

NEW SPECIES IN THE GENUS *SPERCHONOPSIS* IN NORTH AMERICA
WITH A DESCRIPTION OF A NEW SUBGENUS,
SPERCHONOPSELLA. (PART II)

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(Part I has been published in precedent issue of *Acarologia*, t. XXXII, fasc. I, page 000 to 000).

Sperchonopsis ovalis Marshall, 1929
(Fig. 33-40)

MALE : Length of body, 783 (735-830); integument papillate; dorsum (fig. 33) with a series of enlarged glandularia tubercles (warts) which bear irregular papillae; pre- and postocularia also on raised tubercles; a pair of small dorsal plates present, each 98 (86-109) long, 85 (73-96) wide; lateral eye capsules well-developed; length between anterior end of first coxae and posterior end of genital field 457 (452-462); venter (fig. 34) with a few papillae-bearing tubercles but no ventralia; excretory pore on a well-developed tubercle; all coxal groups separated; first coxae with several long hair-like setae; genital flaps 140 (120-159) long; genital field (fig. 35) 157 (153-161) wide; three genital acetabula; note the size and shape of the pregenital sclerite; dorsal lengths of palpal segments (fig. 36) : P-I, 30 (29-31); P-II, 127 (125-129); P-III, 111 (107-114); P-IV, 109; P-V, 26; total palpal length, 403 (402-403); capitulum, 263 long; chelicerae, 286 long; cheliceral claw relatively large; dorsal lengths of the distal segments of the first leg : I-Leg-4, 138 (135-140); I-Leg-5, 150 (146-153); I-Leg-6, 134 (122-146); swimming hairs absent.

FEMALE : Length of body, 928 (819-1092); integument papillate; dorsum (fig. 37) with a pair of

small dorsal plates, 65 (42-83) long, 47 (31-60) wide; glandularia proportionally more widely spaced than in the male; length between anterior end of first coxae and the posterior end of genital field, 501 (431-609); venter is similar to that of the male, but the glandularia are proportionally more widely spaced and the genital field slightly different (fig. 38); genital flaps, 161 (143-195) long; genital field (fig. 39), 147 (127-177) wide; dorsal lengths of palpal segments (fig. 40) : P-I, 33 (26-39); P-II, 150 (125-172); P-III, 137 (112-159); P-IV, 125 (99-146); P-V, 33 (31-36); total palpal length, 479 (401-548); capitulum 301 (255-336) long; chelicerae 294 (240-347) long; dorsal lengths of the distal segments of the first leg : I-Leg 4, 148 (114-182); I-Leg-5, 158 (125-198); I-Leg-6, 151 (114-164); swimming hairs absent.

Type material. Holotype female (mount MC-S-01) from Virgin Island, Lake Nipigon, Thunder Bay District, Ontario, on 1922.07.27 (D. R. RAWSON), deposited in the Marshall Collection, FMNH.

Allotype male (mount 69-0189-02) from the outlet stream, Marion Lake, UBC Forest Reserve, Haney, British Columbia, on 1969.07.14 (ROM Field Party), deposited in the ROM.

One male paratype (same locality and data as the allotype) deposited in the FMNH. One female (mount 73-0015-03) has been deposited in the CNC and the remaining specimens are either deposited in

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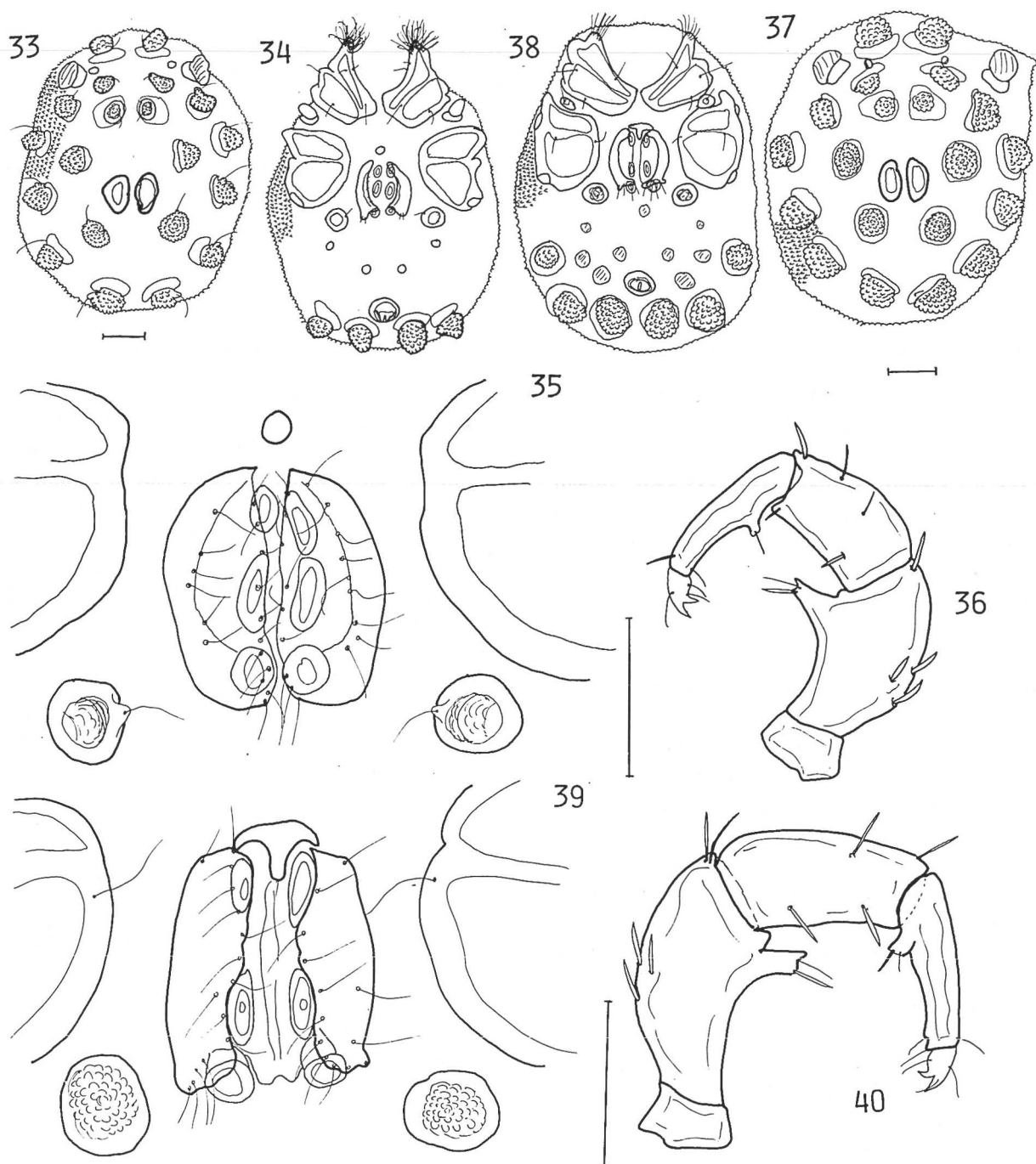


