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PREDACEOUS WATER BEETLES OF THE  
GENUS *NEOBIDESSUS* YOUNG IN THE  
AMERICAS NORTH OF COLOMBIA  
(COLEOPTERA: DYTISCIDAE, HYDROPORINAE)<sup>1</sup>

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INTRODUCTION

The genus *Neobidessus* (Coleoptera: Dytiscidae, Hydroporinae, Bidessini) is extensively developed in the American tropics, but only two species reach the continental United States. This distribution contrasts with that of the related genus *Uvarus*, which in the New World is represented by a number of species in the United States and Mexico but only a few in the tropical regions, and also with that of *Liodessus*, which is represented by various species from Tierra del Fuego to Alaska but is poorly represented in the tropical areas.

With the addition of new species, the definition of *Neobidessus* (Young, 1967a) must be revised. The presence of a discal stria of punctures (accessory discal stria more or less sunken into a groove or sulcus on each elytron is characteristic of all the species, but in some the punctures are reduced in size and thus the stria and its sulcus are difficult to see.

*Diagnosis:* Head with distinct transverse cervical stria behind eyes; clypeal margin thickened, sometimes conspicuously so with

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distinct tubercles on either side; pronotum laterally margined, with distinctly impressed basal striae (plicae) on either side; elytra with distinctly impressed basal striae (plicae) appearing to continue those of pronotum, but subequal to or shorter than those of pronotum; elytra without sutural stria or with coarser impressed punctures barely suggesting a stria near base, and usually with punctures near suture smaller than those on disk; elytra always with a more or less distinct and impressed discal stria (accessory discal stria); fore tarsi pseudotetramerous; prosternal process elongate, narrow, distinctly margined and medially channeled (sulcate); postcoxal processes (postcoxal laminae) not strongly incised at middle; last visible abdominal sternite sometimes conspicuously broad and impressed at middle in males.

The male external genitalis are also usually diagnostic of the genus. The parameres (lateral lobes) may be elaborately modified, and the aedeagus (median lobe) is, except in a few species, complexly modified. In contrast, in *Liodessus* and *Uvarus* the parameres and aedeagus are simply or only feebly modified.

## COLOR PATTERN

Most species of *Neobidessus* can be immediately distinguished from other bidessines of the same general size by the darkly lineate elytra. The other genera with a transverse cervical stria have species in which the elytra tend to be spotted, fasciate, marbled, or uniformly colored. The species of *Hypodessus* that have the elytra darkly lineate not only lack the transverse cervical stria but also lack pronotal or elytral basal plicae, and the parameres of the male external genitalis appear to be unsegmented.

The dark lines and other spots of the elytral pattern of *Neobidessus* are formed by the deposition of dark pigments (melanins) in the elytron after the formation of a fluorescent brownish yellow pigment or pigments over the entire elytron. The yellowish pigments are probably pteridines derived from folic acid, or xanthine, or both.

Study of teneral specimens in series suggests that the pigments are deposited in the elytra under genetic control, as in *Tropisternus collaris* (Fabricius). That is, the dark pigment is deposited in the elytron in or near the vicinity of the tracheal end cells,

which are concentrated in elongate tracts between the larger tracheal tubes. The cuticle over the large tracheae is sometimes unpigmented, and may remain almost glassy in appearance. As in *Tropisternus collaris*, in some species, subspecies, color forms, or genetic races of *Neobidessus* the deposition of melanin continues until the elytra are entirely darkened by the fusion or partial fusion of the usual elongate stripes.

In *Tropisternus*, the darkening that conceals the usual lineate pattern is under the control of a separate set or sets of genes (Young, 1967). A similar mechanism probably operates in *Neobidessus*. The very dark populations of the latter occur in the same areas of the southeastern United States and the parts of Brazil where dark (melanic) populations of *Tropisternus collaris* occur. Correspondingly brightly lineate forms of *Neobidessus* with reduced melanization occur in areas such as northern Venezuela and northwestern Mexico, where distinctly lineate forms of *collaris* with reduced melanization also occur.

The correlation of dark and light forms in these two genera suggests that the color patterns of both *Tropisternus* and *Neobidessus* have evolved under the same set of selective factors. Thus, despite the small size of these beetles, I believe that the color patterns of *Neobidessus* represent protective or concealing coloration, and that the lineation constitutes disruptive coloration when viewed against a lightly colored background. In contrast, the darkened patterns are concealing when viewed against the dark bottoms of aquatic habitats in the areas of ground-water podzols in the southeastern United States and in areas of Brazil.

In opposition to this hypothesis, however, is the occurrence of brightly lineate populations of *Neobidessus* in the murky pools of northern Colombia, where a very dark form of *Tropisternus collaris* occurs. The discovery of a brightly marked specimen of *Neobidessus persimilis* (Régimbart) in the intestine of a spotted sandpiper from central Mexico (Oaxaca, Tehuantepec, Aug. 26, 1955, William H. Coil (UMMZ) is also contradictory.

In support of the hypothesis is the occurrence in southern Florida, in the calcareous pools of the southern rim of the Everglades, of lightly melanized and thus striped forms of both *Neobidessus pullus floridanus* (Fall) and *Tropisternus collaris viridis* Young and Spangler. In both these subspecies similar forms occur only in northern and western Florida and in

southern Georgia, where they evidently represent intergradation with typical *pullus* and *Tropisternus collaris striolatus* (LeConte).

The situation in Brazil is more complex; here nearly uniformly brownish yellow forms occur with lineate and darkly melanic forms of various species. Since most specimens seen have been taken in light traps it is possible that in nature these variously colored forms inhabit different aquatic situations.

In *Neobidessus* the base and suture of each elytron is nearly always darkened (melanized), and there are at least indications of 4 discal and a lateral elongate longitudinal stripe or spots. I have numbered the dark markings as follows (Fig. 1; see Plate 1 for Figs. 1-13); 1) sutural stripe, 2) subsutural stripe, 3) inner medial stripe, 4) medial stripe, 5) outer medial stripe, 6) posterior lateral stripe, 7) humeral or anterior lateral stripe or darkening. The dark pattern is often highly characteristic of a species in a given region, but, as previously indicated, may be expanded, obscure, or rarely lacking. In the following descriptions the markings are described with reference to the above numbers.

