



## **SOME PROSTIGMATID MITES (ACARINA) FROM ANDAMAN AND NICOBAR ISLANDS**

By

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(With 7 Text-figures)

Our knowledge of the mite fauna of Andaman and Nicobar Islands is limited. Prasad (1974) in his catalogue of Indian mites listed only two species from these islands. Recently, the senior author recorded 5 species of Tetranychidae (Gupta, 1976) and 18 species of Phytoseiidae (Gupta, 1977) from these islands. Later, two more species of Phytoseiidae were described by Gupta (in press).

The Andaman and Nicobar Islands comprise of 348 Islands of various sizes distributed North-South between 6° and 14°N. latitudes and 92°E. longitude in the South East Bay of Bengal. The Andaman Islands are in three main groups, i. e. North Andamans, Middle Andamans and South Andamans. Of these, the senior author had an opportunity to survey a part of Middle and South Andamans, Little Andamans and Car Nicobar from Nicobar group of islands during December, 1972 to January, 1973. This enabled him to make a fairly representative collection of mites particularly those from plants.

The present study revealed 30 species of prostigmatid mites in 8 families and 20 genera which included 2 new genera and 7 new species. Besides, 7 genera and 9 species are recorded here for the first time from Indian territory. A comprehensive key to the families, genera and species of prostigmatid mites treated here is given.

Studies revealed that due to heavy rainfall and luxuriant growth of vegetation the mite fauna of Andaman and Nicobar Islands is very rich and varied. An intensive survey of these areas therefore may yield many interesting species.

All the mites reported here were collected by the senior author. The measurements given in the text are in microns. The classification of Prostigmata followed here is that of Meyer *et al.* (1973). Types and other material treated here are deposited in the Zoological Survey of India, Calcutta.

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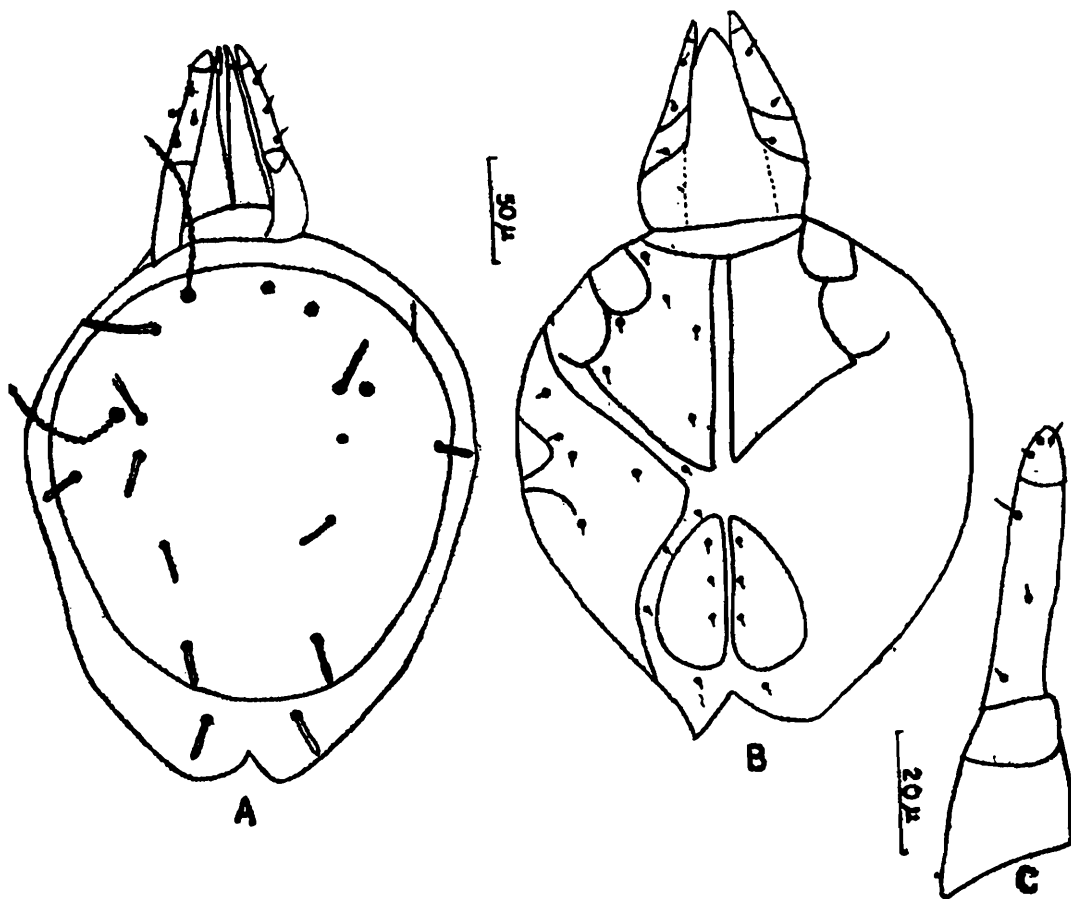
\* Present Address : *Zoological Survey of India, Calcutta*