FIG. 33-40 : *Sperchonopsis ovalis* Marshall.

33-36. — Allotype male, dorsum (33), venter (34), genital area (35), and palp (36). 37-40. — Female, mount HUL-73-03, dorsum (37), venter (38), genital area (39), and palp (40).

Scale bars = 100 μm.

the ROM, the FMNH, or retained in the author's collection.

MATERIAL EXAMINED : Two males and twenty-six females : New Brunswick : one female, from Little River, near Grand Falls, on 1953.07.19 (H. HABEEB, NBM, reported as *S. verrucosa* by HABEEB, 1955) ; Ontario : the female holotype ; one female from a stream crossing Highway 4501, 38.6 km west of Highway 10, Wellington Co., on 1966.09.08 (I. M. SMITH, ROM) ; one female from a stream at Route 11, 11.5 km south of Beardmore, Thunder Bay District, on 1971.06.21 (ROM Field Party, 71-0442) ; four females, from a creek by Highway 11, 4.8 km south of Trout Creek, Nipissing District (one on 1972.05.14, and three on 1972.06.01) (ROM Field Party, 72-0133, 72-0211) ; two females from a stream at the 6th Line, 3.8 km north of Side Road 5, Milton, Halton Co. (one on 1973.06.17, one on 1973.07.08) (I. M. SMITH, ROM) ; two females from Spencer Creek, Beverly Swamp, Wentworth Co., on 1976.06.24 (R. JAAGUMAGI, ROM) ; Manitoba : one female, from Hunt Lake, Whiteshell Provincial Park, on 1973.08.02 (J. C. CONROY) ; Alberta : one female, from Cottonwood Creek, at Highway 6, near Twin Butte, on 1965.06.14 (J. C. CONROY, reported as *S. verrucosa* by CONROY, 1968) ; British Columbia : the two male allotypes ; one male, one female, from Loon Creek, near the Fish Hatchery, Loon Lake Road, Clinton on 1969.07.14 (ROM Field Party, ROM 60-0200) ; Oregon : one female, from Rock Creek, at the campground, South Yachats, Rt. 101, Lane Co. (I. M. SMITH and T. YAMAMOTO, ROM) ; Nevada : four females, from Cabin Creek, Hinkey Summit, North Paradise Valley, Humboldt Co., on 1968.05.30 (I. M. SMITH and T. YAMAMOTO, ROM) ; California : one female, from Waddell Creek, on 1933.06.29 (P. R. NEEDHAM, FMNH, reported as *S. verrucosa* by MARSHALL, 1943) ; one female, from Convict Creek, Bishop, on 1942.02.10 (P. R. NEEDHAM, FMNH) ; one female from Kern River, near the mouth of Rock Creek, Sequoia National Park, on 1942.08.29 (J. W. MOFFET, FMNH) ; one female, from Middle Fork, Kaweah River, Sequoia National Park, on 1942.09.12 (J. W. MOFFET, FMNH) ; New Jersey : one female, from

Vancampens Brook, Warren County, on 1953.10.12 (H. HABEEB, NBM, reported as *S. verrucosa* by HABEEB, 1953).

DISCUSSION : Previously known only from a single female from Ontario (MARSHALL, 1929), the male is described here for the first time. When compared to specimens of *S. verrucosa* (three females from the River Finn System, Co. Donegal, Ireland — two from the River Finn at Killygordan, on 1960.09.30, and one from the River Cumrick, on 1960.08.17), this species was most noticeably different in the size and proportions of the dorsal plates.

Sperchonopsis protuberosa n. sp.

