mexico, Paraguay, Peru, Venezuela.

HOLOTYPE [*CALLITARSIS*]. VENEZUELA. "Venezuela" (1♂, MRSN) [thorax in poor condition].

HOLOTYPE [*NIGRIPALPIS*]. PERU. Chanchamayo, 12.i.1904 (1♂, SMT).

LECTOTYPE [*CUBITOFUSCA*]. PARAGUAY. San Bernardino, K. Fiebrig S.V., ii [2.ii.1906 in original description], "Paratype" [red label] (1♂, ZMHU).

ADDITIONAL MATERIAL EXAMINED. ARGENTINA. Bemberg, 10.iv.1927, R. C. Shannon (1♀, USNM). BOLIVIA. La Paz: 5 km W Mapiri, Arroyo Tuhiri, 750 m, 15°17.8'S, 68°15.6'W, 16.iii.2001, S. D. Gaimari (1♂, USNM), Guanay (8 km E; 15°30.3'S, 67°50.8'W, 510 m), 13.iii.2001, A. Freidberg (1♂, USNM). BRAZIL. Rondonia: 62 km SE Ariquemes, 17–24.iii.1989, 180 m, W. J. Hanson (1♂, EMUS). COLOMBIA. Cundina-marca, Finca Bella Vista, nr. Sasaima, 14.iv.1964, P. R. Craig (2♂, CASC). COSTA RICA. Puntarenas: Fila Cruces, 1200 m, 1.vii.1995, A. Picado (1♂, INBio). ECUADOR. Napo: Limoncocha, 15.vi.1977, P. J. Spangler and D. R. Givens (1♀, USNM), Res. Ethnica Waorani, 1 km S Onkone Gare Camp, Trans. Ent., 3.vii.1995, 220 m, 00°39'10"S, 76°26'W, T. L. Erwin et al., insecticidal fogging of mostly bare green leaves, some with covering of lichenous or bryophytic plants in terre firme forest, Project MAXUS, at trans. 4, sta. 2, lot 1092 (1♀, USNM), Limoncocha, 0°24'S, 76°40'W, 9–16.iii.1976, 250 m, G. E. Shewell (1♂, CNC). GUATEMALA. Quezaltenango, 1850 m, 30–31.vii.1972, J. Helava (1♂, CNC). MEXICO. Zimapan, viii.1962, F. M. Hull (1♀, CNC), SE Citlalpeteti, Orizaba, Ver., 4.viii.1964, el. 4000, L. W. Swan (1♂, CASC), Oaxaca: just W of Chiapas border, 19 km W of Rizo de Oro ridge S Cerro Baul, 1615 m, 28.iv.1972, D. E. Breedlove (1♂, CASC), Chiapas: Lagunas de Montebello, 21.ix.1991, 1580 m, D. M. Wood (1♀, CNC). PERU. Madre de Dios: Manu, Rio Manu, Cocha Salvador, 240 m, 14.ix.1988, A. Freidberg (2♂, USNM), Rio Tambopata Res., 30 air km SW Pto. Maldonado, 290 m, 16–20.xi.1979, J. B. Heppner, subtropical moist forest (1♂, USNM). VENEZUELA. Rancho Grande, Edo., Aragua, 18–27.ii.1971, G. & M. Wood, 1100 m (1♀, CNC), "Akuriman Gran Sabana EB Venez", xi–xii.1940, P. Anduze (1♂, USNM).

COMMENTS. *Tritanypeza cubitofusca* and *Neotanypeza nigripalpis* are here included as junior synonyms of *Tanypeza callitarsis* because the type specimens vary only in pigment intensity on the wing and hind tibia. Other characters used by Enderlein (1936) to define these species have been found to be absent (width of male frons, other color characters) or insignificant (body length).

Enderlein described *Neotanypeza cubitofusca* from a series of 11 specimens, 2 males and 9 females, which are here treated as syntypes. The only specimen examined from ZMHU is here designated as the lectotype.

***Neotanypeza claripennis* (Schiner),
stat. reinst.**

FIGURES 12, 13, 26, 27, 52–57

Tanypeza claripennis Schiner, 1868:247. Bigot, 1886:380; Wulp, 1897:362. *Tanypeza* (*Neotanypeza*) *claripennis*.—Hendel, 1903:203; Enderlein, 1913:226. *Neotanypeza claripennis*.—Hennig, 1936:34; Enderlein, 1936:41 [as a junior synonym of *T. elegans*].

MALE (FIGURES 12, 13, 26, 27). Body length 6.4–7.7 mm. Reflective anterolateral patch on frons reaching level of anterior fronto-orbital. Ocellar disc fully tomentose. Anterior fronto-orbital shorter than posterior bristle. Postvertical bristle minute. First flagellomere frequently pale in coloration and very narrow (as in type), but sometimes broadly rounded and/or darkly pigmented (excluding paler base). Clypeus and palpus dark brown. Postpronotal and presutural intra-alar bristles present. Three dorsocentral bristles. Anepisternum with 1 or 2 dominant bristles. Calypter hairs yellow. Wing lightly clouded on distal $\frac{1}{4}$ – $\frac{1}{3}$ toward costa and rarely with distal margin or entire surface clear; only material from Venezuela and Trinidad ever with wing darker. Legs yellow with tibiae sometimes banded, but never entirely brown and often entirely yellow on distal half (as in type); fore femur almost never with outer distal spot; base of basotarsomeres yellow, but sometimes brownish on either mid or hind legs (some specimens from Trinidad and Ecuador with fore basotarsomere white). Abdominal bristles dark brown with lateral hairs on tergite 1 yellow, but some males with yellow lateral bristles on all pregenitalic tergites; abdomen dark brown with sternite 8 sometimes yellow.

MALE GENITALIA (FIGURES 52–57). Sternite 6 asymmetrical (slanted posteriorly on right side, slightly extended on left side, and with narrow left sublateral sclerotization), setulose (excluding right posterior quarter), and with long bristles on distal margin. Sternite 7 membranous and narrow. Sternite 8 large, dome shaped, covered with silvery tomentose hairs, and heavily sclerotized and setulose with several bristles. Cerci broadest at base and nearly fused to apex (slightly emarginate). Surstylus approximately $\frac{2}{3}$ height of epandrium and nearly as long; setulose posteriorly, with marginal setulae stout, pointed,

and dark. Hypandrium U shaped with anterior margin (excluding medial point of weakness) and arms well sclerotized; 1 hypandrial bristle. Postgonite with 4 apical bristles. Distiphallus approximately $\frac{2}{3}$ length of phallopodeme, with lateral margins sclerotized and toothed and with membrane sclerotized and slightly toothed medially.

FEMALE. As described for male, except several Costa Rican females with spot on fore femur faint; body length 5.3–7.9 mm.

DISTRIBUTION. Argentina, British Honduras, Colombia, Costa Rica, Dominica, Ecuador, El Salvador, Guatemala, neotropical Mexico, Panama, Peru, Venezuela.

LECTOTYPE. VENEZUELA. “Lindig, 1864, Venezuela”, “claripennis, Alte Sammlung” (1♂, NMW).

ADDITIONAL MATERIAL EXAMINED. 101♂ 306♀ [AMNH, CASC, CNC, DEBU, EMUS, INBio, NMW, QCAZ, TAMU, TAU, USNM].

COMMENTS. Schiner (1868) described *Neotanypeza claripennis* from an unstated number of Brazilian specimens. Two identified specimens from Vienna, the original depository, were available for this study. One of these types was found to be conspecific with *N. montana*; the remaining specimen is here designated as the lectotype of *N. claripennis*. Both were collected in 1864 from Venezuela, not Brazil, as stated in Schiner (1868).

Neotanypeza claripennis and *N. dallasi* are, as currently defined, highly variable species with uncertain boundaries that likely contain cryptic species. One such potential “species” (currently classified as *N. claripennis* because of other specimens with intermediate morphologies, as mentioned below) consists of those specimens with a sharp subapical band on the wing (Figure 27), a characteristic reflective anterolateral triangle on the frons (tan colored and extending past the posterior fronto-orbital), and an almost entirely yellow pruinose notum (Figure 13). A few specimens, however, have only the former two characteristics, several DEBU specimens of *N. claripennis* have a similar reflective patch on the frons, and one “typical” specimen of *N. claripennis* from Trinidad has a similarly yellow pruinose scutum. Furthermore, one male from Peru (USNM) with a clear wing and entirely yellow legs has the same pruinosity on the head and notum, although this pruinosity continues medially onto the abdomen to the midpoint of tergite 4.

Other problematic specimens include a number of males and females collected from Chiapas, Guatemala, and El Salvador (TAU, USNM) that have a yellow mid coxa and prosternum, a dark brown palpus, and a broad, darkly infuscated first flagellomere. The mid tibia, pleuron, and shoulders are also variably yellow, the clypeus is sometimes yellow, and the abdomen is also variably yellow, ranging from that typical of other *N. claripennis* to that of the palest *N. rutila*; furthermore, the legs of these pale specimens are often identical to those of *N. dallasi*. These specimens entirely blur the lines between *Neotanypeza claripennis*, *N. dallasi*, and several other taxa with three dorsocentrals and have been only tentatively included in this species; as such, this variation is not included in the definition above. The remaining

phenotypes within *N. claripennis* and *N. dallasi* are characterized by a nearly random assortment of particular characters states, including the shape and color of the first flagellomere, the presence or absence of the apical and/or basal bands on the mid and hind tibiae and fore femur, the color of the basotarsomeres, and the relative amount of patterning on the wing. These difficulties typify the problems involved with delimiting many species of Tanypezidae, which are rarely entirely distinct from one another and are often separated by slight or continuous differences that obscure taxonomic boundaries.

For the current purposes of species circumscription and diagnosis, although *Neotanypeza dallasi* has darker, thicker antennae and darker tibiae and fore femora, these characters emerge independently (singly or in pairs) in specimens that are clearly much more similar to the lectotype of *N. claripennis*. These characters, however, are only entirely present in those specimens with complete basal and distal bands on the mid and hind tibiae and predominantly dark tarsomeres on the mid and hind legs (i.e., basotarsomere brown basally on mid leg and only yellowish to base on hind leg), so it is the combination of these characters that is here used to define *N. dallasi*. This tentative circumscription is clearly in need of reevaluation, preferably using support from independent character sets such as molecular data. Last, nearly all of the previously mentioned characters also vary within the similar *N. callitarsis*, which is distinguished by a yellow mid tibia and should be considered in the future when delimiting the boundaries of *N. claripennis* and *N. dallasi*.

Neotanypeza dallasi (Shannon)

FIGURE 4

Tanypeza dallasi Shannon, 1927:41.

Neotanypeza dallasi.—Hennig, 1936:37.

Tritanypeza Dallasi.—Enderlein, 1936:43.

Neotanypeza (Tritanypeza) dallasi.—Steyskal, 1967:2.

MALE. As described for *N. claripennis* except as follows: body length 7.6–7.9 mm; first flagellomere broadly rounded and darkly infuscated (occasionally light orange in Costa Rican males and narrow and darkly infuscated in Argentinian males and females); anepisternum with 2 dark, dominant bristles; wing clear to lightly clouded on distal $\frac{1}{4}$ – $\frac{1}{3}$ (most Costa Rican specimens with wing lightly clouded, at least past midpoint); fore femur with dark inner distal spot, and mid and hind tibiae dark brown with yellow subapical band (most Central American material with distal $\frac{1}{3}$ of fore femur dark brown, and most of these with mid and hind tibiae entirely dark brown; most Costa Rican males with darker wing and mid femur with dark subapical spot and light posterodistal spot); tarsi dark brown with basal half of fore basotarsomere yellow to base and very base of hind basotarsomere yellowish; only tergite 1 with yellow bristles. Mexican material with distal half of fore femur brownish to brown, and prosternum, proepisternum, and tergite 1 yellow (sometimes also

tergites 2 and 3 yellow with central brown stripe); postpronotum yellowish and pleuron with some yellow mottling.

MALE GENITALIA. As described for *N. claripennis*.

FEMALE (FIGURE 4). As described for male, except sternite 8 brown and body length 6.1–8.1 mm.

DISTRIBUTION. Argentina, Bolivia, Colombia, Costa Rica, Dominica, El Salvador, Guatemala, neotropical Mexico, Panama.

LECTOTYPE. ARGENTINA. Tucumán, Quebrada de Lules, 2.ii.1928, Shannon (1♂, USNM).

PARALECTOTYPES EXAMINED. ARGENTINA. Same collection as lectotype (2♂, USNM).

ADDITIONAL MATERIAL EXAMINED. ARGENTINA. Tucuman E. del Ponte (1♂, USNM), Tucumán, 18.iii.1929, Shannon and Del Ponte (1♀, USNM), Tucuman Ao. El Caleo, W. Alpachiri, 1000 m, 1.x.1968, L. Pena (1♀, CNC), Salta, 30 km E Salta, Campo Quijano, forest vestige at El Alisal, 20.ii.1992, S. A. Marshall (1♂, DEBU), forest remnant at El Alisal, 18.ii.1992, S. A. Marshall (1♂ 1♀, DEBU), Salta Rosario de Lerma, INESALT yard, Malaise, 16–28.ii.1992, S. A. Marshall (1♀, DEBU), Catamarca, Ao. El Pintado, S. La Vina, 650 m, 27–29.ix.1968, Pena (3♀, CNC), Catamarca, El Alto, 3.xi.1972, G. E. Bohart (1♀, EMUS). BOLIVIA. La Paz: 8 km S Chulumani, Apa Apa, 1950–2100 m, 16°22'S, 67°30.4[W] W, 23.iii.2001, S. D. Gaimari (1♀, USNM), 8 km S Chulumani, nr. Apa Apa, 1700–1800 m, 16°22'S, 67°30.4'W, 9.iii.2001, S. D. Gaimari (1♂, USNM), Jujuy: San Pedro de, 29.iv.1926 (1♀, USNM). COLOMBIA. Cundina-marca, Finca Bella Vista, nr. Sasaima, 7.vi.1965, P. R. & D. L. Craig (1♀, CASC), 19.iv.1965, P. R. Craig (1♀, CASC), 16 mi S La Union Narine, 2150 m, 4.iii.1955, E. I. Schlinger & E. S. Ross (1♂, CASC). COSTA RICA. La Suiza de Turrialba, P. Schild (1♀, USNM), La Suiza, x.1926, P. Schild (1♀, USNM), Turrialba, 15–19.vii.1965, P. J. Spangler (1♀, USNM), Alajuela: 20 km S Upala, F. D. Parker, 6.xii.1990 (1♀, EMUS), 24.i.1991 (1♀, EMUS), 27–31.iii.1991 (1♀, EMUS), 1–10.iv.1991 (1♀, EMUS), Cartago: Tapanti Natl. Pk., Ranger Sta., 1200 m, pans in kitchen refuse, 7–11.x.1999, M. Buck (1♀, DEBU), Tapanti Natl. Pk., Arboles Caidos Trail, ca. 1300 m, 11.x.1999, S. A. Marshall (1♀, DEBU), R. Grande de Orosi, desde Puente R. Dos Amigos hasta la Represa, 1400–1800 m, 1–11.ii.1996, D. Delgado (1♀, INBio), R. Grande de Orosi, desde Administracion hasta Sendero La Pava, 1150–1600 m, viii.1996, R. Guzman (1♀, INBio), Res. Ftal. Rio Mache Alto El Roble, 2200 m, 10.x.1999, M. A. Zumbado, manual (1♀, INBio), Guanacaste: 3 km SE R. Naranjo, F. D. Parker, 2–8.xi.1991 (1♀, EMUS), 12–17.xi.1991 (1♀, EMUS), 18–28.xi.1991 (1♀, EMUS), 1–10.vii.1992 (1♀, EMUS), Puntarenas: Monteverde area, 6–14.vi.1973, 1400–1700 m, Erwin & Hevel (1♀, USNM), Monteverde Biol. Res., 1500 m, cloud forest, 13.vi.2000, M. Buck (1♀, DEBU), Monteverde, B. V. Brown, 1–5.vi.1988 (2♂ 2♀, EMUS), 28.v–1.vi.1988 (2♀, EMUS), Monteverde, 1500 m, 24–28.ii.1991, D. M. Wood (1♀, CNC), Monteverde, 1500–1800 m, 24–27.ii.1991, B. J. Sinclair, ex sweeping trails (1♀, CNC), Monteverde, Summit Cerro Chomogo, MT,

1–10.iii.1992, 1800 m, D. M. Wood (2♀, CNC), Est. La Casona, Res. Biol. Monteverde, 1520 m, xii.1990, N. Obando (1♂, INBio), Est. La Casona, Res. Biol. Monteverde, 1520 m, 14–21. iv.1996, Trampa de Clanuro Seco, K. Martinez (1♀, INBio), Fila Pittier, ACLA, PILA, 2550 m, 3.vii.1995, A. M. Maroto (1♂, INBio), Cerro Amigos, Monteverde, 1840 m, 25.ix.1994, M. A. Zumbado (1♀, INBio), Coto Brus, Z. P. Las Tablas, Orilla R. Bellavista, 1er Campito, C. Ehandi, 1900 m, 16.iii.2000, M. Alfaro, manual (1♀, INBio), C. Chomogo, Monteverde, 1800 m, 1.ix.1996, M. A. Zumbado (1♀, INBio), Est. La Casona, Res. Biol. Monteverde, 1520 m, N. Obando, xii.1990 (1♂, INBio), San Luis, 1040 m, R. B. Monteverde, x.1992, Z. Fuentes & A. Zumbado (1♂, INBio), San Luis, R. B. Monteverde, A. C. Arenal, 1000–1350 m, i.1994, Z. Fuentes (1♂, INBio), San José: San Carlos, Cerro Cura, 14 km SSW San Marcos de Tarrazu, 1800 m, 9°36'31"N, 84°07'09"W, 15.ii.2003, S. A. Marshall (1♂, DEBU), Fca Zacatales, 2100 m, 8–10.viii.1995, M. A. Zumbado (1♂, INBio), Escazú, San Antonio, Quebrada Londres, 1700 m, 17.iii.1997, E. Zumbado (1♀, INBio), San Gerrardo de Dota, 2000–2500 m, Curso Tachinidae y Syrphidae, 22–26.ii.1992 (1♀, INBio). **DOMINICA.** W.I., Clarke Hall, 11–20.ii.1965, W. W. Wirth (1♂, USNM), Pont Casse, 23.xi.1964, P. J. Spangler (1♀, USNM). **EL SALVADOR.** Monte Cristo, 28.vii.1977, Barger (1♂ 1♀, USNM). **GUATEMALA.** Petén: Ruinas Tikal, 245 m, 7–10.vii.1977, E. M. & J. L. Fisher (1♀, CASC), Tikal, 13.ii.1979, G. E. Bohart (1♀, EMUS). **MEXICO.** Chiapas: Municipio de la Trinitaria, Lagunas de Monte Belle National Park, Cinco Lagos, 1524 m, 5.x.1981, D. E. & P. M. Breedlove (1♀, CASC), Municipio Union, Canon Juarez SW slope of Volcán Takaná near Talquían, 2134 m, 14.xii.1976, D. E. & J. A. Breedlove (1♂, CASC), Municipio las Margaritas, 48 km NE Las Margaritas on Rd. to Campo Alegré, 2134 m, 25.x.1976, D. E. & J. A. Breedlove (1♀, CASC), 7200 ft, S. Crist. Las Casas, W. R. M. Mason, 8.vi.1969 (1♀, CNC), 29.v.1969 (2♀, CNC), Oaxaca: just W of Chiapas border, 19 km W of Rizo de Oro ridge S Cerro Baul, 1615 m, 28.iv.1972, D. E. Breedlove (1♂ 2♀, CASC), above Valle Nacional, 14.v.1963 (1♂, USNM), Veracruz: Lake Catemaco, 18.vi.1969, B. V. Peterson (1♂, CNC), San Rafael, Townsend (1♂, USNM), Chiapas: 6 km N San Cristobal, 3.viii.1990, R. W. Jones (1♀, TAMU), nr. Pueblo, 24.xii.1962 (1♀, USNM). **PANAMA.** Chiriqui, 15 km NW Mato del Volcan, 1200 m, 24–31.v.1977, Peck & Howden (1♀, CNC), R. P.: Panama Pr., Cerro Campana, 19.viii.1978, N. E. Woodley collection (1♂, USNM).

COMMENTS. *Neotanypeza dallasi* is found throughout the Neotropics and is one of the few *Neotanypeza* known from the Caribbean. It is similar in morphology and coloration to *N. claripennis* (see comments for *N. claripennis*), which has a similar distribution but is also found in Ecuador, Peru, and Venezuela.

Tanypeza dallasi was described from eight males from two locations in Tucumán, Argentina: Quebrada de Lules and Tafi Veijo. A lectotype is here designated from one of the three USNM males that can be reliably placed in this type series.

Neotanypeza dimorpha (Hennig), comb. nov.

FIGURES 30, 31, 61–63

Scipopeza dimorpha Hennig, 1936:37. Hennig, 1936:37; Steyskal, 1967:2.

MALE (FIGURE 31). Body length 9.5–10.3 mm. Anterolateral reflective triangle extending to midpoint of frons. Ocellar disc fully tomentose, relatively small, and not sharply delimited. Fronto-orbitals absent. Postvertical bristle minute. Postpronotal and presutural intra-alar bristles absent. One dorsocentral bristle. Anepisternum with 1 dark, dominant bristle. Calypter hairs yellow. Wing with broad, oblique medial stripe that is paler between veins and darkest to costa. Antenna brownish with first flagellomere darker and relatively thick. Clypeus and palpus dark brown. Legs yellow with mid and hind coxae brown, fore femur dark on distal 1/3, mid femur with dark subapical band, fore tibia brown on basal half, and mid and hind tibiae brown; tarsi dark brown with base of fore basotarsomere yellow and hind basotarsomere light yellow with apex dark. Abdominal bristles black with lateral bristles on tergites 1–3 and bristles on sternites yellow; abdomen dark brown.

MALE GENITALIA (FIGURES 61–63). As described for *N. claripennis* except as follows: external components larger and broader; sternite 6 shifted to left and with right margin atrophied; sternite 7 well developed and with single bristle; surstylus nearly as wide as epandrium, posterior margin bare and with minute bumps; hypandrium bare on left side of dissected male; postgonite relatively stout and short, brown (not yellow to clear), and with numerous apical setulae; distiphallus nearly as long as epandrium + surstylus, slightly widened apically with subapical spinules, and with long basal stalk.

FEMALE (FIGURE 30). Differs from male as follows: body length 10.5 mm; wing dark on distal 1/4 with strong spot around apex of R_{2+3} ; hind coxa light brown; mid femur yellow; fore basotarsomere light yellow with apex dark. Female collected by OL also with wing only lightly infuscated around veins on distal 1/4 (darker apex R_{2+3}) and with faint anterodistal spot on mid femur.

DISTRIBUTION. Ecuador, Peru.

HOLOTYPE. PERU. Pichis-Weg, 3.i.1904 (1♂, SMT).

ADDITIONAL MATERIAL EXAMINED. **ECUADOR.** Napo: SierrAzul Res., 14 km W Cosanga, 0°41'S, 77°56'W, 10.v.2002, S. A. Marshall (1♂, DEBU; 1♀, QCAZ), 9.v.2002, O. Lonsdale (1♀, QCAZ), El Chaco, 4.8 km W, 1750 m, 7.xi.1999, S. A. Marshall (1♂, DEBU), Baeza, 2000 m, 1–10.iii.1979, S. A. Marshall (1♂, DEBU), 5 km N El Chaco, ii.1983, 2000 m, M. Sharkey, Malaise trap (1♀, CNC), 7 km S Baeza, 28.iii.1983, G. & M. Wood (1♂, CNC).