## Family I CUNAXIDAE

Genus 1. *Neocunaxoides* Smiley1. *Neocunaxoides pradhani* sp. nov.

(Text. fig.—1)

*Female*.—Palp 3 segmented, 112, long, almost as long as hypostome, chaetotaxy of palp, trochanter—none, femur—setae not discernible; tibiotarsus—2 outer lateral (one basal, one distal), one mediodorsal, 3 simple setae distally and a short strong claw. Chelicera broad basally, gradually tapering distally, extending beyond base of tibiotarsus; movable digit sharp, dorsum of chelicera tuberculated. Dorsally propodosoma and hysterosoma covered with one single shield;



Text-fig. 1. *Neocunaxoides pradhani* sp. nov., A—Dorsal surface of female (legs omitted), B—Ventral surface of female (legs omitted), C—Palp.

2 pairs of sensory setae and 2 pairs of thick rod like setae (slightly expanded distally) are present in propodosomal region. Ventrally, 2 distinct plates with coxae I and II divided medially, coxae III and IV coalesced forming 2 elongate strong lateral plates. Idiosoma anterior ventral plates each with 6 pairs of simple setae; 5 pairs of simple

setae on lateral ventral plates ; 4 pairs of setae on genital shield. Legs I and II directed anteriorly, legs III and IV directed posteriorly. Chaetotaxy of basifemur, telofemur, genu, tibia and tarsus of legs : 1-2, 3, 8, 7, 14—not discernible ; II—2, 3, 7, 6, 14+1 solenidion ; III—not discernible 3, 6, 14, 10 ; IV—not discernible 2, 6, 5, 9+1 trichobothrium. Body 300 long, 224 wide.

*Holotype*.—♀, INDIA ; Andaman Islands, Port Blair, South point, on Jack fruit (*Artocarpus integrifolia* L.), 1. i. 1973. (Z.S.I. Reg. No. 3144/17)

*Paratype*.—1♀, same data as for holotype. (Z.S.I. Reg. No. 3145/17)

*Remarks*. - It differs from *Neocunaxoides andrei* (Baker and Hoffman, 1948) in lacking mushroom shaped seta on palp tibiotarsus.

The species is named after Mr. K. S. Pradhan, formerly of Zoological Survey of India who lead the survey party to these islands.

