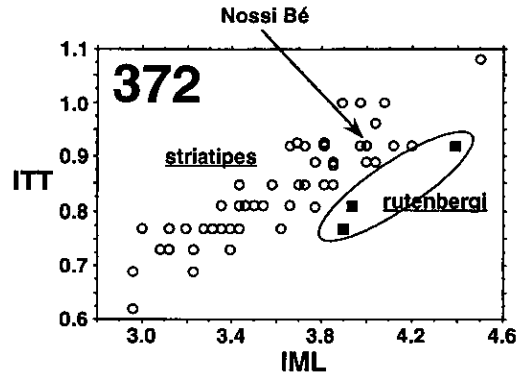
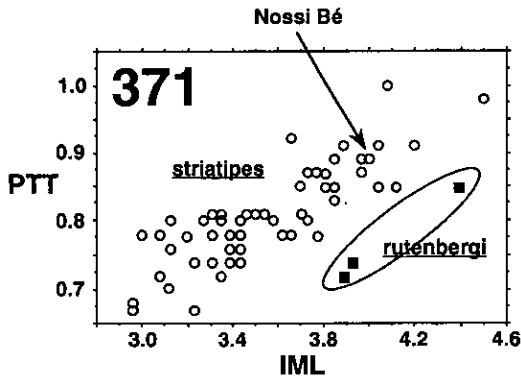


Coyle, F. A. 1995. A revision of the funnelweb mygalomorph spider subfamily Ischnothelinae (Araneae, Dipluridae). Bull. Am. Mus. nat. Hist. 226: 117-128. [Reproduced with permission of Dr. Frederick Coyle].

*Thelechoris striatipes* (Simon, 1889)



Figs. 371, 372. Scattergrams of male characters that help distinguish *Thelechoris rutenbergi* from *Thelechoris striatipes*. Measurements in mm. Arrows point to data points for *T. striatipes* lectotype from Nossi Bé. 371. PTT plotted against IML. 372. ITT plotted against IML.

*Thelechoris striatipes* (Simon)

Figures 5, 8, 9, 31, 36-39, 42, 46, 52, 55, 371-373, 388-442; Map 4

*Entomothele striatipes* Simon, 1889a: 236 (male lectotype, here designated, and female paralectotype from Nossi Bé, off the NE coast of Madagascar; lectotype in MNHN, no. 7008, examined; paralectotype not examined); 1891a: 329.

*Thelechoris rutenbergi* (misidentification): Lenz, 1891: 153. - Strand, 1916: 54.

*Thelechoris karschi* Bösenberg and Lenz, 1894: 27, figs. 31-31b (one adult female lectotype, here designated, and five juvenile paralectotypes from Mbusine, East Africa, in ZMH, examined). - Pavesi, 1897: 170. - Benoit, 1964: 424; 1971: 147. - Raven, 1983a: 346, figs. 1-7, pl. I (figs. 1, 2); 1983b: 553. - Coyle and O'Shields, 1990: 281. - Coyle and Meigs, 1992: 289. NEW SYNONYMY.

*Ischnothele mashonica* Pocock, 1901: 337 (male lectotype, here designated, and six female paralectotypes from Mazoe, Zimbabwe, in BMNH, examined). - Benoit, 1964: 425.

*Ischnothele karschi*: Strand, 1907: 263. - Berland, 1914: 51, figs. 8-10; 1932: 18, fig. 403. - Lessert, 1936: 207. - Holm, 1954: 199, figs. 1-6, pl. I.

- Coyle, 1986: 279, fig. 10.7. - Forster and Murphy, 1986: 29. - Baert and Murphy, 1987: 194.

*Ischnothele rutenbergi* (misidentification): Strand, 1907: 263 (in part).

*Ischnothele gracilis* Tucker, 1917: 123, fig. 10 (male holotype from East Africa, in SAM, no. 491 or 8500, examined). - Lessert, 1936: 207. - Benoit, 1964: 425.

*Ischnothele cassetti* Tucker, 1920: 444 (female holotype from Pemba, Zambia, in SAM, no. 492 or B4666, examined). - Benoit, 1964: 425.

*Thelechoris striatipes*: Willey and Coyle, 1992: 151.

DIAGNOSIS: See the diagnosis of *T. rutenbergi*.

MALES: Tables 5 and 7. Palpal tibia, cymbium, palpal organ, and leg I articles as in generic description (figs. 391-414). Two (rarely 1 or 3) foveal bristles. Carapace with pars cephalica orange-tan to dark chestnut brown, pars thoracica lighter (tan to medium brown centrally, pale cream-yellow to light brown laterally), lateral edges brown or gray, dark brown to black around AMEs and between PMEs and lateral eyes. Color of che-

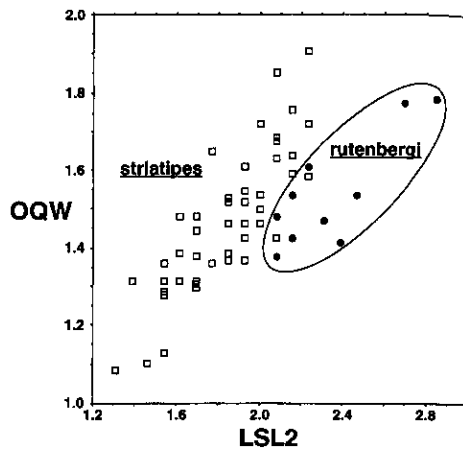
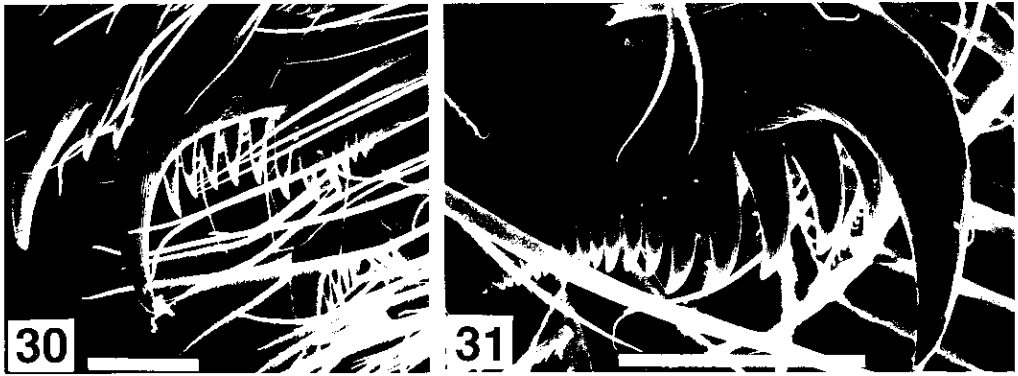


Fig. 373. Scattergram of OQW plotted against LSL2 for *Thelechoris rutenbergi* and *Thelechoris striatipes* females. Measurements in mm.



Figs. 26–31. SEM views of *Ischnothele* and *Thelechoris*. 30, 31. Female leg I tarsal claws (scale bars 100  $\mu$ m). 30. *I. reggae*, all claws. 31. *T. striatipes*, superior (lateral) claw.