(Fig. 41-48)

MALE : Length of body, 629 ; integument papillate ; dorsum (fig. 41) with a series of enlarged glandularia tubercles (warts) which bear irregular papillae ; pre- and postocularia also on raised tubercles ; one large dorsal plate present, 336 long, 242 wide ; lateral eye capsules well-developed ; length between anterior end of first coxae and posterior end of genital field 394 ; venter (fig. 42) with a few papillae-bearing tubercles and well-developed ventralia ; wide, shallow plate (109 wide, 56 deep) lying between the genital area and the anal plate with two small, lateral plates separated from it ; excretory pore on a well-developed anal plate, 120 wide, 135 deep ; all coxal groups separated ; first coxae with several long hair-like setae ; genital flaps 125 long ; genital field (fig. 43) 185 wide ; three genital acetabula ; note the size and shape of the pregenital sclerite ; dorsal lengths of palpal segments (fig. 44) : P-I, 30 ; P-II, 138 ; P-III, 112 ; P-IV, 112 ; P-V, 34 ; total palpal length, 426 ; capitulum, 185 long ; chelicerae, 218 long ; chelicerai claw relatively large ; dorsal lengths of the distal segments of the first leg : I-Leg-4, 114 ; I-Leg-5, 125 ; I-Leg-6, 117 ; swimming hairs absent.

FEMALE : Length of body, 788 (683-882) ; integument papillate ; dorsum (fig. 45) with a single large, well-developed dorsal plate, 223 (210-263) long, 205

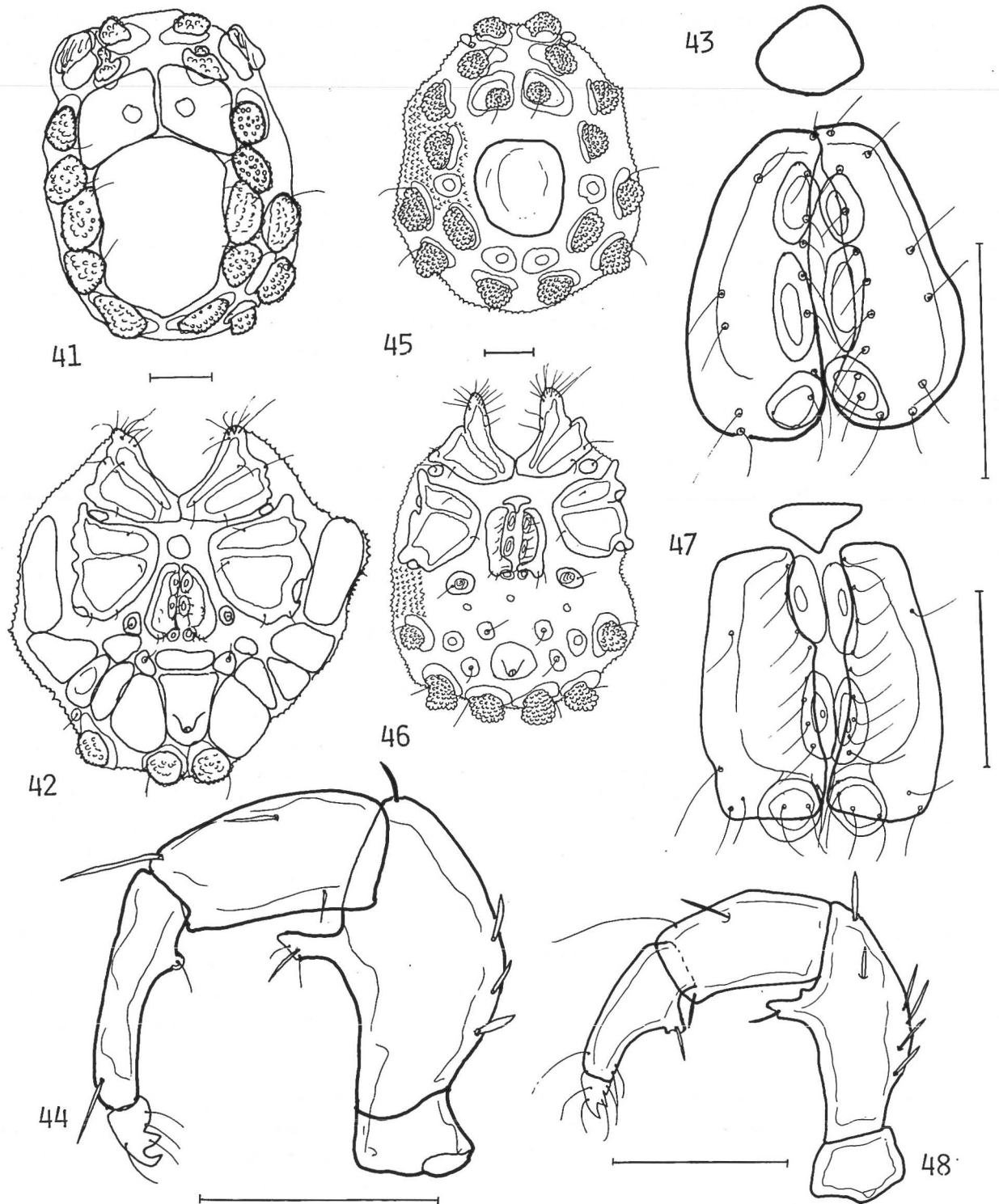


FIG. 41-48 : *Sperchonopsis protuberosa* n. sp.

41-44. — Male allotype, dorsum (41), venter (42), genital area (43), and palp (44). 45-48. — Female holotype, dorsum (45), venter (46), genital area (47), and palp (48).

Scale bars = 100 μm.