Key to Species and Subspecies of *Neobidessus* from  
the Americas North of Columbia

- |       |  |                                 |
|-------|--|---------------------------------|
| 1.    | Last visible abdominal sternite broad, transversely impressed and impressed apically, not narrowed behind<br>.....   | 2                               |
| 1'.   | Last visible abdominal sternite feebly impressed toward tip, narrowing behind usually to a feeble point at apex ...  | 8                               |
| 2(1). | Elytra light yellow brown with dark to very dark brown longitudinal stripes contrasting sharply with lighter background .....  | 3                               |
| 2'.   | Elytra usually uniformly brown or reddish brown in mature specimens, or vaguely striped, the stripes not contrasting sharply with the background; head and pronotum in part infuscated; inner spurs of hind tibiae of males flattened, broadened toward tips, and truncate (squarely cut off) at tips; length about 1.76 to 2.24 mm, but averaging 1.88 mm; peninsular Florida, southern Georgia, Antilles, Cuba ..... | <i>pullus floridanus</i> (Fall) |
| 3(2). | Inner spurs of hind tibiae acute at tips, inner spur slightly shorter and stouter than outer spurs, or inner spurs curved at tips, in both sexes .....   | 4                               |

- 3'. Inner spurs of hind tibiae of males flattened, broadened toward tips, and squarely cut off (truncate) at tip . . . . . 5
- 4(3). Trochanter of hind legs not in same plane as hind femur, produced inward and downward in apical  $\frac{1}{2}$  and ending in a conical point at inner angle (Fig. 11); male external genitalia as in Fig. 18 (see Plate 2 for Figs. 14-24); length about 1.92-2.16 mm; Baja California, Sinaloa, Sonora . . . . .  
 . . . . . *youngi* (Leech)
- 4'. Trochanters of hind legs large, but not separating from femora (Fig. 10); male external genitalia as in Fig. 17; length about 1.8-2.1 mm; Texas, Nuevo Leon, San Luis Potosi, Tamaulipas, Vera Cruz . . . . . *pulloides* sp.n.
- 5(3'). Punctuation of elytral disk coarse and close, punctuation finer toward apex, but not much finer or sparser toward sides . . . . . 6
- 5'. Punctuation of elytral disk fine and sparse, punctuation conspicuously finer toward apex and sides . . . . . 7
- 6(5). Dark stripes of elytra strongly contrasting with lighter background; average length about 2.0 mm; Tamaulipas, Texas, Arkansas, Louisiana, Mississippi, Alabama, Georgia, western Florida . . . . . *pullus pullus* (LeConte)
- 6'. Dark lines of elytra not strongly contrasting with lighter background, usually at best only feebly contrasting; average length less than 2.0 mm; South Florida, western Florida, southern Georgia . . . . .  
 . Some *pullus floridanus* and intermediates with typical *pullus*
- 7(5'). Male external genitalia as in Fig. 16; punctuation of basal abdominal sternite fine and sparse; dark stripes of elytra usually expanded, stripes 1, 2, and 3 united, or 2 and 3 united and separated from 1 by a narrow yellow stripe; length 1.76-2.16 mm, averaging 1.96 mm; Guatemala, Costa Rica, Honduras, Nayarit, Sinaloa . . *obtusus* (Sharp)
- 7'. Male external genitalia as in Fig. 15; punctuation of basal abdominal sternite moderately coarse and close; dark stripes of elytra distinctly separated; length about 2.16-2.24, averaging 2.19 mm; Jalisco and probably Guanajuato . . . . . *obtusoides* sp.n.
- 8(2'). Male external genitalia as in Fig. 20; trochanter of hind leg in male conspicuously large, nearly right angled on lower corner (Fig. 12); length about 2.0 mm; Costa Rica, Panama . . . . . *spangleri* sp.n.

- 8'. Trochanters of hind legs of males large, but not right angled on lower corners (Fig. 13, 24) ..... 9
- 9(8'). Male external genitalia as in Fig. 19; dark markings on elytra extended, stripes 1, 2, and 3 often uniting, except in western Mexico, where pattern is reduced; average length about 1.8 mm; Colima, Oaxaca, Nayarit, Tabasco, Vera Cruz; El Salvador, Guatemala, Nicaragua ..... *persimilis* (Régimbart)
- 9'. Male external genitalia as in Fig. 21; dark stripes of elytra less expanded, usually at least partly separated, very similar to *spangleri*; average length about 2.0 mm; Colombia and probably Panama ..... *hylaeus* sp.n.

Abbreviations used in the following discussions are as follows: AMNH (American Museum of Natural History, New York); BMNH (British Museum, Natural History, London); CAS (California Academy of Science, San Francisco); FSCA (Florida State Collection of Arthropods, Gainesville); MCZ (Museum of Comparative Zoology, Cambridge, Mass.); MNHN (Museum National d'Histoire Naturelle, Paris); NMNH (United States National Museum of Natural History, Washington, D.C.); UMMZ (University of Michigan Museum of Zoology, Ann Arbor).

*Neobidessus pullus* (LeConte 1855: 290)  
(Type species of *Neobidessus*)

*Diagnosis:* This species is easily distinguished from other Nearctic bidessines except *N. obtusus* (Sharp) and *N. obtusoides* sp. nov. by the generic characters and the peculiarly modified inner spurs of the hind tibiae of the male. The male external genitalia (Fig. 14) are highly distinctive and unlikely to be confused with those of any other bidessine except *obtusoides* sp. nov. The external genitalia of *obtusus* (Fig. 16) have the aedeagus (middle lobe) similar, but the parameres (lateral lobes) are unique.

*General description:* Elongate oval, widest about at middle of elytra; rounded and somewhat obtuse posteriorly; not very convex below in lateral view and somewhat flattened dorsally. Length about 1.76 to 2.24 mm with average length 1.96 mm; greatest width about 1.0 to 1.1+ mm. *Head* microreticulate with small irregular meshes; rather coarsely and sparsely punctate, the

punctures finer anteriorly; shallowly impressed above each antenna, each impression with a row of somewhat coarser, closely set punctures extending to about middle of eye and slanting slightly inward as if to converge at middle of transverse cervical suture; usual series of coarser closely set punctures along margins of eyes; antenna short, stout, slightly stouter in females than in males. *Pronotum* in dorsal outline with margins nearly straight and parallel in posterior half and then curving gently inward to apices; lateral margin fine but distinct; basal plicae distinct, deeply impressed, feebly curving inward and about  $\frac{1}{2}$  length of pronotum at midline; disk finely and sparsely punctate, much as on head, but microsculpture lacking or greatly reduced, and punctures coarser and more closely set at base (especially between plicae) and along anterior margin. *Elytra* in dorsal outline with sides gently rounded, widest at about middle of length; apices rounded, only feebly attenuate behind or appearing more or less obtuse; punctation coarse and close on disk, becoming finer and denser posteriorly but not much finer or sparser toward the sides; punctation especially coarse between basal elytral plicae, punctures in places separated by less than the diameter of a single puncture and tending to be seriate; basal elytral plicae strongly impressed, nearly straight, distinctly shorter than pronotal plicae; no evident sutural stria, the punctures near the suture slightly finer than those on the disk; accessory discal stria of punctures distinct, running in a shallow but distinct groove or sulcus from the base to beyond the middle of the elytron, beyond which the punctures mingle with the finer denser apical punctures; microsculpture lacking, most of surface smooth and shining. *Venter* with reticulate microsculpture in certain portions but mostly smooth and shining; punctures almost lacking on hind coxae; basal fused abdominal sternites with transverse rows of coarse, irregularly spaced punctures along the sutures and across the 2nd sternite, but nearly smooth posteriorly except at middle, where there is a group of finer, setate punctates; 3rd and 4th sternites with fine setate punctures along posterior margins; last sternite broad, impressed at middle in males, with a group of medial coarser, denser punctures, finely microreticulate along posterior margins; female venter similar except that last sternite is less impressed, the impression not affecting the hind margin; male posterior trochanters large, somewhat larger than in females, but not distinctly modified; inner spur of hind tibia (metacalcarium) of

male flattened, broadened toward tip, and squarely cut off (truncate) at tip.