Figs. 40–47. SEM views. 40–42. Tarsal organ on leg I of female. 42. *Thelechoris striatipes*. 43–47. Trichobothrium bases on tarsus I of female. 46. *T. striatipes*. All scale bars 10  $\mu$ m.

generic description (figs. 391–414). Two (rarely 1 or 3) foveal bristles. Carapace with pars cephalica orange-tan to dark chestnut brown, pars thoracica lighter (tan to medium

brown centrally, pale cream-yellow to light brown laterally), lateral edges brown or gray, dark brown to black around AMEs and between PMEs and lateral eyes. Color of che-



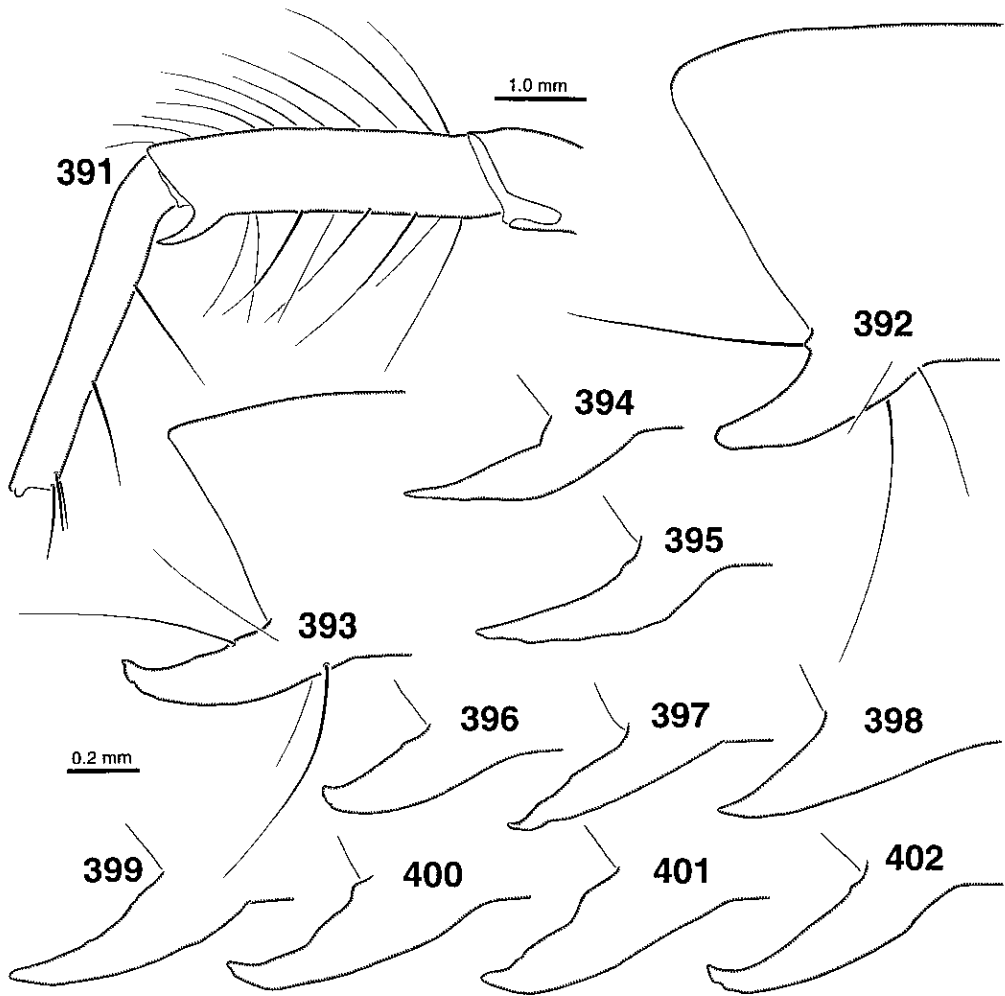
Figs. 388–390. Live *Thelechoris striatipes*. 388. Male from Tsavo West National Park, Kenya. 389. Male from Shimba Hills, Kenya. 390. Female from Tsavo West National Park.

licerae like (or a little darker than) pars cephalica; pedipalps and legs like pars thoracica. Abdominal dorsum light brown to dark gray, sometimes with anterior pair of pale spots followed by series of 6–8 pale chevron-like markings as in figure 419. Abdominal venter pale (with scattered brown spots) to dark gray; brown spot occupies medianmost

20–35% of each posterior lung cover. Color of living spiders (from Kodachrome slides) (figs. 388, 389, 418): Pars cephalica cuticle dark chestnut brown; pars thoracica cuticle dark brown (sometimes a lighter orange-brown or amber-pink laterally), but covered with recumbent white hairs laterally that make the color lighter and silvery; chelicerae like pars cephalica; pedipalps and legs medium to dark gray-brown except tibia to tarsus and sometimes coxa lighter orange-brown or amber-pink and patella with prominent white distal borders formed by dense patches of recumbent white hairs; cymbium and palpal organ orange-amber to dark brown; abdominal dorsum medium to dark gray with 2–4 pairs of white spots, 4 or 5 faint white chevrons, and a weak median longitudinal white strip (figs. 388, 389, 418) (white markings on dorsum are formed by clusters of recumbent white hairs; first and third pair of markings usually more conspicuous than second and fourth).

FEMALES: Table 6. Spermathecae (figs. 421–436) with moderately long to very long stalks usually regularly and tightly spiraled; median stalk usually with slightly fewer spirals (1.5–4) than its lateral partner (2–4.5); bulbs roughly spherical to elongate-oval. Two (rarely 1 or 3) foveal bristles (figs. 415, 416). Carapace with pars cephalica tan to chestnut brown, pars thoracica lighter at least laterally (pale cream-yellow to medium brown), lateral edges brown or gray, dark brown to black around AMEs and between PMEs and lateral eyes. Chelicerae orange-tan to dark chestnut brown. Pedipalps and legs like pars thoracica or slightly darker. Abdominal dorsum and venter as in males. Color of live spiders similar to that of males but slightly lighter (fig. 390).

REMARKS: After consulting with Lenz, and one year after describing *E. striatipes*, Simon (1891a) noted that *E. striatipes* should be a junior synonym of *T. rutenbergi*. Bösenberg and Lenz (1894) pointed out how “very similar” their *T. karschi* was to *T. rutenbergi*, but observed that it was much darker, had more prominent chevrons on the abdominal dorsum, and had larger spots on the posterior book lung covers than did *T. rutenbergi*. Benoit (1964), the only other author to actually describe differences between *T. karschi* and

