

# B R E V I O R A

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### THE GENUS *NOPS* (ARANEAE, CAPONIIDAE) IN PANAMA AND THE WEST INDIES

Arthur M. Chickering

The Caponiidae include a comparatively small group of genera now known to be distributed over much of Africa, South America, Central America, southwestern part of the United States, and the West Indies. For many years I have had a continuous interest in this family and during this period I have accumulated a rather large collection of certain genera in the family. I have had a special interest in the genus *Nops* and this seems to be a convenient time to record my understanding of this genus as it is now believed to occur in Panama and the West Indies.

Again, I wish to express my appreciation and gratitude for the aid and encouragement in the pursuit of my studies extended by the staff of the Museum of Comparative Zoology for many years. My thanks are also extended to Dr. W. J. Gertsch, American Museum of Natural History, for the loan of numerous Caponiidae from Central America and the West Indies. Grants GB-1801 and GB-5013 from the National Science Foundation have made it possible for me to continue my studies in the Museum of Comparative Zoology and to spend a total of nearly eleven months collecting in Panama and the West Indies.

With the exception of the type of *Nops gertschi* sp. nov., all types named in this paper together with all other specimens belonging to the genus *Nops* in my personal collection will be deposited in the Museum of Comparative Zoology.

Genus *NOPS* MacLeay, 1839

Type species is *Nops guanabacoae* by monotypy.

The genus *Nops* was established on the basis of a female from Cuba. Since that time a dozen additional species have been recognized from South and Central America and the West Indies. The



most important features of the genus observed during my study of the group may be stated as follows: Carapace low; widest opposite or just behind the second coxae; considerably narrowed at anterior end; median thoracic groove or pit obscure. Eyes: two, on a slightly raised tubercle; separated by less than their diameter. Chelicerae of moderate size; with no teeth along fang groove but with a relatively large, soft lobe on the promargin (Fig. 11); fang evenly curved; with conspicuous striations on lateral surfaces. Maxillae: robust; lobate at base; strongly convergent; obtusely terminated distally and not narrowed as in *Caponina*; somewhat concave near middle. Lip: usually firmly united to sternum; about as broad as long. Sternum: with a well marked margin; raised somewhat from margin and then flat throughout; nearly oval in outline; widest opposite interval between second and third coxae. Legs: 4123 in order of length; coxae 1243 in order of length; all tarsi with three claws each but third claw often hidden; first and second tarsi with a proximal, ventral, membranous lobe; all tarsi bisegmentate; first and second metatarsi with a median, ventral, membranous fold nearly or quite throughout the segment; first and second coxae lobate at base. Palp: femur in both sexes with a small, prolateral cusp at its base in opposition to the chelicerel striations; with a more or less conspicuous, tibial brush on the prolateral side near distal end in both sexes; in both sexes the tarsus bears a dorsal, distal, oval pad of fine hairs; in females the tarsus lacks a terminal claw; in males the tarsus is simple but usually more or less distinctive. Abdomen: elongate; ovoid; with four spiracles clearly shown; six spinnerets with anterior and median pairs nearly in a transverse row; females usually with a moderately well developed scutum from genital groove to pedicel but this is usually poorly developed in males; females have no definite epigynum.

I have been obliged to transfer *Caponina blanda* Bryant to the genus *Nops* on the basis of what I regard as very clear and definite evidence. After a period of uncertainty I have also come to the conclusion that *Nops coccineus* Bryant belongs to *Nops blandus*. *Caponina darlingtoni* Bryant, known only from a female taken in the Dominican Republic, has been rather carefully examined with the conclusion that it probably deserves to be placed in a new genus. Its status can be determined only when males are available for study. The total list of species belonging to the genus *Nops*, as presented in this paper, may be given as follows: *Nops blandus* (Bryant); *Nops coccineus* Simon; *Nops craneae* sp. nov.; *Nops flutillus* sp. nov.; *Nops gertschi* sp. nov.; *Nops glaucus* Hasselt;



*Nops guanabacoae* MacLeay; *Nops largus* sp. nov.; *Nops simla* sp. nov.; *Nops toballus* sp. nov.; *Nops ursumus* sp. nov. With the exception of *Nops gertschi* sp. nov., all new species listed above are known from both sexes.

*Key to male Nops from Panama and the West Indies*

- 1a. Species with embolus nearly as long as or longer than the cymbium (*craneae*, *guanabacoae*, *largus*, *simla*) ..... 2
- 1b. Species with embolus distinctly shorter than the cymbium (*blandus*, *coccineus*, *flutillus*, *gertschi*, *toballus*, *ursumus*) ..... 5
- 2a. Species with distinct dorsal abdominal spots on a light background (*craneae*, *simla*) ..... 3
- 2b. Species without distinct dorsal abdominal spots (*guanabacoae*, *largus*) ..... 4
- 3a. Abdomen with a central, longitudinal, irregular, grayish stripe and a series of four irregular, grayish spots on each side ... *craneae*, p. 6
- 3b. Abdomen with a series of paired purplish spots along the dorsal surface; without a central stripe ..... *simla*, p. 13
- 4a. Embolus somewhat sinuous ..... *largus*, p. 11
- 4b. Embolus not sinuous; somewhat swollen near middle ..... *guanabacoae*, p. 11
- 5a. Species with at least somewhat definite dorsal abdominal spots (*coccineus*, *gertschi*, *ursumus*) ..... 6
- 5b. Species with no definite dorsal abdominal spots (*blandus*, *flutillus*, *toballus*) ..... 8
- 6a. Abdomen with a central, dorsal, indented, brownish stripe consisting of four interconnected, irregular angular spots; each lateral side with a brownish stripe ..... *coccineus*, p. 5
- 6b. Abdomen lacking such a color pattern as given above (*gertschi*, *ursumus*) ..... 7
- 7a. Abdomen with a series of five pairs of dark grayish, dorsal spots ..... *ursumus*, p. 16
- 7b. Abdomen grayish in general, with two light greenish bars in anterior two-thirds; without any such distinct series of spots as given above ..... *gertschi*, p. 9
- 8a. Embolus short; about half as long as tarsal bulb ..... *blandus*, p. 4
- 8b. Embolus longer; nearly or quite as long as tarsal bulb (*flutillus*, *toballus*) ..... 9
- 9a. Abdomen purplish dorsally ..... *flutillus*, p. 7
- 9b. Abdomen gray dorsally ..... *toballus*, p. 14

Except for the females with a distinct abdominal color pattern this sex is conspicuously lacking in characters which can be used in constructing a key for their separation into species. For this reason no satisfactory key for their separation has yet been devised.