*Neobidessus pullus pullus* (LeConte)

The typical subspecies of *pullus* ranges from Mexico to Arkansas and through Louisiana to southern Georgia. It probably also occurs in Oklahoma, eastern Kansas, Missouri, and Illinois.

I can detect no significant differences between *pullus pullus* and the subspecies *floridanus* except in average size and coloration. The length of *pullus pullus* is the same as given under the species—range 1.76 to 2.24; average length 2.05 mm; greatest width about 1.0 to 1.1<sup>+</sup> mm.

*Coloration*: Typical *pullus pullus* seems to be quite constant in general coloration over its range. Fully hardened specimens are usually colored as follows: *Head* light brownish yellow (flavotestaceous). *Pronotum* basically yellowish brown (testaceous) with vague darker markings along margins and particularly between the basal plicae. *Elytra* with darker melanic markings as shown in Fig. 1. The definitive elements of this pattern are: dark sutural stripe (1) usually narrow, only rarely extended inward and fused with stripes 2 and 3; dark stripe 2 usually distinctly separated from 1 and fused with 3 only apically and extending anteriorly nearly to the narrow basal darkening but not reaching it; dark stripe 3 usually narrow but continuous to base and usually covering the accessory discal stria of punctures; dark stripe 4 reduced usually represented at most by a small projection but sometimes separated from stripe 5 toward apex; dark stripe 5 usually well-developed extending as does dark stripe 3 from near apex to base of elytron; dark markings 6 and 7 variable, 6) usually forming a distinct lateral stripe often united with 5; 7) sometimes reduced or lacking. Stripes 2 through 6 are usually connected apically but rarely one or more of them is separated.

Teneral (callow) specimens, show reduction of the typical pattern, since melanization continues for some time after emergence from the pupa. Even in the most teneral, however, the basic stripes appear on the elytra much as shown in Fig. 1, but they may be unconnected apically and narrower. Even in Texas and Mexico, where *pullus pullus* overlaps in range with *N.*



*pulloides* sp. nov., there is no indication of reduction of the pattern in mature individuals.

Several Mexican and Central American species are similar to *pullus pullus* in the dark pattern of the elytra, but stripes 1, 2, and 3 are often fused together on the disk and leave only a roughly rectangular yellowish brown spot near the base where stripe 2 does not reach. I have seen the dark pattern extended to this extent in only a few specimens from Arkansas (Arkansas and Miller counties). In other species also, the dark stripes may be fragmented or reduced in width or length or both.

In many specimens of *pullus pullus* in most parts of its range the dark pattern is deep brown or almost black (piceous) and contrasts sharply with the lighter yellowish brown ground color. However, in many teneral specimens and some that are fully hardened the darkness of the pattern is reduced and there is some diffusion of darker color into the yellowish brown ground so that the pattern is not sharply contrasted with the background.

*Distribution*: Typically marked specimens of *pullus pullus* averaging over 2 mm in length have been examined from Tamaulipas, Mexico; Texas, Arkansas, Louisiana (type locality), Mississippi, Alabama, Georgia, and Florida:

Localities from which specimens have been examined include: MEXICO: Tamaulipas, Near San Antonio (UMMZ). TEXAS: Calhoun, Cameron, Liberty, Montgomery, Nueces, Travis, Tyler, and Victoria counties (UMMZ); Fedor, locality unknown (Fall collection, MCZ); Colorado, Duval, Kleberg, Lee, and Willacy counties (NMNH); "Red River," probably in Red River or Bowie County (BMNH). LOUISIANA: "Louisiana, Schaum," LeConte's type in MCZ, also some data in BMNH; St. Landry and Madison parishes (UMMZ). ARKANSAS: Arkansas, Cleveland, Hempstead, Miller, Monroe, Ouachita, and St. Francis counties (UMMZ). MISSISSIPPI: George, Newton, and Pearl River Counties (UMMZ). ALABAMA: Dallas, Lowndes, Mobile, and Montgomery counties (UMMZ). GEORGIA: Dacatur, Early, Lowndes, and Mitchell counties (UMMZ). FLORIDA: Bay, Jackson, Santa Rosa, and Walton counties (UMMZ).

Except for Santa Rosa County, Florida, series from western counties of Florida and the southern counties of Georgia contain intermediates between *pullus pullus* and *floridanus*.

The largest specimen of typical *pullus* seen is from George County, Mississippi (2.24 mm in length), and the smallest from St. Landry Parish, Louisiana (1.76 mm in length).

*Neobidessus pullus floridanus* (Fall 1917: 168)

*Coloration*: I can detect no significant differences in sculpture, vestiture, punctation, or male genitalia between *floridanus* and typical *pullus*. Specimens from peninsular Florida and southern Georgia, however, are when fully hardened usually dark brown above with the margins lighter and uniformly dark brown below. The average length, 1.88 mm is distinctly less than that of *pullus pullus*, but all specimens fall within the range of typical *pullus*, the smallest being 1.76 and the largest 2.24 mm long. *Floridanus* is one of the water beetles which in Florida and southern Georgia show "regional melanism" (Young, 1960).

In nearly all series of *floridanus*, however, teneral specimens and sometimes apparently fully hardened ones show some indication or even the typical dark elytral pattern of *pullus pullus*. Only a few that I have seen, from Florida, Georgia, or the Antilles are as distinctly and brightly marked as many specimens from Texas, Arkansas, Louisiana, Mississippi and Alabama.

Antillean specimens are especially variable and may represent other subspecies. Specimens from Cuba (Cayamas, E. A. Schwarz in NMNH) are nearly uniformly dark reddish brown, but in other features including the male genitalia are indistinguishable from specimens of *floridanus*. Specimens from Andros and San Salvador islands in the Bahamas (Hayden in AMNH) have the dark color pattern reduced and the dark elytral stripes in one male are not united apically. In size, however, they fall within the range of *floridanus* (1.92 to 2.0 mm in length).

A single specimen from Miragoane, Haiti (NMNH), is more like typical *pullus*, but one from Jamaica (in NMNH) is intermediate in development of the color pattern. Male genitalia have not been checked on these specimens.

Other localities from which specimens have been examined include:

## Typically dark specimens

FLORIDA: Alachua, Broward, Calhoun, Clay, Collier, Dade, Duval (type locality), Flagler, Franklin, Glades, Hernando, Highlands, Hillsboro, Jefferson, Lee, Levy, Liberty, Madison, Monroe, Osceola, Putnam, Sarasota, Taylor and Volusia counties (UMMZ); Suwannee County (FSCA). GEORGIA: Lowndes County (UMMZ).