## Genus 2. *Cunaxoides* Baker and Hoffman

### 2. *Cunaxoides nicobarensis* sp. nov.

(Text. fig. 2)

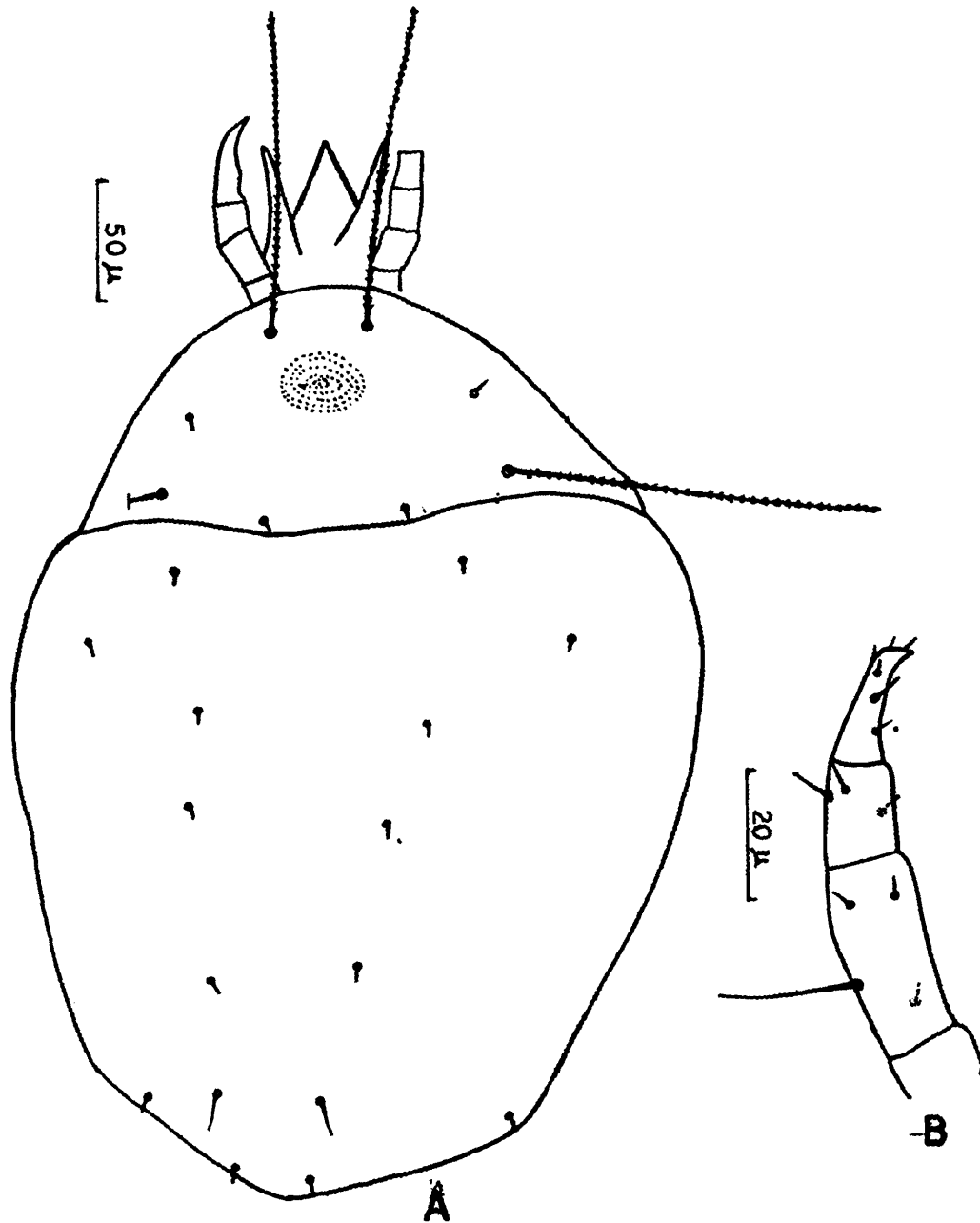
*Female*.—Body spindle-shaped with a distinct furrow. The dorsum finely striated and tuberculated. Propodosoma hemispherical with 2 pairs of long sensory setae and 2 pairs of short simple setae ; eyes scarcely visible. Hysterosoma with 8 pairs of simple setae arranged as in figure. Venter with 6 pairs of short and simple setae ; 4 pairs of simple setae on genital plate. Palp 86 long, 3 segmented, 1st segment with one outer lateral seta, one proximal midventral seta and 2 distal middorsal setae ; second segment with one inner midventral, one outerlateral and one middorsal setae ; 3rd segment with 2 innerlateral setae, distal one longer than proximal one and 3 setae on the distal portion, Chelicera broad basally and tapering distally with small chela, chelicera reaches upto middle of 3rd palpal segment. Legs with 2 claws on each ; chaetotaxy of basifemur, telofemur, genu, tibia and tarsus of legs : I—2, 4, 5, 4+1 solenidion. 9+1 solenidion ; II—3, 3, 4, 5, 9+1 solenidion ; III—3, 3, 5, 5, 6 ; IV—1, 3, 4, 4, 6 ; coxae I and II contiguous, coxae III and IV also contiguous. Body 451 long, 280 wide.