COMMENTS. *Neotanypeza dimorpha* is unique in the genus in having a light yellow hind basotarsomere, a dark hind coxa, and an oblique medial band on the male wing. Dark subgenal bristles, a dark antenna, and absence of the fronto-orbitals

are also diagnostic, but these characteristics are shared with the equally distinct *N. grandis*. Although the newly described female of this species does not share the distinct wing pattern characteristic of the male (thereby staying true to Hennig's intent for the specific epithet), it is here included in this species because it agrees in chaetotaxy, the tomentose pattern on the head and thorax, and the color of the hind tarsi. The single female paratype examined for this species is now treated as the paratype of the new species *N. micans*.

The male genitalia are easily diagnosed. Sternite 6 is almost entirely membranous on the right side and heavily skewed to the left, where there is a strong sclerotized band, and there are numerous minute bumps instead of stout pointed setulae along the posterior margin of the surstylus. The postgonite is also stout and brown (not yellow), and the distiphallus is long and only minutely textured apically.

Neotanypeza elegans (Wiedemann)

FIGURES 47–50, 87

Tanypeza elegans Wiedemann, 1830:528. Schiner, 1868:247; Bigot, 1886:380.

Tanypeza (*Neotanypeza*) *elegans*.—Hendel, 1903:203; Enderlein, 1913:225.

Neotanypeza elegans.—Hennig, 1936:35; Enderlein, 1936:42; Steyskal, 1967:1, 1987:774; Griffiths, 1972:133.

Neotanypeza flavitibia Hennig, 1936:34. Syn. nov.

Polphopeza flavitibia.—Enderlein, 1936:40.

Neotanypeza (*Polphopeza*) *flavitibia*.—Steyskal, 1967:2.

MALE. Body length 7.0–9.0 mm. Dorsal portion of reflective anterolateral triangle on frons as long as wide (or less) at widest point. Ocellar disc shining with central ovate tomentose spot (longer than wide); Peruvian specimen, Ecuadorian specimens, and most Erwin material with additional small, narrow tomentose stripe on lateral edge of disc. Anterior fronto-orbital short. Postvertical bristle minute. First flagellomere narrow and light yellow. Clypeus and palpus dark brown. Postpronotal and presutural intra-alar bristles present. Two dorsocentral bristles. Anepisternum with 1 dark, dominant bristle and several subdominant bristles. Calypter hairs yellow to golden brown, sometimes brown (Bolivia, Brazil, Ecuador, Peru). Wing clear. Legs yellow with mid coxa brown, fore femur with dark inner distal and light outer distal spots (sometimes forming nearly complete band in Ecuadorian and Brazilian specimens), fore tibia light yellow, and mid and hind tibiae with broad basal and short distal (interrupted anteriorly and posteriorly) bands; northern specimens with mid and hind tibiae dark brown with yellowish subapical band; tarsi dark brown with base of first segment sometimes lighter. Abdominal bristles dark brown; abdomen dark brown.

MALE GENITALIA. As described for *N. claripennis*.

FEMALE. As described for male except as follows: calypter hairs always yellow to golden, never brown; first flagellomere sometimes thicker, with color sometimes orange, with apex

(or more) usually infuscated; mid and hind tibiae yellow on distal half with 1 pair of opposing subapical spots that sometimes form distinct bands; distal 1/3 of wing lightly clouded (excluding pale spot near margin at apex of second radial cell) with slightly darker spot around R_{2+3} (paler in *flavitibia* holotype).

DISTRIBUTION. Argentina, Bolivia, Brazil, Ecuador, Peru.

LECTOTYPE [*ELEGANS*]. **BRAZIL.** “Brasilia, Freyreiss” (1♂, ZMHU).

HOLOTYPE [*FLAVITIBIA*]. **PERU.** Rosalina, ix.1903, Urubambatl (1♀, SMT).

PARATYPE EXAMINED [*FLAVITIBIA*]. **PERU.** Same data as holotype (1♂, SMT).

ADDITIONAL MATERIAL EXAMINED. **ARGENTINA.** Misiones 5 km E Puerto Iguazu behind Hotel Orqui-daes, 1–6.ii.1992, S. A. Marshall (3♂ 2♀, DEBU). **BOLIVIA.** Mapiri, Sarampioni, 700 m, 23.i.1903 (1♂, SMT), 4.iii.1903 (1♂, SMT), 6.iii.1903 (1♀, SMT), 11.iii.1903 (1♂, SMT), Mapiri, S. Carlos, 800 m, iv.1903 (2♂, SMT), La Paz: Guanay (8 km W; 15°30.3'S, 67°50.8'W, 510 m), 13.iii.2001, A. Freidberg (1♂, USNM), Mapiri (5 km W; 15°17.8'S, 68°15.5'W; 750 m), 16.iii.2001, W. N. Mathis (1♂, USNM), 8 km S Chulumani, nr. Apa Apa, 1700–1800 m, 16°22'S, 67°30.4'W, 9.iii.2001, S. D. Gaimari (1♀, USNM), 1 km E Guanay, 580 m, 15°30.2'S, 69°52.3'W, 14.iii.2001, S. D. Gaimari (2♀, USNM), 5 km W Mapiri, Arroyo Tuhiri, 750 m, 15°17.8'S, 68°15.6'W, S. D. Gaimari, 16.iii.2001 (2♂, USNM), 18.iii.2001 (1♂, USNM), Cochabamba Prov.: 20 km SW Villa Tunari, Rio Avispha, 460 m, 17°01.50'S, 65°31.67'W, 5.ix.2000, S. D. Gaimari (1♀, USNM), Ichilo Prov.: Santa Cruz Dept., Hotel Flora y Fauna, 4–6 km SSE Suena Vista, 17°29.95'S, 63°33.15'W, 400–500 m, N. E. Woodley, 9.xi.2003 (1♂, USNM), 14.xi.2003 (1♂ 1♀, USNM), Sta. Cruz, Buena Vista, 20.ii.1999, pan tr., F. D. Parker (1♀, EMUS). **BRAZIL.** Nova Teutonia, 27°11'S, 52°23'W, 300–500 m, F. Plaumann, 4.ii.1968 (1♀, CNC), 24.xi.1969 (1♂, CNC), 25.xi.1969 (1♂ 1♀, CNC), 7.xii.1969 (1♂, CNC), Rondonia: 62 km S Ariquemes, W. J. Hanson, 13–25.iv.1992 (1♀, EMUS), 8–20.xi.1994 (1♀, EMUS), Sao Paulo, Caraguatatuba, 1–5.xi.1970, J. W. Boyes (1♂, CNC), “Tinguá, R. Janeiro”, ix.1950, Servico Febre, Amarela, M. E. S. Bras. (1♂, USNM), PR, Teno Boa, 13.vii.1983, J. A. Rafael (1♀, INPA), Est. S. Paulo, Juquia, 1–4.xi.1935 [?], J. Lane (1♂, USNM), Cochabamba: Villa Tunari, “Orquidario”, 16°59.64'S, 65°26.10'W, 325 m, 6.ix.2000, ex: on vegetation, S. D. Gaimari (1♂, USNM), Rondonia: 62 km SE Ariquemes, W. J. Hanson, 8–20.xi.1994 (1♂, EMUS), 180 m, 17–24.iii.1989 (1♂, EMUS). **ECUADOR.** Misahualli nr. Tena, 6–19.x.2001, C. Brammer (1♂, EMUS), Misahualli, nr. Tena, 26.viii–2.ix.2000, S. & P. Keller (1♂, EMUS), Yasuni Res. Sta., C. Brammer, 250 m, M.T., 0°40.566'S, 76°23.851'W, 4–9.v.2003 (1♀, EMUS), 30.ix–1.x.2002 (1♀, EMUS), Napo: Res. Ethnica Waorani, 1 km S Onkone Gare Camp, Trans. Ent., 2.x.1996, 220 m, 00°39'10"S, 76°26'W, T. L. Erwin et al., insecticidal fogging of mostly bare green leaves, some with covering of lichenous or bryophytic plants in terre firme forest, Project

MAXUS, At x-trans 10, 12 m, lot 1704 (1♀, USNM), 2.vii.1995, at trans 7, sta. 5, lot 1066 (1♀, USNM), Trans. Ent., 23.i.1994, 220 m, 00°38'S, 76°36'W, T. L. Erwin et al., insecticidal fogging of mostly bare green leaves, some with covering of lichenous or bryophytic plants, Project MAXUS, At x-trans 10, 12 m, lot 631 (1♂, USNM), Res. Ethnica Waorani, 1 km S Onkone Gare Camp, 29.vi.1994, 00°39'10"S, 76°26'W, insecticidal fogging of mostly bare green leaves, some with covering of lichenous or bryophytic plants in terre firme forest, at 10 x-trans, 58 m mark, lot 746 (1♂, USNM), 20.vi.1996, at trans 2, Sta. 5, lot 1535 (1♂, USNM), 21.vi.1994, at 9 x-trans, 89 m mark, lot 718 (1♂, USNM), 8.ii.1996, at trans. 8, sta. 10, lot 1480 (1♂, USNM). **PERU.** Quincemil, Cuzco, 27–31.viii.1962, 740 m, L. Pena (1♂, CNC), Monson Valley, Tingo Maria, 26.x.1954 (1♂, CASC), Quincemil, Cuzco, L. Pena, 780 m, 13–31.viii.1962 (1♀, CNC), 700 m, 1–15.xi.1962 (3♀, CNC), Pucallpa, 3.xii.1987, J. Schuuke (2♀, CNC), Pucallpa, i–ii.1951 (2♂, USNM), Monzon Valley, Tingo Maria, E. I. Schlinger & E. S. Ross, 23.ix.1954 (1♂ 2♀, CASC), 10.x.1954 (2♀, CASC), 15.x.1954 (1♀, CASC), 19.x.1954 (2♀, CASC), 26.x.1954 (1♂, CASC), 11.xii.1954 (1♀, CASC), 23.xii.1954 (1♂, CASC), 15 mi NE Tingo Maria, E. I. Schlinger & E. S. Ross, 23.ix.1954 (1♀, CASC), Meshagua, Urubambati, 22.ix.1903 (1♂, SMT), 30.ix.1903 (1♂, SMT), 1.x.1903 (1♀, SMT), 7.x.1903 (1♂ 1♀, SMT), 11.x.1903 (1♀, SMT), Ucayalifl, Unini, 21.x.1903 (1♀, SMT), Laristhal, 800 m, 15.viii.1903 (1♀, SMT), Rosalina, 3.ix.1903 (1♂, SMT). Country unknown. “R B” (1♂, USNM).

COMMENTS. *Neotanypeza flavitibia* is here included as a junior synonym of *N. elegans* because the genitalia, coloration, and pattern of tomentosity on the head of the two species are almost identical and vary similarly across the range of both species. The material collected by T. Erwin provide the most convincing support for synonymy, with sympatric representatives of both taxa showing the exact same regionally specific pattern of tomentosity on the ocellar disc. The primary difference between the two “species” is the color of the hairs on the calypter, which is brown (not yellow to golden brown) in the male lectotype of *N. elegans*; this color state is here considered an uncommon male-restricted phenotype found in Ecuador, Peru, Bolivia, and southern Brazil.

Neotanypeza elegans was described from an unstated number of specimens from Brazil in the Senckenbergische Museum, Frankfurt. Enderlein (1936) noted that there was one male and one female in Berlin from the Loew collection, collected in Brazil on the Frey Expedition (“Freyreiss”), and marked these as types; the examined male is here designated the lectotype. There are no syntypes in Vienna, where Wiedemann’s collection was deposited.

***Neotanypeza flavibasis* (Enderlein)**

Tritanypeza flavibasis Enderlein, 1936:45.

Tritanypeza rufiventris Enderlein, 1936:46. Syn. nov.

Neotanypeza (*Tritanypeza*) *flavibasis*.—Steyskal, 1967:2.

Neotanypeza (*Tritanypeza*) *rufiventris*.—Steyskal, 1967:2.

MALE. Body length 6.4–7.1 mm. Anterior reflective triangle on frons nearly extending to level of anterior fronto-orbital. Ocellar disc fully tomentose. Anterior fronto-orbital thin and much smaller than posterior fronto-orbital. Postvertical bristle longer than tubercle and very thin. First flagellomere light yellow and narrow. Clypeus dark brown and palpus yellow. Postpronotal and presutural intra-alar bristles present. Three dorsocentral bristles. Anepisternum with 2 dark, dominant bristles. Calypter hairs pale. Wing clear. Legs yellow with mid coxa brown and tibiae light yellow with basal half of mid and hind tibiae brown; tarsi dark brown with basal half of hind basotarsomere, basal 2/3 of mid basotarsomere, and basal 4/5 of fore basotarsomere light yellow. Abdominal bristles dark brown with lateral bristles on tergite 1 yellow. Abdomen mostly yellow anteriorly with tergite 1 and posterolateral spots on tergites 3 and 4 brownish; tergite 5 brownish posteriorly or entirely brown; abdomen past segment 5 dark brown, excluding yellow sternite 8.

MALE GENITALIA. As described for *N. claripennis*.

FEMALE. As described for male except as follows: body length 6.8–8.4 mm; anterolateral triangle on frons not extending much past ptilinal suture; first flagellomere broad and orange, becoming lightly infuscated apically; tergites 1–4 yellow and tergites 1–3 with narrow medial stripe (widest on tergite 1). Females from Brazil further differ as follows: abdomen dark past anterior 1/3 of tergite 3, anterior half of tergite 2 (Sao Paulo), or entirely brown with anterior half of tergite 2 orange laterally (southern Brazil and Argentina); wing very lightly clouded apically; mid tibia lighter and hind tibia with faint distolateral spots.

DISTRIBUTION. Argentina, Brazil, Trinidad, and Tobago, Venezuela.

LECTOTYPE [*FLAVIBASIS*]. **BRAZIL.** “v. Olfers” (1♀, ZMHU).

PARALECTOTYPE [*FLAVIBASIS*]. **BRAZIL.** Same data as lectotype (1♀, ZMHU).

LECTOTYPE [*RUFIVENTRIS*]. **VENEZUELA.** “Bolívia, Caracas” (1♂, ZMHU).

ADDITIONAL MATERIAL EXAMINED. **ARGENTINA.** Misiones, 5 km E Puerto Iguazú behind Hotel Orquiadaes, 1–6.ii.1992, S. A. Marshall (1♀, DEBU). **BRAZIL.** Nova Friburgo, Sitio Edelweiss, 1100 m, Malaise trap, disturbed for., 26.i.1990, S. A. Marshall (1♀, DEBU), PR, Terra Boa, 27.xii.1983, J. A. Rafael (1♀, INPA), Rio de Janeiro: x.1937–i.1938, R. C. Shannon (2♀, USNM), Mangaritiba, viii.1938–ii.1939, R. C. Shannon (1♀, USNM), Rio de Janeiro, i.1939, R. C. Shannon (1♀, USNM), Rio de Janeiro, Dist. Federal Brasil, Servico Febre, Amarela, M. E. S. Bras., x.1937 (2♀, USNM), iv.1938 (2♀, USNM), vi.1938 (8♀, USNM), viii.1938 (2♀, USNM), v.1938 (2♀, USNM), ix.1938 (2♀, USNM), S. Paulo, [illegible], J. Lane (2♀, USNM), Nova Teutonia, S.C., v.1961, F. Plaumann (1♀, CNC), Nova Teutonia, 27°11'B, 52°23'W, F. Plaumann (1♀, CNC). **TOBAGO.** St. Paul: Roxborough (6 km NNW, 11°16'N, 60°35.4'W), 20.iv.1994, W. N. Mathis (1♂, USNM). **TRINIDAD.** “Trinidad I.”, ASA Wright N.C.,

29.iii.1980, A. Graves (1♀, EMUS), Simla Res. Sta., 2–15.vi.1981, Hanson, Clemens (4♀, EMUS).

COMMENTS. *Tritanypeza rufiventris* is here included as a junior synonym of *Neotanypeza flavibasis*. The availability of new material has revealed a gradient of color intermediate between two extremes that are typified by the two lectotype specimens. Paler specimens appear to the north, where the Venezuelan type of *T. rufiventris* was collected, and darker specimens appear to the south in Brazil, where the type of *N. flavibasis* was collected.

***Neotanypeza flavicalx* (Enderlein)**

FIGURE 21

Tritanypeza flavicalx Enderlein, 1936:46.

Neotanypeza (*Tritanypeza*) *flavicalx*.—Steyskal, 1967:2.

MALE. Body length 5.8 mm. Anterior tomentose triangle on frons not extending much past ptilinal suture. Ocellar disc entirely tomentose. Anterior fronto-orbital bristle half length of posterior bristle and very narrow. Postvertical narrow and as long as tubercle. First flagellomere relatively narrow and orange. Clypeus dark brown (sometimes yellowish in Trinidad) and palpus yellow. Postpronotal and presutural intra-alar bristles present. Three dorsocentral bristles. Anepisternum with only 1 dark, dominant bristle. Calypter hairs pale. Wing clear. Legs yellow with mid coxa brown, fore femur with brown inner subapical spot, fore tibia light yellow, and mid tibia only slightly darker yellow near base; hind tibiae and mid tarsi missing; fore tarsi dark brown with basal ⅓ of basal fore tarsomere light yellow. Abdominal bristles and abdomen entirely dark brown.

MALE GENITALIA. Single known male (Panama) not dissected.

FEMALE (FIGURE 21). As described for male except as follows: body length 5.9–7.7 mm; ocellar disc tomentose with shining anterolateral spots; postvertical bristle longer than tubercle and very thin; mid tibia with small basal band; hind tibia light yellow with basal half brown; tarsi dark brown with basal ⅓ of fore basotarsomere light yellow and base of mid and hind basotarsomeres yellow; abdominal bristles dark brown with lateral bristles on tergite 1 yellow to brown.

VARIATION. Several females from Brazil (EMUS, INPA) with reduced tomentosity on ocellar disc, shining either along anterior ⅓ or with tomentose region reduced to ovate medial spot.

DISTRIBUTION. Bolivia, Brazil, Colombia, Ecuador, Panama, St. Lucia, Trinidad, Venezuela.

HOLOTYPE. **COLOMBIA.** “Cordillere, terra caliente” (1♀, ZMHU).

ADDITIONAL MATERIAL EXAMINED. **BOLIVIA.** Ichilo Prov.: Santa Cruz Dept., Hotel Flora y Fauna, 4–6 km SSE Suena Vista, 17°29.95'S, 63°33.15'W, 400–500 m, 11.xi.2003, N. E. Woodley (1♀, USNM). **BRAZIL.** Rondonia: 62 km SE

Ariquemes, 8–20.xi.1994, W. J. Hanson (1♀, EMUS), Roraima: Serra Grande, 11–20.x.1992, D. W. Davis (1♀, EMUS), São Paulo: São Jose dos Campos, 29.viii–5.ix.1999, E. R. DePaula (1♀, EMUS), Pará: Óbidos, Serra da Escama, 1°55'00"S, 55°00'24"W, 33.viii.2001, J. A. Rafael & J. F. Vidal (1♀, INPA), Amazonas: Campus Universitario Manaus, “21–30/2x/1988”, Marcia Castilho, arm., Shannon, Isla Fezes (1♀, INPA), Pq. N. Jau, Ig. Miratucu/Ig. Do Gerlei, 015700S-614900W, 23–28.vii.1995, Arm. Malaise, J. A. Rafael & J. Vidal (1♀, INPA), Rio de Janeiro: x.1937–i.1938, R. C. Shannon (1♀, USNM). **ECUADOR.** Rio Palenque, 0°35'S, 79°22'W, 22–26.ii.1976, 150 m, G. E. Shewell (1♀, CNC). **PANAMA.** Tabernilla, Canal Zone, “July 16-07”, A. Busck (1♂, USNM). **ST. LUCIA.** Barre d'Isle, north side (09–07), 13.93416°N, 60.95863°W, 320 m, S. D. Gaimari, A. R. Cline & R. Winton, 18–20.v.2009, Sharkey malaise (1♀, CSCA). **TRINIDAD.** Simla Res. Sta., 2–15.vi.1981, Hanson, Clemens (1♀, EMUS), Verdant Vale, “Oct.28,30.'18. A345”, Ulrich and Morrison (1♀, USNM), Morne Blue, 6.vii.1969, H. A. Howden, 2700'[ft] (1♀, CNC). **VENEZUELA.** T.F.A. Basecamp, 0°51'N, 66°10'W, Cerro d.l. Neblina, 140 m, 20–24.iii.1984, O. Flint & J. Louton, Malaise trap over small stream at east side of base camp (2♀, USNM), T. F. Amaz. Cerro de la Neblina Basecamp, 0°50'N, 66°9'44"W, 140 m, 4–12.ii.1984, D. Davis & T. McCabe (1♀, USNM), T. F. Amaz. Cerro de la Neblina Basecamp, 0°50'N, 66°10'W, 140 m, Malaise trap in rainforest, P. J. & P. M. Spangler, R. A. Faitoute, & W. E. Steiner, 10–20.ii.1985 (1♀, USNM), 21–28.ii.1985 (2♀, USNM), Valera, E. P. deBellard (1♀, USNM).

COMMENTS. Although the characters used to distinguish *Neotanypeza flavicalx* from similar species (short reflective tomentose triangle on frons, dark brown abdominal bristles that are sometimes paler) are relatively consistent, the status of this species should remain tentative since it is unknown how significant these relatively weak characters are in the indication of specific status. Furthermore, the Brazilian females of *N. flavicalx* with reduced tomentosity on the ocellar disc reflect an intermediate morphology between *N. callitarsis* and *N. alopecia*, which only otherwise differ in the color of the palpus (here given relative import for species diagnosis) and the hind femur. Only a single male is known for this species, suggesting that the males may inhabit a microhabitat less commonly sampled, as canopy fogging may have revealed for *N. alopecia*.

***Neotanypeza grandis* (Enderlein), comb. nov.**

FIGURES 5, 22, 28, 64–66

Scipopeza grandis Enderlein, 1913:228. Hennig, 1936:37; Enderlein, 1936:40; Steyskal, 1967:3.

MALE (FIGURES 22, 28). Body length approximately 10.2–12.1 mm. Dorsal portion of anterior tomentose triangle 2 times longer than wide at widest point. Ocellar disc fully

tomentose. Frons black, excluding reflective parts. Fronto-orbital bristles absent. Postvertical bristle minute. Subgenal bristles sometimes black, brown to yellow in nontypes. First flagellomere narrow; antenna black and face orange. Clypeus and palpus dark brown. Postpronotal and presutural intra-alar bristles absent (postpronotal present in one nontype). One dorsocentral bristle. Anepisternum with 1 dark, dominant bristle, sometimes with numerous subdominant bristles. Calypter hairs yellow. Wing dark in first radial cell, excluding base, and around distal $\frac{2}{3}$ of R_{2+3} ; distal half of R_{4+5} surrounded by light infuscation. Legs yellow with mid coxa brown, distal $\frac{1}{3}$ of fore and mid femora dark brown (reduced in nontypes), apex of hind femur brown, and tibiae and tarsi dark brown with distal half of fore tibia yellow; nontypes with yellowish subapical bands on mid and hind tibiae. Abdominal bristles dark brown; abdomen dark brown.

MALE GENITALIA (FIGURES 64–66). As described for *N. claripennis* except as follows: terminalia stouter, with surstylus broader and strongly curved on posteromedial margin; sternite 6 more extensively setulose, with weakly sclerotized regions on right distal and left basal margins and with reverse N-shaped sclerotized band on left side; sternite 7 relatively large and well developed; setulose portions of sternites 7 and 8 heavily wrinkled; distiphallus not much longer than wide, without sclerotized medial section, and with sides strongly produced at midpoint.