Lightly pigmented, lineate specimens

FLORIDA: eastern Dade County, only (UMMZ).

Intermediates with typical *pullus*

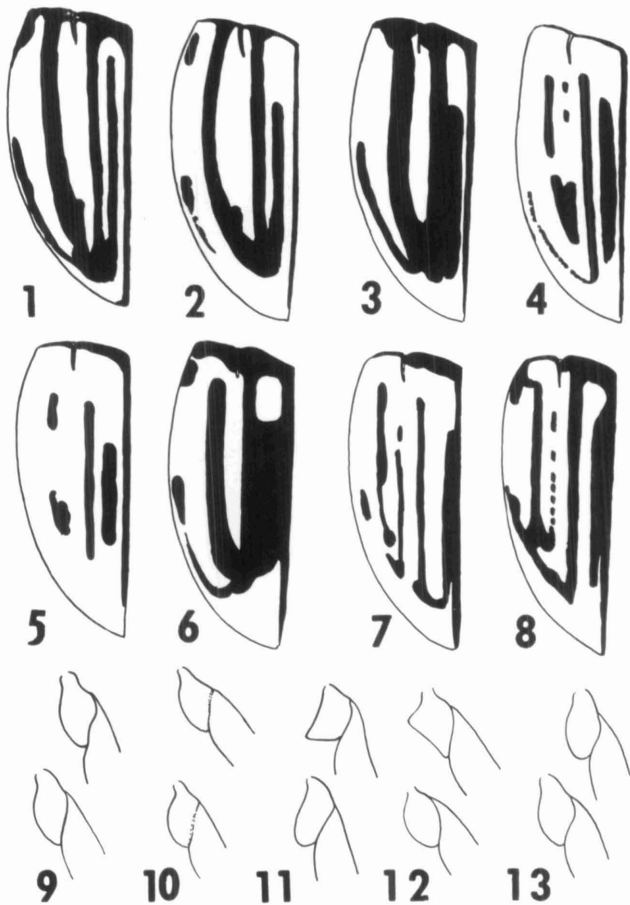
FLORIDA: Bay, Calhoun, Gadsden, Jackson, Wakulla, Walton, and Washington counties (UMMZ). GEORGIA: Irwin County (UMMZ).

In Lowndes County, Georgia, a single typically marked specimen of the size of typical *pullus* was taken along with 12 typically marked and sized *pullus floridanus* without any indication of intermediacy.

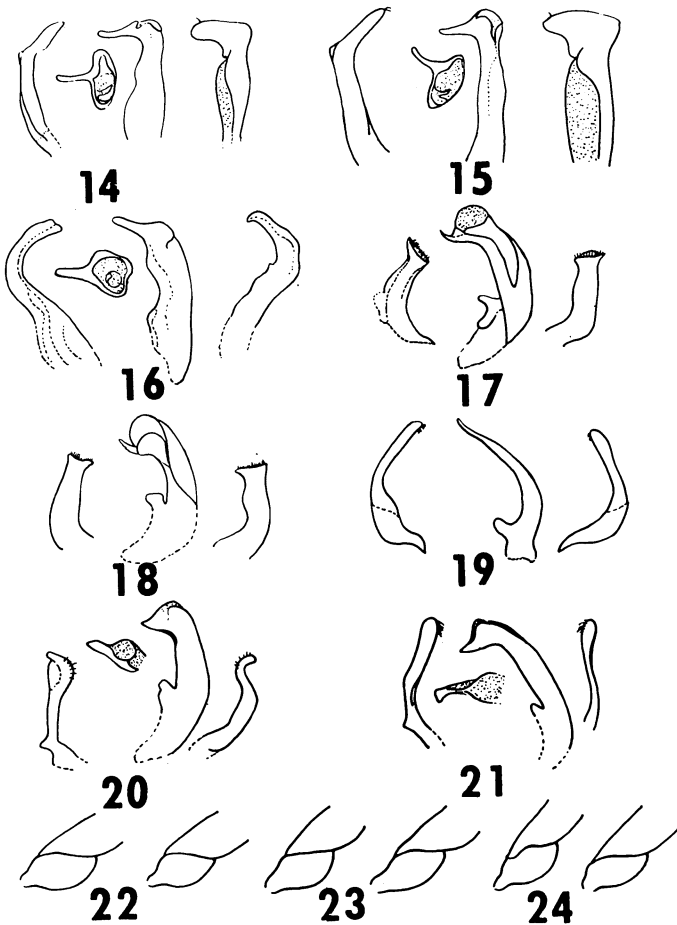
*Neobidessus obtusoides* sp. nov.

*Diagnosis:* Very similar to *N. pullus*, but differing in being more finely punctate dorsally and in the darker coloration of head, pronotum, and venter. Male external genitalia similar to those of *pullus*, but proportionately larger and with parameres differing in detail (Fig. 15). Length 2.16-2.24 mm, greatest width 1.08-1.16 mm; average length 2.19 mm.

*Holotype Male:* Elongate oval, somewhat broader than *pullus*. Length 2.16 mm; greatest width near middle of elytra 1.08 mm; width of pronotum at apex 0.60 mm; width pronotum at base, 0.84 mm; length pronotum at midline 0.34 mm. *Head* with microreticulation and punctation much as in *pullus*; transverse cervical stria distinct. *Pronotum* shaped much as in *pullus*, somewhat more coarsely and less densely punctate; basal plica deeply impressed, curved basally and then nearly straight, more than  $\frac{1}{2}$  length of pronotum at midline (a tiny elongate median plica present but considered teratological); punctation between basal plicae and along apical margin somewhat finer than in *pullus*. *Elytra* shaped and sculptured much as in *pullus*; discal punctation finer and less dense, becoming finer and sparser laterally and finer and denser apically; basal plica distinctly impressed, straight, distinctly shorter than pronotal plica; accessory discal stria distinct, impressed to near apical  $\frac{1}{3}$  of elytron; sutural stria lacking. *Venter* much as in *pullus*; last visible sternite broad, apically impressed as in *pullus*. *Color:* Head light



FIGS. 1-8. Semidiagrammatic representations of elytral color patterns of species of *Neobidessus*: FIG. 1. *N. pullus pullus* (LeConte), a male from Arkansas. FIG. 2. *N. obtusoides* sp. n., holotype. FIG. 3. *N. obtusus* (Sharp), a male from cotype series. FIG. 4. *N. pulloides* sp. n., holotype. FIG. 5. *N. youngi* (Leech), a male from Sinaloa. FIG. 6. *N. persimilis* (Régimbart), plesiallotype male. FIG. 7. *N. spangleri* sp. n., holotype. FIG. 8. *N. hylaeus* sp. n., holotype. FIGS. 9-13. Ventral view of left trochanter and base of femur of species of *Neobidessus*. Upper figure male, lower female: FIG. 9. *N. pullus pullus*. FIG. 10. *N. pulloides*, holotype, and allotype. FIG. 11. *N. youngi*. FIG. 12. *N. spangleri*, holotype and allotype. FIG. 13. *N. hylaeus*, holotype and allotype.