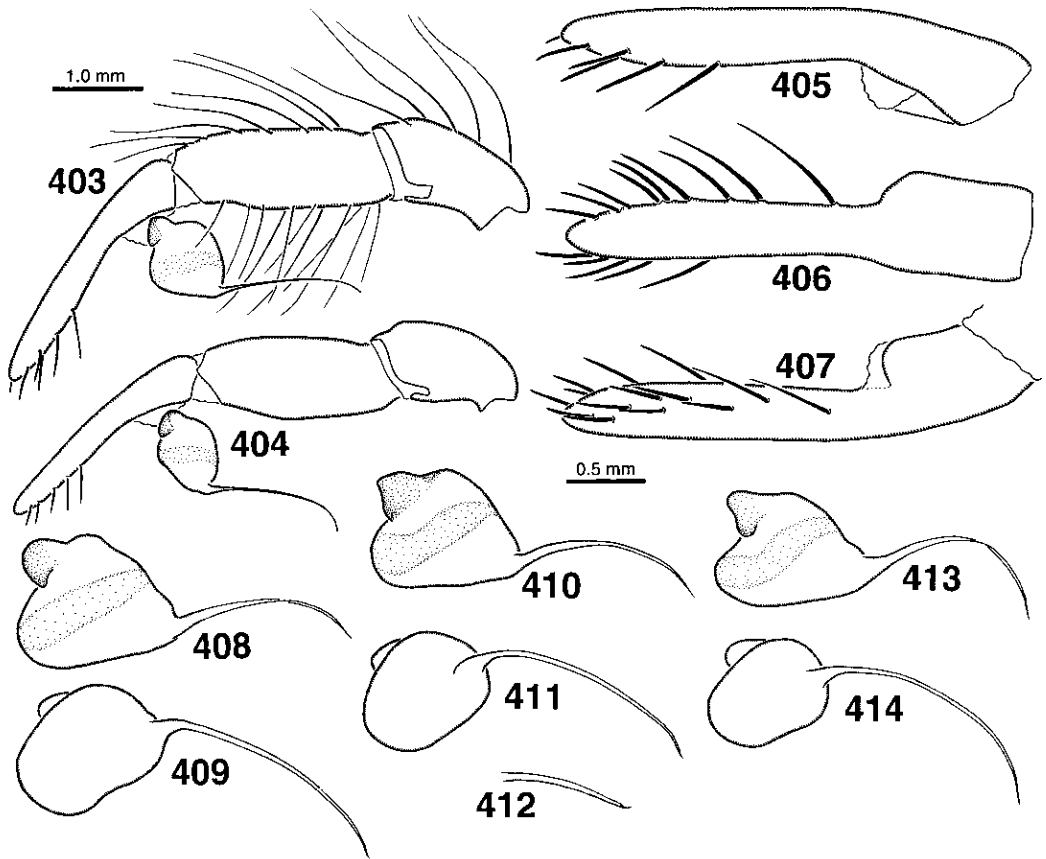


Figs. 391–402. *Thelechoris striatipes* males, leg I. 391. Tibia and metatarsus, retrolateral view, 9 km N Kilifi, Kenya, 1.0 mm scale. 392–402. Tibia I apophysis, retrolateral view, 0.2 mm scale; setae included only in figs. 392, 393. 392. Lectotype. 393. *Ischnothele mashonica* lectotype. 394, 395. Tsavo West National Park, Kenya. 396–398. Dar es Salaam, Tanzania. 399. 9 km N Kilifi, Kenya. 400. Katanga, Kisenge, Zaire. 401. 8 mi W Luanza, Zaire. 402. Katima Mulilo, Zaire.

*T. rutenbergi*, likewise emphasized their close similarity, but indicated that males of the two species could be separated by differences in abdominal coloration, labium shape, and maxillary setation. My analysis reveals that none of these previously cited characters distinguish the African *Thelechoris* samples from the Madagascar samples or the Nossi Bé sample (which includes the type of *E. striatipes* Simon).

Indeed, the only characters I have found that appear to distinguish any *Thelechoris*

population or group of populations from the rest are the male palpal tibia and leg I dimensions cited in the diagnosis of *T. rutenbergi* and which distinguish the three Madagascar males from all other *Thelechoris* males. The paucity and small size of these differences, the absence of genital or mating clasper differences, and the small sample size from Madagascar taken together suggest that the African populations may not be reproductively isolated from those on Madagascar. If the differences I have discovered disappear

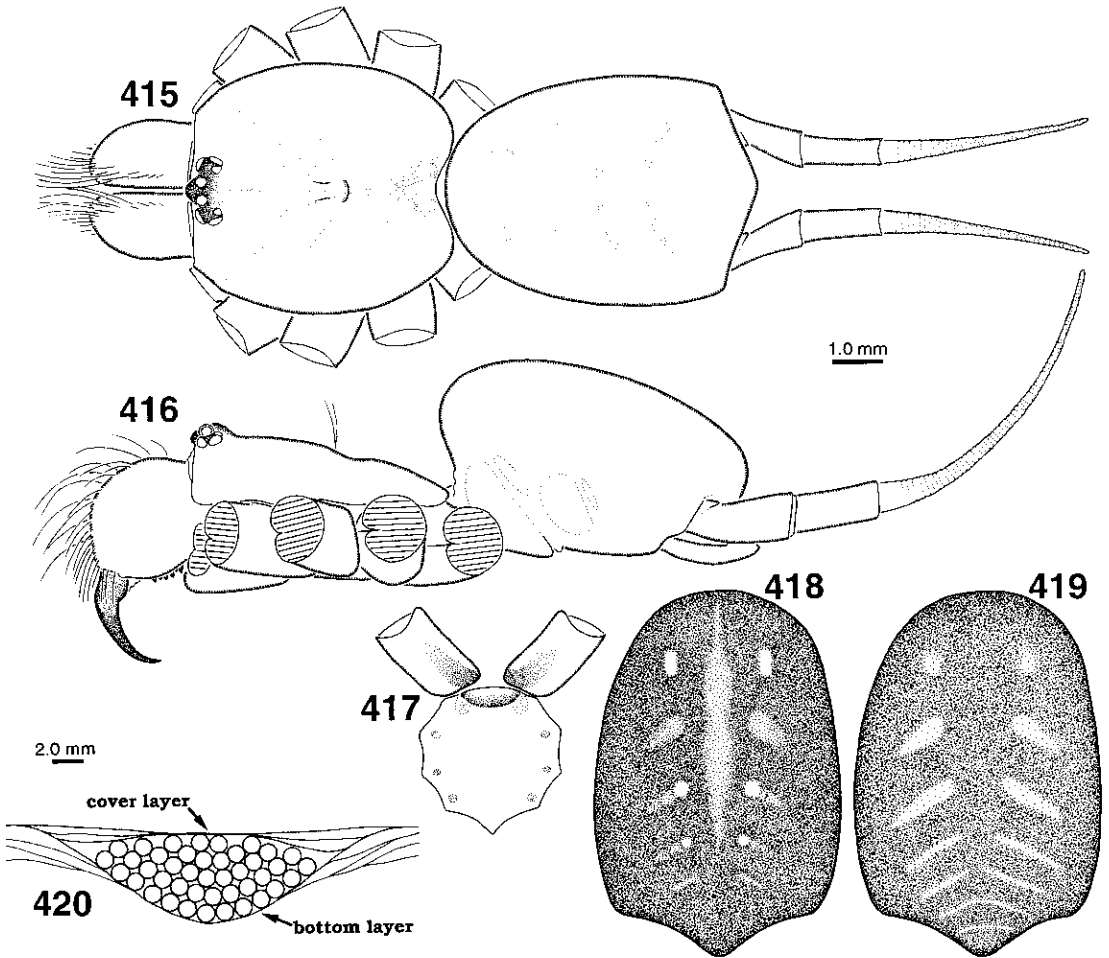


Figs. 403–414. *Thelechoris striatipes* males. 403, 404. Pedipalp, retrolateral view. 403. 9 km N Kilifi, Kenya. 404. Tsavo West National Park, Kenya; representative bristles not included. 405–407. Cymbium, 9 km N Kilifi. 405. Retrolateral view. 406. Dorsal view. 407. Prolateral view. 408–414. Palpal organ. 408, 409. 9 km N Kilifi. 408. Retrolateral-ventral view. 409. Ventral view. 410–412. Lectotype. 410. Retrolateral-ventral view. 411. Ventral view. 412. Embolus tip, magnified 2× fig. 411. 413, 414. Tsavo West National Park. 413. Retrolateral-ventral view. 414. Ventral view. Scale lines: 1.0 mm for figs. 403, 404; 0.5 mm for figs. 405–414 (except fig. 412).

with increased sample size or if cross-mating experiments with proper controls demonstrate the absence of reproductive isolation, then it will be necessary to synonymize *T. striatipes* with *T. rutenbergi*.