FEMALE (FIGURE 5). As described for male except as follows: body length 9.9–11.0 mm; postpronotal bristle and 1 fronto-orbital bristle present; dorsocentral bristles closely spaced; subgenal bristles brown; first flagellomere more ovate with base orange.

DISTRIBUTION. Ecuador, Venezuela.

HOLOTYPE. ECUADOR. Baños, R. Haensch S. (1♂, PAN).

ADDITIONAL MATERIAL EXAMINED. ECUADOR. Napo: SierrAzul Lodge, 14 km W Cosanga, 2200 m, 8–11.v.2002, S. M. Paiero (1♀, DEBU), 0°40'S, 77°56'W, S. A. Marshall (7♂ 2♀, DEBU; 1♂ 1♀, QCAZ), 0°40'55"S, 77°56'W, O. Lonsdale (1♀, DEBU), 0°41'S, 77°56'W, 10.v.2002, S. A. Marshall (1♂, DEBU; 1♂ 1♀, QCAZ), Reserva SierrAzul, 14 km W Cosanga, 2200 m, 5.xi.1999, S. A. Marshall (2♂, DEBU; 2♂ 1♀, QCAZ). VENEZUELA. Lindig, 1864, "elegans, Alte sammlung" (2♂ 1♀, AMNH).

COMMENTS. *Neotanypeza grandis* is easily diagnosed not only by its size but also by its dark antenna, face, femora, and wing, the latter of which is heavily infuscated along the anterior margin. The male genitalia are also characteristic in that the sixth sternite has a dark reversed N-shaped band and the epandrium and sternite 8 have a skin-like surface texture (sometimes found in other species with reduced chaetotaxy).

Neotanypeza leucothrix, sp. nov.

MALE. Body length 8.5 mm. Dorsal portion of anterior tomentose triangle short, slightly longer than wide at widest

point; frons shining anteromedially. Ocellar disc tomentose with posterior margin shining. Anterior fronto-orbital bristle absent. Postvertical bristle minute. First flagellomere relatively narrow and light yellow. Clypeus dark brown and palpus brown with orange tint. Postpronotal bristle present and presutural intra-alar bristle absent. One dorsocentral bristle. Anepisternum with 1 dominant bristle. Calypter hairs yellow. Wing clouded on distal third with darker spot around R_{2+3} . Legs yellow with mid coxa brown, fore femur with dark inner distal and light outer distal spots, mid and hind femora with apex brown, fore tibia light yellow, and mid and hind tibiae brown with faint yellow subapical bands (nearly indistinct on hind leg); tarsi dark brown with basotarsomeres lighter to base. Abdominal bristles dark brown; abdomen yellow with narrow medial stripe on tergite 2, tergite 3 with thick medial stripe and brown posterior margin, tergites 4 and 5 infuscated sublaterally and with brown posterior and anterior margins, tergite 4 with narrow central stripe, tergite 6 brown excluding lateral margin, and epandrium and posterior $\frac{2}{3}$ of surstylus brown with yellow mottling.

MALE GENITALIA. Externally as described for *N. claripennis* (sole male not dissected), except sternite 6 approximately $\frac{1}{3}$ longer and sternite 7 well developed.

FEMALE. Unknown.

ETYMOLOGY. The specific epithet refers to the color of the hairs on the calypter.

DISTRIBUTION. Peru.

HOLOTYPE. PERU. Quincemil, Cuzco, 1–15.xi.1962, 700 m, L. Pena (1♂, CNC).

COMMENTS. Of those *Neotanypeza* with a single dorsocentral bristle, *N. leucothrix* is unique in having a single fronto-orbital, a lightly clouded wing with a small subapical spot, a posteriorly shining ocellar disc, and a predominantly yellow abdomen.

Neotanypeza marshalli, sp. nov.

FIGURES 7, 8, 29, 67–69

MALE (FIGURES 7, 8, 29). Body length 7.3–7.9 mm. Dorsal portion of anterior tomentose triangle slightly longer than wide; frons (excluding reflective stripe) black, without purple tint. Ocellar disc fully tomentose. Anterior fronto-orbital bristle smaller than posterior fronto-orbital. Postvertical bristle minute. Clypeus and palpus dark brown. Antenna dark brown with base of first flagellomere (relatively narrow) orange. Postpronotal bristle present and presutural intra-alar bristle absent. Two dorsocentral bristles. Anepisternum with 2 to 3 dark, dominant bristles. Calypter hairs yellow. Wing clouded apically and in anterodistal half. Legs yellow with mid and hind coxae brown, fore femur dark brown on distal $\frac{3}{5}$, mid femur dark on distal $\frac{2}{5}$, hind femur dark on distal $\frac{1}{5}$, and tibiae and tarsi dark brown with fore tibia yellow on inner distal face and yellowish on outer apical face. Abdominal bristles dark brown, sometimes with lateral bristles on tergites 1 and 2 yellow; abdomen dark brown.

MALE GENITALIA (FIGURES 67–69). As described for *N. claripennis* except as follows: sternite 6 symmetrical, without sublateral sclerotization, evenly setose and setulose, and with distal margin shallowly emarginate; surstylus only $\frac{3}{5}$ height of epandrium, evenly curved on both margins, more heavily setose, with smaller setulose region and without stout conical setulae along posterior margin; epandrium and sternite 8 with shallow wrinkles; hypandrium with 2 pairs of bristles; postgonite with 6 apical setulae; distiphallus long (nearly as long as epandrium + surstylus), evenly dark and sclerotized, slightly curved in cross section, textured distolaterally, and with several medial fossae.

FEMALE. As described for male except as follows: body length 7.6–8.2 mm; first flagellomere more orange at base; only 1 dominant bristle on anepisternum; basal $\frac{4}{5}$ of fore basotarsomere and distal $\frac{1}{3}$ of fore tibia light yellow; distal half of fore femur and distal $\frac{1}{3}$ of mid femur dark brown; abdominal bristles entirely dark brown.

ETYMOLOGY. The specific epithet honors Dr. Stephen Marshall, who not only collected much of the type material of this species (including the holotype) but also provided all photographs of live specimens used here (Figures 1–6).

DISTRIBUTION. Ecuador, Venezuela.

HOLOTYPE. ECUADOR. Napo: SierAzul Res., 14 km W Cosanga, 2200 m, 0°40'55"S, 77°56'09"W, 8–11.v.2002, S. A. Marshall (1♂, QCAZ).

PARATYPES. ECUADOR. Same data as holotype (4♂ 2♀, DEBU; 2♂ 1♀, QCAZ), 10.v.2002, M. Buck (1♂, DEBU), SierAzul Res., 14 km W Cosanga, 2200 m, 5.xi.1999, S. A. Marshall (1♂, DEBU), 7 km S Baeza, 28.iii.1983, G. & M. Wood (1♀, CNC). VENEZUELA. Aragua Colonia Tovar, 2300 m, sweep, steep forest trail, 10.iii.1995, S. A. Marshall (3♂ 1♀, DEBU), Mérida (city), Rio Albarregas, 2500 m, cloud for., Los Chorros, 1.v.1988, S. A. Marshall (1♀, DEBU), Mérida, La Azulita, 20 km SE, ULA Biol. Res., La Carbonera, 2300 m, podocarp forest, Malaise, 28.vi–3.viii.1989, S. & J. Peck (1♀, DEBU), Mérida, Tabay, La Mucuy, Truchicola trail, 2300 m, cloud forest, FIT, 17.vi–3.vii.1989, S. & J. Peck (1♀, DEBU), Lara, Prq. Nac. Yacambu, 10 km S Sanare, 28.ii.1985, Kovarik & Jones (1♂, TAMU), Ara.: trail near Yacambu National Park, 5.ix.2008, 9°41'59"N, 69°38'52"W, 1904 m, J. Skevington (1♀, CNC).

COMMENTS. The long, entirely sclerotized phallus and dark color of *Neotanypeza marshalli* easily differentiates it from congeners. Other taxa that have the ends of the femora extensively pigmented, including *N. dimorpha* and *N. grandis* (both of which also have black antennae and tibiae), differ in having no postpronotal or fronto-orbital bristles (at least in the male) and have strikingly different male genitalia. *Neotanypeza symmetros* also has predominantly brown mid and hind tibiae and similar genitalia, but the fore leg and antenna are predominantly yellow.

***Neotanypeza micans*, sp. nov.**

MALE. Body length 7.9 mm. Dorsal portion of anterior tomentose triangle short, as long as wide at widest point;

frons shining anteromedially and medial furrow slightly raised and widened. Ocellar disc shining with wide, subquadrate, medial tomentose spot. One fronto-orbital bristle. Postvertical bristle minute. First flagellomere narrow and orange. Clypeus yellow and palpus light brown to yellowish. Postpronotal bristle present and presutural intra-alar bristle absent. Two dorsocentral bristles. Anepisternum with 2 or more dark, dominant bristles. Calypter hairs yellow. Wing clear with distal $\frac{1}{3}$ lightly clouded around R_{2+3} and R_{4+5} . Legs yellow with mid coxa brown, distal $\frac{1}{3}$ of fore femur dark brown, apex of mid and hind femora dark brown, fore tibia light yellow and mid and hind tibiae dark brown with faint yellowish subapical band; tarsi dark brown with base of first segment yellowish. Abdominal bristles dark brown; abdomen light brown with tergites 1–3 yellow, excluding dark medial stripe.

MALE GENITALIA. As described for *N. claripennis*.

FEMALE. As described for male except as follows: body length 10.5–13.7 mm; abdomen dark brown; wing lightly clouded on distal $\frac{1}{3}$; first flagellomere slightly thicker.

ETYMOLOGY. The specific epithet, which is Latin for “shiny,” refers to the bare shining patches on the frons and ocellar disc.

DISTRIBUTION. Peru.

HOLOTYPE. PERU. Meshagua, Urubambafl, 7.x.1903 (1♂, SMT).

PARATYPES. PERU. Meshagua, Urubambafl, 12.x.1903 (1♀, SMT) [paratype of *N. dimorpha*], Madre de Dios, Manu, Rio Manu, 250 m, Pakitza, 12°07'S, 70°58'W, 9–23.ix.1988, A. Freidberg (1♀, USNM).

COMMENTS. In addition to having two pairs of dorsocentral bristles, this newly described Peruvian species can be readily diagnosed by a shining (not velvety) anteromedial patch on the frons, pale mouthparts, and a wide (not narrow) tomentose spot on an otherwise shining ocellar disc. The externally similar *Neotanypeza apicalis*, which also has a pale male abdomen, a yellow palpus, and similar chaetotaxy, can be diagnosed by having yellow spots on the thorax (excluding the type), clearer wings (excluding the type), entirely yellow mid and hind femora, a yellow-haired male frons with a deep, broad central sulcus, and an entirely tomentose ocellar disc.

***Neotanypeza montana* (Enderlein)**

Polphopeza montana Enderlein, 1936:40.

Neotanypeza (*Polphopeza*) *montana*.—Steyskal, 1967:2.

Neotanypeza elegans. Misidentification.—Steyskal, 1987:774.

FEMALE: LECTOTYPE. Body length nearly 9.0 mm. Dorsal portion of anterior tomentose triangle approximately 1.5 times longer than wide; color white, but dorsal portion golden yellow if extending past anterior fronto-orbital. Ocellar disc fully tomentose. Anterior fronto-orbital bristle absent. Postvertical bristle minute. Clypeus dark brown; palpus yellowish. First flagellomere relatively narrow and very lightly infuscated

apically. Postpronotal bristle present and presutural intra-alar bristle absent. Two dorsocentral bristles. Anepisternum with 1 dark, dominant bristle. Calypter hairs yellow. Wing faintly infuscated to apex. Legs yellow with mid coxa brown, fore femur with faint inner distal spot, and mid and hind tibiae with broad basal and narrow distal brown bands; tarsi dark brown with fore basotarsomere yellow on basal half and mid and hind basotarsomeres yellowish to base. Abdominal bristles dark brown; abdomen dark brown.

VARIATION: FEMALES. As described for lectotype except as follows: body length 6.6–9.0 mm; presutural intra-alar bristle present in females from Costa Rica, Panama, Brazil, and one specimen from Ecuador; anterior fronto-orbital bristle present in specimens outside of Ecuador; palpus dark brown; wing varying from clear (Ecuador) or lightly clouded apically (Brazil, Costa Rica, Ecuador) to darkly clouded on distal 1/3, becoming darker to costa (Bolivia, Venezuela); one female from Peru with distal half of mid and hind tibiae yellow; apex of mid and hind femora brown in females from Bolivia, Venezuela, and Peru; basal half of fore tibia brown in females from Bolivia and Venezuela; female from Ecuador with brown distal band on mid and hind tibiae; mid tarsi entirely dark in Central American females and mid and hind tarsi entirely brown in Bolivian and Venezuelan females; fore basotarsomere light yellow with apex brown in Ecuadorian, Bolivian, and Venezuelan females; abdominal bristles entirely dark in Bolivian and Brazilian females, yellow on tergite 1 in Colombian paralectotype and some females from Costa Rica and Panama, and yellow on tergites 1 and 2 in females from Venezuela and Ecuador.

MALE. As described for female lectotype except as follows: body length 8.2–8.5 mm; anterior tomentose triangle on frons variable in length (very short to extending to midpoint of frons). Ocellar disc tomentose with some Peruvian and Brazilian (CNC) males with anterior and posterior (Peru only) margins shining. First flagellomere narrow to broad, pale to infuscated (infuscation usually darker and more extensive in specimens south of Ecuador and Brazil); pedicel brown in Peruvian male. Palpus yellow in one Brazilian and one Colombian male that have faded or absent distal bands on mid and hind tibiae. Presutural intra-alar present in Brazilian males. Anepisternum with 1 or 2 dark, dominant bristles. Wing clear to lightly clouded on distal 1/3. Legs yellow with mid coxa brown, fore femur with light outer distal spot and broad, dark inner distal spot (sometimes forming broad band), and mid and hind tibiae dark brown with yellowish subapical band (entirely yellow on distal half in specimens from Ecuador); basal half of fore tibia sometimes brown; tarsi dark brown with basal segment usually yellow to base (entirely to predominantly dark in Peruvian and Brazilian males and entirely light yellow with apex brown in some South American specimens, including most Ecuadorian material); apex of mid and hind femora dark in Peruvian male. Abdominal bristles dark brown with lateral hairs yellow on pregenitalic tergites of Ecuadorian males and lateral hairs of tergite 1 of Peruvian

males. Mexican male with lateral bristles on abdomen yellow, tergite 3 with lateral margin broadly yellow, and golden tomentose triangle on frons reaching level of anterior fronto-orbital. Brazilian males with most putatively ancestral states, having 2 fronto-orbitals, 1 presutural intra-alar, entirely brown abdominal bristles, a clear wing, yellow femora, and strongly banded tibiae.

MALE GENITALIA. As described for *N. claripennis* except as follows: medial sclerotization absent from distiphallus in males with predominantly dark abdominal bristles (that is, leaving only 1 pair of pointed lateral sclerites); sternite 6 approximately 50% longer in males with apex of femora and basal half of fore tibia brownish. Mexican male with lateral sclerotizations on distiphallus faint and with medial sclerotization narrow but pronounced.

DISTRIBUTION. Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, Panama, Peru, Venezuela.

LECTOTYPE. COLOMBIA. “Cordillieren, Terra fria, Thieme S” (1♀, ZMHU).

PARALECTOTYPE. COLOMBIA. Moritz (1♀, ZMHU).

ADDITIONAL MATERIAL EXAMINED. ARGENTINA. Salta, 30 km E Salta, Campo Quijano, forest vestige at El Alisal, S. A. Marshall, 20.ii.1992 (2♂ 1♀, DEBU), 18.ii.1992 (2♂, DEBU), Salta, 10 km N La Caldera forest, 1500 m, Camino la Cornisa, 27.ii.1992, S. A. Marshall (1♂ 2♀, DEBU). BOLIVIA. La Paz: Apa Apa (8 km S Chulumani, 16°35.6'S, 68°51.2'W, 1960 m), 9.iii.2001, A. Freidberg (2♀, USNM), Apa Apa, 8 km S Chulumani, 1950–2100 m, 16°22'S, 67°30.4'W, S. D. Gaimari, 23.iii.2001 (2♀, USNM), 24.iii.2001 (3♀, USNM), La Paz, Caranavi, ca. 10 km NW, road to Entel Tower, 1400 m, 15°46'35"S, 67°35'48"W, 13.iv.2001, S. A. Marshall (1♀, DEBU), dung pans (1♀, DEBU), La Paz, Chulumani, Apa Apa Reserve, 2000 m, 16°21'15"S, 67°30'21"W, 1.iv.2001, S. A. Marshall (3♀, DEBU), Cochabamba, 109 km E, 1400 m, traps, mountain/cloud forest, FIT, 1–6.ii.1999, F. Génier (2♀, DEBU). BRAZIL. Rio de Janeiro: Dist. Federal, Serviço Febre Amarela, M. E. S. Bras., ix.1938 (3♀, USNM), x.1937 (1♀, USNM), Rio de Janeiro, R. C. Shannon (1♀, USNM), Rio de Janeiro, i.1939, R. C. Shannon (1♀, USNM), Sao Paulo: Caraguatatuba, 1–5.xi.1970, J. W. Boyes (4♂, CNC), Est. Biol Boraceia, Salesopolis, 14–19.x.1970 (1♂, CNC). COLOMBIA. 3 mi W Villavicencio, Meta, 920 m, 11.iii.1955, E. I. Schlinger & E. S. Ross (1♂, CASC). COSTA RICA. Alajuela: 20 km S Upala, F. D. Parker, 10–19.iii.1991 (1♀, EMUS), 19.ii.1991 (1♀, EMUS), Limon: Est Hitoy Cerere, 100 m, R. Cerere, Res. Biol. Hitoy Cerere, R. Guzman, “28–12 abr 1992” (1♀, INBio), Puntarenas: 2000 m, 12.viii.1996, S. A. Marshall (1♀, DEBU), Las Alturas Bio. Stn., 8°57'N, 82°58'W, Cerro Chai, 2500 m, 15.viii.1995, S. A. Marshall (1♀, DEBU), Monteverde, sweep nr. Biol. Stn., 25.v.1998, S. A. Marshall (1♀, DEBU), San Jose: San Gerrardo de Dota, 9.33'N, 84.48'W, Bosque Nuboso, 2400–2600 m, 7.viii.1995, D. C. Caloren (1♀, DEBU). ECUADOR. Biblián (1♀, USNM), Napo, Baeza, 2000 m, 1–10.iii.1979, S. A. Marshall (2♀, DEBU), Sierra Azul Res., 14 km W

Cosanga, 2200 m, 0°40'55"S, 77°56'09"W, 10.v.2002, M. Buck (2♀, DEBU), 8–11.v.2002, S. A. Marshall (1♀, DEBU), SierrAzul Lodge, 14 km W Cosanga, 2200 m, 0°40'55"S, 77°56'09"W, Malaise, 9–10.v.2002, Buck & Paiero (1♀, DEBU), Napo, El Chaco, 2000 m, 15–23.ii.1983, Mal. Tp., L. Masner & M. Sharkey (1♀, DEBU), Napo, 5 km N El Chaco, ii.1983, 2000 m, M. Sharkey, Malaise trap (1♀, CNC), Tandapi, 40 km SW Quito, 1300–1500 m, 15–21.vi.1965, Pena (5♂ 5♀, CNC), Tandapi, Pichincha, 1300–1700 m, 21.vi.1965, L. Pena (5♂ 3♀, CNC), Rio Margajitas, Rio Pastaza, 1250 m, 20.iii.1939, F. M. & H. Brown (1♀, AMNH), Pichincha, Maquipucuna Res., main trail, 1400–1600 m, 0°07'34"N, 78°37'57"W, 27.iv.2002, S. A. Marshall (2♂ 1♀, DEBU), Maquipucuna Res., 1200 m, 0°07'34"N, 78°37'57"W, 28.iv.2002, M. Buck (1♂, DEBU), Pichincha, Nanagalito, 7 km SE, trout farm, 1500 m, 27.x.1999, S. A. Marshall (1♂, DEBU). **MEXICO.** Oaxaca: 15.1 mi N San Gabriel, Mixtepec, 3850 ft, Hwy 131, 11.vii.1987, R. Wharton (1♂, TAMU). **PANAMA.** Chir., Boquete Trail, 28.iii.1982, W. J. Hanson (1♀, EMUS). **PERU.** Monson Valley, Tingo Maria, 10.x.1954, E. I. Schlinger and E. S. Ross (1♀, CASC), Pasco, 10°35'S, 75°35'W, 30–31. xii.1972, 1700 m, S. Helava (2♂, CNC). **VENEZUELA.** Lindig, 1864, "claripennis, Alta Sammlung" (1♀, AMNH), Mérida, Mucuy Fish Hatchery, 7 km E Tabay, 6600 ft, 10–13.ii.1978, J. B. Heppner (2♀, USNM), Mérida, Mucui, 10 km E Tobay, 2000 m, 28.iv.1981, H. Townes (4♀, CNC), Yacambo, 1200 m, 10.v.1981, H. K. Townes (1♀, CNC), Merida (city), Rio Albarregas, 2200 m, cloud for., 24.iv.1988, S. A. Marshall (1♀, DEBU), Lara, Yacambu N.P., 17 km E Sinaré, 9°42'N, 69°34'W, 1650 m, v.1998, J. Ashe, R. Brooks, R. Hanley, FIT (1♀, CNC).

COMMENTS. As is evident from the above description, *Neotanypeza montana* as currently defined is a highly variable and widespread species that likely contains at least one cryptic taxon (hence description of the name-bearing female lectotype first). The reason for not dividing this species into a number of discrete taxa is that there are only a few characters that vary among morphotypes, and these vary in relatively nondiscrete ways. Although a number of differences could be compiled for any two of the above specimens (for example, when comparing the females from Ecuador and the female from Peru, which are highly dissimilar) that would make them appear to belong to separate species, an additional series from other neotropical locations would reveal a spectrum of intergradations that blur the boundaries of these potential "species." Some of these characters even vary between otherwise identical specimens collected at the same location; in Ecuador, for example, one female has a presutural intra-alar bristle (absent in other Ecuadorian material), and several other uncharacteristic specimens have a dark wing stripe and a basally brown fore tibia. Furthermore, although the materials from Venezuela and Bolivia are nearly identical in morphology, the lateral hairs on the first tergite (a character otherwise useful in specific circumscription) are yellow in the former and brown in the latter. As also seen for *N. dallasi* and *N. claripennis*, additional data will be necessary to

determine what components of this variation are indicative of actual interspecific boundaries.

Neotanypeza nigrithrix, sp. nov.

MALE. Body length 7.3 mm. Dorsal portion of anterolateral tomentose triangle short, slightly longer than wide at widest point. Ocellar disc tomentose with anterior margin around tubercle shining. Fronto-orbitals absent. Postvertical bristle minute. Clypeus and palpus dark brown. First flagellomere relatively narrow and brown with base orange. Postpronotal bristle present and presutural intra-alar bristle absent. Two dorsocentral bristles. Anepisternum with several dark, dominant bristles. Calypter hairs brown. Wing clear with anterodistal margin faintly infuscated. Legs yellow with mid coxa brown, fore femur with dark inner distal and light outer distal spots, mid and hind femora with apices brown, fore tibia light yellow, and mid and hind tibiae brown with faint yellow subapical bands (nearly indistinct on hind leg); tarsi dark brown. Abdominal bristles dark brown; abdomen dark brown.

MALE GENITALIA. Not dissected; hypandrium, phallapodeme, and sternite 6 not visible. As described for *N. claripennis*, except sternite 7 well developed, surstylus more extensively setose, and distiphallus emarginate apically and without medial sclerotization (like that of *N. plotoplax*).