FIGS. 41-21. Male external genitalia of species of *Neobidessus*. Each set of figures arranged as follows from left to right: outer face of right paramere, aedeagus viewed end on (if diagnostic), lateral aspect of aedeagus, outer face of left paramere. The parts are considered in relation to each other in the copulatory position. FIG. 14. *N. pullus pullus*. FIG. 15. *N. obtusoides*, holotype. FIG. 16. *N. obtusus*, lectoholotype. FIG. 17. *N. pulloides*, holotype. FIG. 18. *N. youngi*. FIG. 19. *N. persimilis*, plesioallotype. FIG. 20. *N. spangleri*, holotype. FIG. 21. *N. hylaeus*, holotype. FIGS. 22-24. Ventral view of left trochanter and base of femur of species of *Neobidessus*. Left hand figure male, right hand female. FIG. 22. *N. obtusoides*, holotype and allotype. FIG. 23. *N. obtusus*. FIG. 24. *N. persimilis*.

brownish yellow with base darkened, the brownish cloud extending onto disk between eyes. Pronotum basically light brownish yellow, with margins and base between and outside basal plicae brown. Elytra basically light brownish yellow, with dark pattern as in *pullus* reduced: dark stripes 1, 2, and 3 narrow, but connected by an apical dark cloud with 4, which is just indicated by a short anterior extension; dark stripe 5 not connected with others, incomplete, not extending anterior of middle of elytron; dark markings 6 and 7 lacking. Venter darker than in *pullus*.

*Allotype Female*: Somewhat broader than holotype. Length 2.16 mm; greatest width near middle of elytra 1.12 mm; width of pronotum at apex 0.64 mm; width of pronotum at base 0.92 mm; length of pronotum at midline 0.36 mm. Very similar to male in punctuation, but with elytral pattern strongly developed, dark stripes 1 to 5 connected apically and 5 continued to base of elytron; dark stripe 6 represented by a small spot near middle of elytron; head and pronotum less extensively darkened than in holotype. Basal elytral plica very short, very distinctly shorter than pronotal plica.

*Variation*: The elytral coloration varies among the paratypes. Some have the dark stripes developed much as in typical *pullus*, but not as darkened and not as sharply contrasted with background color; others have the pattern reduced. All types may be somewhat teneral.

*Holotype, allotype and 5 paratypes* all from MEXICO: Jalisco, 25 mi. S. Guadalajara, July 6, 1964, P. J. Spangler (NMNH). Specimens from MEXICO: Guanajuato, Tupataro, Hóge, ex Biología Centrali Americana material (BMNH) probably also represent this species.

This species may be only a subspecies of *pullus*; but it seems to be isolated in the central plateau of Mexico.

#### *Neobidessus obtusus* (Sharp 1882: 24)

*Diagnosis*: Similar in size and general shape to *N. pullus pullus* but with elytral punctuation conspicuously finer and sparser laterally and apically; male external genitalia diagnostic (Fig. 16); aedeagus similar to that of *pullus* but parameres unique. Inner spur of hind tibia of male much as in *pullus*. Ventral punctuation, especially on basal abdominal sternites,

reduced in comparison to *pullus*; last visible sternite in male broad, medially impressed as in *pullus*. Color basically identical with *pullus*, but usually with dark stripes of elytra more expanded; stripes 1, 2, and 3 sometimes united or more frequently 2 and 3 united and 2 separated from 1 by a narrow yellowish stripe. In even the darkest specimens, however, stripe 2 is shortened anteriorly leaving a small yellowish spot (Fig. 3). Size about as in *pullus*: length 1.76 to 2.16 mm, average 1.96 mm; greatest width near middle of elytra 0.92 to about 1.09 mm.

*Variation*: As indicated above the color pattern of the elytra varies. Specimens from Mexico generally seem to be more lightly pigmented than those from Guatemala, Honduras, and Costa Rica. Specimens from northwestern Mexico are often marked much as in typical *pullus*.

*Distribution*: I have seen specimens (checked by dissection of male genitalia) in series from the following localities: GUATEMALA, Paso Antonio, 400', Champion ex Biologia Centrali Americana material—Cotypes (BMNH). COSTA RICA, S. La Cruz, July 13, 1965, P. M. Spangler (NMNH); SW Liberia, July 24-25, 1965, P. M. Spangler (NMNH). HONDURAS, E. Choluteca, July 28, 1965, P. M. Spangler (NMNH); Jicaro Galen Jct., 5 mi. W., July 9, 1965, P. J. Spangler (NMNH). MEXICO, *Nayarit*; Flood pools, Rio de las Canyonas, 8 mi. N.W. Acaponeta, Sept. 25, 1948, H. B. Leech (CAS). *Sinaloa*, Rio Presidio near Villa Union, June 20, 1965, F. N. Young (UMMZ); Mazatalan, 1934, H. E. Hinton (BMNH).

To fix this name, I designate as Lectoholotype a dissected male from Guatemala among the cotypes cited above.

*Neobidessus pulloides* sp. nov.  
(J. Balfour-Browne, *inedit.*)

*Diagnosis*: A small, lineate species, 1.8-2.1 mm long, less darkly pigmented than any of the other Nearctic species except some specimens of *youngi* (Leech). Smaller and more attenuate behind than *pullus*, the last visible abdominal sternite moderately broad and transversely impressed but not as conspicuously broad as in *pullus*. Cervical stria, accessory discal stria, pronotal and elytral plicae distinct, the latter distinctly shorter than pronotal plica. Dark elytral markings usually reduced to a few

detached stripes, not broadly confluent as in *pullus* and *obtusus*. Male genitalia diagnostic (Fig. 17). *Holotype Male*: Oblong oval, slightly attenuate behind. Length 1.9 mm; greatest width near middle of elytra, 0.96 mm; width of pronotum at apex, 0.56 mm; width of pronotum at base, 0.8 mm; length of pronotum at midline; 0.35 mm.