## NOPS BLANDUS (Bryant)

## Figures 1-2

*Caponina blanda* Bryant, 1942: 328, pl. 2, fig. 17. The male holotype from St. Croix, U. S. Virgin Islands, is in the Museum of Comparative Zoology.

*Nops coccineus*, — Bryant, 1948: 344. (Not *Nops coccineus* Simon.)

*Caponina blanda* Bryant must be transferred to *Nops* because it very clearly exhibits the characters of the latter genus. Until recently I have considered the specimens called *Nops coccineus* by Miss Bryant, from Haiti, as a new species and intended to describe it as new. Recently, however, following careful comparison with *N. blandus*, I have been forced to place them together. There are minor differences but, in my judgment, no greater than are commonly found among individuals of the same species (Figs. 1-2).

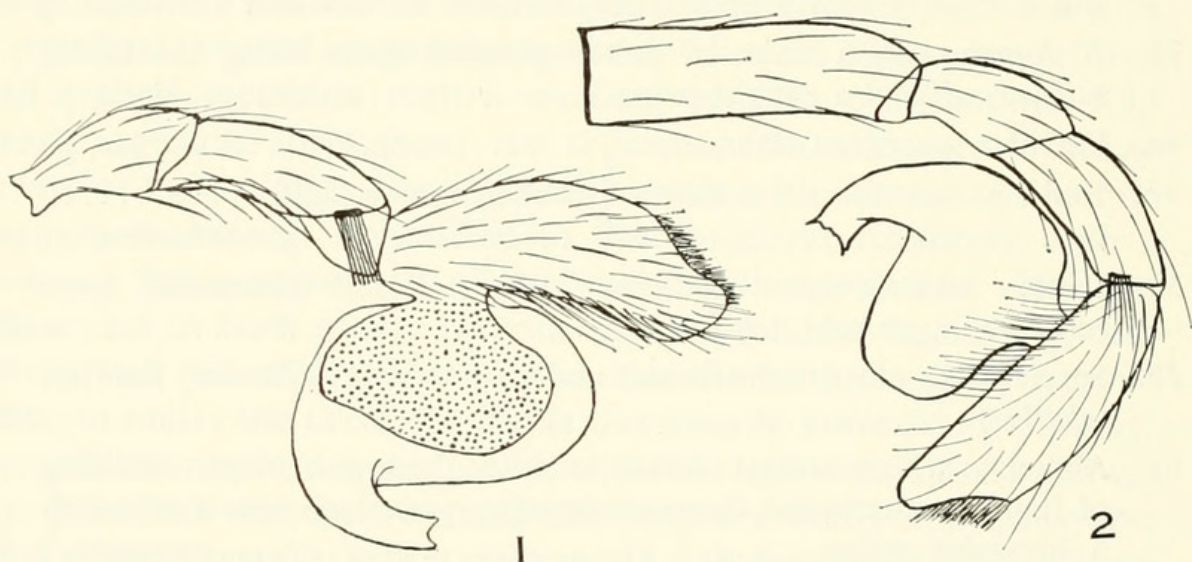


Figure 1. *Nops blanda* (Bryant). Left male palp; prolateral view. Fig. 2. *Nops coccineus* Bryant (= *Nops blanda* (Bryant)). Left male palp; prolateral view.

I had hoped to collect specimens of *Nops blanda* during my two recent visits to St. Croix but I failed to find any members of the genus. I now have two males from St. John together with several immature specimens collected in July, 1966; I also have a female together with two immature specimens collected in February, 1964. These are all tentatively placed in *Nops blanda* pending more data on the *Nops* population of these islands. During my recent visit to Virgin Gorda, British Virgin Islands, I collected two mature males, one female, and two immature specimens. These were all taken on August 18, 1966, and are also tentatively placed in this species.



A female *Nops* and several immature specimens collected on St. Thomas in February, 1964, and in July, 1966, are not yet definitely assigned to species.

### NOPS COCCINEUS Simon

#### Figure 3

*Nops coccineus* Simon, 1891, fig. 18, pl. 42. Male and female syntypes from St. Vincent, B. W. I., are in the British Museum (Natural History). Simon, 1893: 324; Petrunkevitch, 1911: 133; Lutz, 1915: 82; Berland, 1932: 339; Roewer, 1942: 316; Bonnet, 1958: 3114.

While working in the British Museum in the summer of 1958, I had an opportunity to examine both sexes of *Nops coccineus* Simon. The following notes were written during my examination of these specimens. Female: length from anterior border of clypeus to posterior end of anal tubercle 8.78 mm; carapace 2.99 mm long; 2.26 mm wide opposite interval between second and third coxae where it is widest; regularly rounded posteriorly but much narrowed in front; about 1.3 mm tall. Two eyes circular and separated by a little more than the radius of one. Height of porrect clypeus 3.25 times the diameter of an eye. Chelicerae with a fleshly lobe just promarginal to fang; no teeth observed; markedly striate along