The surprising finding that the one male (the lectotype of *E. striatipes*) from Nossi Bé, which is geographically so close to Madagascar, resembles the African males in all characters studied, including those that are diagnostic for the Madagascar males, leads me to conclude—contrary to Simon (1891a), Lenz (1891), and Strand (1916)—that *T. karschi* is the junior synonym of *T. striatipes*.

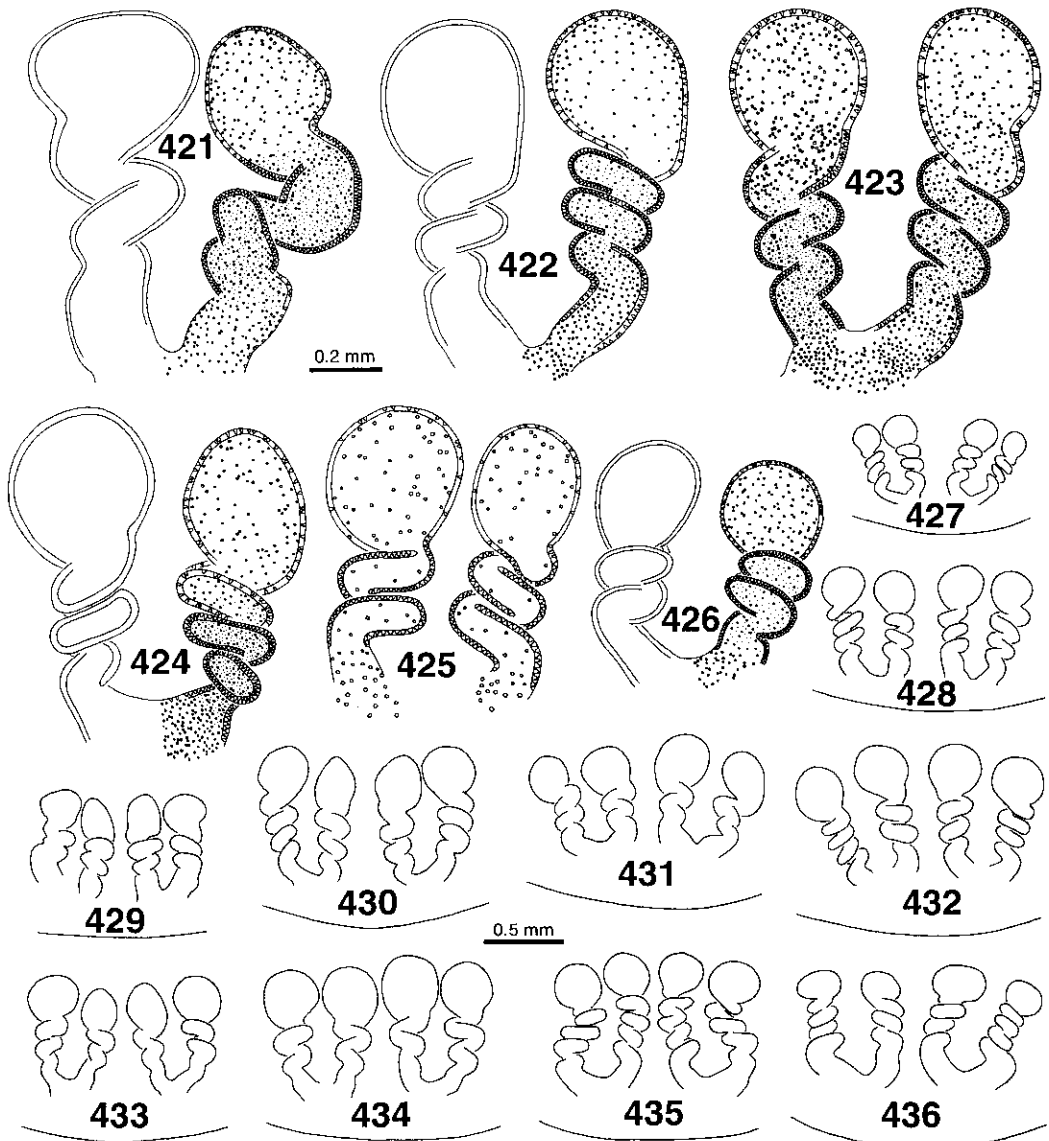
**VARIATION:** In all live material examined, whether from coastal or interior populations, the abdominal dorsum was medium to dark gray with two to four pairs of white spots, four or five faint white chevrons, and a weak median longitudinal white strip (figs. 388–390). These white markings are formed by clusters of short recumbent white hairs, not by pale areas in the body wall proper; if these pale body wall areas (spots or chevrons) are present, they are masked in life by hairs. On the other hand, specimens viewed under alcohol are lighter than when alive and the pigmentation of the abdominal body wall be-



Figs. 415–420. *Thelechoris striatipes*. 415–417. Female from Shimba Hills, Kenya. 415, 416. Whole body. 415. Dorsal view. 416. Lateral view. 417. Sternum, labium, and maxillae. Dots on maxillae represent cuspules. 418, 419. Abdominal dorsum. 418. Coloration of live male from 9 km N Kilifi, Kenya, drawn from color photo; all white markings are produced by clusters of white hairs. 419. Coloration of another male from 9 km N Kilifi after preservation; when viewed under alcohol, coloration is determined solely by distribution of pigment in body wall. 420. Longitudinal section through egg sac. Scale lines: 1.0 mm for figs. 415–419; 2.0 mm for fig. 420.

comes dominant over hair color. Preserved specimens from the coastal region of Kenya and Tanzania and from Nossi Bé differ in color from all other African specimens examined, including those from Tsavo West and Kibwezi, which are only 200–250 km inland from the coastal populations. Coastal specimens are generally lighter, the abdominal dorsum in particular is lighter and has dorsal pale chevron-like markings (fig. 419), and the abdominal venter between the pos-

terior book lungs is pale with only scattered dark spots. In all other preserved African adults the abdominal dorsum is dark gray and lacks the pale chevron markings, and the abdominal venter between the posterior book lungs is dark gray. It is interesting that the populations of coastal East Africa and Nossi Bé closely resemble *T. rutenbergi* in these color characteristics. What is even more remarkable is that, unlike the geographic color variation exhibited by preserved specimens,



Figs. 421–436. *Thelechoris striatipes* spermathecae. 421–426. Right spermathecae, 0.2 mm scale. 421, 422. Kaswabilinga R., Lufira, Zaire. 423. Konde Unuha, East Africa. 424. Kalemie (Albertville), Zaire. 425. *Thelechoris karschi* lectotype. 426. *Ischnothele mashonica* paralectotype. 427–436. All spermathecae, 0.5 mm scale. 427. Dar es Salaam, Tanzania. 428. Katanga, Lubumbashi, Zaire. 429, 430. 9 km N Kilifi, Kenya. 431. Kisenge, Dililo, Zaire. 432. Neuhelgoland, near Liuli, Tanzania. 433. Shimba Hills, Kenya. 434. Near Likkubula R., base of Mt. Mulanje, Malawi. 435. *Ischnothele cassetti* holotype. 436. Kitani Lodge, Tsavo West National Park, Kenya.

there are virtually no abdominal dorsum color differences between live coastal spiders and live spiders from the interior of Africa. Living adults from Kilifi and other coastal sites were often salmon-red on the lateral carapace and

coxae; interior specimens (Kitani and Malawi) were not.