FEMALE. Unknown.

ETYMOLOGY. The specific epithet refers to the color of the hairs on the calypter.

DISTRIBUTION. Peru.

HOLOTYPE. PERU. Pasco, 10°35'S, 75°35'W, 30–31. xii.1972, 1700 m, S. Helava (1♂, CNC).

COMMENTS. *Neotanypeza nigrithrix* resembles the Peruvian *N. plotoplax* in having no fronto-orbitals, dark calypter hairs, and a similar distiphallus, but it is smaller and less robust, there are two pairs of dorsocentrals (not one), and the wing, hind coxa, antenna, and legs are much darker.

Neotanypeza ochrifemur (Enderlein)

Tritanypeza ochrifemur Enderlein, 1936:45.

Neotanypeza (*Tritanypeza*) *ochrifemur*.—Steyskal, 1967:2.

MALE. Body length 5.7–7.0 mm. Anterior tomentose triangle on frons reaching past level of anterior fronto-orbital. Ocellar disc tomentose with shining anterolateral spots. Anterior fronto-orbital bristle narrow and half the length of posterior bristle, sometimes absent. Postvertical bristle longer than tubercle and very narrow. First flagellomere pale yellow and with length slightly more than twice width. Clypeus dark brown and palpus yellow. Postpronotal and presutural intra-alar bristles present. Three dorsocentral bristles. Anepisternum with only 1 dark, dominant bristle. Calypter hairs pale. Apex of wing dusky. Legs yellow with mid coxa brown, fore tibia light yellow, mid

tibia grayish to base, and hind tibia with dark basal and light distal bands; tarsi dark brown with base of basotarsomeres yellow (paler on fore leg). Abdominal bristles dark brown with lateral bristles on tergite 1 yellow; abdomen dark brown.

VARIATION. One Argentinian male differs as follows: first flagellomere darker; fore femur with long inner distal spot; mid tibia brownish on basal third; hind tibia with 1 pair of dark distolateral spots. Other Argentinian male with brownish basal band on hind tibia. Costa Rican male differs as follows: reflective stripe on frons extending to level of posterior fronto-orbital; basal half of fore basotarsomere as pale as tibia; mid and hind tibiae with dark basal band and dark distolateral spots.

MALE GENITALIA. As described for *N. claripennis*.

FEMALE. Unknown.

DISTRIBUTION. Paraguay, Guatemala, Ecuador.

LECTOTYPE. Paraguay. San Bernardino, II [11 December in original description], K. Fiebrig, S.V. (1♂, ZMHU).

ADDITIONAL MATERIAL EXAMINED. ARGENTINA. Misiones, 5 km E Puertos Iguazu behind Hotel Orquideas, 1–6.ii.1992, S. A. Marshall (2♂, DEBU). BRAZIL. Roraima: Rio Uraricoera, Ilha de Maraca, 21–30.x.1987, J. A. Rafael e equipe, Armadilha de Malaise (1♂, INPA). COSTA RICA. Heredia: Santo Domingo, INBio Pk., 19–21.viii.2001, S. A. Marshall (1♂, DEBU). PANAMA. Canal Zone, Chiva-Chiva Rd., 8 air km N Ft. Clayton, 23.vii.1978, N. E. Woodley (1♂, USNM).

COMMENTS. See comments for *Neotanypeza ornatipes*.

Neotanypeza ornatipes (Bigot)

FIGURES 16, 17

Taeniptera ornatipes Bigot, 1886:380.

Taeniptera pallidipennis Bigot, 1886:380. Syn. Steyskal (1967) [not explicit].

Tanypeza mexicana Giglio-Tos, 1893:14. Giglio-Tos, 1895:61; Wulp, 1897:363. Syn. Hennig (1936).

Tanypeza ornatipes.—Wulp, 1897:363.

Tanypeza pallidipennis.—Wulp, 1897:363.

Tanypeza (*Neotanypeza*) *ornatipes*.—Enderlein, 1913:225.

Tanypeza (*Neotanypeza*) *pallidipennis*.—Enderlein, 1913:225.

Tanypeza (*Neotanypeza*) *mexicana*.—Enderlein, 1913:225.

Tanypeza (*Neotanypeza*) *flavohirta* Enderlein, 1913:226. Syn. nov.

Neotanypeza ornatipes.—Hennig, 1936:34; Enderlein, 1936:42; Steyskal, 1967:1.

Neotanypeza flavohirta.—Hennig, 1936:37.

Tritanypeza flavohirta.—Enderlein, 1936:43.

Neotanypeza (*Tritanypeza*) *flavohirta*.—Steyskal, 1967:2.

MALE (FIGURE 16). Body length 6.1–7.9 mm. Anterior tomentose triangle on frons yellowish to tan colored and nearly reaching level of anterior ocellus. Ocellar disc fully tomentose. Anterior fronto-orbital bristle thin and 1/2–2/3 length posterior bristle. Postvertical bristle slightly longer than tubercle and very thin. First flagellomere pale yellow with length slightly more than

twice width. Clypeus dark brown and palpus yellow. Postpronotal and presutural intra-alar bristles present. Three dorsocentral bristles. Anepisternum with only 1 dark, dominant bristle. Notum, excluding anterior margin, with relatively thick yellow pruinosity. Calypter hairs yellow. Wing clear. Legs yellow with hind coxa brown, fore tibia light yellow, mid and hind tibiae with dark basal and apical bands; fore femur sometimes with faint inner distal spot; tarsi dark brown with basal half of fore basotarsomere yellow. Abdominal bristles yellow, becoming brown medially.

VARIATION. The questionably identified male from Costa Rica differs from the *N. ornatipes* holotype in having the anterior dorsocentral reduced and hairlike (possibly as a developmental abnormality) and in having the mid tibia entirely yellow. Erwin material with mid tibia light yellow on distal half and fore femur with dark inner subapical spot; INBio specimen with mid tibia only brownish at base. Guatemala female with mid coxa mostly yellow, mid tibia yellow with only faint basal band, fore femur yellow, and basal 2/3 of fore basotarsomere yellow.

MALE GENITALIA. As described for *N. claripennis*, except posteromedial margin of surstylus sometimes slightly more broadly rounded.

FEMALE (FIGURE 17). As described for male except as follows: body length 7.0–9.2 mm; first flagellomere more broadly ovate in outline, darker and faintly infuscated on distal half; yellow abdominal bristles sometimes only extending to tergite 2 or 3; fore basotarsomere lighter on basal 2/3; *T. flavohirta* and *T. pallidipennis* types with small shining anterolateral spots on ocellar disc; anterolateral reflective triangle on frons usually slightly longer and mid and hind tibiae slightly darker.

DISTRIBUTION. Costa Rica, Ecuador, Mexico.

HOLOTYPE [*ORNATIPES*]. MEXICO [no label]. “*T. ornatipes*, ex coll. Bigot” (1♂, UMO).

LECTOTYPE [*PALLIDIPENNIS*]. MEXICO [no label]. “*T. pallidipennis*, ex coll. Bigot” (1♀, UMO).

PARALECTOTYPES [*PALLIDIPENNIS*]. MEXICO [no label]. “*T. pallidipennis*, ex coll. Bigot” (2♀, UMO).

HOLOTYPE [*FLAVOHIRTA*]. COSTA RICA. H. Schmidt S. (1♀, PAN).

SYNTYPES [*MEXICANA*]. MEXICO. Orizaba; Tuxpango (type information unknown, ?MRSN). [Not examined.]

ADDITIONAL MATERIAL EXAMINED. “*T. ornatipes*, ex coll. Bigot” [white label] (1♂, UMO). COSTA RICA. Zarzero, Schild, & Burgdorr (1♂, USNM), Guanacaste: Est Cacao, 1100–1200 m, 15.ii.1996, S. Marshall (1♀, DEBU), Heredia: Santo Domingo, Santa Rosa, INBio, 1100 m, 14.ii.2003, F. C. Thompson, manual (1♂, INBio), Santo Domingo, INBio Pk., 21.viii.2001, K. N. Barber, pooter, leaves along trails, 09°58.4'N, 84°05.6'W (3♂ 1♀, DEBU), Santo Domingo, INBio Pk., 18.viii.2001, K. N. Barber, pooter, on *Heliconia* leaves over long lawn grass, 09°58.4'N, 84°05.6'W (1♀, DEBU), Santo Domingo, INBio Pk., 9°58'23"N, 84°06'30"W, 12–14.ii.2003, O. Lonsdale (1♀, DEBU), INBio Pk., 19–21.viii.2001, S. A. Marshall (1♀, DEBU), Puntarenas: Monteverde, San Luis Ecological, Espajito trail, Malaise, 1–24.iii.2007, P. D. Careless (2♂ 3♀, DEBU),

Punta Leona, forest around hotel, 21–23.ii.2001, P. D. Careless (1♂, DEBU), San José: Farm La Caja, “ii-10”, H. Schmidt (1♂, USNM), San Carlos, Cerro Cura, 14 km SSW San Marcos de Tarrazu, 1800 m, 9°36'31"N, 84°07'09"W, 15.ii.2003, S. A. Marshall (1♀, DEBU). ECUADOR. Napo: Res. Ethnica Warorani, 1 km S Onkone Gare Camp, Trans. Ent., 4.x.1994, 220 m, 00°39'10"S, 76°26'W, T. L. Erwin et al., insecticidal fogging of mostly bare green leaves, some with covering of lichenous or bryophytic plants in terre firme forest, Project MAXUS, at trans. 2, sta. 1, lot 860 (1♂, USNM), 4.x.1996, 216.3 m, 00°39'25.7"S, 76°27'10.8"W, at trans. 10, sta. 73, lot 1757 (1♂, USNM). GUATEMALA. El Naranjo, Chicacao, “vii 6–45”, E. J. Hambleton (1♀, USNM), Coban, Alta Vera Paz., 22.v.1926, J. M. Aldrich (1♂ 1♀, USNM), La Providencia, C. Rouillard (2♂ 7♀, USNM), Biotopo del Quetzal, near Purulha, at light and sweeping, 21–22. viii.1995, D. Langor (1♀, CNC). MEXICO. Nr. Chapulhuacan, Hidalgo, 22.xii.1961 (1♀, USNM), Chiapas: SE side of Cerro Tres Picos, montane rainforest, 1524–1829 m, 28.v.1972, D. E. Breedlove (1♀, CASC), Veracruz: 3 mi N. Huatusco, 17.vii.1980, Schaffner, Weaver, & Freidlander (1♂, TAMU).

POSSIBLY *N. ORNATIPES*. COSTA RICA. San Jose: Escazu, 8.ii.1987, G. E. Bohart (1♂, EMUS).

COMMENTS. *Neotanypeza ochrifemur* is most similar in morphology to *N. ornatipes* and may eventually prove to be conspecific, along with its existing synonyms *Tanypeza mexicana*, *Taeniptera pallidipennis*, and *Tanypeza flavohirta*. The characters used to delimit these two species include the pattern on the ocellar disc and the color of the abdominal bristles, mid tibia, and mid and hind basotarsomeres (see couplet 21 of the key). Those taxa with a yellow palpus and an entirely brown abdomen overlap widely in morphology, and the only species that appears to be reliably distinct from all others is *N. flavicalx*, having a very short anterolateral reflective triangle on the frons and tibiae that are entirely yellow on the distal half; existing specific boundaries should be reexamined when additional data are available. Three of the four described syntypes of *T. pallidipennis* were examined, one of which is here designated as the lectotype.

In addition to the material listed above, one male and several females from Ecuador (CASC) and Chiapas (TAU) tentatively identified as this species largely agree with the above description, but their color reveals affinities to *N. claripennis* and *N. ochrifemur*. The male has yellow hairs along the length of the abdomen laterally, but the palpus is light brown, the fore femur is entirely yellow, the hind tibia is yellow distally, and the base of the basotarsomeres of all tarsi is yellow. The females also have a palpus that varies from relatively dark to mottled yellow, and the yellow abdominal bristles are restricted to the first tergite.

Neotanypeza plotoplax, sp. nov.

FIGURES 70–72

MALE. Body length 10.3 mm. Dorsal portion of anterior tomentose triangle approximately 1.5 times longer than

wide at widest point; dark portion of frons with purple tint. Ocellar disc fully tomentose. Narrow bronze pruinose stripe on notum in front of scutellum. Fronto-orbital bristles absent. Postvertical bristle minute. Subgenal bristles yellow and nearly indistinct. Antenna entirely dark brown/black, with first flagellomere relatively wide but not broadly rounded. Clypeus and palpus dark brown. Postpronotal and presutural intra-alar bristles absent. One pair of dorsocentral bristles (both missing: pin through right socket, but left socket visible). Anepisternum with 1 dark, dominant bristle. Calypter hairs dark brown. Wing dusky with anterodistal margin darker and first radial cell yellowish. Legs entirely dark brown with fore coxa, basal half of fore and mid femora, and all but apex of hind femur yellow. Abdominal bristles dark brown; abdomen dark brown.

MALE GENITALIA (FIGURES 70–72). As described for *N. claripennis* except as follows: sternite 6 with irregular right margin, soft and convoluted distal margin, narrow basal right sublateral sclerotization, and long left sublateral band; sternite 7 not evident; sternite 8 with shallow skin-like texture; surstylus broadly rounded, narrowing to base, only setulose near base and without spine-like setulae; hypandrium bare; apex of postgonite clear and only membranously attached to base, which is almost entirely atrophied on right side; flat arrowhead-shaped plate between lobes of hypandrium in front of phallapodeme, curving ventrally to apex; distiphallus short and dark with deep, clear distomedial emargination and 1 pair of spinulose dorso-basal processes.

FEMALE. Unknown.

ETYMOLOGY. The specific name compounds the Greek words for floating (*plotos*) and plate or tablet (*plax*), referring to the characteristic free sclerite between the lobes of the hypandrium.

DISTRIBUTION. Ecuador.

HOLOTYPE. ECUADOR. Pichincha: Bellavista Reserve, trail “B”, 2200 m, 30.x.1999, S. A. Marshall (1♂, QCAZ).

COMMENTS. Externally, this species is distinctive in having one pair of dorsocentrals, no fronto-orbitals, dusky wings that are slightly darkened anterodistally, dark brown calypter hairs, and similarly dark abdominal bristles. Regarding the male genitalia, sternite 6 has a second small sclerotized patch on the right side basally, the distiphallus is distinct, the surstylus is broad and largely bare, and the postgonite is atrophied. Most unique, however, is the ventral, floating, arrowhead-shaped plate between the halves of the hypandrium, which is likely homologous with the anterior process of the phallapodeme.

Neotanypeza posthos, sp. nov.

FIGURES 73–75

MALE. Body length 9.0 mm. Dorsal portion of anterior tomentose triangle approximately 1.5 times longer than wide at widest point. Ocellar disc tomentose with portion bordering ocellar tubercle shining. Frons (excluding reflective parts)

black with purple tint. One fronto-orbital bristle. One subgenal bristle brown, 1 yellow. Postvertical bristle minute. First flagellomere slightly thickened and dark with base orange. Clypeus and palpus dark brown. Postpronotal and presutural intra-alar bristles absent. One dorsocentral bristle. Anepisternum with 1 dark, dominant bristle. Calypter hairs brown (golden in some Bolivian specimens). Wing very lightly infuscated anterodistally (clear in Ecuadorian male), with overall hue yellowish. Legs yellow with mid and hind coxae brown, fore femur with broad inner distal spot, mid and hind femora dark apically, fore tibia sometimes lightly infuscated on basal half (if so, distal half light yellow), and mid and hind tibiae dark brown with yellowish subapical band on mid tibia; tarsi dark brown. Abdominal bristles dark brown; abdomen dark brown.

VARIATION. Two smaller paratype males from Ecuador and Venezuela (7.7–8.1 mm) with outer face of fore femur and all of mid and hind femora yellow, mid and hind tibiae entirely dark brown, hind coxa yellow, subgenal bristles yellow, and antenna entirely black with orange base.

MALE GENITALIA (FIGURES 73–75). As described for *N. claripennis* except as follows: sternite 6 nearly symmetrical and without sclerotized band; sternite 7 not evident; sternite 8 with shallow skin-like texture dorsally; spinulose setulae on surstylus restricted to narrow basal patch; distiphallus long and dark, slightly expanding apically, and with minute sub-lateral spinules converging to basal $\frac{1}{3}$.

FEMALE. As described for male except as follows: length 6.8–8.0 mm; reflective triangle on frons extending past fronto-orbital in Peruvian female; ocellar disc entirely tomentose; subgenal bristles yellow (slightly darker in Peruvian female); first flagellomere broadly ovate and orange with dorsal and apical margins dark brown; calypter hairs yellow; hind coxa sometimes yellow; yellowish subapical band faint on hind tibia in Bolivian female, and bands on both legs strong in Peruvian female; fore basotarsomere light yellow on basal $\frac{3}{5}$ – $\frac{2}{3}$ (entirely light with apex brown in Peruvian female, which is also weakly pigmented on thorax and abdomen but not head or legs); Colombian female with femora broadly dark brown apically and bristles on first and second tergites yellow; wing more darkly and widely infuscated.

ETYMOLOGY. The specific epithet is Greek for “one with a large penis.”

DISTRIBUTION. Bolivia, Colombia, Ecuador, Peru, Venezuela.

HOLOTYPE. **BOLIVIA.** La Paz: Coroico, Cerro Uchumachi, 2550 m, 16°12'43"S, 67°42'49"W, cloud forest, 5.iv.2001, S. A. Marshall (1♂, CBFC).

PARATYPES. **BOLIVIA.** Incochoca, Cochab, 25–31.viii.1956, L. E. Pena (1♂, CNC), La Paz: Coroico, Cerro Uchumachi, 2550 m, 16°12'43"S, 67°42'49"W, cloud forest, 5.iv.2001, S. A. Marshall (1♂, DEBU). **ECUADOR.** 40 mi S Alausi, Chimborazo, 20.ii.1955 (1♂, CASC), Napo: Baeza, 2000 m, 1.iii.1979, S. A. Marshall (1♂, QCAZ). **PERU.** Cusco, Wayqecha Biol. Stn., ~9 km NE Challabamba, 13°10'S, 71°35'W, ~2800 m, 13–15.v.2007, S. A. Marshall (1♂, DEBU). **VENEZUELA.** Aragua

Colonia Tovar, 2300 m, sweep, steep forest trail, 10.iii.1995, S. A. Marshall (1♂, DEBU).

ADDITIONAL MATERIAL EXAMINED. **BOLIVIA.** Br. Ichilo R., rain forest, 15–16.x.1966, B. & K. Burks (1♀, USNM), Paracti, Chapare, 1–4.ii.1976, 2200 m, L. E. Pena (1♀, CNC), La Paz, Cumbre Alto Beni, 28 km E Caranavi, ~1400 m, 15°40'31"S, 67°29'21"W, cloud forest, 14.iv.2001, S. A. Marshall (1♀, DEBU). **COLOMBIA.** Ant. Queb. La Iguana, 17 km NW Medellin, 22.ii.1984, C. M. & O. S. Flint, Jr. (1♀, USNM). **ECUADOR.** Napo, Baeza, W along road, 1500 m, montane rain forest/pasture, Malaise trap, 16–19.v.1987, Coote & Brown (1♀, DEBU), SierrAzul Res., 14 km W Cosanga, 2200 m, 0°40'55"S, 77°58'09"W, 10.v.2002, M. Buck (5♀, DEBU). **PERU.** Cuzco, Pueblo, Machu Picchu, 21.iii.1947, 6491 ft, D. C. Pallister coll., F. Johnson donor (1♀, AMNH), Cusco, Wayqecha Biol. Stn., ~9 km NE Challabamba, 13°10'S, 71°35'W, ~2800 m, 13–15.v.2007, S. A. Marshall (1♀, DEBU).

COMMENTS. *Neotanypeza posthos* is a relatively large species with one dorsocentral, one fronto-orbital, a nearly symmetrical sternite 6, and a long, dark distiphallus (hence the specific name) with a smooth medial plate surrounded by minute spinules. The abdominal bristles are also usually entirely dark, and the calypter hairs are brown to golden in color. Since the most diagnostic characters of this new species are male genitalic, the females listed above are only tentatively included in this taxon and are not included in the type series.

Neotanypeza quadrisetosa (Enderlein)

Polphopeza quadrisetosa Enderlein, 1913:227. Enderlein, 1936:40.

Neotanypeza quadrisetosa.—Hennig, 1936:35.

Neotanypeza (*Polphopeza*) *quadrisetosa*.—Steyskal, 1967:2.

MALE. Body length 8.7–9.4 mm. Dorsal portion of anterior tomentose triangle approximately 2 times longer than wide at widest point. Ocellar disc tomentose with anterior margin around tubercle shining. Anterior fronto-orbital bristle absent. Postvertical bristle minute. First flagellomere relatively narrow and brown with base orange. Clypeus and palpus dark brown. Postpronotal bristle present and presutural intra-alar bristle absent. Two dorsocentral bristles. Anepisternum with 1 dark, dominant bristle. Calypter hairs brown. Wing clear, sometimes with infuscation around distal half of R_{2+3} . Legs yellow with mid coxa brown, fore femur dark on distal quarter (more extensive on inner face), mid and hind femora with apex brown, fore tibia brown on basal half, and mid and hind tibiae dark brown, sometimes with faint yellow subapical bands; tarsi dark brown. Abdominal bristles dark brown; abdomen dark brown.

MALE GENITALIA. As described for *N. claripennis*, except sternite 6 $\frac{1}{3}$ longer.

FEMALE. Unknown.

DISTRIBUTION. Ecuador.

HOLOTYPE. **ECUADOR.** Baños, R. Haensch S. (1♂, PAN).

ADDITIONAL MATERIAL EXAMINED. ECUADOR. Baños, 19.ii.1937, S. W. Frost (2♂, USNM), Napo: Sierra Azul Res., 14 km W Cosanga, 2200 m, 0°40'55"S, 77°56'09"W, 8.v.2002, O. Lonsdale (1♂, DEBU), 10.v.2002, M. Buck (1♂, DEBU), Sierra Azul Lodge, 14 km W Cosanga, 2200 m, 0°40'55"S, 77°56'09"W, Malaise, 9–10.v.2002, Buck & Paiero (1♂, QCAZ).

COMMENTS. *Neotanypeza quadrisetosa* is a weakly defined Ecuadorian species with relatively undifferentiated male genitalia. At present it can only be diagnosed by using the combination of characters presented in the key.

Neotanypeza rutila (Wulp)

FIGURES 15, 76–78

Tanypeza rutila Wulp, 1897:362. Wulp, 1897: tab. ix.

Tanypeza (*Neotanypeza*) *rutila*.—Enderlein, 1913:225.

Neotanypeza rutila.—Hennig, 1936:37.

Tritanypeza rutila.—Enderlein, 1936:43.

Neotanypeza (*Tritanypeza*) *rutila*.—Steyskal, 1967:2.

MALE (FIGURE 15). Body length 7.0–8.2 mm. Anterior tomentose triangle on frons tan colored and reaching level of posterior fronto-orbital. Ocellar disc fully tomentose. Anterior fronto-orbital approximately half length of posterior bristle and thin. Postvertical bristle yellow, thin, and slightly longer than tubercle. First flagellomere light yellow and narrow, tapering to apex. Clypeus yellow (dark brown in males with more extensively pigmented abdomens) and palpus yellow. Postpronotal and presutural intra-alar bristles present. Three dorsocentral bristles. Thorax dark brown. Anepisternum with only 1 dark, dominant bristle. Calypter hairs pale. Wing clear. Face mostly white with dorsal and lateral markings on face faded. Legs entirely yellow with mid coxa variably orange to brown, fore tarsi darker yellow distally (and pale basally in holotype), and mid and hind tarsi brown with mid basotarsomere yellow and hind basotarsomere yellow basally; fore and hind tarsi sometimes light brown with base paler. Abdominal bristles dark brown with lateral bristles on tergite 1 yellow; abdomen dark brown with sternite 8 and segments 1–5 yellow (darker on segments 4 and 5), sometimes with posterior margin brown on tergites 3–5 and sometimes with brown medial stripe on tergites 3 and 4.