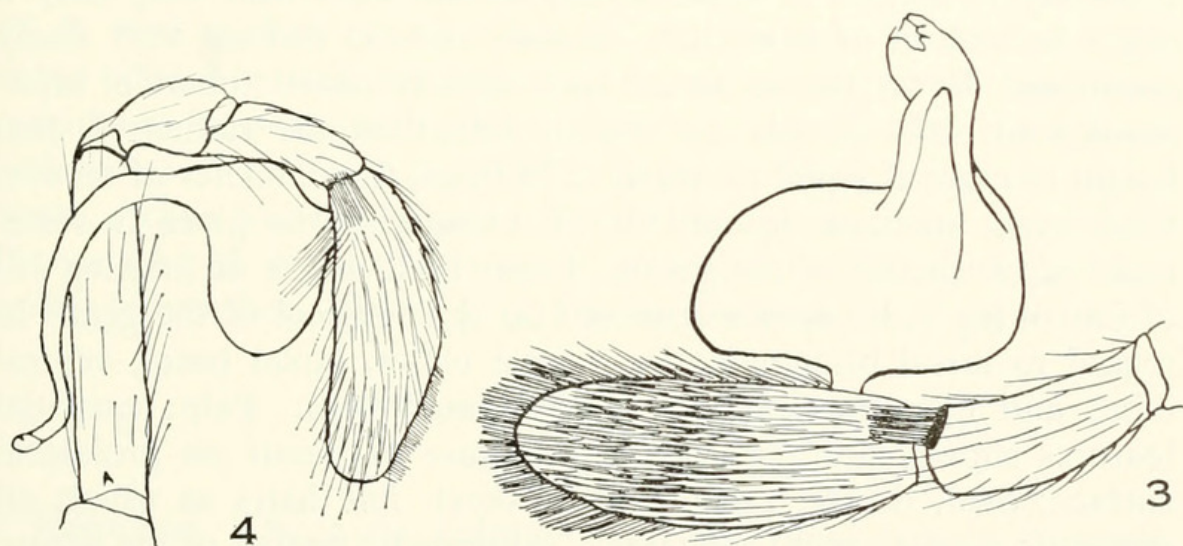


Figure 3. *Nops coccineus* Simon. Left male palp; prolateral view. Fig. 4. *Nops craneae* sp. nov. Left male palp; prolateral view.

outer surfaces; opposing palpal, femoral cusps moderately developed. Tarsi 1 and 2 with a small third claw; tarsi 3 and 4 with a somewhat more prominent third claw; all tarsi bisegmentate; tarsi 1 and 2 with the usual ventral, proximal lobe. Metatarsi 1 and 2



with the usual ventral, median, longitudinal, membranous fold. Sternum only extended to bases of fourth coxae. Epigynal area lightly cornified. Color in alcohol: cephalothorax very reddish; legs somewhat lighter; abdomen yellowish dorsally with a central, indented, brownish stripe consisting of four connected, irregularly angular spots. Male: essential features of the male palp shown in Figure 3; total length from anterior border of porrect clypeus to posterior end of posterior spinnerets 5.6 mm; color in general like that of female but clearer; each lateral side of abdomen with a brownish stripe, very irregular; venter yellowish.

NOPS CRANEAE sp. nov.

Figure 4

*Holotype.* The male is from Simla, Arima Valley, Trinidad, W. I., in the close vicinity of the Wm. Beebe Tropical Research Station, April 17, 1964. This species is named after Miss Jocelyn Crane, director of the station.

*Description.* Total length from anterior border of clypeus to posterior end of extended spinnerets 7.8 mm; length from anterior border of clypeus to posterior end of abdomen 7.21 mm. Carapace 3.25 mm long; 2.34 mm wide opposite interval between second and third legs where it is widest; only about 0.55 mm tall; only a slight indication of a median, thoracic fovea; surface very finely granulate. Eyes: two as usual on a slightly raised tubercle; separated from one another by slightly less than the radius of one; height of clypeus equal to nearly 2.75 times the diameter of an eye. Chelicerae, maxillae, lip and sternum essentially as given in statement of characters of the genus. Legs: tibial index of first leg 13, of fourth leg 9; no spines observed on legs; typical of the genus in regard to tarsal bisegmentation, tarsal claws, tarsal basal, ventral lobes and metatarsal ventral, longitudinal folds. Palp: essential features shown in Figure 4; cusp at base of femur on prolateral surface; oval, dorsal, tarsal pad of short, fine hairs as usual; all segments simple except the tarsus. Abdomen: typical of the genus. Color in alcohol: carapace and sternum a dark reddish; considerable black pigment in ocular area; legs and mouth parts reddish brown in general but with variations; metatarsi 1 and 2 and the proximal divisions of tarsi 1 and 2 very light yellowish. Abdomen: light greenish with dark gray spots; an irregular, median, dark gray stripe extends throughout the dorsum; on each dorsolateral side there is a series of 4 irregularly elongated, dark gray spots the last of which spreads and unites with the median stripe; the venter has



two small and very irregular, dark gray spots and a pair of larger gray spots in a ventrolateral position; the greenish coloration is somewhat darker in the region of the tracheal spiracles.

*Female paratype.* The described female paratype measures 10.34 mm from anterior border of clypeus to posterior end of abdomen; from anterior border of clypeus to posterior end of spinnerets 11.25 mm. Carapace 4.03 mm long; 3.06 mm wide opposite second coxae where it is widest; otherwise essentially as in male holotype. Eyes: two, separated by about  $\frac{5}{8}$  of their diameter; height of clypeus equal to about 3.5 times the diameter of an eye. Chelicerae, maxillae, lip and sternum essentially as in male. Legs: tibial index of first leg 14, of fourth leg 10; tarsal claws, tarsal, basal, ventral lobes, metatarsal ventral, membranous folds and other features as stated for the genus all typical. Abdomen: essentially as in male; scutum only moderately developed anterior to genital groove. Color in alcohol: nearly identical to that of male; abdominal color pattern clear and definite; venter with three very irregular, dark spots on each ventrolateral side; the first of these is lateral to the scutum, the second is a little behind the middle and somewhat nearer the middle line, while the third is anterior to the spinnerets and still nearer the middle line.

*Records.* The described female paratype is also from Trinidad, W. I., with no date of collection (N. A. Weber). Two females are in the collection with the described female paratype; two immature specimens from Balandra Bay, Trinidad, April, 1922 (Reynolds collection). I took eight specimens in April, 1964, in the vicinity of Simla, Arima Valley, Trinidad, W. I. One immature specimen from Piarco (A. M. Nadler), January, 1955, and a female from Gasparee, November, 1944 (T. S. Jones) are tentatively placed here.