(188-221) wide; glandularia proportionally more widely spaced than in the male; length between anterior end of first coxae and the posterior end of genital field, 447 (389-478); venter is similar to that of the male, but the glandularia are proportionally more widely spaced and the genital field slightly different (fig. 46); the large anal plate is 105 (94-133) wide, 83 (68-107) deep; genital flaps, 164 (153-177) long; genital field (fig. 47), 145 (135-156) wide; dorsal lengths of palpal segments (fig. 48): P-I, 31 (29-36); P-II, 141 (127-159); P-III, 113 (103-127); P-IV, 92 (85-101); P-V, 27 (25-31); total palpal length, 404 (373-447); capitulum 263 (231-284) in length; chelicerae 264 (231-294) in length; dorsal lengths of the distal segments of the first leg: I-Leg-4, 132 (120-140); I-Leg-5, 139 (130-151); I-Leg-6, 127 (99-140); swimming hairs absent.

TYPE MATERIAL: holotype female, eight paratype females and one paratype nymph from Bronte Creek, Spence, Parry Sound District, Ontario, on 1977.02.20 (ROM Field Party). Allotype male from Wildcat Creek, 19.2 km east Siloan Springs, Benton Co., Arkansas, on 1949.09.03 (R. D. MITCHELL).

Holotype female and allotype male are deposited in the ROM (holotype: mount ONT-B5-08-ROM; allotype: mount LOT-92-01-ROM). One female paratype deposited in each of the CNC and the FMNH. The remaining paratypes are either in the ROM, the FMNH, or retained in the author's collection.

Other material examined: two females, in the R. H. WOLCOTT Collection, FMNH (collected by Dr. A. D. HUNTSMAN, University of Toronto, date and location unknown, but Canada (?) according to MARSHALL notes, labelled *S. protuberosa* by MARSHALL, and reported as *S. verrucosa* by MARSHALL, 1929); one female from Webb Creek, east of Gatlinburg, on Tennessee Route 321, Sevier Co., Tennessee, on 1951.07.01 (R. D. MITCHELL, LOT-201, ROM).

DISCUSSION: Superficially, the male is similar to *S. magniscuta* with the palp of similar shape, but that of *S. protuberosa* is larger by 25%. Two female members of the Genus *Sperchonopsis*, col-

lected by Dr. A. D. HUNTSMAN and labelled *S. protuberosa* were found in the Marshall Collection in the FMNH. MARSHALL however did not publish a description of the specimens since she apparently thought that they were *Sperchonopsis verrucosa* Protz (MARSHALL, 1929). Since these two specimens from the FMNH are members of the same species as the type series of mites from Bronte Creek, found in the ROM collection, I have retained the name *S. protuberosa*.

Sperchonopsis tuberculata n. sp.

(Fig. 49-56)

MALE: Length of body, 554 (452-693); integument papillate; dorsum (fig. 49) with a series of enlarged glandularia tubercles (warts) which bear irregular papillae; pre- and postocularia also on raised tubercles; a pair of small dorsal plates present, each 61 (47-83) long, 41 (33-62) wide; lateral eye capsules well-developed; length between anterior end of first coxae and posterior end of genital field 351 (294-462); venter (fig. 50) with a few papillae-bearing tubercles but no ventralia; excretory pore on a small tubercle; all coxal groups separated; first coxae with several long hair-like setae; genital flaps 118 (86-143) long; genital field (fig. 51) 117 (96-143) wide; three genital acetabula; note the size and shape of the pregenital sclerite; dorsal lengths of palpal segments (fig. 52): P-I, 24 (19-26); P-II, 93 (81-107); P-III, 84 (70-107); P-IV, 81 (70-94); P-V, 24 (21-29); total palpal length, 305 (278-359); note the unusual shape of P-IV as well as its reduced ventral projection; capitulum, 187 (148-226) long; chelicerae, 178 (130-226) long; cheliceral claw relatively large; dorsal lengths of the distal segments of the first leg: I-Leg-4, 89 (69-109); I-Leg-5, 96 (73-120); I-Leg-6, 94 (73-109); swimming hairs absent.

FEMALE: Length of body, 754 (584-903); integument papillate; dorsum (fig. 53) with glandularia proportionally more widely spaced than in the male; a pair of small dorsal plates present, each 60 (42-99) long, 40 (29-65) wide; length between anterior end of first coxae and the posterior end of