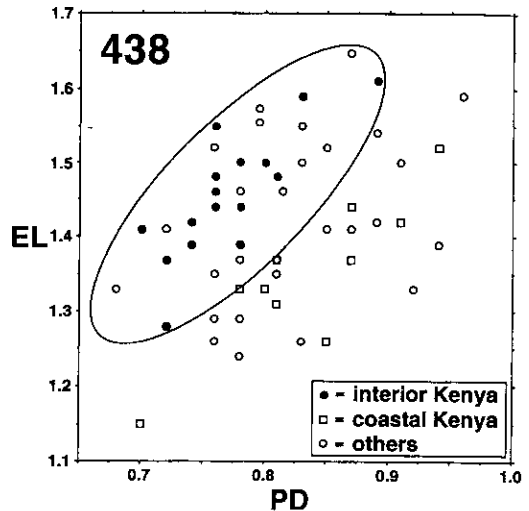
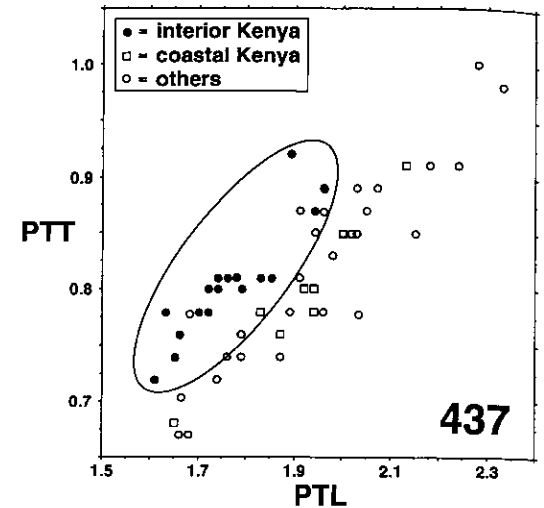
There is marked variation in some quantitative morphological characters, but no population sample is distinctively different.

The most variant populations are the two from the interior of Kenya (Kitani and Kibwezi), which have, on average, proportionally shorter and thicker male palpal tibiae (fig. 437) and proportionally longer emboli (fig. 438) than other populations. It is particularly interesting that all of the specimens ( $N = 10$ ) from the coastal region of Kenya—which are geographically close to these interior populations—have lower EL/PD values than the interior specimens ( $N = 18$ ) (figs. 437, 438). The shape of the male tibia I mating apophysis varies within and among populations such that no population is distinctive (figs. 391–402); a few specimens (figs. 397, 400, 401) exhibit some of the rough/wrinkled surface characteristic of the *T. rutenbergi* specimens examined (figs. 374–377). There is considerable but continuous variation in spermathecal form with no sample being distinctive (figs. 421–436); smaller, probably younger, specimens (fig. 429) tend to have fewer stalk spirals than do larger members (fig. 430) of the same population.

In summary, the analysis of variation does not support the hypothesis that there is more than one species of *Thelechoris* in Africa. Results of mating behavior studies (Coyle and O'Shields, 1990)—the absence of courtship behavior differences among populations from the coast and interior of Kenya and from Malawi, and the apparent success of mating attempts by Kenya coastal males with Kenya interior females and by Kenya interior males with Kenya coastal and Malawi females—are also consistent with the hypothesis that only one widespread species of *Thelechoris* occurs in Africa. The absence of geographic variation in the host-specific kleptoparasite *Kilifia inquilina* is also consistent with this hypothesis (Coyle and Meigs, 1992).

**DISTRIBUTION:** Southern Africa from Namibia and Angola east and north to Mozambique, Tanzania, and Kenya; also on Nossi Bé off the NW coast of Madagascar (map 4).

**MATERIAL EXAMINED: ANGOLA:** 26 mi S Chibemba, elev. 1170 m, Dec. 15, 1966 (E. Ross, K. Lorenzen; CAS), 1 ♀. **BOTSWANA:** Chobe Dist., Tsotsoroga Pan, 1930 (Fitzsimons, TM), juv.; Kgwebe Hills, N Maun, Mar. 30–31, 1976 (F. Wanless, A. Russell-Smith; MRAC 154.427, 154.435), juvs.; Maun, garden of government camp, Nov.



Figs. 437, 438. Scattergrams of male characters that vary geographically in *Thelechoris striatipes*. Measurements in mm. All data points from interior of Kenya included in ellipses. 437. PTT plotted against PTL. 438. EL plotted against PD.

10, 1975 (Wanless, Russell-Smith; MRAC 154.439), juv.; Maun, Maphaning, Pan, Apr. 3, 1976 (Wanless, Russell-Smith; MRAC 154.437), juv.; Maxwee, Mopane woodland, 1976 (Russell-Smith, MRAC 154.594), 1 ♂. **EAST AFRICA** (unable to find localities on maps): Konde Unuha (Fülleborn, ZMB 9455), 1 ♀; Kongoram, Aug. 1894 (Stuhlmann, ZMB 9456), juvs.; Mbusine, Aug. 27–29, 1888 (F. Stuhlmann, ZMH), 1 ♀, juvs. (*T. karschi* Bös-