*Male*.—Body 390 long, 250 wide ; other characters being same as of female.

*Holotype*.—♀, India ; Car Nicobar Isl., Kakana, on an unidentified host, 25. xii. 1972. (Z.S.I. Reg. No. 3146/17)

*Paratypes*.—2 ♀♀, 2 ♂♂, with the same data as for holotype. (Z.S.I. Reg. No. 3146/17)

*Remarks*.—This new species differs from *Cunaxoides croceus* (Koch 1838) in the chaetotaxy of dorsum, in the chaetotaxy and structure of palp.



Text-fig. 2. *Cunaxoides nicobarensis* sp. nov., A—Dorsal surface of female (legs omitted), B—Palp.

### Genus 3. *Indocunaxa* Gen. nov.

*Diagnosis*.—Dorsum covered with one shield on propodosomal region and that is weakly granulated, hysterosoma without shield,

variously striated. Palpi—4 segmented, gnathosoma enormously large, palp tibia and tarsi modified for clasping purpose with spine like setae ; all legs long, tarsi I-IV tapering with a pair of claws.

Type species : *Indocunaxa smileyi* sp. nov.

*Remarks.*—This genus is distinguished from *Dactyloscirus* Berlese as diagnosed by smiley (1975) by its enormously large gnathosoma with clasping modification of palp, tibia and tarsus.

### 3. *Indocunaxa smileyi* sp. nov.

(Text—fig. 3)