#### NOPS FLUTILLUS sp. nov.

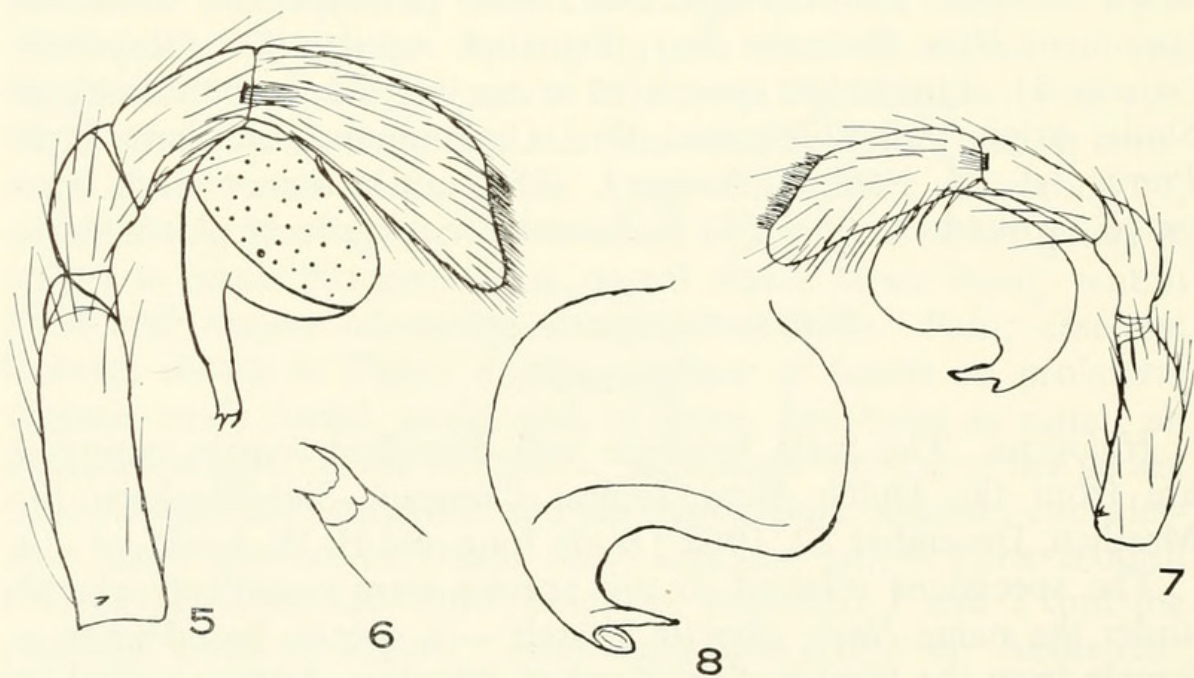
##### Figures 5-6

*Holotype.* The male holotype and described female paratype are from the Dutch West Indies, Curaçao, Sint-Nicolaas; St. Marthaa, December 29, 1962 (B. de Jong and H. W. Levi).

The specimens referred to this species were tentatively placed under the name *Nops glaucus* Hasselt — a species based upon a female from the West Indian island of Bonaire. After a period of some uncertainty the decision has been made to regard the species as new. The name of the species is an arbitrary combination of letters.



*Description.* Total length of male from anterior border of clypeus to posterior end of abdomen 5.79 mm. Carapace 2.5 mm long; 1.87 mm wide opposite second coxae where it is widest; about 0.55 mm tall; otherwise essentially typical of males of the genus. Eyes: two as usual; separated by about  $\frac{9}{14}$  of their diameter. Chelicerae, maxillae and lip essentially typical of males of the genus. Sternum: longer than wide in ratio of about 6 : 5; somewhat more oval in outline than usual; fourth coxae separated by about  $\frac{9}{10}$  of their width; otherwise quite typical of the genus. Legs: tibial index of first leg 14, of fourth leg 10; tarsi typical with respect to bisegmentation, claws, and ventral, proximal, membranous lobes; metatarsi also typical with respect to the ventral, medial, membranous fold; no spines but with many hairs and bristles; trichobothria observed on tarsi, metatarsi, tibiae and, possibly, also on palpal segments. Palp: essential features shown in Figures 5-6. Abdomen apparently typical of the genus in all essential features. Color in alcohol: all parts except abdomen essentially as described for *N. largus* sp. nov.; abdomen purplish over most of the dorsum, becoming darker and broader posteriorly; lateral sides yellowish, becoming purplish posteriorly; venter with a fairly well defined scutum anterior to genital groove and with light green color around a broad margin; remainder of venter yellowish with purplish dots, becoming more definitely purplish toward posterior end.



Figures 5-6. *Nops flutillus* sp. nov. Fig. 5. Left male palp; prolateral view. Fig. 6. Tip of embolus, more enlarged; retrolateral view. Figs. 7-8. *Nops gertschi* sp. nov. Fig. 7. Right male palp; prolateral view, Fig. 8. Tarsal bulb, more enlarged; retrolateral view.



*Female paratype.* The described female paratype has a total length of 8.45 mm from anterior border of porrect clypeus to posterior end of abdomen. Carapace 4.03 mm long; 3.04 mm wide opposite posterior border of second coxae where it is widest; 0.96 mm tall; otherwise essentially typical of the genus. Eyes: two as usual on a low tubercle; separated by nearly  $\frac{3}{4}$  of the diameter of an eye; height of porrect clypeus equal to about 4.5 times the diameter of an eye. Chelicerae, maxillae, lip and sternum all essentially typical of females of the genus. Legs: tibial index of first leg 18, of fourth leg 13; tarsi typical with respect to claws, bisegmentation, and basal, ventral lobes; metatarsi typical with respect to ventral, medial, longitudinal folds; claw tufts moderately developed; with no palpal tarsal claws; with the usual, distal, prolateral, tibial, palpal brush. Abdomen: essentially as in male; a well defined scutum occupies the whole area of tracheal spiracles continued to the pedicel; what has frequently been termed the epigynum is a slightly re-curved slit between anterior spiracles. Color in alcohol: essentially as in male holotype with minor variations; with considerable light green color in parts of the ventral scutum.

*Records.* One male paratype, two female paratypes and two immature specimens taken with the holotype. One male paratype and eleven immature specimens from several localities on the island of Curaçao collected by Dr. and Mrs. H. W. Levi and Mr. B. de Jong in December, 1962.

#### NOPS GERTSCHI sp. nov.

##### Figures 7-8

*Holotype.* The male holotype is from Loma Cibao, La Vega, Dominican Republic, August 9, 1956, 600-1600 m elevation (Dr. Allan F. Archer, E. B. M.). The holotype will be deposited in the American Museum of Natural History, New York, N. Y.

Until recently the specimen described here as a new species was regarded as another specimen of *Nops blandus* (Bryant) but study has convinced me that it must be regarded as new. The species is named after Dr. W. J. Gertsch.