enberg and Lenz syntypes); Langenburg (Fülleborn, ZMB 9450), many ♀, juvs. **KENYA:** Jimba, 3 km SE Gedi, elev. 100 m, second growth forest, Mar. 28, 1989 (Coyle, Bennett, AMNH), 3 ♂, 3 ♀, juvs.; Kibwezi, July–Oct. 1907 (Scheffler; ZMB 9445, 9446), 26 ♂, many ♀, juvs.; Kilifi, Mkwajuni Motel grounds, elev. 50 m, Mar. 27–28, 1989 (Coyle, Bennett, AMNH), 1 ♂, 2 ♀, juv.; 9 km N Kilifi on Kilifi Beach Rd., elev. 10 m, Mar. 27–29, 1989 (Coyle, Bennett; AMNH and NMK), 9 ♂, 6 ♀, juvs.; 30 mi NE Magadi, Jan. 3, 1960 (E. Ross, CAS), 1 ♀; Mariakani, Dec. 28, 1980 (V. Eagle, NMK), 1 ♂; Sabaki R., June 1979 (N. Scharff, ZMD), juv.; Shelly Beach Rd., few miles S Mombasa, old field with scattered trees, elev. 30 m, Apr. 1, 1989 (Coyle, Bennett; AMNH), 1 ♂, 1 ♀, juvs.; Shimba Hills Nat. Res., S Kwale, Hunter's Camp Site, elev. 1050 ft, forest patch in grassland, Mar. 31, 1989 (Coyle, Bennett; AMNH), 1 ♂, 1 ♀, juvs.; Public Camp Site, elev. 1100 ft, open forest and scrub, Mar. 31, 1989 (Coyle, Bennett; AMNH), 1 ♂, 2 ♀; 9 mi E Taveta, elev. 900 m, Oct. 30, 1957 (Ross, Leech, CAS), 1 ♀; Kitani Lodge, Tsavo West Nat. Park, 41 km S Mtito Andei, elev. 2500 ft, rock garden, April 15, 1989 (Coyle, Bennett; AMNH and NMK), 8 ♂, 23 ♀, juvs.; Wangi, N Lamu (Tiede, ZMB 9453), 1 ♂. **MADAGASCAR:** Nossi Bé (MNMH), 1 ♂ (*E. striatipes* Simon type), 1892 (ZMH), 1 ♀. **MALAWI:** Blantyre, yard and garden, elev. 1000 m, Apr. 22, 1989 (Coyle, Bennett; AMNH), 2 ♀; Cape Maclear, elev. 480 m, Apr. 22, 1989 (Coyle, Bennett; AMNH), juvs.; Chintheche, June 1978 (R. Joqué, MRAC 151.889), 1 ♂; Aug. 31, 1977 (R. Joqué, MRAC 153.287), juvs.; Chiro-mo, elev. 100 m, Feb. 26, 1958 (Ross, Leech; CAS), 1 ♀; near Likhubula R. at base of Mulanje Mtn., elev. 750–850 m, Apr. 18, 1989 (Coyle, Bennett; AMNH), 1 ♂, 4 ♀; Mkuwazi Hill Forest, 11 mi S Nkata Bay, elev. 590 m, Feb. 22, 1958 (Ross, Leech; CAS), 1 ♀; Mt. Mulanje, Mulanje, Likubula, elev. 900 m, Nov. 27, 1981 (R. Jocqué, MRAC 155.240), 1 ♂; Nkhata Bay, evergreen forest, 1978 (R. Joqué, MRAC 153.046), juv.; NW edge Zomba, elev. 1000–1200 m, Apr. 21, 1989 (Coyle, Bennett; AMNH), 1 ♀, juv.; 24–26 km N Zomba on route M1, elev. 750 m, earth road bank, Apr. 21–22, 1989 (Coyle, Bennett; AMNH), 1 ♂, 2 ♀, juv. **MOZAMBIQUE:**

(Tiesler, ZMB 9451), 1 ♀. **NAMIBIA:** Andara-Kavango, Okavango R., 1979 (M. Baddeley, MRAC 152.831), juv.; Katima Mulilo, woodland on bank of Zambesi R. near Nature Conservation Office, in small hollow tree, Oct. 20, 1987 (R. Jocqué, MRAC 168.678), 1 ♂; Ondangwa, elev. 1100 m, May 16, 1958 (Ross, Leech; CAS), 1 ♀; Tsumeb, June 13–19, 1911 (W. Michaelsen, ZMH), 1 ♀; 27 mi SE Tsumeb, elev. 1400 m, Dec. 19–20, 1966 (Ross, Lorenzen; CAS), 1 ♀. **TANZANIA:** Dar es Salaam (Stuhlmann; ZMB 9448, 9449), 3 ♂, many ♀, juvs.; Kipatimu, 1967 (Hofman, MRAC 133.307), juv.; Landsch. Irangi, Kondoa-Irangi, Jan. 1912 (E. Obst, ZMH), 1 ♂, 2 ♀; Mwanza, Kobamba, May 1927 (Bayet, MRAC 5034), juv.; 12 mi S Namanga, elev. 1425 m, Oct. 20, 1957 (Ross, Leech, CAS), 1 ♀; Neuhelgoland, near Liuli on shore of Lake Nyasa (Fülleborn, ZMB 9447), 6 ♂, many ♀; Sadani, July 1907 (Vosseler, ZMB 9452), 1 ♀; Zanzibar (Ruff, MNMH), 2 ♀. **ZAIRE:** Region Brgashi, Kilembe, July 1940 (Van Nuffelen, MRAC 27060), 1 ♀; Ht. Katanga, Gadotville, Kasampi, Oct. 1956 (M. Z. Baeq; MRAC 90550, 90293, 90241, 90243), 1 ♂, juvs.; Jadotstad, H. H., 1957 (A. DeDuker, MRAC 97106), 1 ♀; Kalemie (Albertville), 1960 (J. Verhaustraete, MRAC 116602), 4 ♀; Katanga, Kasapa, Nov. 21, 1973 (F. Malaisse, MRAC 145.534), 1 ♂, juvs., Nov. 1967 (G. Goffinet, MRAC 134.237), 1 ♂, juv.; Katanga, Katombe, June 1930 (Gerard, MRAC 5178), juvs.; Katanga, Kisenge, Dec. 1964 (A. Regnard, MRAC 127567), 2 ♂, 5 ♀, 1965 (A. Regnard, MRAC 129853), 2 ♂; Katanga, Lubumbashi (Eizabethville), June 1968 (G. Goffinet, MRAC 134.225), 2 ♀, Apr.–May 1966 (G. Godeaux, RMAC 131.513), 1 ♀, (Kirkvoorde; MRAC 27058, 27059), 2 ♀, Sept. 1961 (MRAC, 120489), 1 ♀, juv.; Katanga, Luiswishi, Oct. 9, 1974 (F. Malaisse, MRAC 146.219), 1 ♀, juv.; Kinda (L. Charliers, MRAC 12913), 1 ♂; Kisenge, Dilolo, Oct. 1963 (A. Regnard; MRAC 126094, 126032, 126027, 126026), 1 ♂, 5 ♀; Kivu, Mt. Kahuri, Feb. 1952 (H. Bomans, MRAC 85536), juv.; Kivu, Uvira, July 1961 (R. Kiss, MRAC 119907), 1 ♀, Oct. 19, 1961 (R. Kiss, MRAC 120352), 1 ♀, juv.; near Lubumbashi, Jan. 1962 (MRAC 121187, 121170, 121152, 120482), 1 ♂, 3 ♀; 8 mi W Luanza, elev. 1330 m, Jan. 15, 1958 (Ross, Leech; CAS), 1 ♂;

Mamima, Kasongo, Sept. 1959 (P. Benoit, MRAC 116604), 1 ♂; Parc National de L'Upemba, Gorges de la Pelenge, elev. 1250–1600 m, May 22, 1947 (M. DeWitte; MRAC 139.819, 139.820), 2 ♀; Kabenga, elev. 1240–1300 m, Apr. 6–9, 1949 (M. DeWitte, MRAC 139.825), 1 ♀, Kabwe, elev. 132 m, May 26–28, 1948 (M. DeWitte, MRAC 139.822), 1 ♀, juvs.; Kaswabilenga River, Lufira, elev. 680 m, Sept. 27–30, 1947 (M. DeWitte, MRAC 139.823), 2 ♂, 6 ♀, juvs.; Kilwezi, elev. 700–1000 m, Sept. 1–7, 1948 (M. DeWitte, MRAC 139.821), juv.; Lusinga, elev. 1810 m (M. DeWitte, MRAC 139.812), juv.; Mabwe R., E Lac Upemba, elev. 585 m, Aug. 14–24, 1947 (M. DeWitte; MRAC 139.815, 139.816, 139.817), juvs.; Munoi R., elev. 890 m, June 3–5, 1948 (M. DeWitte, MRAC 139.826), juvs.; 10 mi W Tshikapa, Aug. 9, 1957 (Ross, Leech, CAS), 1 ♀; 30 mi N Uvira, elev. 960 m, Aug. 22, 1957 (Ross, Leech, CAS), juv. ZAMBIA: Abercorn, elev. 1600 m, Feb. 16, 1958 (Ross, Leech; CAS), 1 ♀; Kalambo Falls, 33 km NW Mbala, elev. 1200 m, Jan. 18, 1958 (Ross, Leech; CAS), 1 ♀; Pemba, Aug. 1919 (Cassett, SAM B4666), 1 ♀ (*I. cassetti* Tucker type); Senga Hill, 40 mi S Abercorn, elev. 1580 m, Feb. 12, 1958 (Ross, Leech; CAS), 1 ♀. ZIMBABWE: Mazoe, 1899 (J. Darling, BMNH), 1 ♂, 6 ♀ (*I. mashonica* Po- cock types).