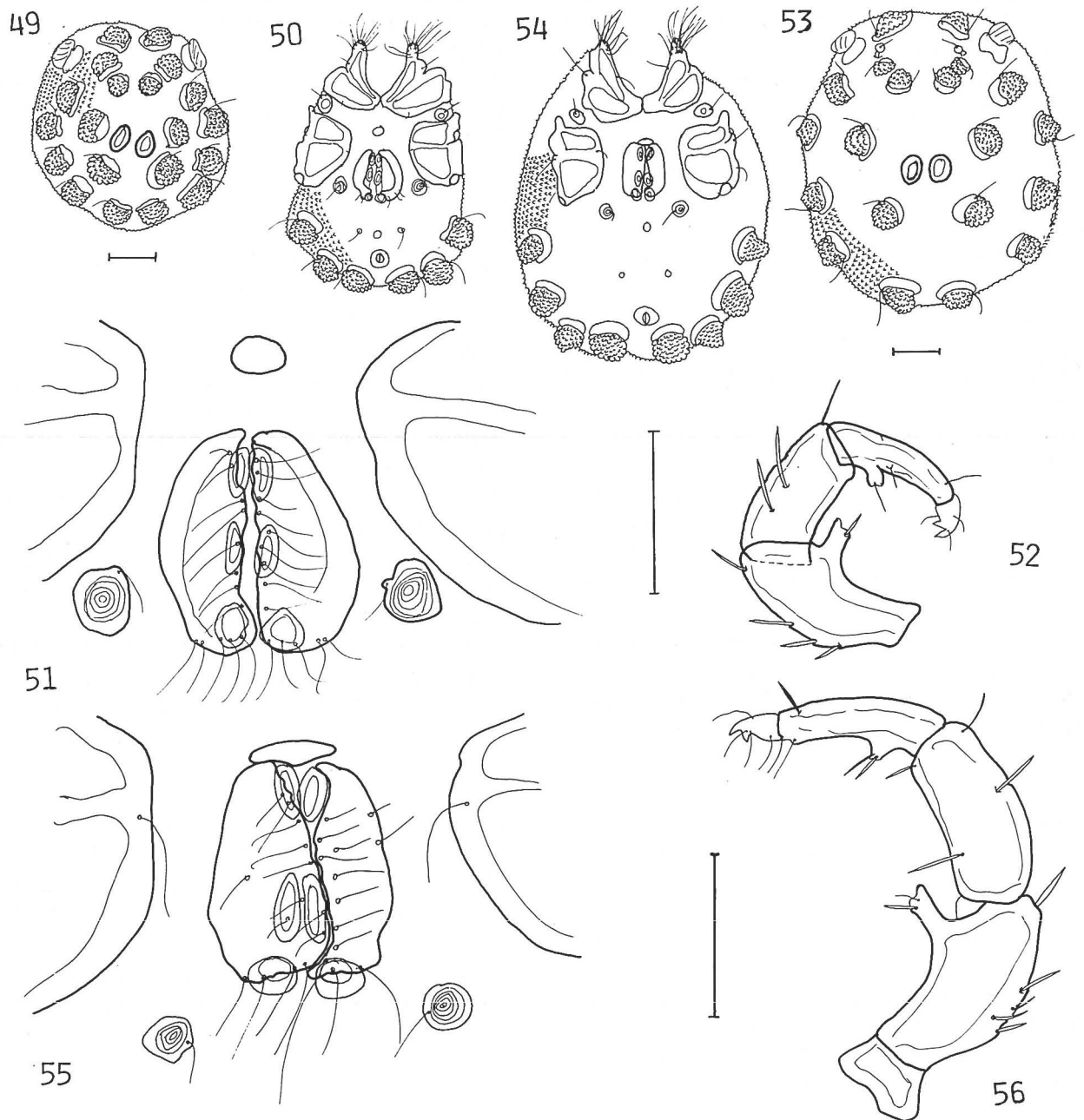


FIG. 49-56 : *Sperchonopsis tuberculata* n. sp.

49-52. — Male holotype, dorsum (49), venter (50), genital area (51), and palp (52). 53-55. — Female allotype, dorsum (53), venter (54), and genital area (55). 56. — Palp of female, mount 72-02-11-10.
Scale bars = 100 μm.

genital field, 411 (336-494); venter is similar to that of the male, but the glandularia are proportionally more widely spaced and the genital field slightly different (fig. 54); genital flaps, 138 (117-161) long; genital field (fig. 55), 120 (107-143) wide; dorsal lengths of palpal segments (fig. 56) P-I, 31 (26-39); P-II, 125 (109-138); P-III, 117 (101-138); P-IV, 107 (88-120); P-V, 30 (26-36); total palpal length, 409 (361-440); note the unusual shape of P-IV as well as its reduced ventral projection; capitulum 253 (208-298) long; chelicerae 246 (190-290) long; dorsal lengths of the distal segments of the first leg: I-Leg-4, 116 (88-156); I-Leg-5, 124 (91-177); I-Leg-6, 114 (88-143); swimming hairs absent.

TYPE MATERIAL: Holotype male (mount MC-S-02) from Green Lake, Green Lake Co., Wisconsin, on 1921.08.** (C. JUDAY), deposited in the FMNH (Marshall Collection).

Allotype female (mount 71-0442-04) from a stream, at Route 11, 11.5 km south of Beardmore, Thunder Bay District, Ontario, on 1971.06.21 (ROM Field Party, ROM 71-0442), deposited in the ROM.

Paratypes: One male and one female paratypes (from Webb Creek, by Tennessee Route 321, east of Gatlinburg, Sevier Co., Tennessee, on 1951.07.01, collected by R. D. MITCHELL, ROM LOT-201) deposited in each of the FMNH and the CNC. One female, from Kern River, near mouth of Rock Creek, Sequoia National Park, on 1942.08.29 (J. W. MOFFET) deposited in the FMNH. The remaining paratypes are either in the ROM or are retained in the author's collection.

MATERIAL EXAMINED: Twenty-six males, forty females, one nymph: Ontario: three males, one female, from a stream crossing Highway 401, 38.6 km west of Junction with Highway 10, Wellington Co. (two males on 1966.09.08, one male, one female, on 1967.08.27) (I. M. SMITH, ROM); one female, from Laurel creek, Waterloo, Waterloo Co., on 1967.09.01 (C. G. PATTERSON, J. C. CONROY collection); two females, including allotype, see above; one female, from Sturgeon River, at Highway 11, 17.8 km, north-east of