*Description.* Total length from anterior border of clypeus to posterior end of abdomen 5.98 mm; from tip of somewhat porrect chelicerae to posterior end of abdomen 6.18 mm. Carapace 2.86 mm long; 2.08 mm wide opposite second coxae where it is widest; narrowed to about 0.78 mm at anterior end. Eyes: two as usual on a low tubercle; separated by their diameter; surrounded



by black pigment, lighter between the eyes; height of porrect clypeus equal to nearly 3.75 times the diameter of an eye. Chelicerae, maxillae, lip and sternum all essentially typical of males of the genus; fourth coxae separated by their width. Legs: tibial index of first leg 14, of fourth leg 9; tarsi typical as stated in description of the genus; metatarsi 1 and 2 also typical with respect to the ventral, longitudinal, membranous fold; typical with respect to other observed features. Palp: essential features shown in Figures 7-8; palpal, tibial, prolateral brush apparently lacking on left palp. Abdomen: essentially typical of males of the genus. Color in alcohol: carapace and sternum an orange yellow; with considerable black pigment in ocular area; legs nearly the same as carapace dorsally but lighter ventrally; lip and chelicerae like sternum; maxillae lighter; palp like legs with variations. Abdomen: dorsum grayish in general but with two irregular, light greenish, dorsolateral bars in anterior two-thirds; lateral sides dark grayish with ventral extensions of the lighter dorsal, irregular bars; venter yellowish with a faint greenish tint anterior to genital groove; posterior to genital groove light greenish with irregular dark spots for nearly three-quarters of the distance to the spinnerets; the area immediately in front of the spinnerets is dark like most of the dorsum.

#### NOPS GLAUCUS Hasselt

*Nops glaucus* Hasselt, 1887: 77, figs. 1-4, 10. Female holotype from Bonaire, Dutch West Indies, in the Natural History Museum, Leiden. Simon, 1892: 449; Petrunkevitch, 1911: 134; Roewer, 1942: 316; Bonnet, 1958: 3114.

Through the courtesy of Dr. van der Hammen of the Natural History Museum in Leiden I have been able to examine the holotype of this species from which I have derived the following: total length 9.17 mm from anterior border of clypeus to posterior end of abdomen; carapace 3.9 mm long and 2.92 mm wide opposite interval between second and third legs. Eyes: two as usual on a low tubercle; separated by nearly three-fourths of the diameter of an eye; height of clypeus nearly equal to four times the diameter of an eye. Legs: typical of the genus in all respects as given in the description of the genus. The usual palpal, tibial brush is present. The color appears to have faded somewhat during long preservation. Legs and palps light yellowish; carapace, sternum, and other mouth parts all reddish brown; abdomen light grayish with a purplish tint dorsally and yellowish ventrally. I consider the original drawings very good with one exception; in figure 1 the second femur



is over-inflated; in the holotype under observation the second femur is only normally robust. Simon reported this species from Venezuela in 1892. Apparently it has not been definitely recorded since that time.

### NOPS GUANABACOE MacLeay

#### Figures 9-10

*Nops guanabacoae* MacLeay, 1839: 1-14, pls. 1-2. The female holotype from Cuba is probably in the British Museum (Natural History), London. Walckenaer, 1842: 442; Hasselt, 1887: 71; Simon, 1893: 328; Petrunkevitch, 1911: 133; Bryant, 1940: 271; Roewer, 1942: 316; Bonnet, 1958: 3114.

The male was unknown until 1940 when Miss Bryant described it and had both sexes for study. As a result of my examination of these specimens I am obliged to disagree with several of the published statements concerning the male. These may be briefly stated as follows: eyes separated from one another by nearly  $\frac{3}{5}$  of the diameter of one of them; chelicerae with the usual fleshy lobe on the promargin of the fang groove; lip firmly united to sternum and only a little longer than wide; legs 4123 in order of length; all tarsi with three claws; tarsi 1 and 2 with the typical ventral, proximal lobe; metatarsi 1 and 2 with the ventral, median, membranous fold; the usual palpal, tibial brush is present in both sexes. Essential features of the male and female palps are shown in Figures 9-10. There are now two mature males together with several females and immature specimens from several localities in Cuba, and the species is, apparently, known only from that island.