MALE GENITALIA (FIGURES 76–78). As described for *N. claripennis* except as follows: sternite 6 nearly symmetrical and membranous on left anterior margin, without sclerotized sublateral band and with 2 long distomedial bristles; sternite 7 well developed and with 2 bristles; surstylus broad, doubly sinuate on posterior margin, densely setose, and without stout pointed setulae; hypandrium with multiple bristles on each side; postgonite with subapical setulae; distiphallus pointed at base, bifid, loosely associated with separate basiphallus, and heavily spinulose laterally and medially.

FEMALE. As described for male except as follows: body length 7.1–8.2 mm; postvertical black; first flagellomere

orange with posterior margin broadly rounded and sometimes with distal margin lightly infuscated; thorax yellow on anepisternum, postpronotum, notopleuron, prosternum, anterior half of meron (mottled, with suture brown), and dorsal half of katepisternum; legs yellow with mid coxa brown, fore tibia light yellow, and hind tibia light yellow with basal half dark brown; fore tarsi brown with basotarsomere yellow, excluding apex (basal half yellowish in TAMU female); abdomen dark brown, with segments 1–6 predominantly yellow; tergites (1)2–4(5) with narrow central stripe (stripe sometimes wide and flaring posteriorly on tergites 3–5), posterior margin of tergites (3)4–6 brown, and tergites 5 and 6 sometimes brownish to brown.

VARIATION. Brazilian males: postvertical brown, prosternum dark yellow with brownish medial spots, hind tibia with very light subapical band, tarsi brown with basal 2/3 of basotarsomeres yellow, clypeus brown, and first flagellomere broader; abdominal coloration indistinct past segment 2. One Costa Rican male (INBio) with thorax entirely dark brown. TAMU female with thorax (excluding prosternum) brown, hind tibia with distal brown band, basotarsomeres yellow to base on mid and hind legs and light yellow on basal half of fore basotarsomere, and abdomen dark with tergites 1–3 yellow (excluding narrow medial stripe and brown posterior margin on tergite 3).

DISTRIBUTION. Costa Rica, Mexico.

LECTOTYPE. MEXICO. Guerrero, Sierra de las Aguas Escondidas, 3000 ft, “July”, “cotype”, “Cent. America, F. D. Godmando, O. Salvin, B. M. 1903-172” (1♂, BMNH).

PARALECTOTYPES. MEXICO. Same data as lectotype (2♀, BMNH).

ADDITIONAL MATERIAL EXAMINED. COSTA RICA. San Jose: Escazu, F. D. Parker, 24–30.i.1988 (1♂, EMUS), 13–15.iv.1988 (1♀, EMUS), Guanacaste: 3 km SE R. Naranjo, 12–14.v.1993, F. D. Parker (1♀, EMUS), Liberia, P. N. Sta. Rosa, Est. Santa Rosa, Bque Húmedo, 300 m, viii.1999, Janzen, manual (5♀ 1♂, INBio), P. N. Sta. Rosa, Stor Santa Rosa, Area Adm., 300 m, J. Sullivan & A. A. Pérez, Malaise, vi.1999 (1♀, INBio), iii.1999 (1♂, INBio), Estacion Pitilla, 9 km S de Santa Cecilia, 700 m, iii.1995, P. Rios (1♀, INBio), Los Almendros, P. N. Guanacaste, 7–26.i.1993, E. López (1♂, INBio). MEXICO. Jalisco: 16 mi SW Autlan, 22.viii.1976, Hanson, Schwartz (1♀, EMUS), Jalisco: rd. to Parque Nacional de Volcan de Colima, 11 mi W Hwy. junct. 54 (near Atenquique), 11–12.vii.1984, Carroll, Schaffner, & Freidlander (1♀, TAMU).

COMMENTS. *Neotanypeza rutila* is highly variable in its color pattern, although all females and some males have a yellow prosternum and those males with a brown prosternum have a largely yellow abdomen and clypeus. Northern specimens also tend to be paler in overall pigmentation. This species is similar in appearance to *N. abdominalis*, and there is a significant overlap in coloration; however, females of *N. rutila* are much paler on the thorax, and males have a different pattern on the frons and an unusual distiphallus.

The male syntype of *Neotanypeza rutila* is here designated as the lectotype.

***Neotanypeza symmetros*, sp. nov.**

FIGURES 79–84

MALE. Body length approximately 7.5 mm. Dorsal portion of anterior tomentose triangle not much longer than wide at widest point; frons (excluding reflective patches) black with purple tint anteromedially. Ocellar disc fully tomentose. One fronto-orbital. Postvertical bristle slightly longer than tubercle and thin. First flagellomere broadly rounded and infuscated along distal and dorsal margins. Clypeus dark brown and palpus yellow. Postpronotal and presutural intra-alar bristles absent. One dorsocentral bristle. Anepisternum with 1 dark, dominant bristle. Calypter hairs yellow. Wing infuscated apically. Legs yellow with mid coxa brown, fore femur lightly pigmented subapically on inner dorsal surface, mid and hind femora dark brown on distal half excluding apex, fore tibia and tarsi light yellow with distal tarsomere and apex of penultimate tarsomere brown, and mid and hind tibiae and tarsi dark brown. Abdominal bristles dark brown; abdomen dark brown.

MALE GENITALIA (FIGURES 79–84). As described for *N. claripennis* except as follows: sternite 1 apparently fused to sternite 2, elongate; sternite 3 relatively elongate; sternite 6 virtually symmetrical, shallowly emarginate at base, without sublateral sclerotization, evenly setose, and without anteromedial setulae; sternite 7 well developed; surstylus with bristles restricted to posterior half and with setulae restricted to posterodorsal corner (none stout and pointed); phallapodeme and distiphallus slightly longer with distiphallus wide and toothed on distal half with relatively long, narrow base and no dark sclerotized medial region.

FEMALE. Unknown.

ETYMOLOGY. The specific epithet refers to the nearly symmetrical male sternite 6.

DISTRIBUTION. Colombia.

HOLOTYPE. COLOMBIA. Valle Paramo Las Hermosas, 26.x.1975, 2700 m, J. E. Lattke, montane rainforest, Malaise trap (1♂, CASC).

COMMENTS. *Neotanypeza symmetros* is a relatively small (7.5 mm), pale species with a single dorsocentral and fronto-orbital, a broad, dark first flagellomere, dark legs, a yellow palpus, pale calypter hairs, and an unusually long, narrow abdomen. The first three sternites are particularly elongate, with sternite 1 apparently fused to sternite 2, which form a single plate.

***Neotanypeza vexilla*, sp. nov.**

FIGURES 32, 85, 86

MALE. Body length approximately 9.5 mm. Dorsal portion of anterior tomentose triangle approximately 1.5 times longer than wide at widest point. Ocellar disc fully tomentose. Fronto-orbital bristles absent. Postvertical bristle minute. First

flagellomere relatively wide (but not broadly rounded) and orange with distal $\frac{2}{3}$ dark. Clypeus and palpus dark brown. Frons black with light purple tint. Postpronotal and presutural intra-alar bristles absent. One dorsocentral bristle. Anepisternum with 1 dark, dominant bristle. Calypter hairs yellow. Wing dusky with dark apical spot around R_{2+3} . Legs yellow with mid coxa brown, fore femur with dark inner distal spot and light outer distal spot, mid femur light brown apically, hind femur brownish at apex, fore tibia with broad basal and narrow apical light brown bands, and mid and hind tibiae and all tarsi dark brown. Abdominal bristles dark brown with lateral bristles on first tergite yellow; abdomen dark brown.

MALE GENITALIA (FIGURES 85, 86). As described for *N. claripennis* except as follows: sternite 7 well developed but not strongly differentiated from sternite 8; surstylus nearly as wide as epandrium, broadly rounded, and with stout setulae partially extending around margin of surstylus; hypandrium bare; distiphallus slightly narrower and without medial sclerotization. Male with pale wings with distiphallus narrow and very slightly narrowing apically, with spinulose margins less textured and meeting medially.

FEMALE. As described for male except as follows: body length 9.5–11.0 mm; frons black, without purple tint; antenna black; fore femur light brown apically; hind femur and fore tibia entirely yellow; fore basotarsomere entirely light yellow.

VARIATION. CNC female from Peru (Figure 32) differs from above females as follows: body length approximately 10.0 mm; wing yellowish anteriorly, with light infuscation along CuA_1 continuing up dm-cu and then down M_1 ; R_{4+5} infuscated along distal section and R_{2+3} with dark apical spot; fore femur yellow with light inner distal spot; fore basotarsomere only yellowish at base. DEBU female similar to CNC female except mid and hind tibiae with yellowish subapical band and base of hind basotarsomere yellow.

VARIATION: NONTYPE SPECIMENS. One Ecuadorian male (CNC) largely agrees with above description but differs as follows: body length 8.1 mm; fore femur yellow on outer surface and becoming darker yellow basally; sternite 8 yellow; epandrium and surstylus with yellowish mottling; distiphallus only $\frac{1}{4}$ length at widest point, with lateral margin sclerotized and center with narrow, tapered sclerite extending for $\frac{2}{3}$ length of distiphallus. This male possibly belongs to a separate species, but additional material would be needed before it could be determined whether or not the differences observed represent normal intraspecific variation. A similar Venezuelan female from the AMNH may also be conspecific: length 8.4 mm; margins of ocellar disc shiny; first flagellomere broad; wing slightly darker; fore femur brownish on outer apex; fore tibia light brown on basal half; mid and hind tibiae with yellowish subapical band; sternite 8 brown; yellow lateral abdominal bristles extending along length of abdomen.

ETYMOLOGY. The specific name is derived from the Latin for banner, flag, or standard, referring to the characteristic wings, which are likely used for conspecific signaling.

DISTRIBUTION. Ecuador, Colombia, Peru, Venezuela.

HOLOTYPE. ECUADOR. SierrAzul Res., 14 km W Cosanga, 2200 m, 0°40'55"S, 77°58'09"W, 8–11.v.2002, S. A. Marshall (1♂, QCAZ).

PARATYPES. COLOMBIA. Boyacá, SFF Iguaque, 5°25'12"N, 73°27'24"W, 2850 m, 1–19.iv.2000, Malaise, P. Reina (1♀, DEBU). PERU. Cuzco, Machu Picchu, 21.xii.1967, G. E. Bohart (1♀, CNC), Cusco, Aguas Calientes, 15–16.vi.2006, Paiero & Klymko (1♀, DEBU).

ADDITIONAL MATERIAL EXAMINED. ECUADOR. Tandapi, 40 km SW Quito, 1300–1500 m, 15–21.vi.1965, Pena (1♂, CNC). VENEZUELA. Lindig, 1864, "elegans", "Alte Sammlung" (1♀, AMNH).

COMMENTS. Although somewhat variable in coloration, *Neotanypeza vexilla* can be diagnosed by a subapical spot on vein R_{2+3} and a reduction in chaetotaxy. *Neotanypeza leucothrix* (Peru) also has an apical spot on R_{2+3} , but the frons is shining anteromedially, the posterior margin of the ocellar disc is shining, there is one pair of fronto-orbital bristles, the postpronotal bristle is present, the fore tibia is not banded as above, the basotarsomeres are yellow basally, the abdominal bristles are brown on the first tergite, and the abdomen has yellow spots.

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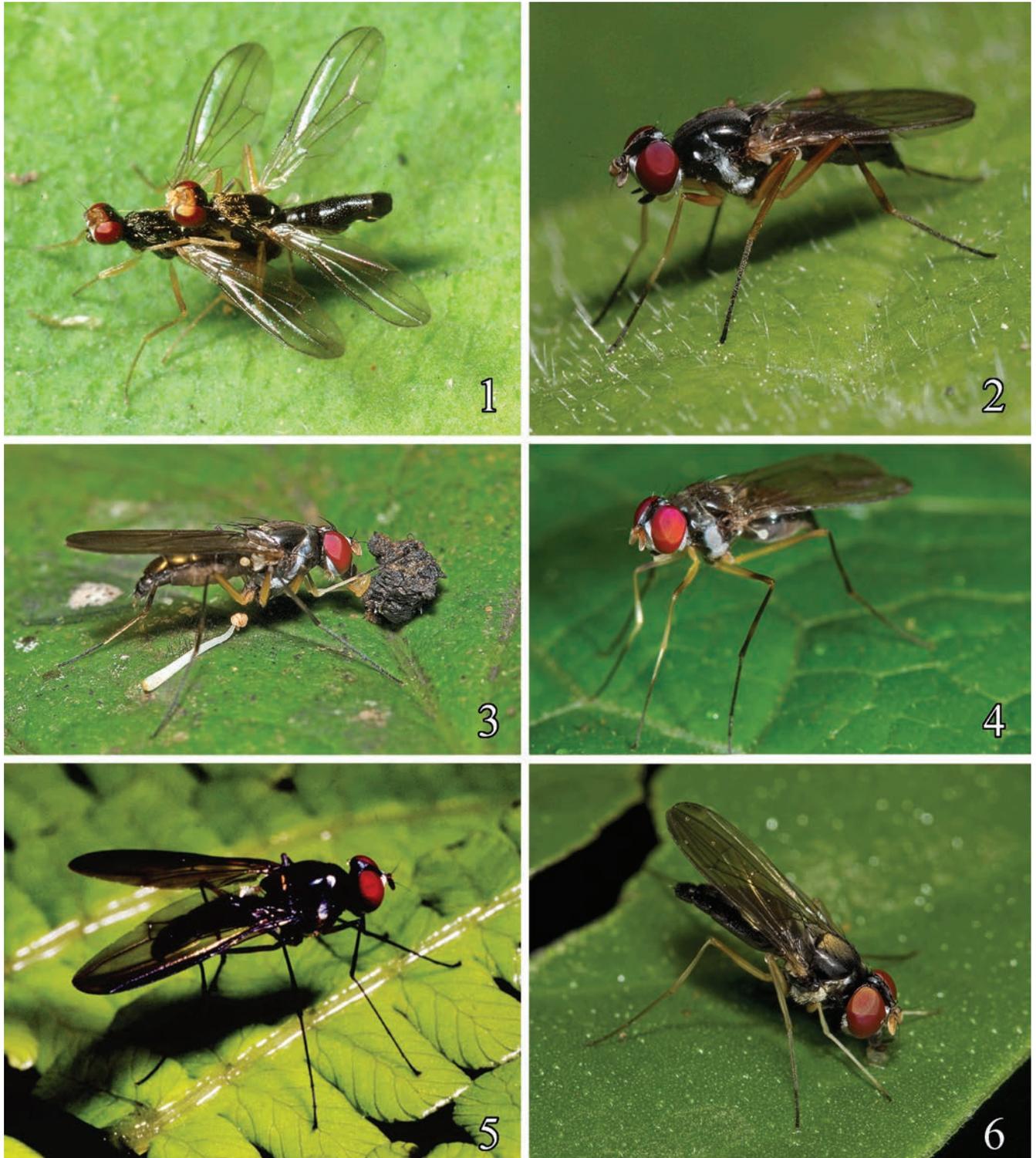
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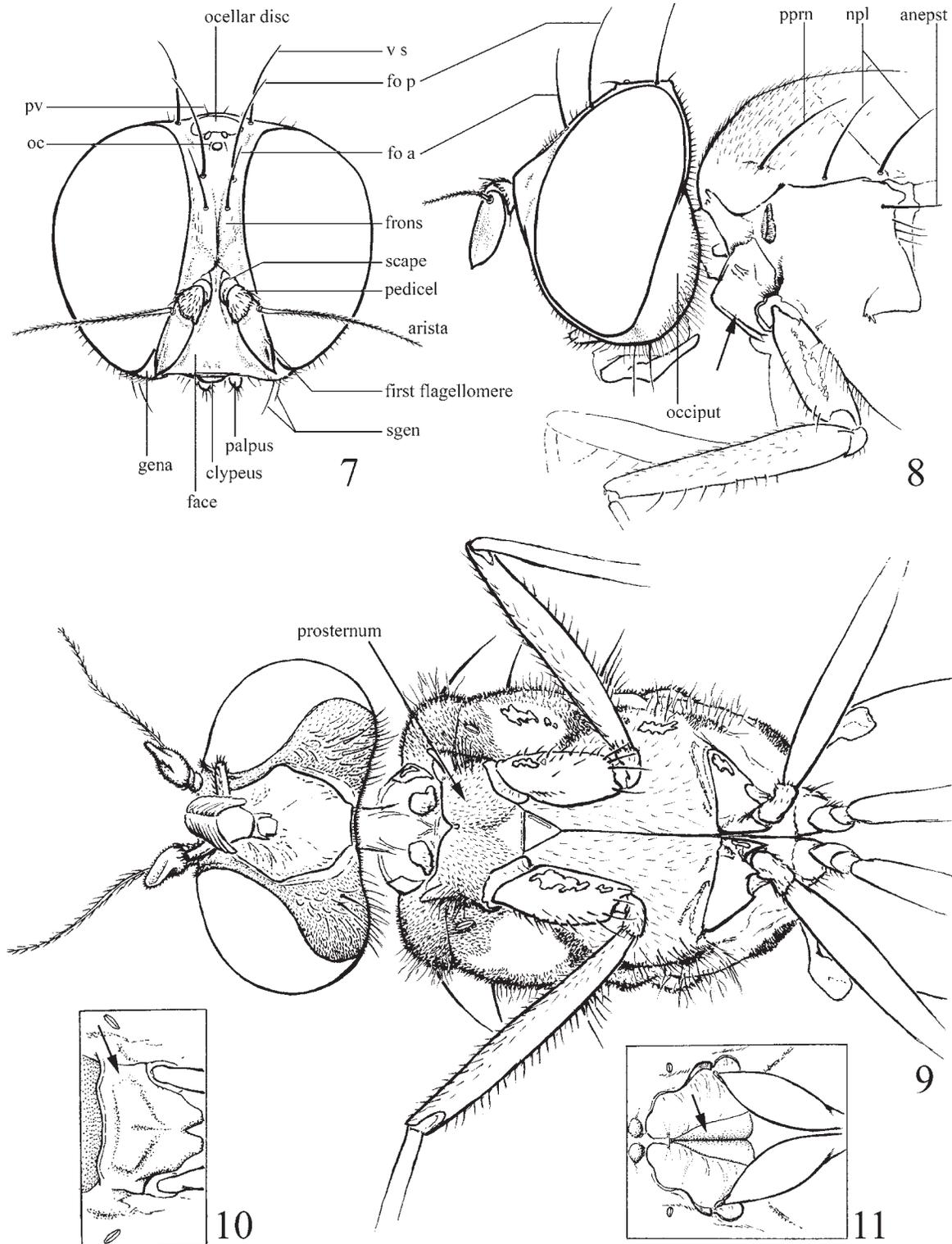
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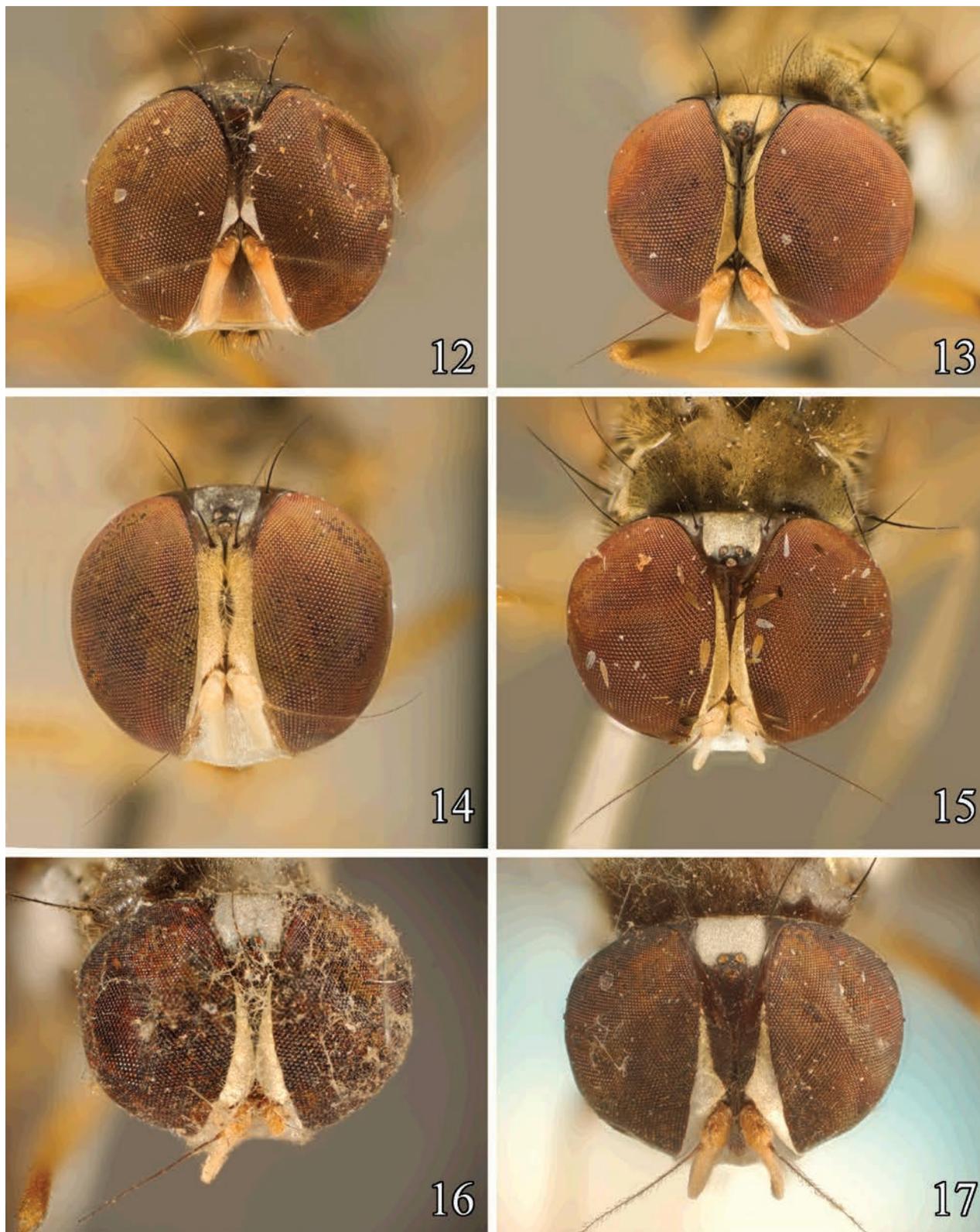
FIGURES



FIGURES 1–6. Figure 1: *Strongylophthalmyia angustipennis* Melander, male and female in copula, Ontario, Canada. Figure 2: *Tanypeza longimana* Fallén, female, Ontario, Canada. Figure 3: *Neotanypeza posthos*, sp. nov., female, Wayqecha Biological Station, Peru. Figure 4: *N. dallasi* (Shannon), female, Savegre Lodge, Costa Rica. Figure 5: *N. grandis* (Enderlein), female, SierrAzul Research Station, Ecuador. Figure 6: *N. alopecia*, sp. nov., female, Heath River Wildlife Center, Bolivia. All photos courtesy S. A. Marshall.