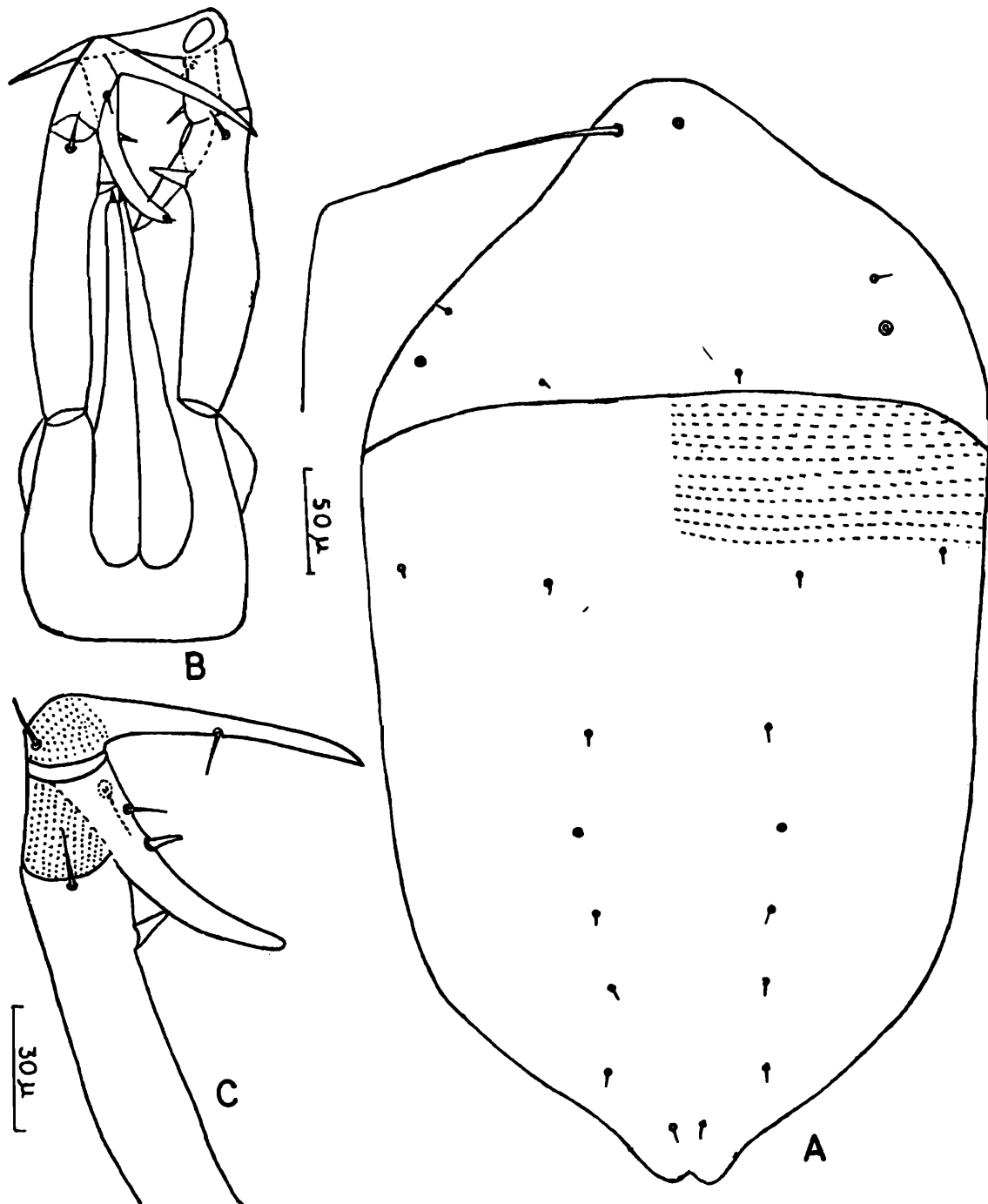
*Female.*—Dorsum with propodosomal shield with 2 pairs of long sensory setae ; propodosomal shield weakly granulated. Palpi—4 segmented, 1st segment with one small seta mediodorsally, one strong seta distally, one strong claw on the inner surface and another strong claw close by on the ventral surface ; the second segment with one long fine seta basally facing inward, one strong spine like seta at the distal end and another stout and pointed seta on the outer surface ; 3rd and 4th segment being clasping organ. Fixed digit with a long pointed seta and the movable digit with a strong spine medially and another more strongly developed spine at the tip. Chelicera reaches barely upto the tip of the first palpal segment ; gnathosoma squarish at base. Hysterosoma with fine striae and 8 pairs of setae, all being simple and short. Ventrally coxae I and II contiguous, coxae III and IV also contiguous ; 7 pairs of setae present ventrally between coxae II and posterior tip of body ; 4 pairs of setae present on the genital plate. Chaetotaxy on basifemur, telofemur, genu, tibia and tarsi of legs : I—2, 4, 5, 5+1 duplex setae, 16+4 solenidion, II—3, 5, not discernible, not discernible, 15 ; III—3, 5, 4, 4, 16 ; IV—2, 4, 6, 5, 14.

*Holotype.*—♀, INDIA ; Andaman Isl., Bednabad, on cane (*Calamus tenuis* Roxb.), 21 xii. 1972. (Z.S.I. Reg. No. 3147/17)

*Paratype.*—1 ♀, Car Nicobar Isl., Sawai, on an unidentified host, 24. xii. 1972. (Z.S.I. Reg. No. 3148/17)

*Remarks.*—This species differs from all the known species by its gnathosoma and by its palpal character.