### NOPS LARGUS sp. nov.

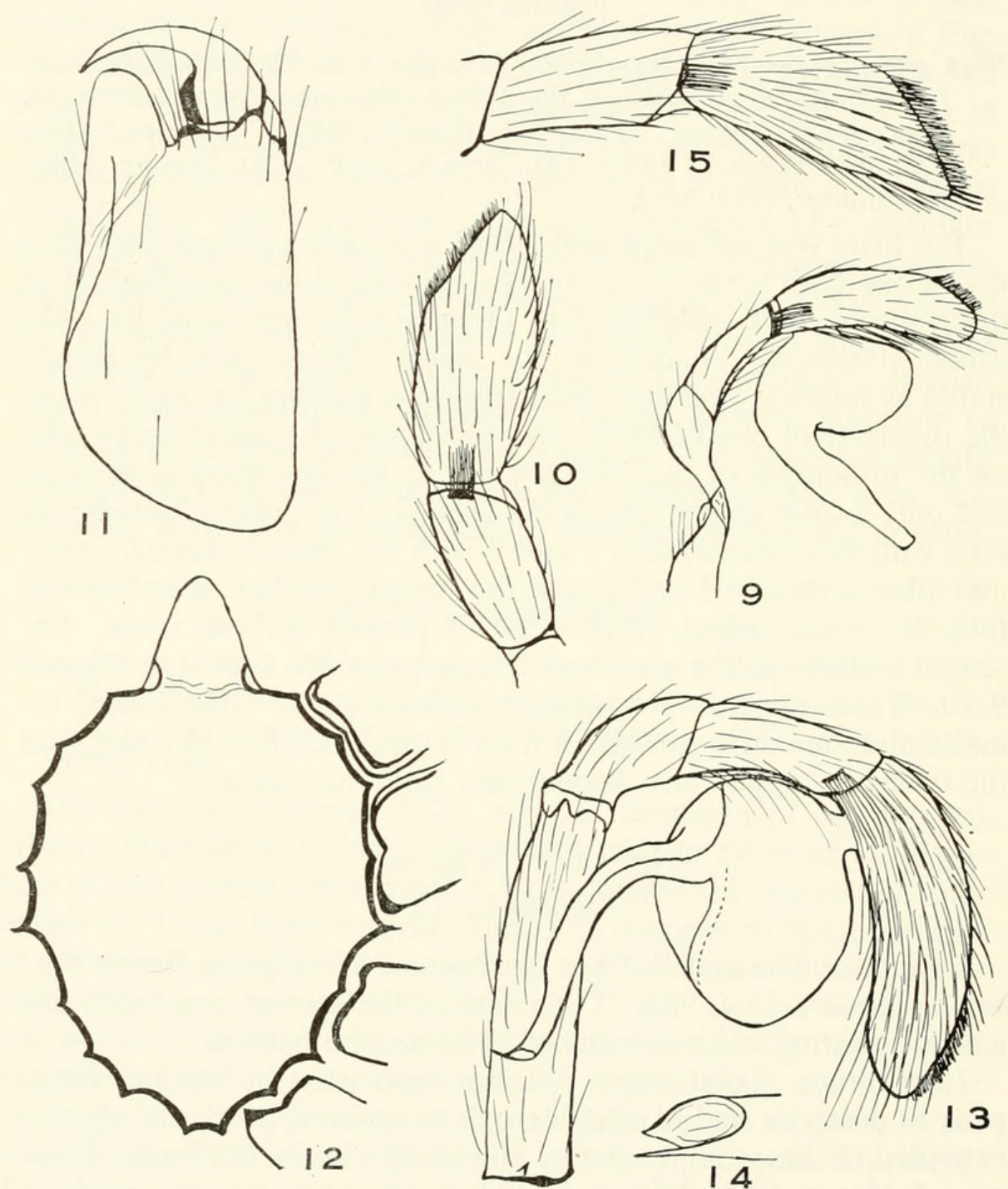
#### Figures 11-15

*Holotype.* The male is from the Panama Canal Zone Forest Preserve, January 21, 1958. The name of the species is a Latin adjective referring to its abundance in its natural habitat.

*Description.* Total length 6.7 mm from anterior border of clypeus to posterior end of abdomen; from anterior border of slightly extended chelicerae to posterior end of spinnerets 6.89 mm. Carapace 3.15 mm long; 2.34 mm wide opposite second coxae where it is widest; about 0.7 mm tall. Eyes: two as usual on a slightly raised tubercle; separated by slightly less than their radius; height of porrect clypeus nearly equal to 2.66 times the diameter of an eye. Chelicerae, maxillae and lip essentially



typical of the genus; cheliceral fleshy lobe shown in Figure 11. Sternum: surface rather coarsely granulate; coxae 1 and 2 basally lobed as usual; terminated just posterior to bases of fourth coxae which are separated by about their width (Fig. 12). Legs: tibial index of first leg 14, of fourth leg 11; spines lacking; tarsal claws, ventral, proximal lobes on tarsi 1 and 2 and ventral, medial,



Figures 9-10. *Nops guanabacoae* Macleay. Fig. 9. Left male palp; prolateral view. Fig. 10. Left female palp; prolateral view. Figs. 11-15. *Nops largus* sp. nov. Fig. 11. Left chelicera of male. Fig. 12. Sternum of male. Fig. 13. Left male palp; prolateral view. Fig. 14. Tip of embolus; enlarged. Fig. 15. Left female palp; prolateral view.



longitudinal folds on metatarsi 1 and 2 all typical of the genus. Palp: essential features shown in Figures 13-14. Abdomen: quite typical of the genus; ventral scutum rather poorly developed; with a copious supply of short hair. Color in alcohol: carapace and sternum a bright orange red; legs generally somewhat lighter dorsally and still lighter ventrally; all coxae and mouth parts yellowish with variations. Abdomen: greenish gray with many narrow, light colored lines running in a variety of directions; lateral sides grayish with the gray areas extending to ventral surface and covering the posterior fourth of the venter with the remainder nearly white with greenish spots around spiracles. Considerable variation in coloration has been noted among paratypes with a tendency for a purplish color to replace the greenish gray.

*Female paratype.* Total length of described female paratype 8.58 mm from anterior border of clypeus to posterior end of abdomen; from anterior border of slightly porrect chelicerae to posterior end of spinnerets 8.78 mm. Carapace 3.84 mm long; 2.86 mm wide opposite second coxae where it is widest; 0.58 mm tall; posterior end transversely rugulose; with a series of light colored, fine, intricately branched lines covering entire surface; otherwise as in male. Eyes: two as usual; separated by about  $\frac{2}{3}$  of their diameter; height of porrect clypeus equal to about 3.3 times the diameter of an eye. Chelicerae, maxillae, lip and sternum essentially as in male and typical of females of the genus. Legs: tibial index of first leg 15, of fourth leg 9; essentially as in male with respect to the ventral lobe on tarsi 1 and 2, the median, ventral fold on metatarsi 1 and 2, and tarsal claws. The palp lacks a tarsal claw but has the usual tibial brush and the femoral, prolateral, basal cusp. Abdomen: essentially as in male. Color in alcohol: essentially as in male with minor variations.

*Records.* The described female paratype is from Barro Colorado Island, Panama Canal Zone, January, 1958. About forty mature males together with many females and immature specimens assigned to this species have been taken in several localities in the Canal Zone and in Panama proper in El Valle, El Volcan, and Arraijan. I have found it especially abundant on Barro Colorado Island, Canal Zone.

NOPS SIMLA sp. nov.

Figures 16-17

*Holotype.* The male is from Simla, Arima Valley, Trinidad, W. I., in the close vicinity of the Wm. Beebe Tropical Research Station, March 31, 1964. The name of the species is a noun used in apposition after the locality where the holotype was collected.