Jellicoe, Thunder Bay District, on 1972.06.21 (ROM Field Party, 71-0450); twelve females, from a creek by Highway 11, 4.8 km south of Trout Creek, Nipissing District (four on 1972.05.14, seven on 1972.06.01, and one on 1972.09.29) (ROM Field Party, 72-0133, 72-0211, 72-0248); one female from Kelly Creek, 46.1 km west of Timmins, Timiskaming District, on 1972.05.23 (ROM Field Party, 72-0183); one female from an unidentified location in Ontario (ROM Field Party, 72-0408); one female, from Crane River, Miller Lake, Bruce Co., on 1972.08.26 (D. BARR, B. P. SMITH, ROM 72-0432); one female, from a stream, near 6th Line, 3.8 km north of Side Road 5, Milton, Halton Co., on 1973.06.10 (I. M. SMITH, ROM 73-0005); thirteen males, 10 females, one nymph, from Bronte Creek, Spence, Parry Sound District (eleven males, eight females, one nymph, on 1976.09.29, and two males, two females, on 1977.02.20) (ROM Field Party); two males, one female, from Lake 224, Experimental Lakes Area, near Kenora, Kenora District, on 1986.08.20 (B. BILYJ, J. C. CONROY collection); Saskatchewan: one male, one female, from Torch River, near Love, on 1982.08.06 (M. M. QUAGLIA, J. C. CONROY collection); Yukon: one female, from Moose Creek, at the campground, Yukon, on 1976.06.18 (ROM, 79-5027); Wisconsin: male holotype, see above (reported as *S. verrucosa* by MARSHALL, 1931); Tennessee: six males, six females, from Webb Creek, on Tennessee Route 321, east of Gatlinburg, Sevier Co., on 1951.07.01 (R. D. MITCHELL, ROM LOT-201); California: one female, from Kern River, near mouth of Rock Creek, Sequoia National Park, on 1942.08.29 (J. W. MOFFET, FMNH).

DISCUSSION: This species has the widest distribution of the genus in North America. The specimen from Green Lake, Wisconsin, was labelled by MARSHALL as *S. tuberculatus*, but reported by her as *S. verrucosa* (MARSHALL, 1931). These specimens were compared to three females of *S. verrucosa* from the River Finn System, Co. Donegal, Ireland (two from the River Finn at Killygordan, on 1960.09.30, and one from the River Cumrick, on 1960.08.17) and the differences were quite marked — especially in the size of the body, length of the

palp, size of the dorsal plates, length of chelicerae and capitulum.

Sperchonopsis verrucosa Protz

(Fig. 57-60)

Previously reported from Wisconsin (MARSHALL, 1931, 1946), Wyoming (MARSHALL, 1933, 1946, BERGSTROM, 1953), California (MARSHALL, 1943, 1946), New Brunswick and New York (HABEEB, 1955), Manitoba and Alberta (CONROY, 1968). With the exception of the BERGSTROM specimen from Wyoming, all previously reported specimens of *S.*

verrucosa have been examined by me and were found to be other species. The present study shows that the MARSHALL Wisconsin and Wyoming specimens are *S. tuberculata* n. sp., the Manitoba specimen is *S. whiteshellensis* n. sp., and the Alberta, New York, and California specimens are more correctly assigned to *S. ovalis* Marshall. PRASAD and COOK (1972, page 188) note that there are no authentic records of *S. verrucosa* from North America. I concur with this assessment. See also the note under *S. ecphyma*. The figures are for a female *S. verrucosa* from the River Cumrick, Co. Donegal, Ireland, collected on 1960.08.17.