*Head*: Clypeus somewhat thickened, the small depressions on either side of front somewhat more distinct than in *pullus*, suggesting that clypeus is broadly margined except in middle; punctation of clypeus and front fine and sparse; microsculpture moderately evident about as in *pullus*. *Pronotum*: Shaped much as in *pullus*. Base just slightly narrower than conjoined elytra, apex slightly narrowed. Punctation somewhat finer, sparser, and more regular than in *pullus*, but coarser than on head. Lateral pronotal plicae sharply incised, incurved anteriorly, a little less than 1.2 length of pronotum at midline. *Elytra*: Punctation throughout finer than in *pullus*, somewhat coarser than that on pronotum. Accessory discal stria of coarser punctures distinct but less impressed than in *pullus*. Basal elytral plica well-impressed, nearly straight, distinctly shorter than pronotal plica. *Venter*: Much as in *pullus* except inner spur of hind tibia simple, acute, stouter, and slightly shorter than outer. Last visible abdominal sternite narrower than in *pullus* but moderately wide and transversely impressed. Metatrochanters large but not conspicuously modified, about as in *pullus*, the apex not separating from femur (Fig. 10). *Color*: Head, venter, and appendages basically nearly uniformly light brownish yellow, slightly darkened at joints and along sutures as usual. Abdominal sternites except 1st and last darkened, deep brown along posterior edges (much more darkened in some paratypes). Dorsum basically light brownish yellow, with darker brown markings at base of head and along pronotal base between plicae. Elytra with darker markings as follows: 1) base and suture narrowly darkened as usual, the sutural darkening very narrow, joined to basal darkening at base but not reaching apex; 2) moderately broad, running from about basal 1/3 to apical 1/3 of elytron; 3) narrower than subsutural stripe, nearly straight, slightly more extended both apically and basally than subsutural but not joining basal darkening as in some other species; 4) represented on disk only by 2 tiny flecks of brown in basal 1/3 of elytron on left elytron, by 1 in a similar position on right elytron, and by a moderately broad and elongate spot toward apical 1/3 of both



elytra, the latter conjoined with posterior spot representing humeral stripe; 5) outer medial stripe represented by a narrow elongate stripe less than  $1/3$  length of elytron in basal  $1/2$  and an elongate incurved stripe in apical  $1/3$  conjoined to median stripe as indicated above; 6 and 7) lacking except for small dark spots near middle of side margins on usual little lateral carina of elytra just above epipleurae (Fig. 4).

*Allotype Female*: Very similar to male, but somewhat larger. Length, 2.0 mm; greatest width near middle of elytra 1.0 mm; width of pronotum at apex, 0.57 mm; width of pronotum at base, 0.8 mm; length of pronotum at midline, 0.37 mm. Elytra with inner medial dark stripe (3) expanded at tip and medial stripe (4) not represented on disk.

*Variation*: The paratype series varies somewhat in size, but most specimens are similar in dimensions to the holotype and allotype. The dark markings of the elytra do not vary much in extent, but do vary in intensity. Specimens from Nuevo Leon, Tamaulipas, and San Luis Potosi, Mexico are somewhat more darkly marked than others, but the pattern is very little more extended.

Holotype, allotype, and 7 paratypes from: TEXAS: Nueces County, Lake in Corpus Christi State Park, Jan. 2, 1941, F. N. Young (UMMZ).

Paratypes (F. N. Young, collector, unless otherwise indicated) designated as follows: TEXAS: Burnett Co., Hubbard and Schwarz, 2 (NMNH); Burnett Co., M. L. Linell, 2 (NMNH); Calhoun Co., N. E. Tivioli, June 15, 1960, 1 (UMMZ); Cameron Co., Brownsville, Sept. 27, 1942, E. S. Ross, 7 (CAS); Refugio Co., Arkansas River at U.S. Hwy. 77, June 9, 1960, 2 (UMMZ); Travis Co., Austin, Dec. 5, 1928, J. C. Martin, 1 (CAS) associated with *N. pullus pullus*! Valverde Co., Del Rio, H. F. Wickham, 3 (NMNH); Willacy Co., 20 mi. N. Raymondsville, June 26, 1965, P. J. Spangler, 6 (NMNH); Western Texas, BMNH 1889-97, ex Horn, Horn det. *Bidessus pullus* LeConte, 5 (BMNH). MEXICO: *Nuevo Leon*, Siesta Motel, Monterrey, June 28, 1966, black light trap R. E. Woodruff, 1 (FSCA); Canals near Villa Juarez, Dec. 19, 1940, 7 (UMMZ); Rio Montemorelos at Montemorelos, July 26, 1969, 5 (UMMZ). *San Luis Potosi*: Stream N. of Ciudad Valles, Aug. 19, 1954, 4 (UMMZ); Stream 16 mi. N. Ciudad Valles, July 24, 1969, 4 (UMMZ); Stream 16 mi. W. Ciudad Valles, July 24, 1969, 102 (UMMZ); Palmira, July 20, 1969, 368 (UMMZ). *Tamaulipas*: Nuevo Morelos, July

28, 1965, P. J. Spangler, 43 (NMNH); Guemas, June 28, 1965, P. J. Spangler, 1 (NMNH); Ciudad Valles, Aug. 22, 1964, P. J. Spangler, 1 (NMNH); Near San Antonio, July 29, 1969, 150 (UMMZ); Rio Guayalejo near Magiscatzin, July 11, 1960, 7 (UMMZ); Rio Pilon, 8 mi. N. Villagran, July 19, 1969, 6 (UMMZ); Rio Salinas near El Limon, July 20, 1969, 29 (UMMZ); Stream 2 mi. S Antiquo Morelos, July 20, 1969, 56 (UMMZ); Stream near Vallecillo, July 27, 1969, 4 (UMMZ); Rio Ramos near Allende, July 19, 1969, 6 (UMMZ). Vera Cruz, 15 mi. S.E. Tantoyuca, Aug. 28, 1965, P. J. Spangler, 2 (NMNH).

Paratypes will be distributed to various museums and private collections.

*Neobidessus youngi* (Leech 48-392)  
(=*godmani* J. Balfour-Browne, *inedit.*)

*Diagnosis:* Similar to *pullus* and *pulloides* but readily distinguished in both sexes by the enlarged and modified hind trochanters (Fig. 11); dorsum more finely and sparsely punctate with surface less shining than in *pullus*; inner spur of hind tibia not clubbed in males but somewhat curved at tip in both sexes; elytral dark pattern often reduced to 3 disconnected discal stripes (Fig. 5); but sometimes more extended with stripes connected apically; pronotum and base of head sometimes darkened; male external genitalia diagnostic (Fig. 18).

*General Description:* Elongate oval, moderately attenuate behind. Total length about 1.92 to 2.16 mm; greatest width near middle of elytra about 1.0 to 1.12 mm. *Head* shallowly microreticulate, finely and sparsely punctate. *Pronotum* smooth, shining, rather finely punctate but more coarsely so near anterior margin and along base; basal pronotal plicae deeply impressed, feebly curved inward, slightly more than  $\frac{1}{2}$  length of pronotum at midline. *Elytra* elongate, conjointly widest at about middle; basal elytral plicae deeply impressed, nearly straight, distinctly shorter than pronotal plicae; surface smooth, more or less shining, sparsely punctate in basal  $\frac{1}{2}$  of disk with punctures about same size as largest ones on pronotum, punctures finer laterally and finer and denser apically; accessory discal stria distinct, shallowly impressed; a vague sutural stria indicated in some specimens by impressed punctures. *Venter* mostly finely punctate or almost impunctate, with fine sparse punctures on metasternum and hind coxal plates, a median series of coarser punctures on 1st and 2nd visible abdominal sternites, and a third

series along suture between 2nd and 3rd sternites; last visible abdominal sternite broad, impressed apically; hind trochanters not in a plane with hind femora, but produced inward and downward in apical  $\frac{1}{2}$  and ending in a conical point at inner apical angle; inner spurs of hind tibiae not clubbed, somewhat curved at tip on both sexes; external male genitalia similar to those of *pullus*, but parameres symmetrical and aedeagus complex (Fig. 18). *Color* basically light brownish yellow, with head broadly darkened at base and base of pronotum darkened between the basal plicae; elytra marked as in Fig. 5 or with stripes more or less reduced. *Venter and appendages* largely brownish yellow.