NATURAL HISTORY: Benoit (1971) regarded *T. striatipes* as the most widely distributed diplurid in Africa. This wide geographic range is presumably the result, in part, of this species' ability to inhabit a wide variety of natural and disturbed habitats. It has been collected from sea level to 1800 m elevation and recorded in the following habitats: *Brachystegia* woodlands, disturbed semi-open forest, "islands" of low forest in savanna (fig. 440), low scrubby second-growth forest, old fields with scattered trees and shrubs (fig. 439), woody vegetation and earth banks along edges of cultivated fields, and residential areas with trees, shrubs, hedges, or rock gardens. The highest population densities observed were 50 adult and near-adult webs in an 18-m-long hedge at Kilifi, Kenya (fig. 441), and about 200 adult and near-adult webs in a 35-m<sup>2</sup> "rock garden" (fig. 9) at Kitani, Kenya. Searches for *T. striatipes* webs in dense mesic forests were unsuccessful. Benoit (1971) re-



439



440

Figs. 439, 440. *Thelechoris striatipes* habitats. 439. End of Kilifi Beach Rd., 9 km N Kilifi, Kenya. 440. Forest "island" in savanna at Shimba Hills, Kenya.

marks that this species "avoids faithfully the forest regions of the Congo Basin." Webs were common in the following microhabitats: in crevices and limb junction crotches of trees and shrubs (from ground level to 4 m above ground), rock piles, and crevices and depressions in rock outcrops and earthen banks.

The web (figs. 5, 8, 9, 441, 442) typically consists of a tubular silk retreat (protected in a crevice, within a limb junction, or under or between rocks) opening out via one to three access tunnels to an exposed capture web, which is an irregular complex of interconnected horizontal and inclined sheets and funnels fanning out and supported by surrounding substrates. Adult capture webs generally cover 500–1500 cm<sup>2</sup> when viewed from above. Occasionally, peripheral portions of the capture webs of two or three individuals are interconnected. Silk lines often extend from capture sheets vertically upwards as



Figs. 441, 442. *Thelechoris striatipes*. 441. Web in shrubbery at Kilifi, Kenya, showing vertical lines above capture web. 442. Female approaching prey at Kitani Lodge, Tsavo West National Park, Kenya.

much as 60 cm to branches, leaves, or other substrates (figs. 8, 441). Perhaps these vertical strands also help support the capture web and/or knock down flying insects. Capture webs are capable of at least temporarily entangling ants and other arthropods in the manner of similarly constructed *Ischnothele*

webs (Coyle and Ketner, 1989). Often much organic debris, especially leaves and pieces of leaves, is found in these webs, particularly in and near the retreat. These large, apparently long-lived webs often support numerous spider, insect, and other arthropod cohabitants, which function as kleptoparasites, commensals, and/or spiderling predators (Forster and Murphy, 1986; Baert and Murphy, 1987; Coyle and Meigs, 1992).

Prey capture by *T. striatipes* (fig. 442) is similar to that of *Ischnothele* species and involves the same advance-pause-advance approach (Coyle and Ketner, 1990). During most daylight hours, the spider remains within its retreat and is very reluctant to emerge onto the capture web in response to struggling prey or vibrations simulating such prey. At night the spider is often outside the retreat mouth in an access passageway and can readily be lured onto the capture web by vibrations. At least some spiders are not reluctant to approach prey during the early daylight hours. Some individuals captured isopods and grasshoppers that were dropped into their webs. Remains of the following prey were found in retreats of the Kenyan spiders: ants, beetles, millipedes, hemipterans, spiders, isopods, cicadas (30-mm wing length), winged termites, wasps, flies, grasshoppers, and snails. The first three taxa were especially abundant; ants and beetles ranged widely in diversity and size, from tiny to large (beetle elytra of 10–15 mm were rather common).

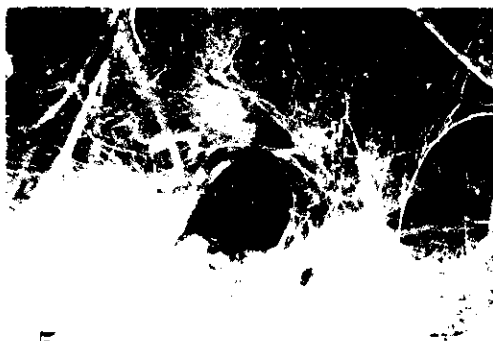
See Coyle and O'Shields (1990) for a description and discussion of courtship and mating behavior in *T. striatipes*. Male maturation and behavior may be regulated so that mating occurs during rainy seasons. This is suggested by the presence of adult males in their own webs at Kilifi and other coastal areas just before the onset of the late March–May rainy season, the presence of adult males primarily in female webs at Kitani during this rainy season, and the absence of adult males in the Malawi populations after the November–April rainy season of that region. The collection of many males from Kibwezi, Kenya, by Scheffler sometime between July and October 1907 does not appear to support this hypothesis, although a short rainy season does occur in that area in October and/or November.

Egg sacs are constructed in the wall of the female's retreat (fig. 420) and are somewhat elongate and hammock-shaped (14–25 mm long, 9–16 mm wide, 7–15 mm thick:  $N = 6$ ). The one observation of construction behavior revealed that the bottom (hammock-like) sheet of the sac is spun first, the eggs are deposited in a mass in its center, and then the cover layer of silk (which becomes part of the retreat lining) is spun over the eggs and attached peripherally to the bottom sheet. The female appears to spend most of her time in the retreat positioned over the surface of the egg sac as if monitoring/protecting the sac. Of nine egg sacs collected from the coastal region of Kenya (March 28–April 1), two contained eggs only, one contained hatching eggs, four contained second postembryonic stage spiderlings, and two contained only the exuviae of emerged spiderlings. Of six egg sacs collected from Kitani, Kenya (April 15), one contained only eggs, two contained second postembryonic stage spiderlings, two contained only the exuviae of emerged spiderlings, and one contained a mantispid pupa within its yellow cocoon, remnants of consumed eggs and spiderlings, and a few uninjured third postembryonic stage spiderlings. I am aware of only one other report of a mantispid associated with a mygalomorph spider, the Japanese ctenizid, *Latouchia typica* (Kishida) (Kishida, 1929; Bristowe, 1932; K. Hoffman, personal commun.). One egg sac was collected in Malawi (April 18); it contained hatching eggs. Thirteen spiders oviposited in captivity between April 9 and August 20, 1989; three of these consumed their eggs within 4 days of oviposition (Willey and Coyle, 1992).