*Description.* Total length 4.94 mm. Carapace 1.95 mm long; 1.45 mm wide opposite second coxae where it is widest; 0.44 mm tall; median thoracic fovea barely indicated. Eyes: two as usual; separated by about  $\frac{5}{11}$  of their diameter; with a moderate amount of black pigment around eyes; height of porrect clypeus nearly equal to  $2\frac{2}{3}$  times the diameter of an eye. Chelicerae, maxillae and lip with only minor variations from the typical. Sternum: very granulate; obtusely terminated between bases of fourth coxae which are separated by about  $\frac{4}{5}$  of their width. Legs: tibial index of first leg 14, of fourth leg 10; tarsi typical of the genus with respect to bisegmentation and claws; tarsi 1 and 2 typical with respect to ventral, basal lobe; metatarsi 1 and 2 essentially typical with respect to ventral, medial, longitudinal fold except that this seems to be somewhat reduced in prominence. Palp: essential features shown in Figure 16; embolus very long. Abdomen essentially typical of the genus. Color in alcohol: carapace, lip and sternum a medium reddish brown; palp and other mouth parts yellowish with variations; all coxae light yellowish; other segments of legs reddish brown with variations; legs 1 and 2 somewhat the darkest. Abdomen: background color light yellowish; dorsum with a series of five pairs of light, irregular, purplish spots (Fig. 17); at posterior end there is a pair of elongated, lateral, purplish spots extending forward from the spinnerets; venter generally yellowish.

*Female paratype.* Total length 5.92 mm. Carapace 2.15 mm long; 1.69 mm wide opposite posterior border of second coxae where it is widest; about 0.44 mm tall. Eyes essentially as in male. Chelicerae, maxillae, lip and sternum essentially as in male. Legs: tibial index of first leg 16, of fourth leg 10; other features of legs essentially as in male and typical of the genus. Abdominal features and color essentially as in male.

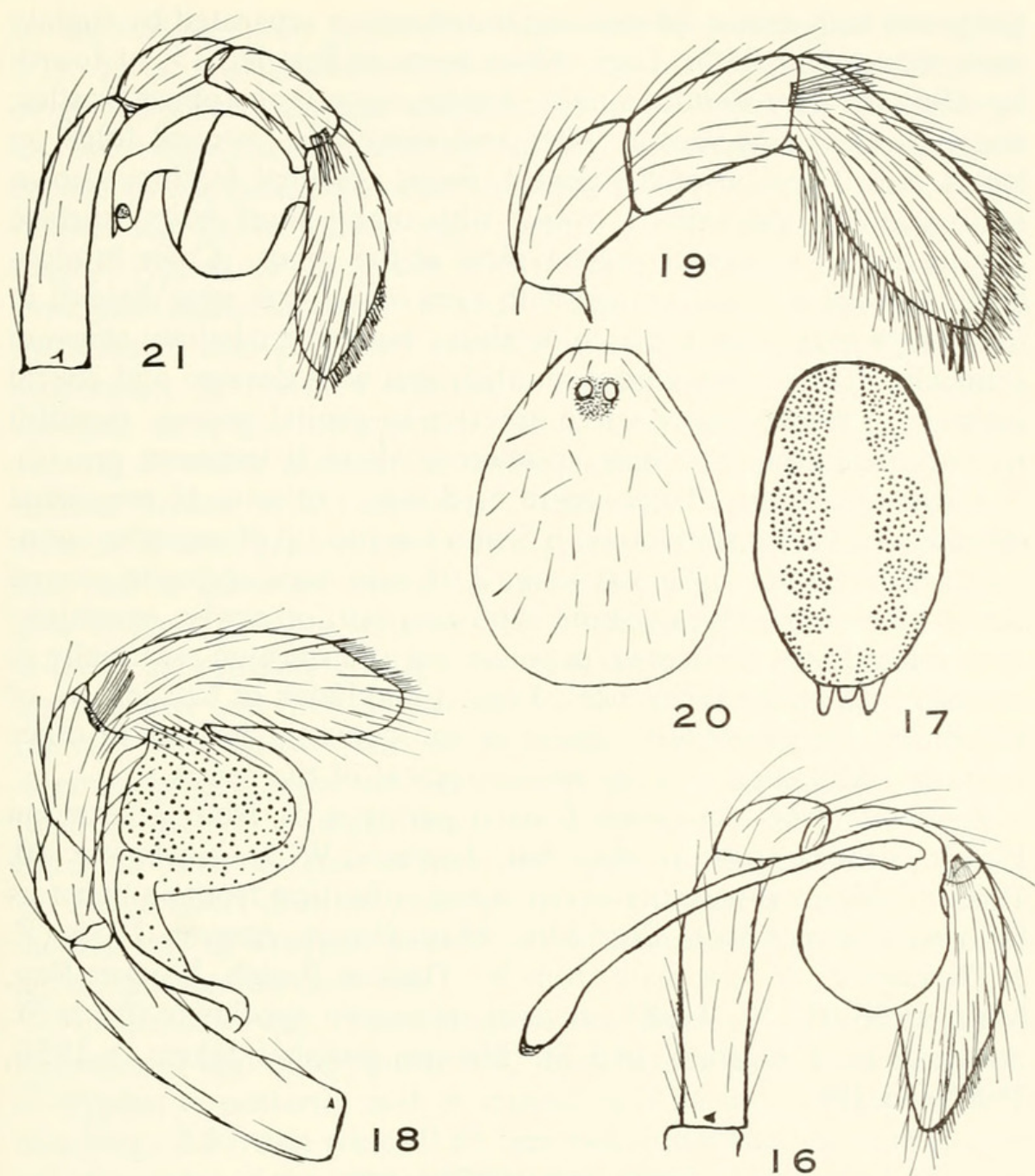
*Records.* The female paratype was taken in the same locality as the holotype on April 25, 1964, together with an immature specimen. The following have been on loan from Dr. W. J. Gertsch: two males from Arima, Trinidad, May, 1953 (N. L. H. Kraus) and an immature specimen from Piarco, Trinidad, January, 1955 (A. M. Nadler).

NOPS TOBALLUS sp. nov.

Figures 18-19

*Holotype.* The male holotype is from St. Catherine Parish, near May Pen, Jamaica, W. I., November 22, 1957. The name of the species is an arbitrary combination of letters.





Figures 16-17. *Nops simla* sp. nov. Fig. 16. Left male palp; prolateral view. Fig. 17. Abdomen; dorsal view. Figs. 18-19. *Nops toballus* sp. nov. Fig. 18. Left male palp; prolateral view. Fig. 19. Left female palp; prolateral view. Figs. 20-21. *Nops ursumus* sp. nov. Fig. 20. Male carapace; dorsal view. Fig. 21. Left male palp; prolateral view.