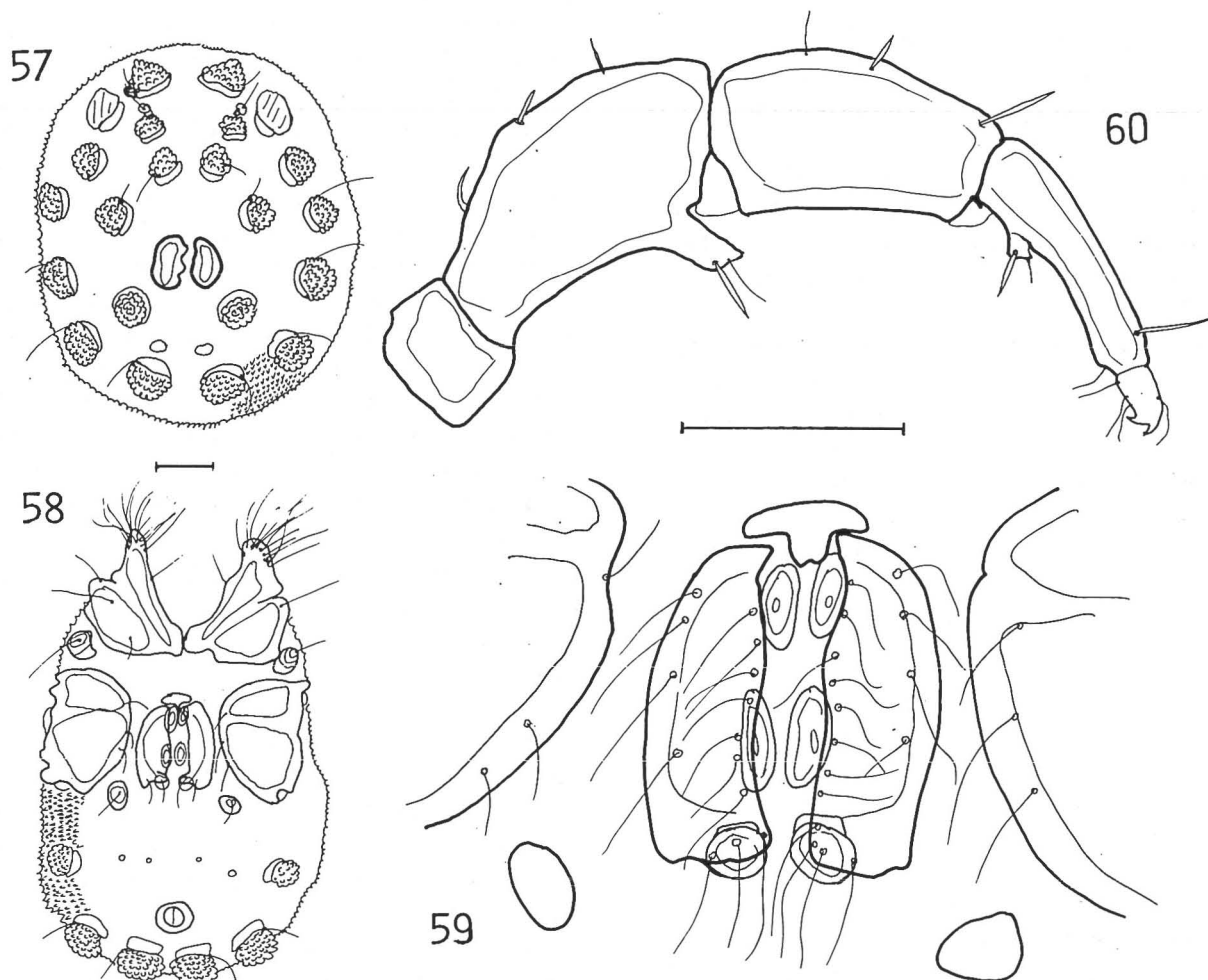


FIG. 57-60 : *Sperchonopsis verrucosa* ((Protz), female (mount CUR-60-01), dorsum (57), venter (58), genital area (59), and palp (60).
Scale bars = 100 μ m.

Subgenus *Sperchonopsella* new subgenus

DIAGNOSIS : Characters of the Genus *Sperchonopsis*; three pairs of genital acetabula, with the second and third pairs circular in appearance and lying close together.

Type species : *Sperchonopsis* (*Sperchonopsella*) *whiteshellensis* n. sp.

Sperchonopsis (*Sperchonopsella*) *whiteshellensis* n. sp.
(Fig. 61-68)

MALE : Length of body, 646 (588-725); integument papillate; dorsum (fig. 61) with a series of enlarged glandularia tubercles (warts) which bear irregular papillae; pre- and postocularia also on raised tubercles; a pair of small dorsal plates present, each 58 (45-78) long, 42 (36-57) wide; lateral eye capsules well-developed; length between anterior end of first coxae and posterior end of genital field 396 (357-441); venter (fig. 62) with a few papillae-bearing tubercles but no ventralia; excretory pore on a small tubercle; all coxal groups separated; first coxae with several long hair-like setae; genital flaps 124 (104-143) long; genital field (fig. 63), 121 (112-133) wide; note the unique arrangement and shape of the three genital acetabula with the anterior two pairs oval and clearly smaller than the posterior pair (this arrangement is more reminiscent of those of the Genus *Thyasella* Lundblad); note the size and shape of the pregenital sclerite; dorsal lengths of palpal segments (fig. 64) : P-I, 24 (21-26); P-II, 99 (88-112); P-III, 86 (78-94); P-IV, 85 (79-91); P-V, 23 (21-26); total palpal length, 318 (300-349); capitulum, 204 (183-216) long; chelicerae, 199 (182-234) long; cheliceral claw relatively large; dorsal lengths of the distal segments of the first leg : I-Leg-4, 105 (96-117); I-Leg-5, 112 (104-125); I-Leg-6, 106 (88-117); swimming hairs absent.

FEMALE : Length of body, 906 (725-1069); integument papillate; dorsum as illustrated in fig. 65 with glandularia proportionally more widely spaced than in the male; a pair of small dorsal plates

present, each 59 (42-86) long, 41 (31-57) wide; length between anterior end of first coxae and the posterior end of genital field, 484 (441-557); venter is similar to that of the male, but the glandularia are proportionally more widely spaced and the genital field slightly different (fig. 66); genital flaps, 163 (146-185) long; genital field, 130 (117-169) wide (fig. 67); note the unusual shape and arrangement of the genital acetabula; dorsal lengths of palpal segments (fig. 68) : P-I, 32 (29-36); P-II, 128 (112-140); P-III, 115 (109-125); P-IV, 109 (101-120); P-V, 28 (23-31); total palpal length, 413 (384-452); capitulum 266 (237-309) long; chelicerae 258 (237-315) long; dorsal lengths of the distal segments of the first leg : I-Leg-4, 135 (114-156); I-Leg-5, 148 (109-174); I-Leg-6, 133 (96-161); swimming hairs absent.

TYPE MATERIAL : Holotype male (mount ONT-79-01-JC) from a small stream, beside the road to the Experimental Lakes Area, near Kenora, Ontario, on 1979.07.31 (J. C. CONROY and A. J. BERRINGTON), deposited in the ROM.

Allotype female (mount ONT-79-02) same locality and data as holotype, deposited in the ROM.

Paratypes : One male and one female paratype, from a stream, crossing Route 11, 102.7 km east of Fort Francis, Rainy River District, Ontario, on 1971.06.11 (ROM Field Party, 71-0387) deposited in each of the FMNH and the CNC. The remaining paratypes are either in the ROM or are retained in the author's collection.