Careful examination of these broods confirms the postembryonic developmental pattern described for *T. striatipes* by Holm (1954), one that is essentially the same as that described by Galiano (1972) for *Ischnothele*, by Yoshikura (1955, 1958) for *Heptathela* and *Atypus*, and by Coyle (1971) for antro-

diaetids. The cuticle of the first postembryonic stage (Holm, 1954: figs. 4a, 4b) splits soon after the spiderling emerges from the chorion and is shed attached to the chorion. The second postembryonic stage spiderlings (also called the "first free postembryonic stage" by Holm) are initially unpigmented, have only rudimentary fangs, eyes, tarsal claws, and spigots (Galiano, 1972: figs. 3–10), and move their appendages only slowly when disturbed. The third postembryonic stage spiderlings are well pigmented (seven or eight chevrons on abdominal dorsum), have all the aforementioned structures well developed, are active, and emerge from the egg sac. Development in the egg sac appears to be remarkably rapid; in captivity at 72–75°F, oviposition to hatching took less than 11 days ( $N = 2$ ) and oviposition to emergence of the third postembryonic stage spiderlings from the sac took 14 days for one brood and 17 for another. It is not known how long spiderlings remain in the maternal web after emerging from the egg sac, but several webs at Kitani contained many postemergent spiderlings, and in a few adult webs (not at Kitani) one to a few small postspiderling juveniles were present (one of these webs also contained an egg sac with spiderlings).

In nature, brood size ranged from 56 to 277 (mean =  $168 \pm 58$ ,  $N = 10$ ); the coastal Kenya broods tended to be smaller ( $56\text{--}235$ ,  $152 \pm 52$ ,  $N = 7$ ) than those from Kitani ( $143\text{--}277$ ,  $205 \pm 55$ ,  $N = 3$ ). Broods oviposited in captivity tended to be smaller ( $44\text{--}134$ ,  $87 \pm 27$ ,  $N = 12$ ). Two spiders from Kitani oviposited twice in captivity; in one case only 17 days elapsed between oviposition, in the other 75 days elapsed. Egg size was recorded for 10 eggs in each of five broods: the eggs of two broods of 134 and 235 eggs produced in nature by coastal Kenya populations ranged from 0.98 to 1.26 mm in diameter; those of three smaller broods (52, 80, 117) produced in captivity by Kitani spiders ranged from 1.22 to 1.46 mm in diameter.

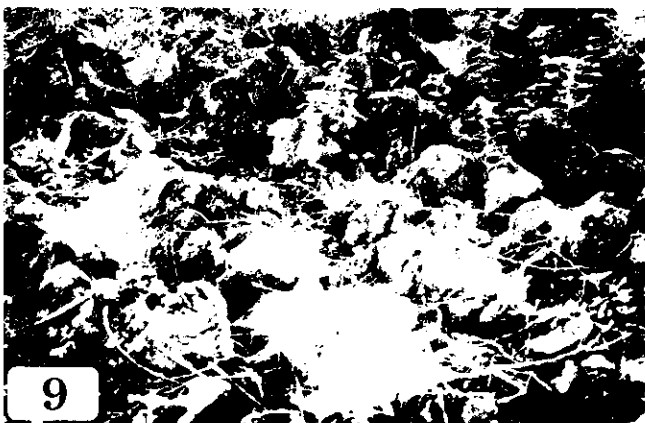


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Figs. 3–5. 3. Male *Ischnothele guianensis* from Puerto Maldonado, Peru. 4. Female *Andethele tarma* approaching prey on capture web; Cochas Bajo, Peru. 5. Female *Thelechoris striatipes* in mouth of retreat; Kilifi, Kenya.



8



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Figs. 8, 9. Webs and habitat of *Thelechoris striatipes* at Kitani Lodge, Tsavo West National Park, Kenya. 8. Web, showing retreat entrance and vertical lines above capture web. 9. Several webs, some of which are contiguous, on rocks.

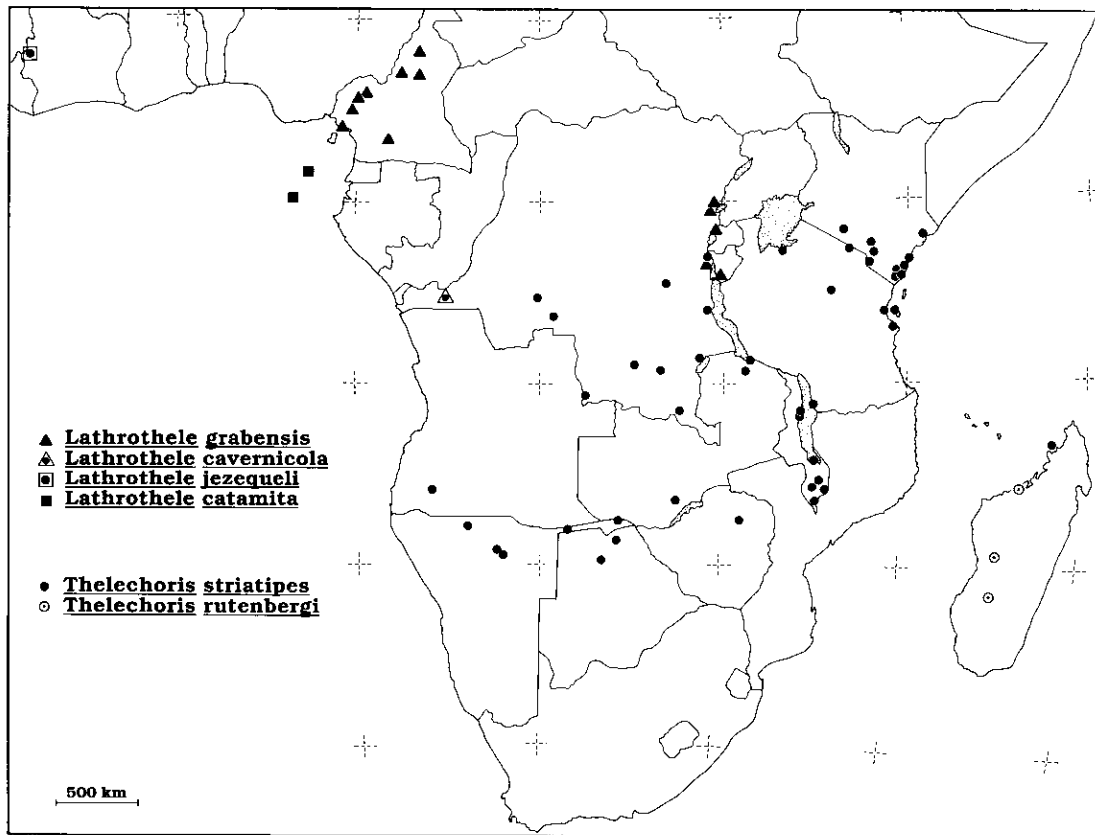


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Figs. 48–55. SEM views of spigots on posterior lateral spinnerets of female. 48–52. Spigot bases. 52. *Thelechoris striatipes*. 53–55. Spigot tips. 55. *T. striatipes*. All scale bars 10  $\mu$ m.



Map 4. Africa and Madagascar, showing distribution of *Lathrothele grabensis*, *L. cavernicola*, *L. jezequeli*, *L. catamita*, *Thelechoris rutenbergi*, and *T. striatipes*.