*Variation*: The most conspicuous variation is in the extent of the elytral dark pattern. In some specimens the dark markings are greatly reduced, but in others they are extended and united apically. In general, however, this is the most lightly marked of the Nearctic species of the genus.

*Distribution*: The types are from MEXICO: *Baja California*, lagoon 20 mi. N. of Comondu, July 23, Michelbacher and Ross (CAS). I have also seen specimens from: MEXICO: *Baja California*, Arroya Colorado, 2 mi. N. El Pilar, Nov. 13, 1959, I. L. Wiggins (CAS); Arroya Saltito, near Las Cruces, Jan. 23, 1959, H. B. Leech (CAS); Arroya de la Purisma, 1 mi. upstream from town, Dec. 27, 1958, H. B. Leech; 12.5 mi. E. La Paz, on road to Las Cruces, Dec. 23, 1958, H. B. Leech (CAS); Arroya San Bartalo, 1 mi. S.E. San Bartolo, Jan. 20, 1959, H. B. Leech (CAS). *Sonora*, Rio Mayo, 0.6 mi. W. Etchojea, BLT Apr 30, 1966, F. G. Thompson (UMMZ); Hermosilla, Aug. 15-20, 1953, Borys Malkin (CAS); Los Mochis, July 13-July 20, 1922, C. T. Dodd (CAS); 10 mi. N.E. Ciudad Obregon, July 10, 1964, Howden and Lindquist (CAS). *Sinaloa*, Rio Presidio at Villa Union, June 20, 1965, F. N. Young (UMMZ).

*Neobidessus persimilis* (Régimbart 95-329)  
(=*falsificus* J. Balfour-Browne, *inedit.*)

*Diagnosis*: Very similar to *obtusus*, but with distinctive male external genitalia (Fig. 19), inner spur of hind tibia simple, acute in both sexes, last visible abdominal sternite narrow, feebly impressed, and the color pattern usually distinctive.

*General Description*: Elongate oval, somewhat attenuate behind. Total length about 1.76 to 1.92 mm; average length about 1.84 mm. *Head* punctuation and microsculpture much as in

*obtusus*, somewhat less strongly microreticulate and thus more shining than in *pullus*; impressions above bases of antennae somewhat more pronounced than in either *obtusus* or *pullus*; transverse cervical stria distinct, the microsculpture behind it more distinct than on rest of head. *Pronotum* punctation and microsculpture much as in *obtusus*; basal plicae shorter than in *obtusus*, less than  $\frac{1}{2}$  as long as pronotum at midline. *Elytra* rather coarsely but sparsely punctate between the basal plicae, less strongly punctate laterally, much as in *obtusus*; surface strongly shining between punctures; accessory discal stria distinct, impressed for most of its length; lateral basal plicae distinct, slightly curved outward (oblique) and slightly shorter than pronotal plicae, much as in *obtusus*. *Venter*: much as in *obtusus* and *pullus*, except that last visible sternite is relatively narrow and more acuminate behind and only feebly impressed; metatrochanters large but not conspicuously modified, about same in both sexes; inner spur of hind tibia simple, acute in both sexes. *Color*: Head, pronotum, appendages, and venter brownish yellow, darker along base of pronotum between plicae, slightly darker along sutures and margins as usual, and dark brown along sides of basal abdominal sternites; elytra basically of same color as head and pronotum, with darker markings much as in *obtusus*; many specimens with stripes 1, 2, and 3 fused apically and only stripe 2 shortened anteriorly to leave a small yellow spot, as in Régimbart's figure of his type (1895) (Fig. 6); other specimens, however, especially from western Mexico and Nicaragua, have the color pattern less extended, and in some it is even reduced. *Male genitalia* relatively simple for genus; parameres simple, curved; aedeagus slender, upcurved at tip, but basically simple. (Fig. 19).

*Variation*: As indicated above, the principal variation seems to be in the extent of the elytral color pattern. Teneral specimens may have the dark stripes greatly reduced.

*Distribution*: I have seen specimens (checked by male genitalia) in series from the following localities: MEXICO: *Tabasco*: San Juan Bautista, Höge, ex Biologia American Material, (BMNH); Villa Hermosa, Sept. 5, 1969, R. V. Harmsworth (UMMZ); 23 mi. N. Villa Hermosa, Aug. 4, 1964, P. J. Spangler, (NMNH); Veracruz: 15 mi. W. Tampico, Aug. 23, 1954, F. N. Young (UMMZ); *Colima*: N. of Manzanillo, Jan. 19, 1961, C. O. Morse (CAS); Lake Catemaco, July 7-9, 1963, UV light, R. E. Woodruff (FSCA); *Nayarit*: Acaponeta, Aug. 15, 1950, P. H. Arnaud, Jr., E. S. Ross, D. C. Rentz (CAS); *Oaxaca*: Tehu-

antepec, Aug. 26, 1955, ex intestine of spotted sandpiper, W. H. Coil (UMMZ). *Nayarit*: Tepic, Sept. 1953, Borys Malkin (CAS). EL SALVADOR: 7 mi. S.E. Ciudad Arce, Aug. 3, 1965, P. J. Spangler (NMNH). GUATEMALA: N. of Morales, Aug. 16-18, 1965 (Km. 239 on Atlantic Highway), P. J. Spangler (NMNH); 17 mi. E. Esquintla, July 8, 1965, P. J. Spangler (NMNH). NICARAGUA: Bonanza, Oct. 6, 1955, Borys Malkin (CAS); Musawa, Oct. 17, 1953, Borys Malkin (CAS).

This species was not recognized by Sharp, and the *Biologia Centrali Americana* material cited was included by him under *obtusus*. However, specimens from Mexico and elsewhere very closely match Régimbart's female type in the Museum National d'Histoire Naturelle, Paris (from tobacco from Mexico, Grouvelle). To fix this name I designate as *Plesioallotype* a dissected male from Mexico: Tabasco, Villa Hermosa, Sept. 5, 1969, R. V. Harmsworth (UMMZ).

*Neobidessus spangleri* sp. nov.