This species is named after Dr. R. L. Smiley of the United States Dept. of Agriculture, Beltsville, U. S. A. for his valuable contribution to the family Cunaxidae.



Text-fig. 3. *Indocunaxa smileyi* sp. nov., A—Dorsal surface of female (legs omitted), B—Gnathosoma, C—Palp.

#### Genus 4. *Cunaxa* von Heyden

#### 4. *Cunaxa setirostris* (Hermann)

*Scirus setirostris* Hermann, 1805. *Mem. Apteologique* : 62

*Diagnosis.*—Strong spine present on the inner anterolateral margin of the palpal telofemur.

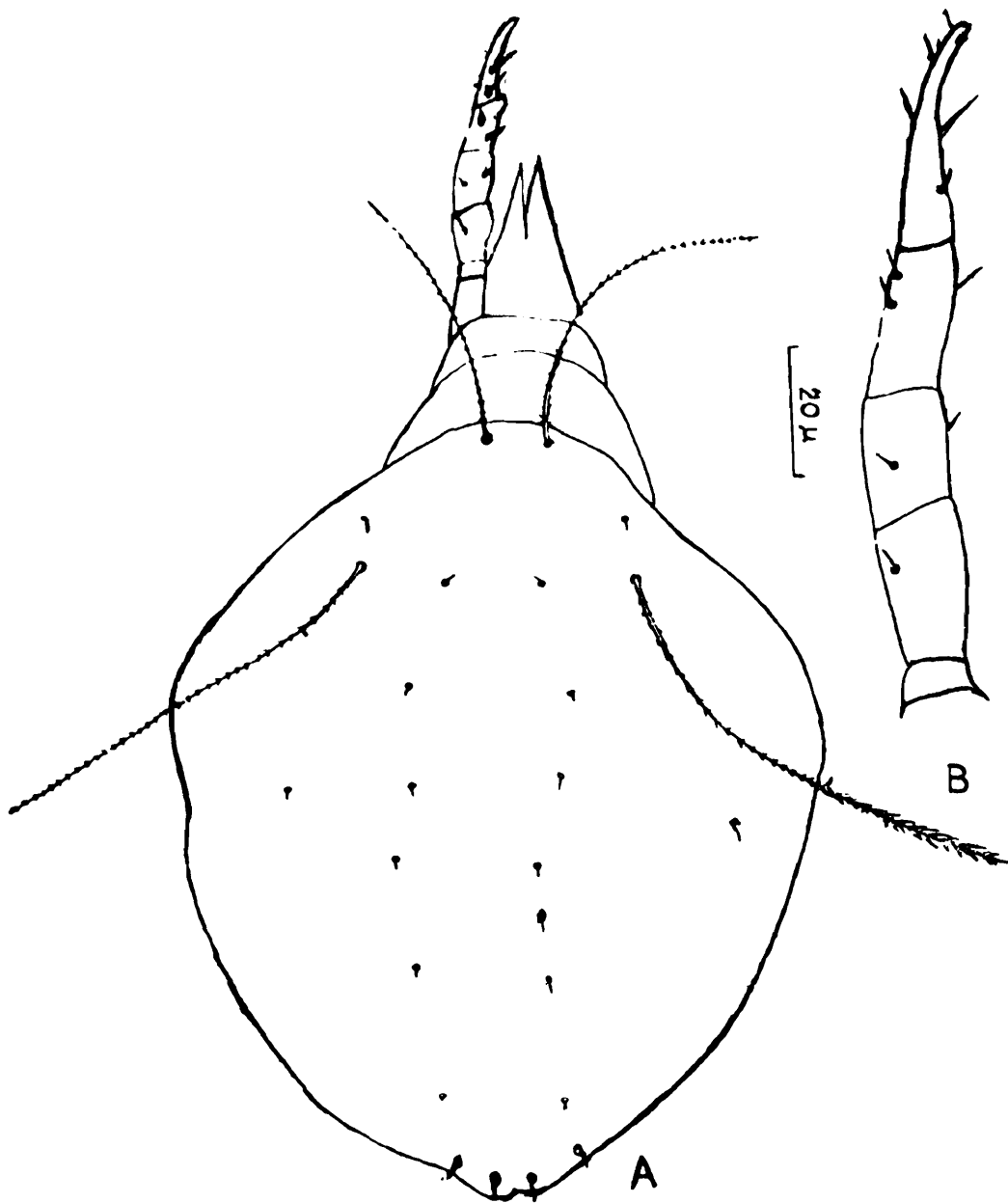
*Material examined.*—2 ♀ ♀, Andaman Isl., Port Blair, Zoological-