Material examined : seventy-two males and ninety females : Ontario : 69 males, 85 females, from a stream crossing Route 11, 102.7 km east of Fort Francis, Rainy River District, on 1971.06.11 (ROM Field Party, 71-0387); one male, two females, from a stream crossing Route 17, 4.9 km east of Thunder Bay, Thunder Bay District, on 1971.06.17 (ROM Field Party, 71-0432); one female from a creek, crossing Route 11, 11.5 km south of Beardmore, Thunder Bay District, on 1971.06.21 (ROM Field Party, 71-0442); one male, one female, holotype and allotype, see above; Manitoba : one male and two females, from Hamilton Creek, Whiteshell Provincial Park (one

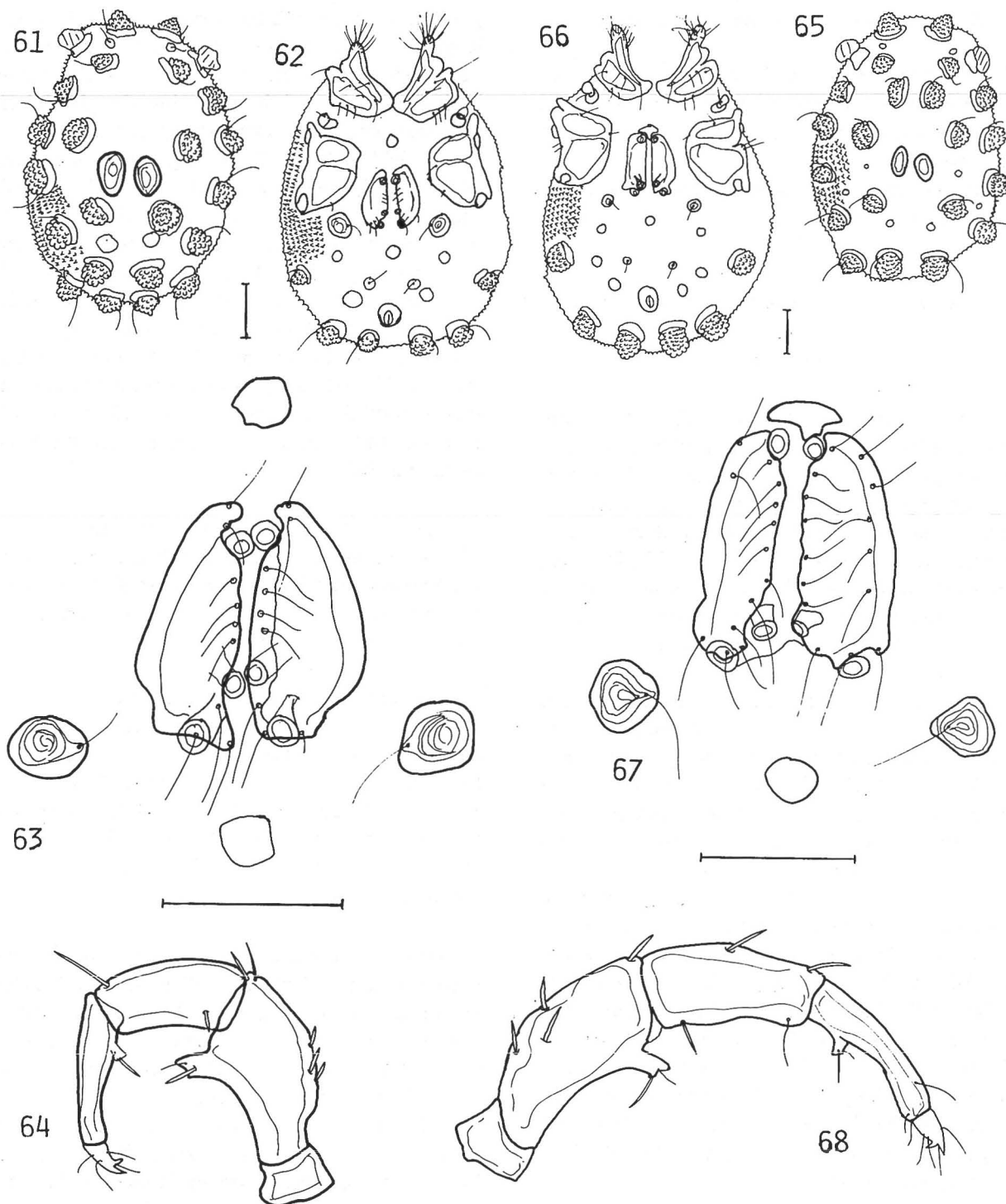


FIG. 61-68 : *Sperchonopsis* (*Sperchonopsella*) *whiteshellensis* n. subgen., n. sp.

61-64. — Male ; dorsum (61), venter (62) and genital area (63) of holotype ; palp (64) of mount 71-0387-07. 65-68. — Female ; dorsum (65) of mount 71-0387-08 ; venter (66), genital area (67), and palp (68) of mount 71-0387-09.
Scale bars = 100 μ m.

female on 1964.0.09, reported as *S. verrucosa* by CONROY (1968), and one male, one female, on 1973.08.04 (J. C. and M. E. CONROY); two females, from Hanson's Creek, Whiteshell Provincial Park, on 1973.08.03 (J. C. and M. E. CONROY).

DISCUSSION : This is the most numerous species of the genus in North America. The species can be separated from all other species of *Sperchonopsis* (in North America) by the shape and arrangement of the genital acetabula. *S. nipponicus* (UCHIDA, 1934), the only other member of the subgenus *Sperchonopsella*, has a similar arrangement of the genital acetabula (UCHIDA, 1934, page 91). *S. whiteshellensis* has a much smaller palp (300-349) than *S. nipponicus* (390) and the arrangement of the dorsal glands, dorsal plates, and dorsal papillae is quite different (UCHIDA, 1934, page 89, figure 21). *Sperchonopsis nipponicus* should be placed, with *S. whiteshellensis*, in the subgenus *Sperchonopsella*.

ACKNOWLEDGEMENTS

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extended to the faculty, staff and students for their advice during that period. Grateful thanks are also extended to my wife and family for their assistance during the collecting trips. Special thanks are made to A. J. BERRINGTON and Libby MADRA for their collecting assistance.

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