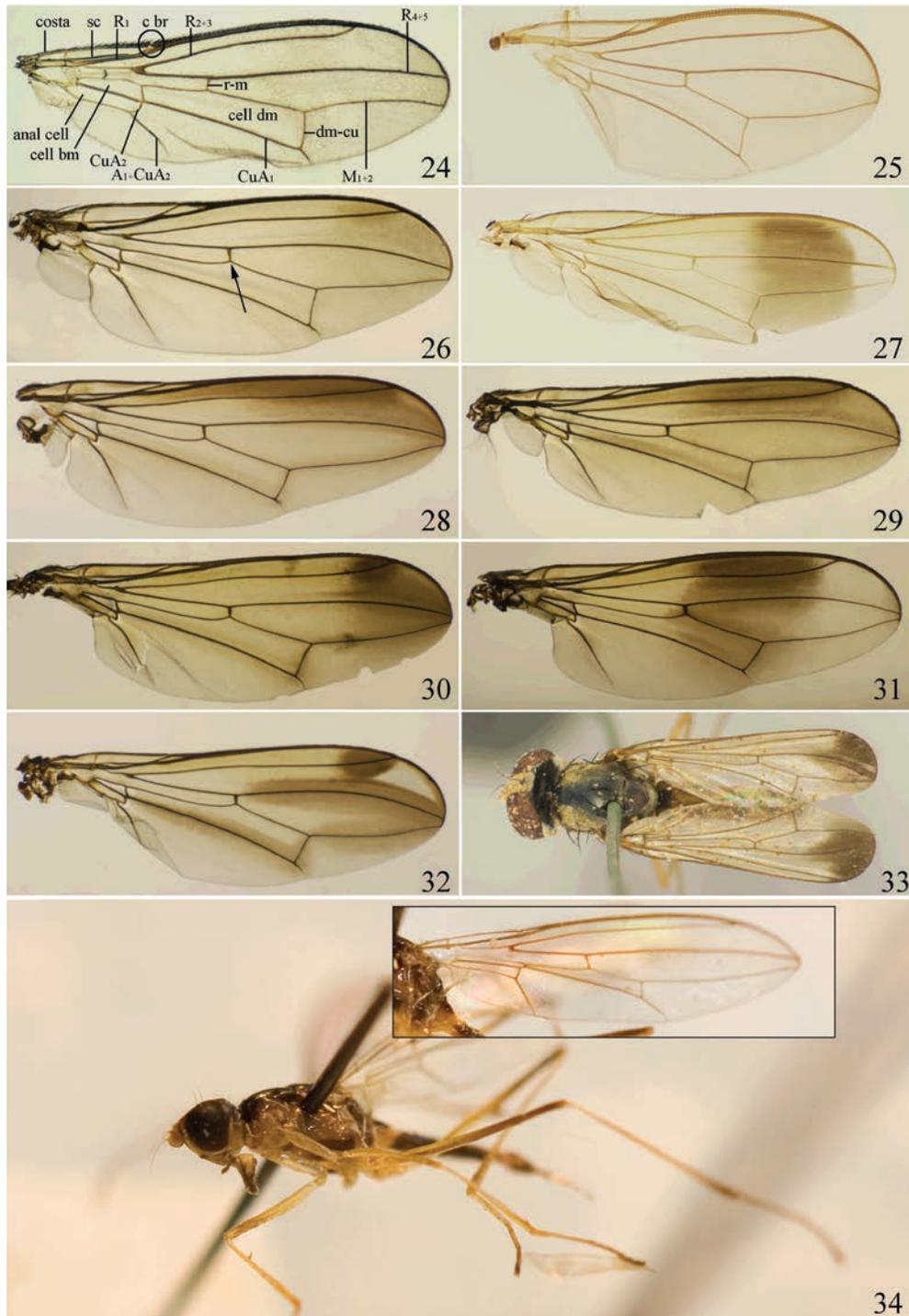
FIGURES 7–11. Figures 7–8: *Neotanypeza marshalli*, sp. nov.; Figure 7: head, anterior; Figure 8: body, lateral. Figure 9: *Tanypeza longimana* Fallén, ventral. Figure 10: *Strongylophthalmyia angustipennis* Melander, prosternum and base of fore coxae. Figure 11: *Centrioncus prodiopsis* Speiser (Diposidae), prosternum and base of fore coxae. Abbreviations: fo a = anterior fronto-orbital bristle; fo p = posterior fronto-orbital bristle; npl = notopleural bristle; oc = ocellar bristle; pprn = postpronotal bristle; pv = postvertical bristle; sgen = subgenal bristles; v s = vertical bristle.



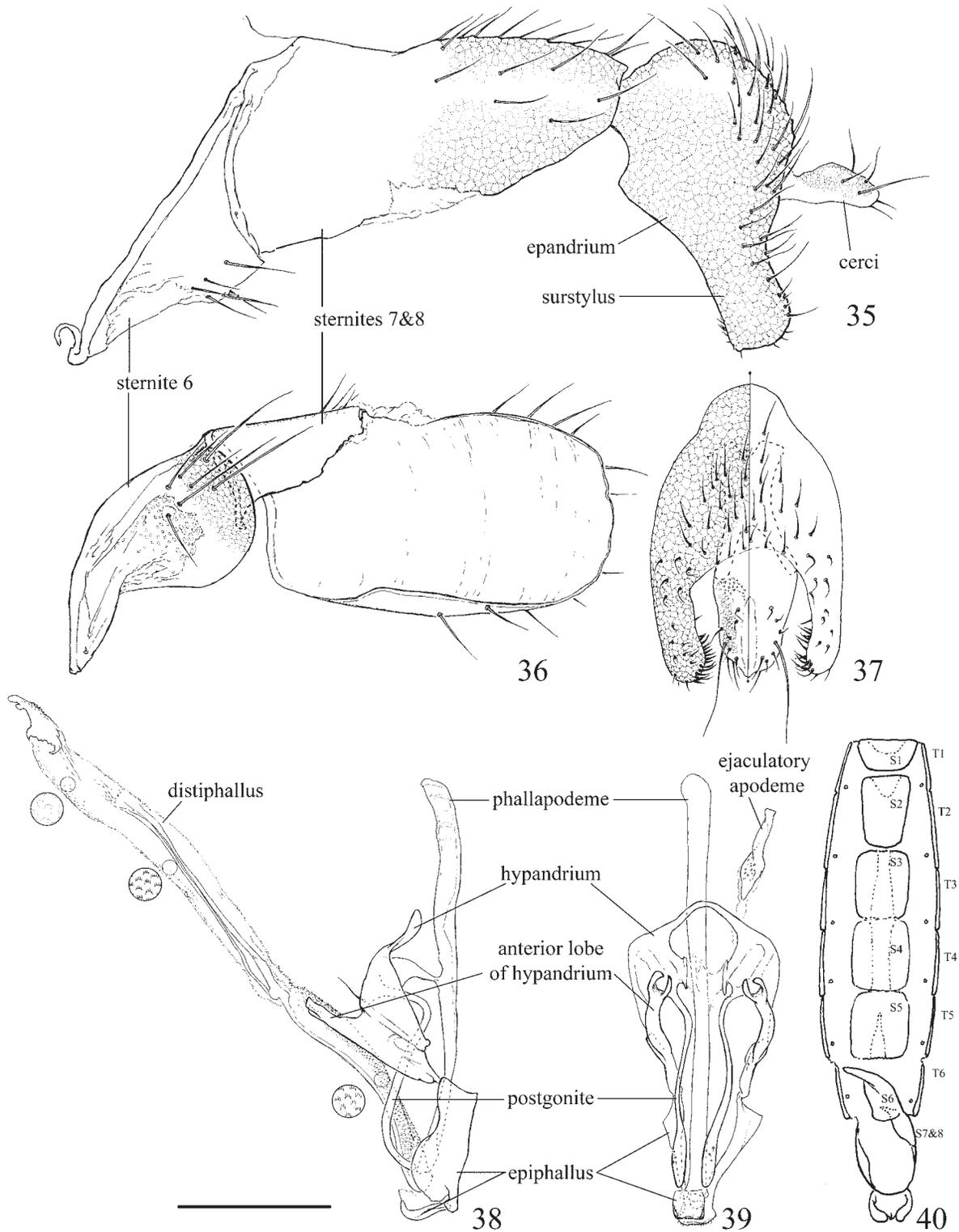
FIGURES 12–17. Heads, anterodorsal view. Figure 12: *Neotanypeza claripennis* (Schiner), male lectotype. Figure 13: *N. claripennis*, tentatively included male. Figure 14: *N. apicalis* (Wiedemann), male. Figure 15: *N. rutila* (Wulp), male. Figure 16: *N. ornatipes* (Bigot), holotype, male. Figure 17: *N. ornatipes*, female (*Taeniaptera pallidipennis* Bigot, lectotype).



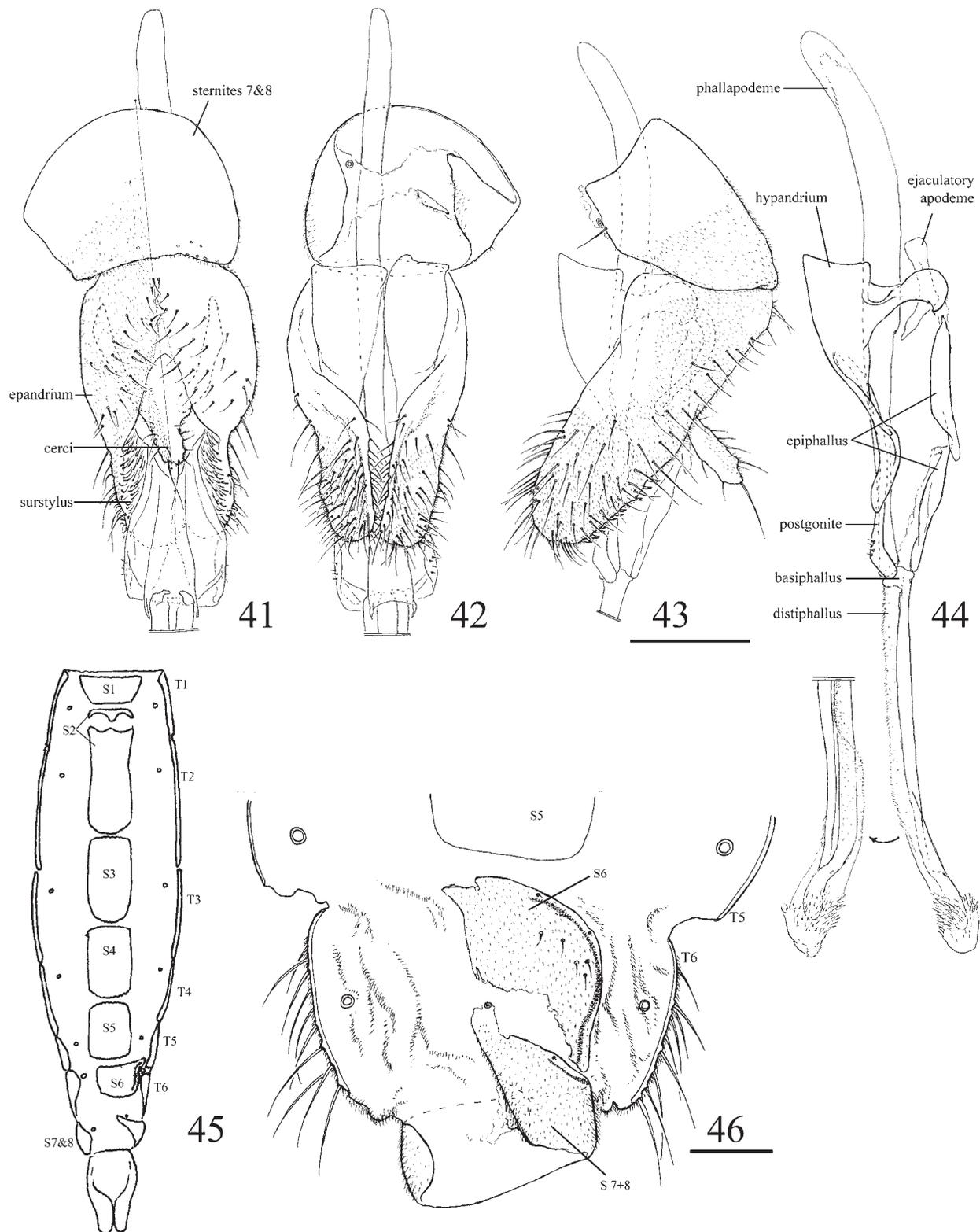
FIGURES 18–23. Heads, anterdorsal view. Figure 18: *Neotanypeza abdominalis* (Wiedemann), female. Figure 19: *N. micans*, sp. nov., holotype, male. Figure 20: *N. alopecia*, sp. nov., paratype, female. Figure 21: *N. flavicalx* (Enderlein), holotype, female. Figure 22: *N. grandis* (Enderlein), male. Figure 23: *N. argentia*, sp. nov., holotype, male.



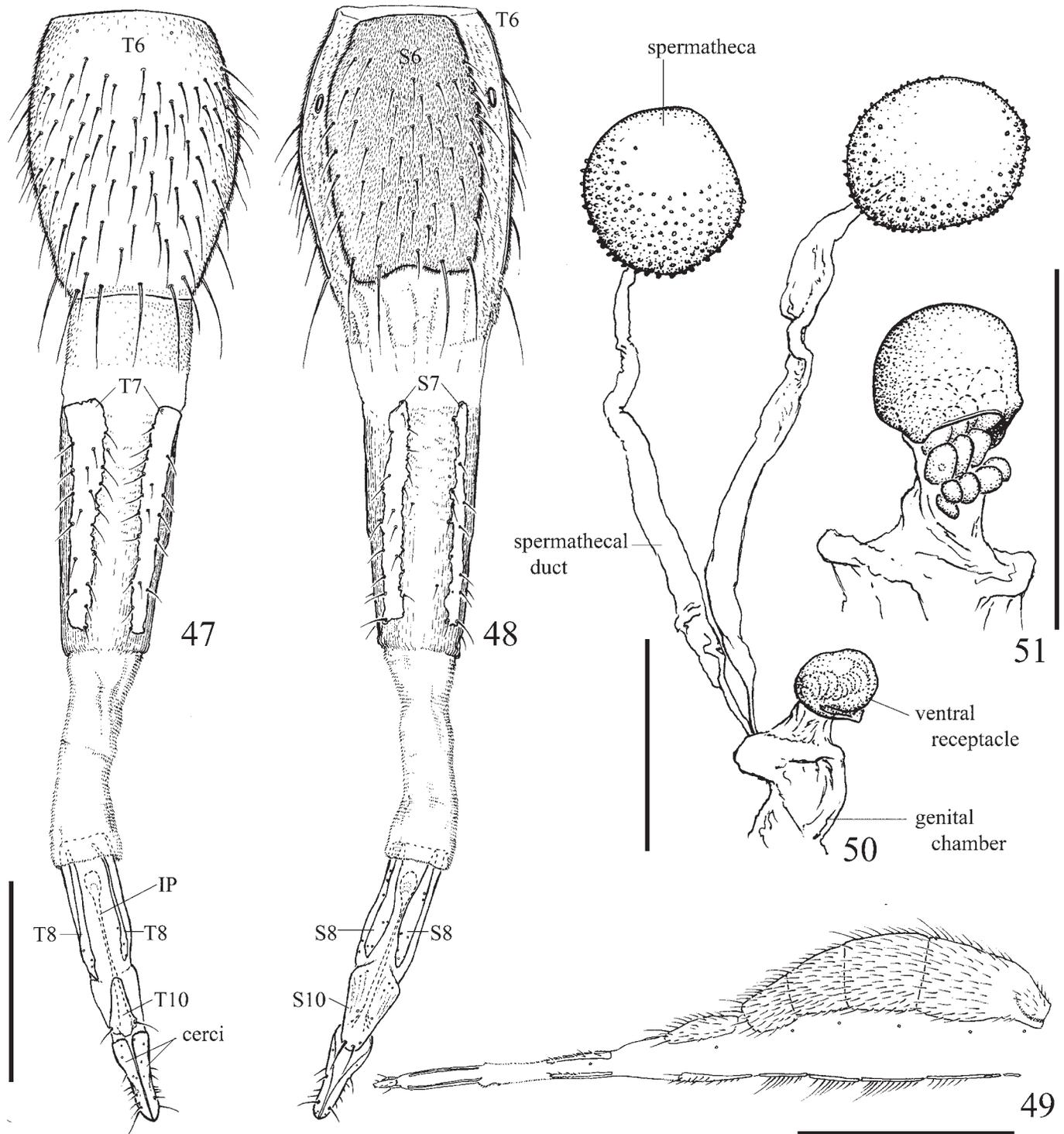
FIGURES 24–34. Figures 24–32: Left wing, ventral; **Figure 24:** *Strongylophthalmyia angustipennis* Melander (abbreviations: sc, subcostal; c br, subcostal break; all other labeling = actual vein or cell names); **Figure 25:** *Tanypeza longimana* Fallén; **Figure 26:** *Neotanypeza claripennis* (Schiner), with arrow indicating pointed deviation along margin of cell dm referred to in character 42; **Figure 27:** *N. claripennis*, tentatively included specimen; **Figure 28:** *N. grandis* (Enderlein); **Figure 29:** *N. marshalli*, sp. nov.; **Figure 30:** *N. dimorpha* (Hennig), female; **Figure 31:** *N. dimorpha*, male; **Figure 32:** *N. vexilla*, sp. nov., Peruvian female. **Figure 33:** *N. apicalis* (Wiedemann), holotype, dorsal. **Figure 34:** *Nartshukia musiva* Shatalkin, holotype, lateral with wing inset; photo courtesy A. Shatalkin.



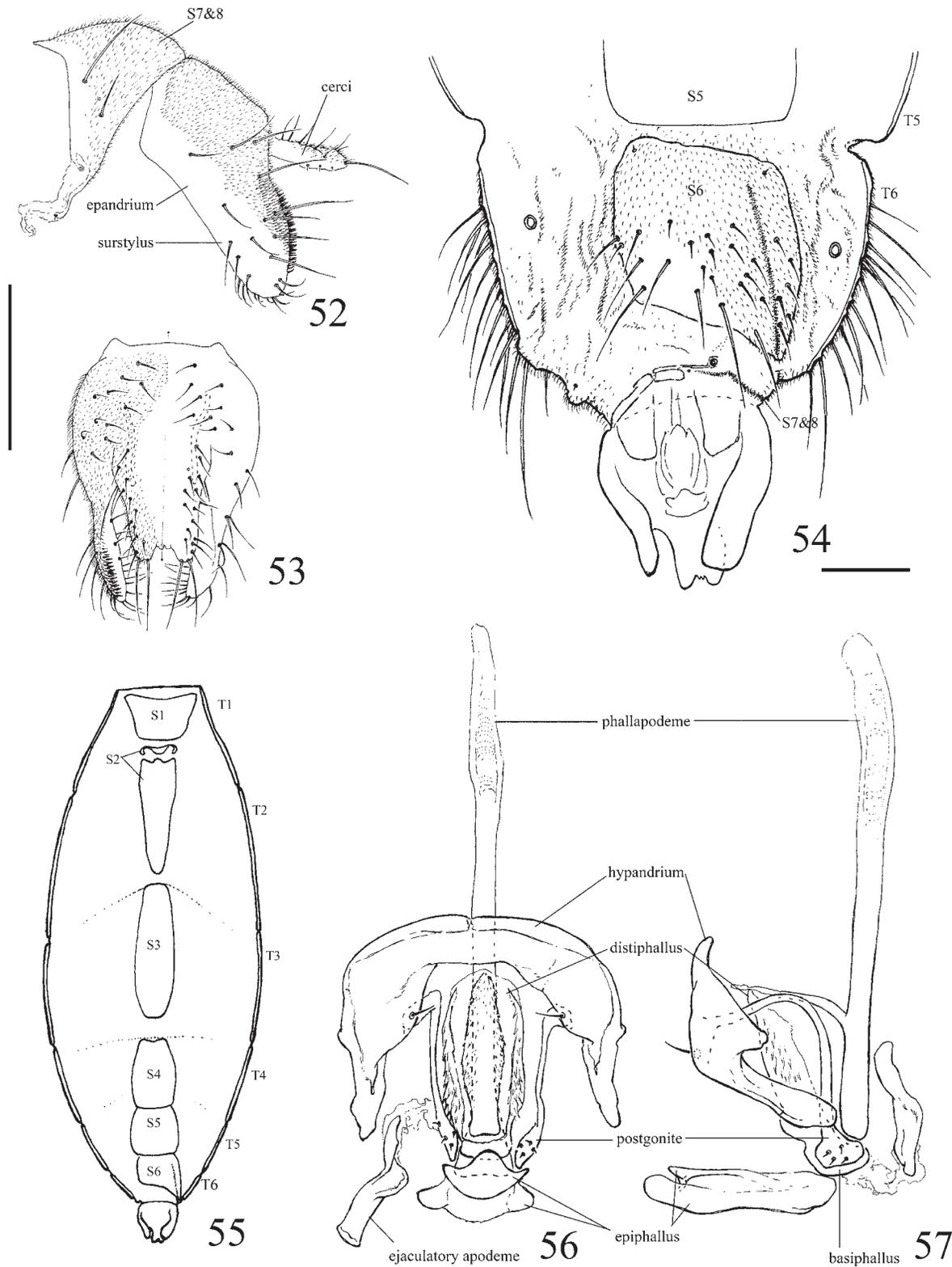
FIGURES 35–40. *Strongylophthalmyia angustipennis* Melander, male abdomen. Figure 35: External components of genitalia, left lateral. Figure 36: Sternites 6–8, ventral. Figure 37: External genitalia, posterior. Figure 38: Hypandrial complex, left lateral, showing details of membrane texture on phallus. Figure 39: Hypandrial complex, ventral, phallus removed. Figure 40: Ventral (not to scale; dotted lines delimiting medially bare, desclerotized regions). Abbreviations: S = sternite; T = tergite. Scale bar = 0.1 mm.