Horticultural garden, on *Tabernaemontana coronaria* Willd., 12. xii. 1972.

*Distribution.*—Cosmopolitan.

5. *Cunaxa myabunderensis* sp. nov.

( Text-fig. 4 )



Text-fig. 4. *Cunaxa myabunderensis* sp. nov., A—Dorsal surface of female (legs omitted), B—Palp.



*Female*.—Palpi 5 segmented, 172 long, exceeding length of hypostome; chaetotaxy of palpus; trochanter—nil; basifemur—one outerlateral seta; telofemur—one weak spine like seta on the inner surface and one outerlateral simple seta; genu—inner surface with a sharp spine like seta and one small seta anterolaterally with one anteromedian seta; tibiotarsus with one small sharp seta on the inner surface, anterior to this one long, sharp spine like seta on the inner surface, opposite to strong spine a short seta, anterior to it another short seta, in addition one short seta at the tip—all being almost of same length. Chelicera broad at base, gradually tapering anteriorly extending upto tip of telofemur; fixed digit absent, movable digit not well discernible. Propodosomal shield indistinct, 2 pairs of finely branched sensory setae and 2 pairs of short setae. Hysterosomal region with fine striations with 6 pairs of short setae ( $L_1$ ,  $D_1$ - $D_5$ ). Coxae I and II almost contiguous, coxae III and IV also contiguous. Coxal setal formula: 2: 1: 3: 1. Five pairs of setae on the ventral surface between coxae II and posterior tip of body excluding genital and anals. Genital plate with 4 pairs of setae, all of same length. Legs I and II directed anteriorly, III and IV directed posteriorly; leg IV longest. Tarsi I-IV attenuated, each with 2 claws. Body 420 long, 300 wide. Leg chaetotaxy of basifemur, telofemur, genu, tibia and tarsus of legs: I—3, 4, 5+1 solenidion+1 duplex seta, 3+1 solenidion+1 duplex seta, 17+not discernible solenidion; II—2, 4, 5+1 solenidion, 5+1 solenidion, 17+1 solenidion; III—2, 3, 4, 4+1 solenidion, 15+not discernible: IV—1, 4, 4, 12.

*Male*.—Body 380 long, 250 wide; other characters being same as of female.

*Holotype*.—♀, INDIA: Andaman Isl., Myabunder Isl., on wood apple (*Aegle marmelos* Corr.) 10. i. 1973. (Z.S.I. Reg. No. 3149/17)

*Paratypes*.—1♂, data same as for holotype (Z.S.I. Reg. No. 3149/17); 1♀, Nicobar Isl., Chuckchucha, on an undetermined host, 24. xii. 1972. (Z.S.I. Reg. No. 3150/17)