*Description.* Total length 3.94 mm. Carapace 1.87 mm long; 1.47 mm wide opposite second coxae where it is widest; 0.51 mm tall; surface very finely granulate; with no definite thoracic fovea. Eyes: two as usual, separated by about their radius; height of pre-ocular clypeus equal to a little less than three times the diameter of an eye. Chelicerae, maxillae, lip and sternum essentially typical of



the genus with minor differences; fourth coxae separated by slightly more than their width. Legs: tibial index of first leg 15, of fourth leg 10; with very slender spines, hardly more than robust bristles; tarsal claws, tarsal ventral lobes and metatarsal, ventral folds on legs 1 and 2 typical of the genus. Palp: essential features shown in Figure 18. Abdomen: ovoid; with many short hairs; surface very granular; otherwise quite typical of the genus. Color in alcohol: carapace a bright orange with eyes on a black spot divided in front; legs nearly the same color above but lighter below; sternum somewhat lighter than carapace; abdomen with dorsum and lateral sides gray, venter nearly white anterior to genital groove, greenish from genital groove to near spinnerets where it becomes grayish.

*Female paratype.* Total length 6.18 mm, exclusive of somewhat extended posterior spinnerets; 6.5 mm long to tip of posterior spinnerets. Carapace: 2.73 mm long; 2.02 mm wide opposite second coxae where it is widest; about 0.65 mm tall; otherwise essentially as in male. Eyes, chelicerae, maxillae, lip and sternum essentially as in male with minor differences. Legs: tibial index of first leg 16, of fourth leg 10; essentially typical of the genus in respect to other features. Abdomen also essentially typical of the genus.

*Records.* The described female paratype is from Clarendon Parish, 3 miles north of May Pen, Jamaica, W. I., November 10, 1963. Additional specimens are in the collection from Jamaica as follows: a female from Blue Mts., Main Range, August, 1934 (P. J. Darlington, Jr.); a male from St. Thomas Parish, Morant Bay, May, 1956 (C. C. Hoff); several immature specimens from St. Andrew, St. Catherine, and St. Thomas parishes taken in 1956, 1957 and 1963.

#### NOPS URSUMUS sp. nov.

##### Figures 20-21

*Nops maculata*, — Banks, 1929: 53-96, 4 pls. (Not *N. maculata* Simon).

*Holotype.* The male holotype was taken in a Berlese funnel on Barro Colorado Island, Panama Canal Zone, between April and June, 1950, by Dr. James Zetek. The name of the species is an arbitrary combination of letters.

*Description.* Total length from anterior border of clypeus to posterior end of abdomen 4.94 mm; from anterior border of clypeus to posterior end of spinnerets 5.14 mm. Carapace 2.07 mm long; 1.52 mm wide opposite posterior border of second coxae where it is widest; 0.59 mm tall; with no discernible thoracic



fovea; surface finely granulate; with a sparse covering of hair (Fig. 20). Eyes: two as usual; separated by about  $\frac{5}{13}$  of their diameter; height of porrect clypeus about equal to 2.5 times the diameter of an eye. Chelicerae, maxillae, lip and sternum apparently quite typical of the genus as observed in this study. Legs: tibial index of first leg 13, of fourth leg 8; legs 1-3 only slightly different in length; typical of the genus with respect to tarsal claws, ventral, proximal lobes on tarsi 1 and 2 and ventral, median fold on metatarsi 1 and 2. Palp: essential features shown in Figure 21. Abdomen: all features essentially typical of the genus. Color in alcohol: carapace and sternum a rich, dark orange with a moderate amount of black pigment in ocular region. Mouth parts and legs reddish brown with variations. Abdomen: background color of dorsum a light greenish with five pairs of dark grayish spots; the first pair of spots are broad and extend posteriorly for a considerable distance and are separated by a narrow, greenish stripe in the middle; the remaining four pairs of spots are diagonal bars reaching forward and then downward for a very short distance ventrolaterally; the last two pairs are somewhat united and the fourth pair is considerably extended posteriorly; shortly anterior to the anal tubercle there is a single, small, irregular spot somewhat united to the most posterior pair of bars; the venter is whitish with a greenish tint; a short distance anterior to the spinnerets there is a short, median line of irregular gray dots and lateral to these is an irregular dotted area on each side.

*Female paratype.* Total length from anterior border of clypeus to posterior end of abdomen 9.42 mm; length from anterior border of clypeus to posterior end of spinnerets 9.94 mm. Carapace 3.45 mm long; 2.67 mm wide; 0.85 mm tall; otherwise essentially typical of females of the genus. Eyes: two as usual; separated by about their radius; height of clypeus nearly equal to 3.5 times the diameter of an eye. Chelicerae, maxillae, lip and sternum essentially typical of females of the genus; sternal suture line unusually clear but probably does not indicate freedom of movement for the lip. Legs: tibial index of first leg 12, of fourth leg 9; tarsal claws, ventral, proximal lobe on tarsi 1 and 2 and ventral, median fold on metatarsi 1 and 2 all typical of the genus. Abdomen: essentially typical of females of the genus; region from genital groove to pedicel rather poorly supplied with a scutum. Color in alcohol: essentially as in male with minor variations; here the two posterior, dorsal, abdominal bars are united to one irregularly shaped spot; the venter has scattered dark spots, the largest of which occur as a



pair of very irregular spots shortly anterior to the spinnerets.

*Records.* The described female paratype was taken in the same locality as the holotype, January, 1958. One mature male paratype was taken with the holotype; another male was taken by Dr. Zetek in the same locality and by the same method, Oct.-Dec., 1941. A very few females which may be mature and nearly three dozen others in various stages of immaturity are in the collection from Barro Colorado Id., C. Z. Forest Preserve, Summit Gardens, and Pedro Miguel, all in the Canal Zone. The immature specimen reported by Banks (1929) as *N. maculata* Simon quite clearly belongs in *N. ursumus* sp. nov. The following have been on loan from Dr. W. J. Gertsch: a male and a female from Barro Colorado Id., Dec. 1937-Jan. 1938 (F. J. Ryan); three immature specimens from the same locality taken July, 1930, and July-August, 1938; an immature specimen taken in Santa Rosa, Colon Prov., Panama, Sept., 1945 (C. D. Michener).

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