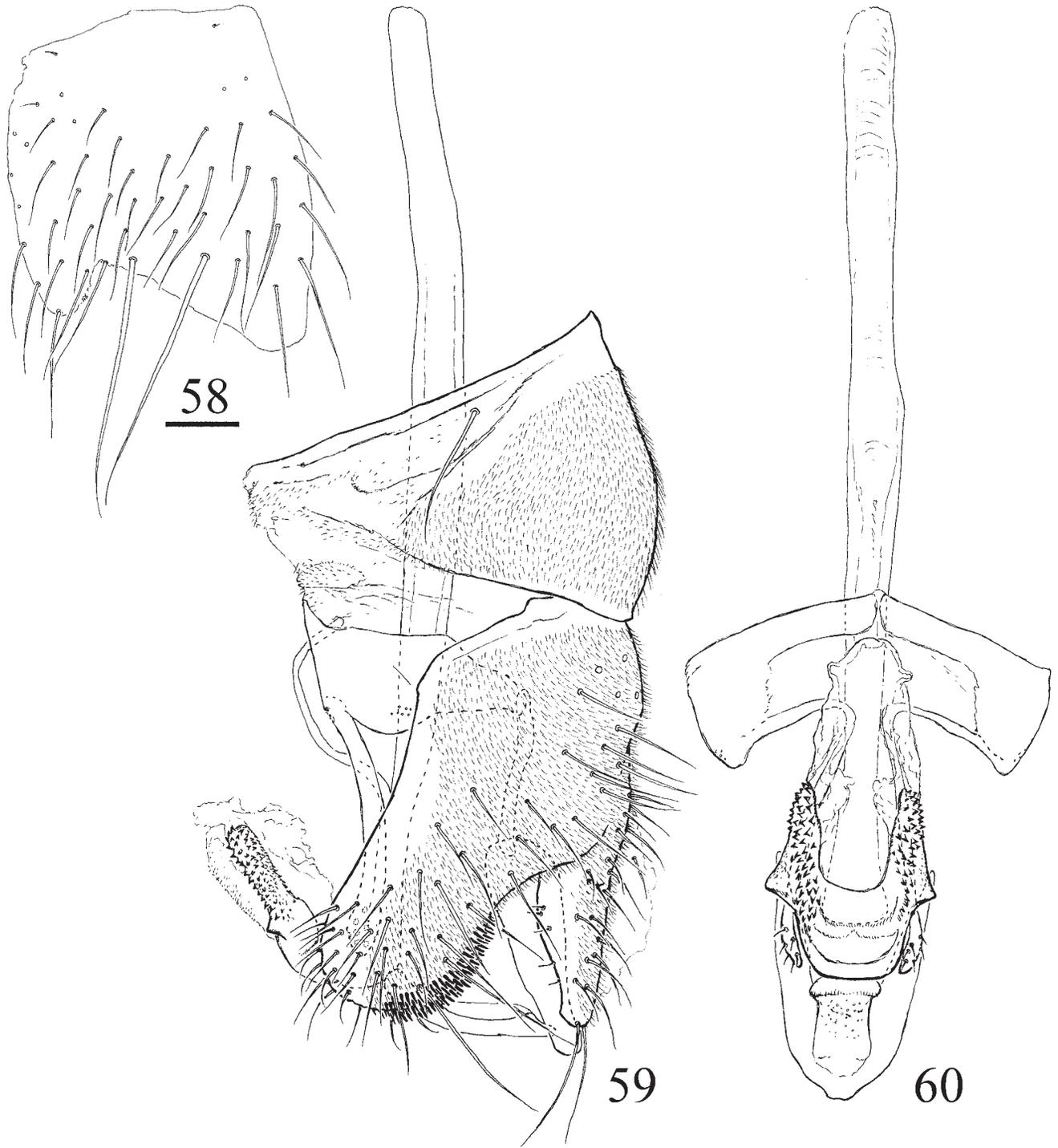
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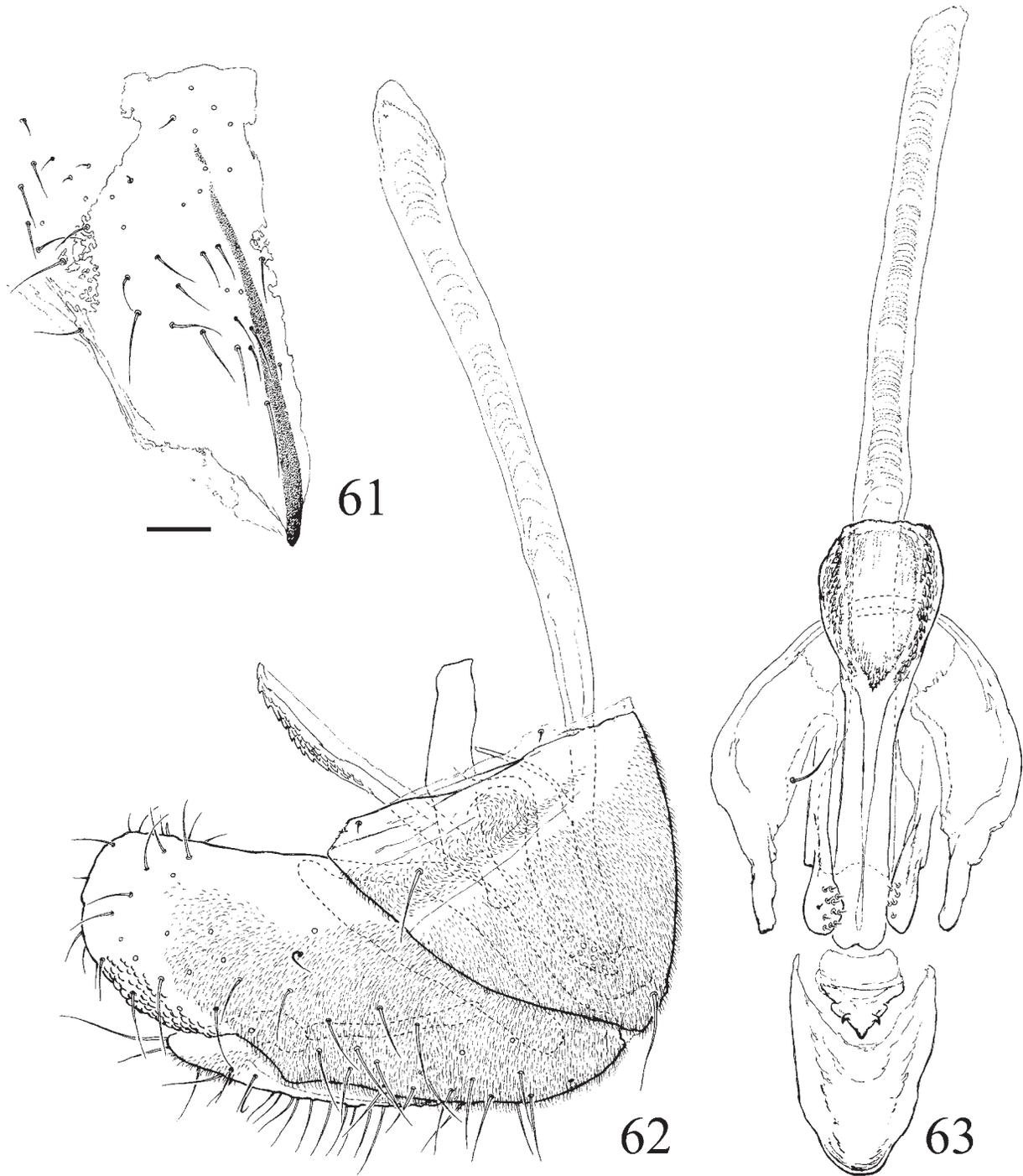
FIGURES 47–51. Figures 47–50: *Neotanypeza elegans* (Wiedemann), female abdomen; Figure 47: segments 6 to cerci, dorsal (scale bar = 0.5 mm); Figure 48: segments 6 to cerci, ventral; Figure 49: left lateral (scale bar = 2.0 mm); Figure 50: internal genitalia (scale bar = 0.2 mm). Figure 51: *Tanypeza longimana* Fallén, ventral receptacle (scale bar = 0.2 mm). Abbreviations: S = sternite; T = tergite; IP = internal process of sternite 10.



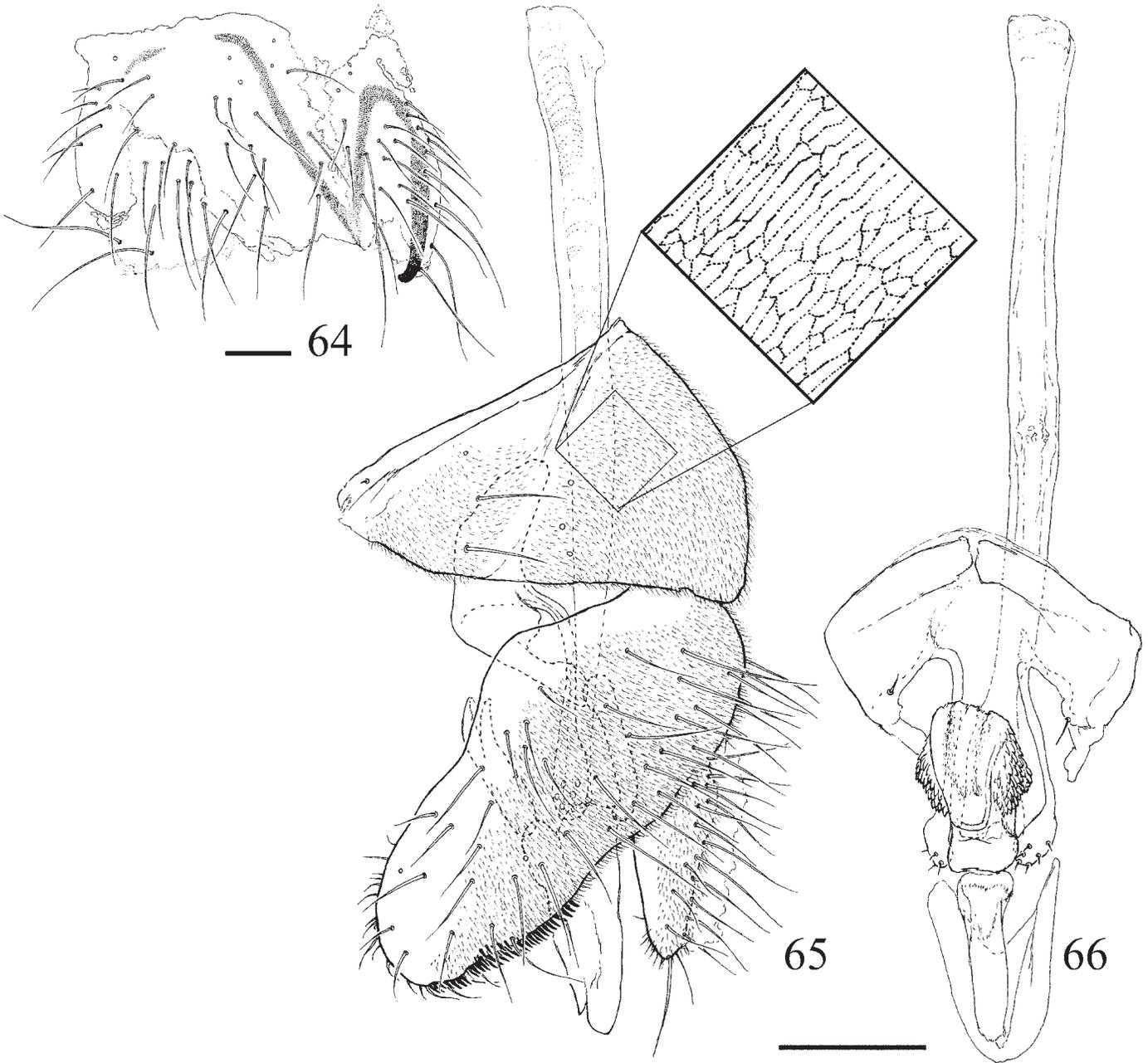
FIGURES 52–57. *Neotanypeza claripennis* (Schiner), male abdomen. Figure 52: External genitalia, left lateral. Figure 53: External genitalia, posterior. Figure 54: Ventral, detailing segment 6. Figure 55: Ventral. Figure 56: Hypandrial complex, ventral. Figure 57: Hypandrial complex, left lateral. Abbreviations: S = sternite; T = tergite. Scale bar = 0.1 mm.



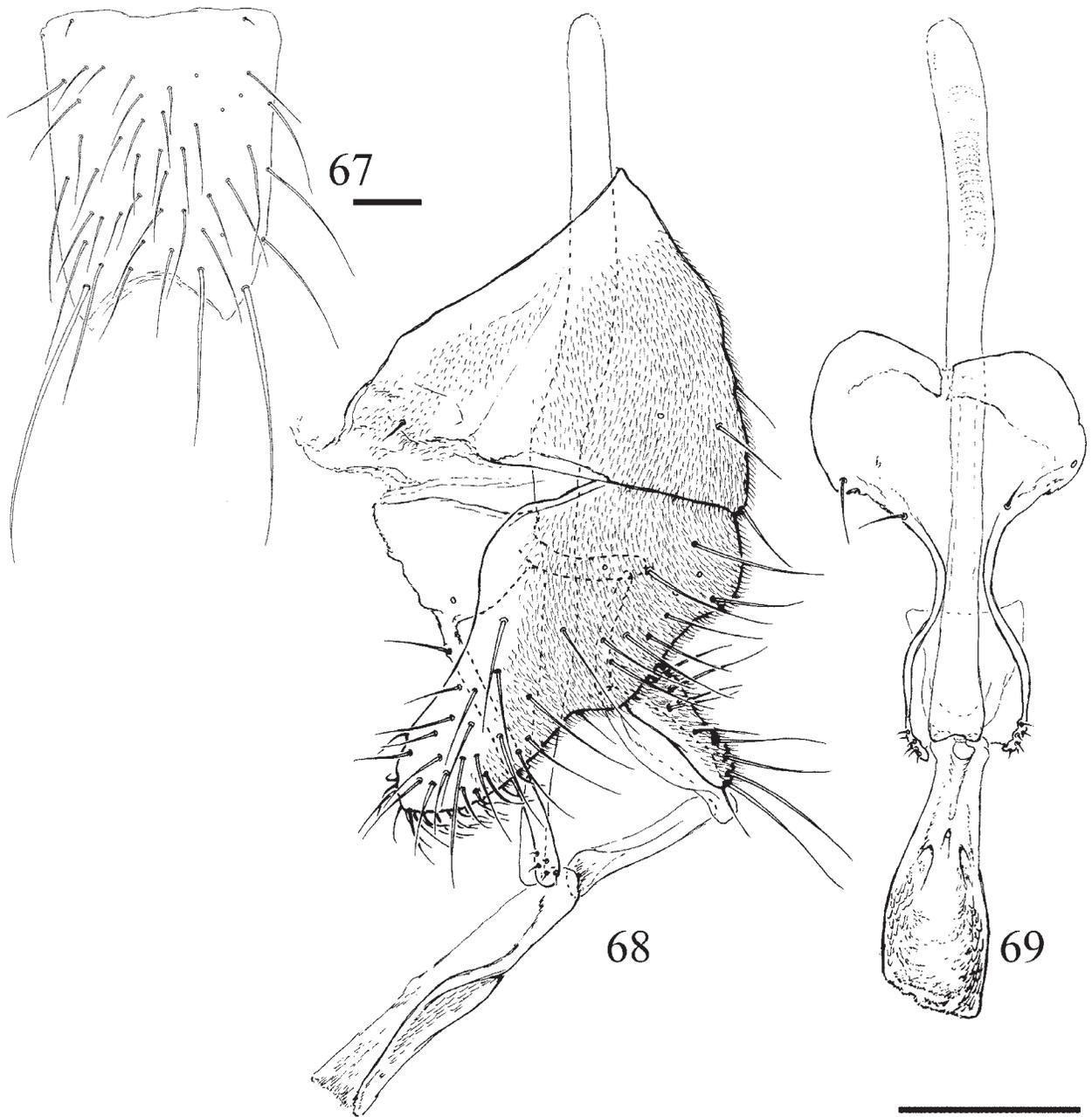
FIGURES 58–60. *Neotanypeza apicalis* (Wiedemann), male genitalia. Figure 58: Sternite 6. Figure 59: Left lateral. Figure 60: Hypandrial complex, ventral. Scale bar = 0.1 mm.



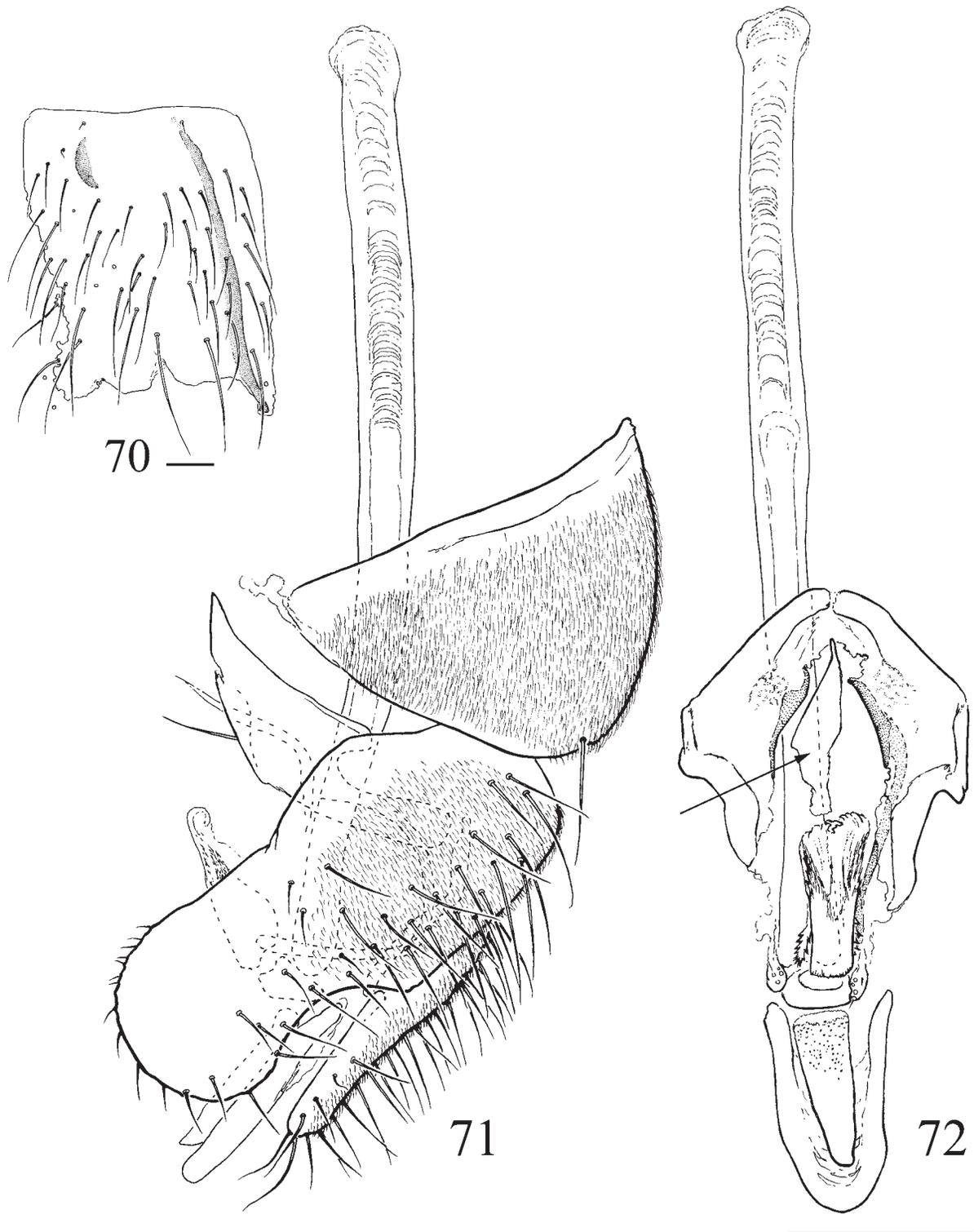
FIGURES 61–63. *Neotanypeza dimorpha* (Hennig), male genitalia. Figure 61: Sternite 6. Figure 62: Left lateral. Figure 63: Hypandrial complex, ventral. Scale bar = 0.1 mm.



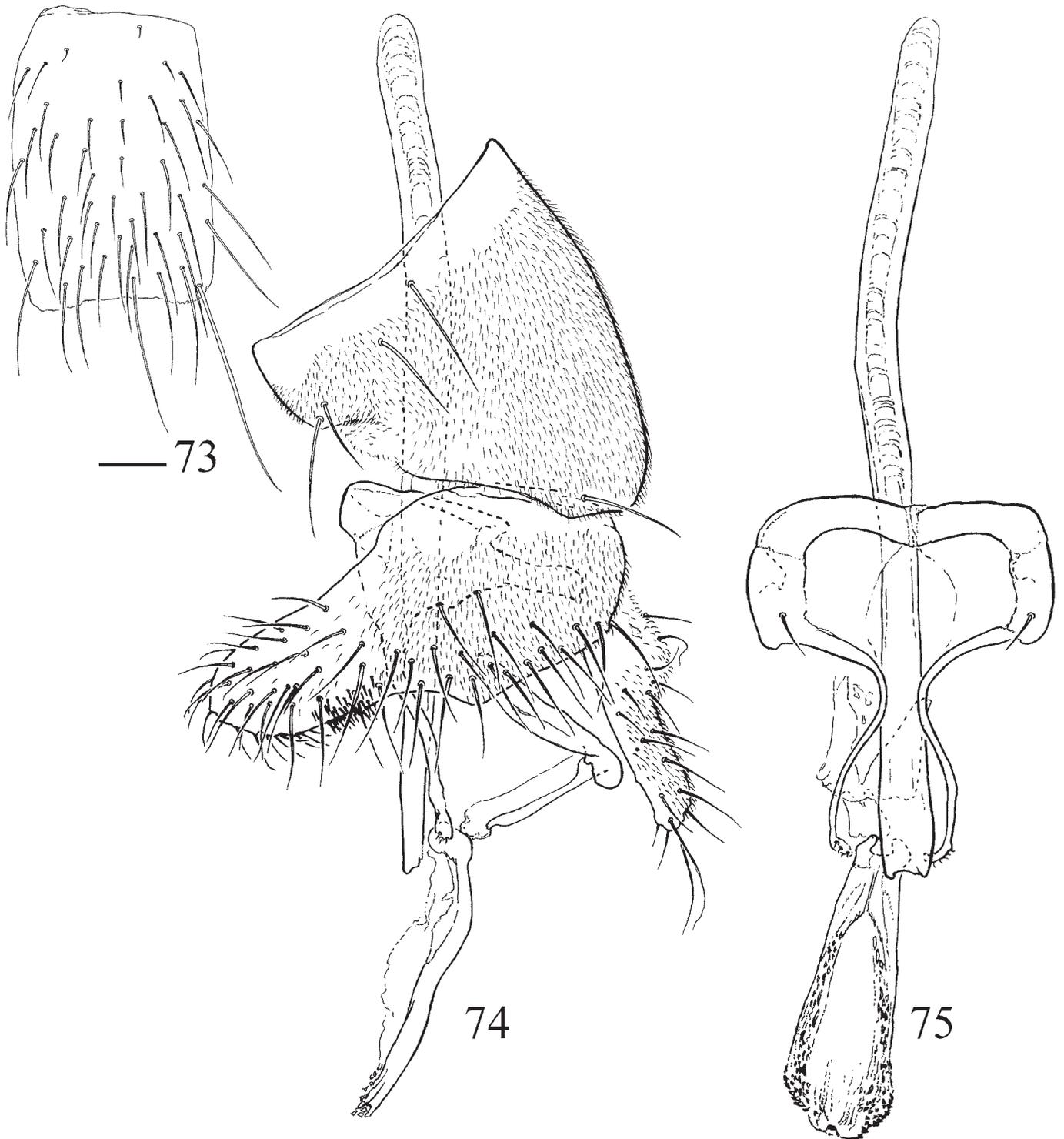
FIGURES 64–66. *Neotanypeza grandis* (Enderlein), male genitalia. Figure 64: Sternite 6. Figure 65: Left lateral with detail of surface texture. Figure 66: Hypandrial complex, ventral. Scale bar = 0.1 mm.