*Diagnosis*: Similar to *pullus*, but with inner spur of hind tibia acute in both sexes and metatrochanters more distinctly modified in male, elytral dark pattern reduced or extended, and venter darkened. On the elytra the extension of the 4th stripe from suture and the fusing of the sutural and 1st discal stripes seem to be characteristic of this species and *hylaesus* sp. nov. Male genitalia diagnostic (Fig. 20).

*Holotype Male*: Oblong ovate, slightly attenuate behind. Total length 2.08 mm; greatest width near middle of elytra 1.08 mm; width of pronotum at apex 0.56 mm; width of pronotum at base 0.88 mm; length of pronotum at midline 0.32 mm. *Head* with punctation and impressions above antennae much as in *pullus*, but microsculpture less impressed and the surface thus more shining; cervical stria distinct, the microsculpture behind it more distinct. *Pronotum* somewhat more coarsely punctate than in *pullus* and lateral basal plicae slightly more oblique, nearly straight, somewhat more than  $\frac{1}{2}$  length of pronotum at midline. *Elytra* somewhat less densely punctate than in *pullus*, microsculpture about the same as in *pullus*, lateral plicae much as in *pullus*, nearly straight and distinctly shorter than pronotal plicae; accessory discal stria distinct but not much impressed. *Venter* similar to that of *pullus*, with last visible sternite broad, strongly transversely impressed; inner spur of hind tibia simple, acute; metatrochanter nearly right-angled on lower inner corner (Fig.

12). *Color*: Head, pronotum, and appendages almost uniformly light brownish yellow, darker along sutures, margins and base of pronotum between the plicae as usual. Venter darker brown, especially dark along sides of abdominal sternites (venter very dark in some paratypes). Elytra basically light yellowish brown, with dark lineate pattern much as in Fig. 7.

*Allotype Female*: Similar to holotype, but somewhat less parallel sided, larger; dark pattern on elytra less extensive. Total length 2.08 mm; greatest width near middle of elytral 1.08 mm; width of pronotum at apex 0.64 mm; width of pronotum at base 0.88 mm; length of pronotum at midline 0.32 mm.

*Variation*: The most obvious variation in the paratype series is in the intensity (or extension) of the dark elytral markings and in the extended darkening of the venter. Some specimens from Panama are intensely brown beneath and the sides of the basal abdominal sternites appear black.

*Male Genitalia*: Aedeagus strongly modified, in lateral aspect resembling a bird's head with beak; parameres dissimilar, the left with a distinctive projection or tubercle near base (Fig. 20).

*Habitat*: I believe that *N. spangleri* will prove to be normally a forest species, in contrast to *pullus*, which is characteristic of small ponds and streams in open areas. At the Albrook Forest Site in the Panama Canal Zone, specimens were taken in U.V. traps at both ground level and 100 feet elevation.

*Holotype male, allotype female, and 3 paratypes*: PANAMA CANAL ZONE, Albrook Forest Site, black light trap at 100 ft. above forest floor, Dec. 21-22, 1967, R. S. Hutton (NMNH).

Other paratypes from PANAMA CANAL ZONE, same data as holotype and allotype except Aug. 10-11, 1967 and Dec. 6-7, 4 (NMNH); same data except at ground level Aug. 8-9, 1967, 1 (NMNH); COSTA RICA, Rio General, 1 mi. S. San Isidro, July 1, 1967, P. J. Spangler, 5 (NMNH). PANAMA: Panama, Tocumen, July 6-10, 1970; July 20-24, 1970; Aug. 31-Sept. 5, 1970; Sept. 7-11, 1970, black light trap, Diego Navas, 41 (FSCA).

The following new species from Northern Colombia will doubtless also be found in Panama.

*Neobidessus hylaeus* sp. nov.

*Diagnosis*: Extremely similar to *N. spangleri*, but readily distinguished on the basis of the male external genitalia (Fig. 21). Length about 1.9 to 2.1 mm.

*Holotype Male*: Oblong, oval, slightly attenuate behind much

as in *spangleri*. Total length 2.0 mm; greatest width near middle of elytra about 1.0 mm; width of pronotum at apex 0.60 mm; width of pronotum at base 0.84 mm; length of pronotum at midline 0.32 mm. *Head* with microsculpture almost obliterated except behind transverse cervical stria; impressions above antennae deep, their anterior edges almost straight, so that the clypeus appears broadly margined except at middle; punctuation fine, sparse. *Pronotum* shaped much as in *spangleri* and *pullus*; punctuation shallow; basal plicae deeply impressed, feebly curved, feebly curved inward, about  $\frac{1}{2}$  as long as pronotum by midline. *Elytra* much as in *spangleri* and *pullus*, but punctuation shallower, finer and sparser laterally and finer and denser apically; basal elytral plicae deeply impressed, nearly straight, about as long as basal pronotal plicae; accessory discal stria of punctures distinct, but not much impressed. *Venter* similar to that of *spangleri*; last visible abdominal sternite moderately broad, transversely impressed, but not impressed apically; spurs of hind tibiae simple, acute; hind trochanters large, comparatively larger than in *pullus* but not as large as in *spangleri* (Fig. 13). *Color*: Dorsum much as in *spangleri*, elytra with almost identical basic pattern (Fig. 8); head only slightly darker along base; pronotum vaguely darker apically, along margins, and basally; elytra with dark stripe 4 fragmented but distinct; sutural stripe and stripe 2 fused at middle of elytron; venter darker throughout than in *pullus*, very dark brown at sides of basal abdominal sternites.

*Allotype Female*: Very similar to male. Total length 2.0 mm; greatest width near middle of elytra 1.04 mm; width of pronotum at apex 0.60 mm; width of pronotum at base 0.80 mm; length of pronotum at midline 0.34 mm. Elytra with dark pattern more extended, so that stripes 3, 4, 5, and 6 are all united apically. Venter with hind coxae dark, but abdomen nearly uniformly light yellowish brown.

*Variation*: The coloration of the elytra varies somewhat in the paratype series. Some paratypes are very dark below.

*Holotype, allotype, and 12 paratypes* from COLOMBIA: Magdalena, Baranquilla, March 18, 1969, Paul and Phyllis Spangler (NMNH). COLOMBIA: Magdalena, 8 km east of Baranquilla, March 19, 1969, Paul and Phyllis Spangler, 3 (NMNH).

#### SUMMARY

Diagnoses or redescriptions are given for four described species of *Neobidessus* from the Antilles, Central America,

Mexico, and the United States, and four new species are described: *N. pulloides* (northeastern Mexico), *obtusoides* (central Mexico), *spangleri* (Costa Rica and Panama Canal Zone), *hylaesus* (northern Colombia and probably Panama). A key and figures to aid identification are included. A Lectoholotype is designated for *N. obtusus* (Sharp), and a Plesiallotype male for *N. persimilis* (Régimbart). *N. pullus pullus* (LeConte), *N. pullus floridanus* (Fall), and *N. youngi* (Leech) are discussed and distributions given. The ecological correlations and possible evolutionary significance of the color patterns of beetles in this genus are discussed.

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