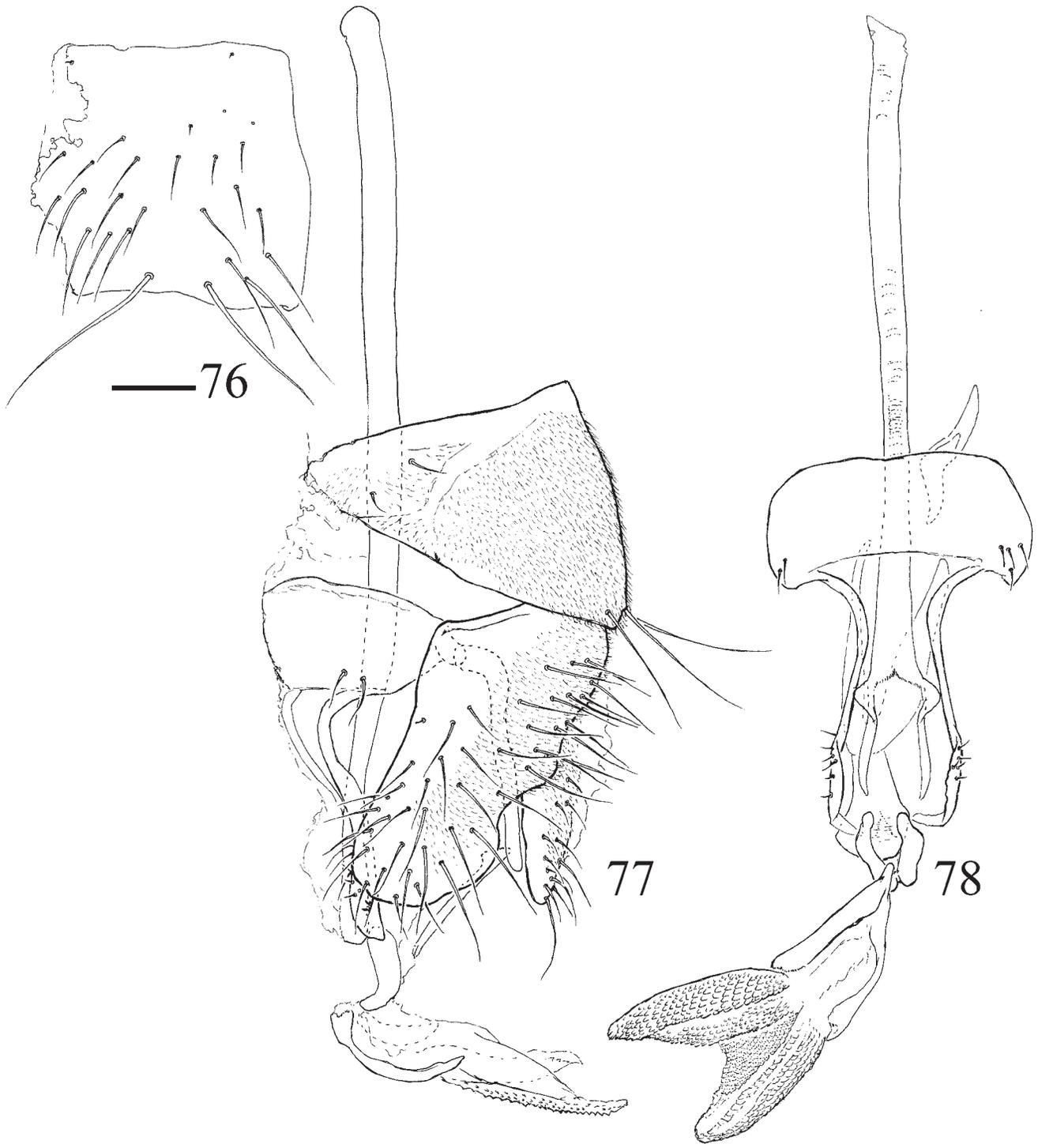
FIGURES 67–69. *Neotanypeza marshalli*, sp. nov., male genitalia. Figure 67: Sternite 6. Figure 68: Left lateral. Figure 69: Hypandrial complex, ventral. Scale bar = 0.1 mm.



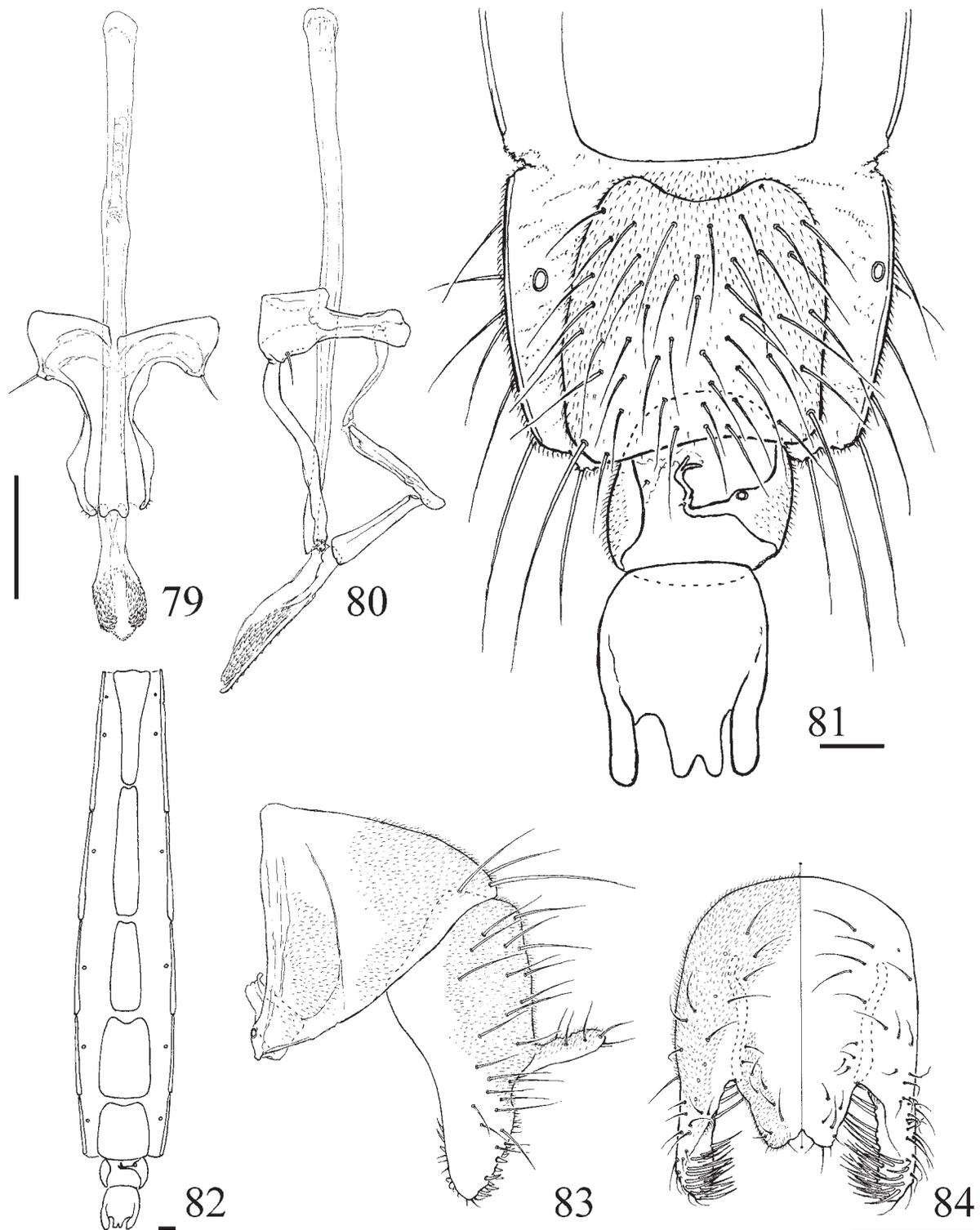
FIGURES 70–72. *Neotanypeza plotoplax*, sp. nov., male genitalia. Figure 70: Sternite 6. Figure 71: Left lateral. Figure 72: Hypandrial complex, ventral. Scale bar = 0.1 mm. Arrow indicates characteristic floating medial plate.



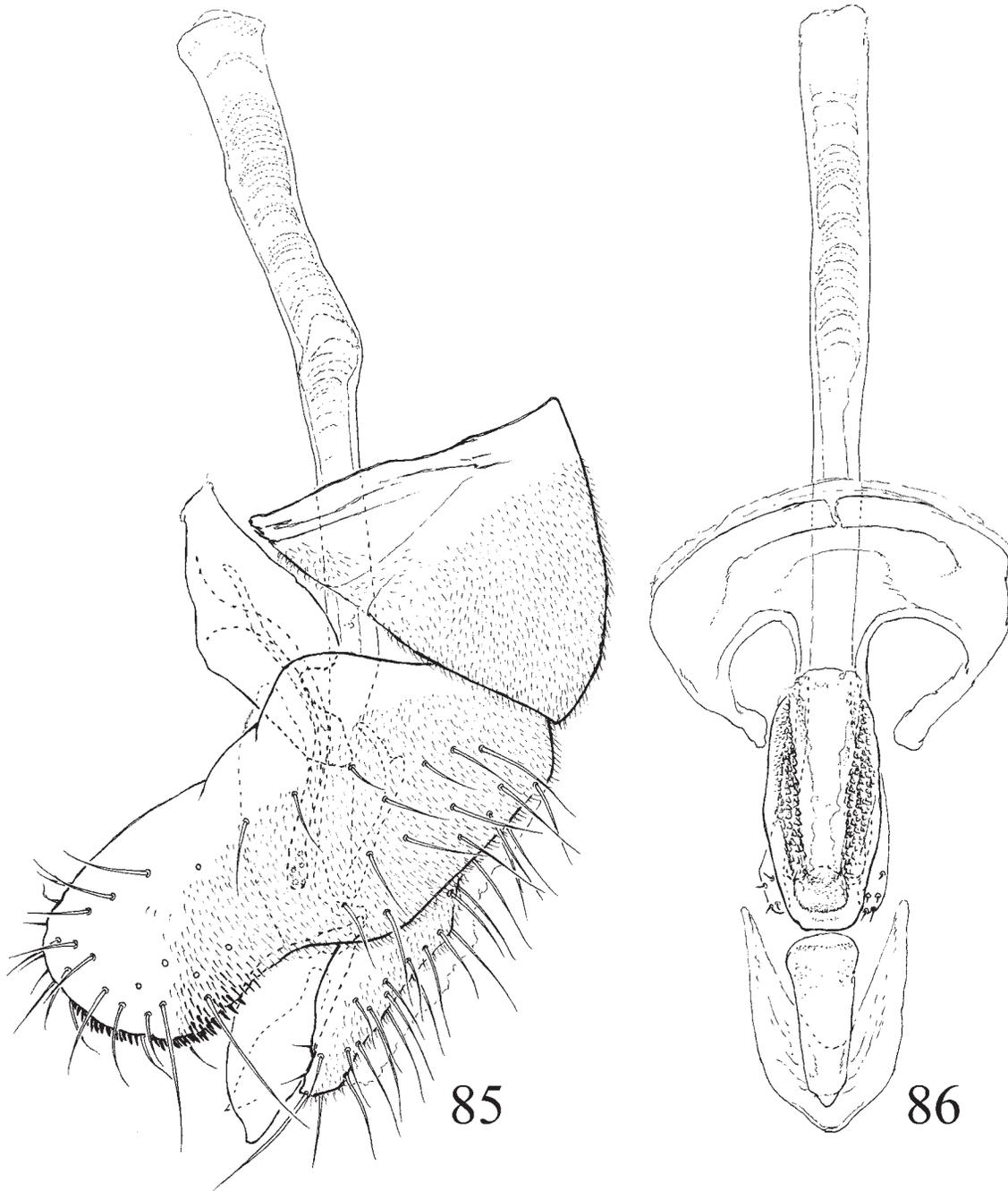
FIGURES 73–75. *Neotanypeza posthos*, sp. nov., male genitalia. Figure 73: Sternite 6. Figure 74: Left lateral. Figure 75: Hypandrial complex, ventral. Scale bar = 0.1 mm.



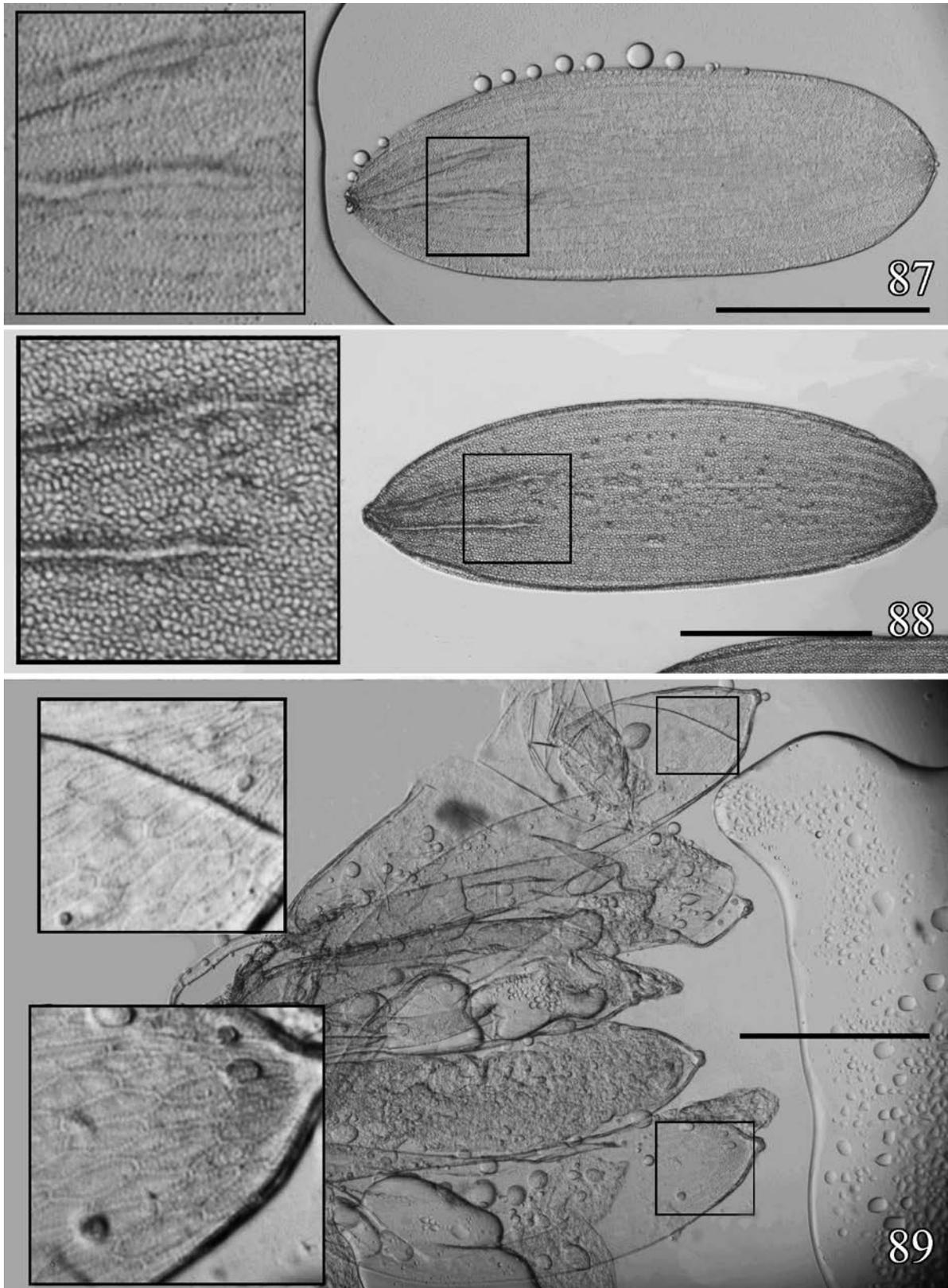
FIGURES 76–78. *Neotanypeza rutila* (Wulp), male genitalia. Figure 76: Sternite 6. Figure 77: Left lateral. Figure 78: Hypandrial complex, ventral. Scale bar = 0.1 mm.



FIGURES 79–84. *Neotanypeza symmetros*, sp. nov., male abdomen. Figure 79: Hypandrial complex, ventral. Figure 80: Hypandrial complex, left lateral. Figure 81: Ventral, detailing sternites 6–8. Figure 82: Ventral. Figure 83: External genitalia, left lateral. Figure 84: External genitalia, posterior. Scale bar = 0.1 mm.



FIGURES 85–86. *Neotanypeza vexilla*, sp. nov., male genitalia. Figure 85: Left lateral. Figure 86: Hypandrial complex, ventral. Scale bar = 0.1 mm.



FIGURES 87–89. Eggs. Figure 87: *Neotanypeza elegans* (Wiedemann). Figure 88: *Tanypeza longimana* Fallén. Figure 89: *Strongylophthalmyia angustipennis* Melander. Scale bar = 0.3 mm.

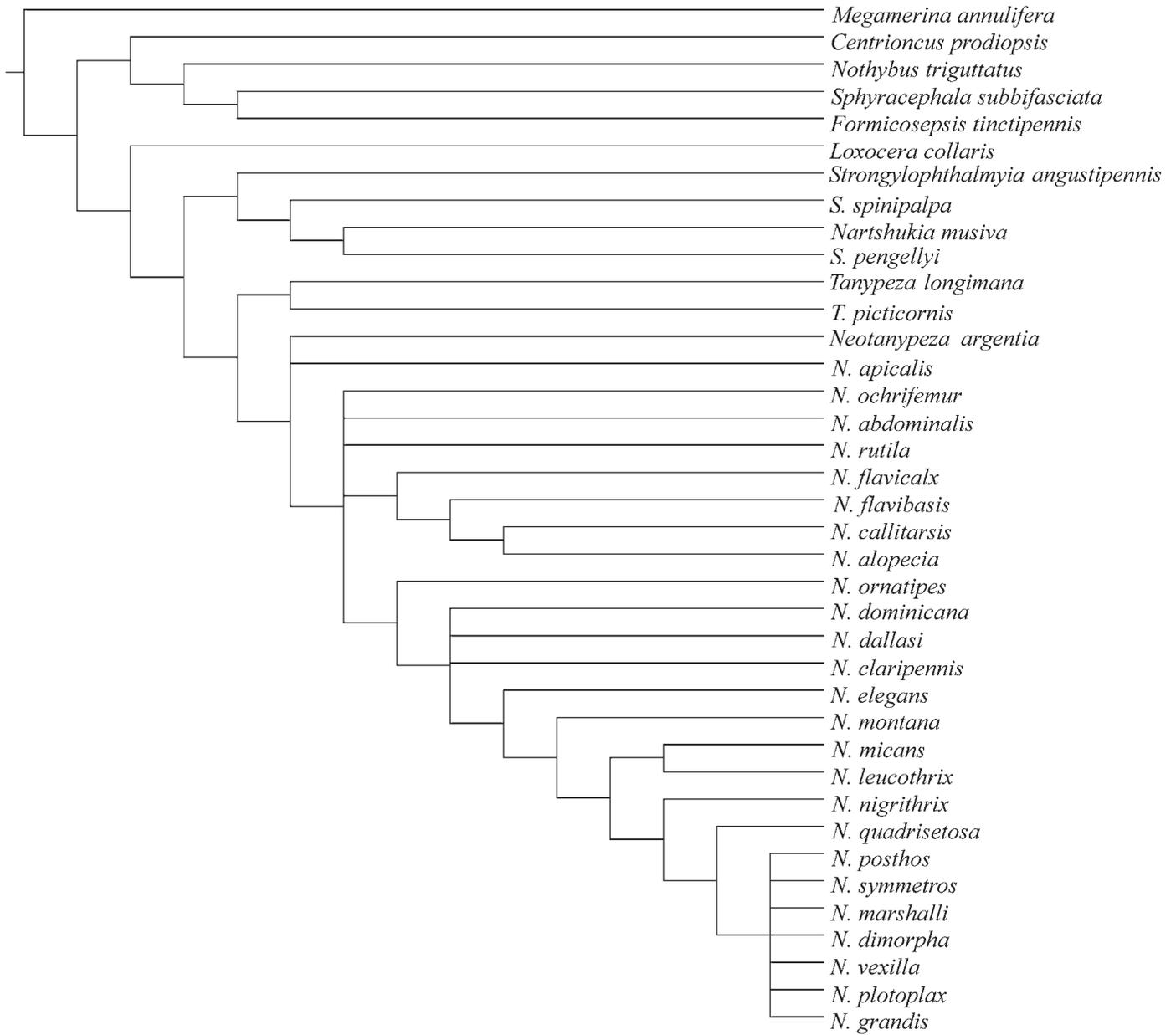


FIGURE 90. Strict consensus of the 45 most parsimonious trees resulting from the phylogenetic analysis.

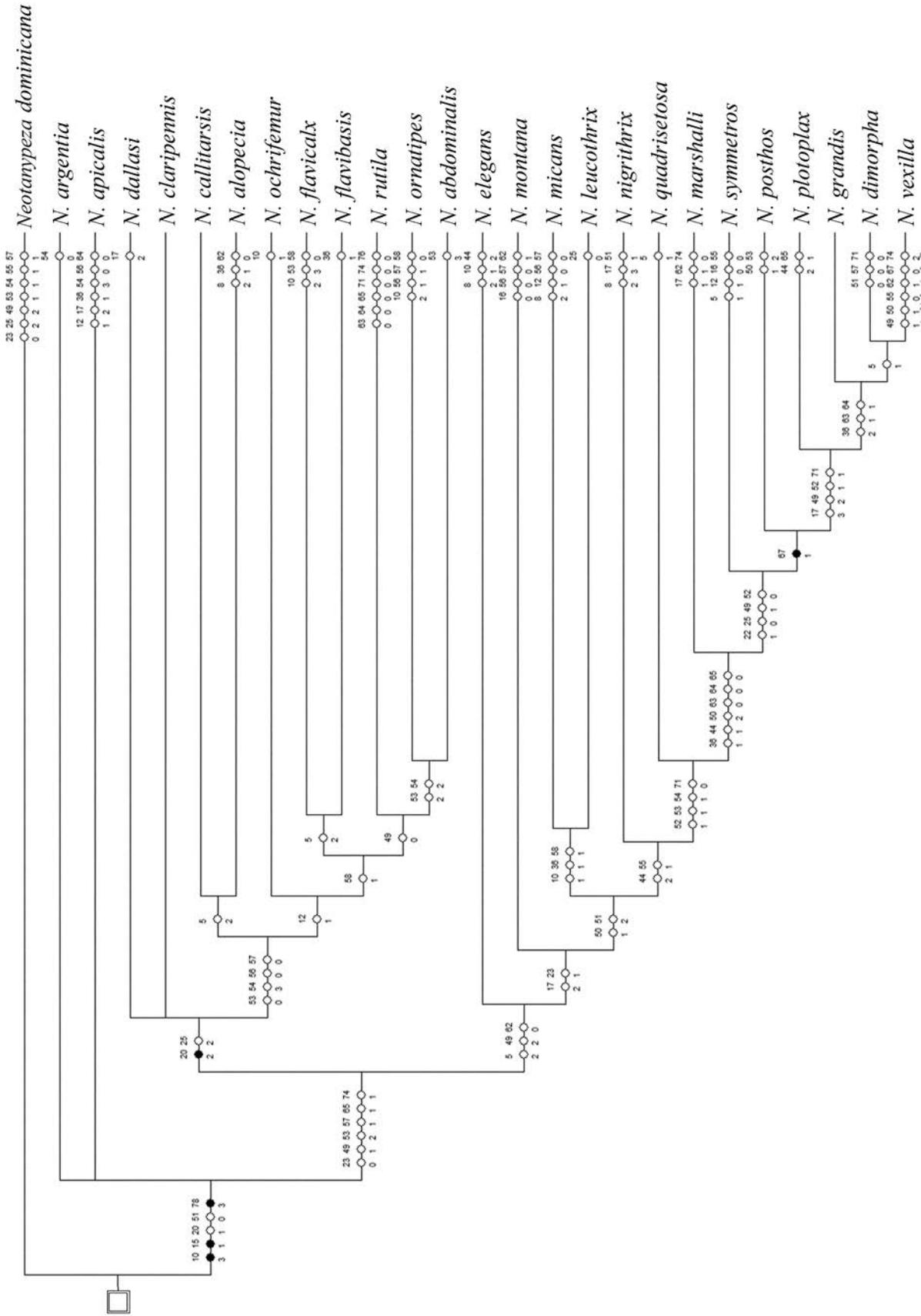


FIGURE 92. Detail of the working phylogenetic hypothesis for the species of *Neotanypeza*.

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