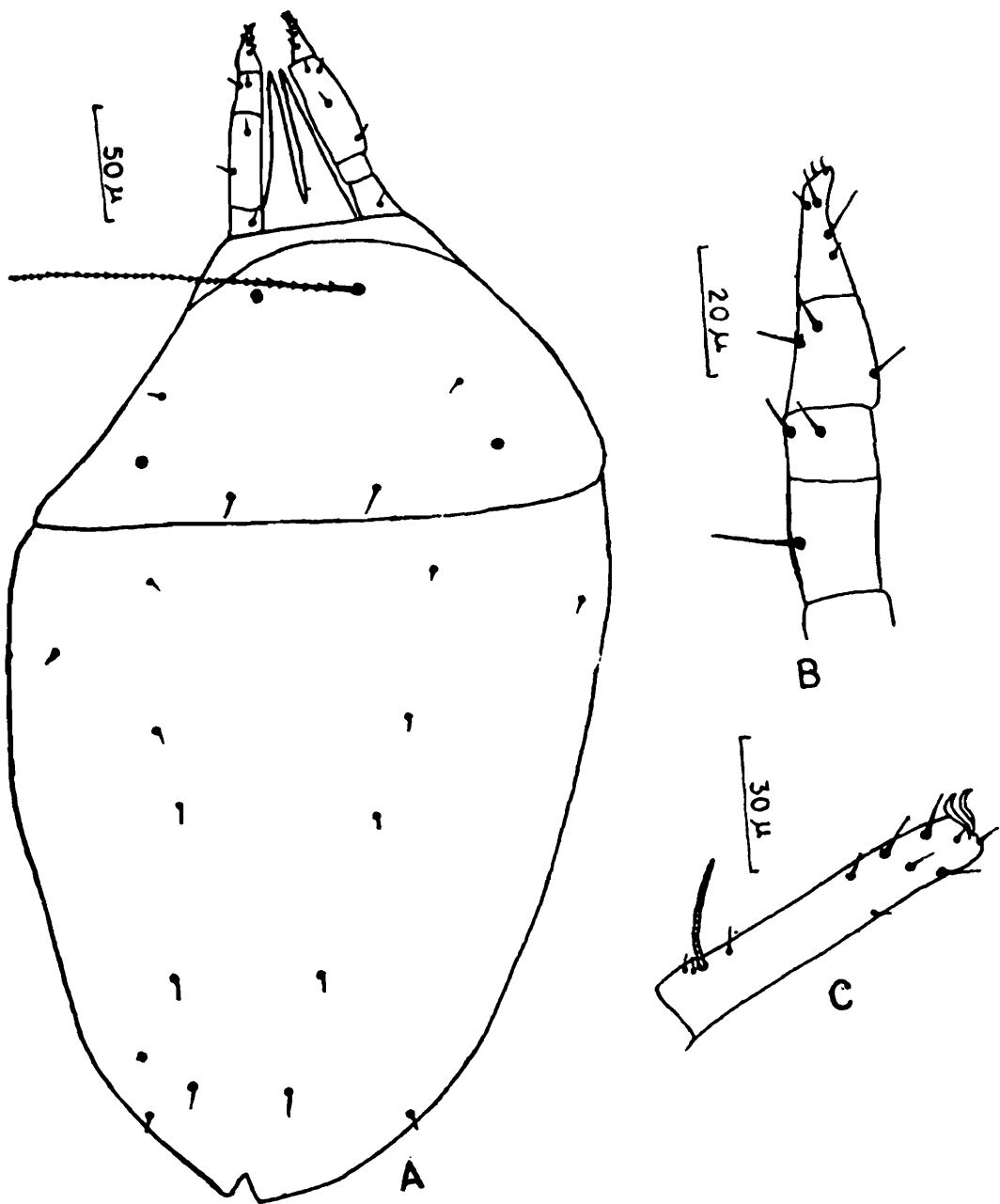
*Remarks*.—This new species differs from *C. setirostris* (Hermann) and *C. cynodona* sp. nov., in relative length of chelicera and in chaetotaxy of palp segments.

## 6. *Cunaxa cynodona* sp. nov.

(Text-fig. 5)

*Female*.—Palpi 5 segmented, 129 long, slightly exceeding the length of hypostome. Chaetotaxy of palp: trochanter—nil, basifemur with one outer lateral seta; telofemur with one outer and one anterodorsal seta; genu—one outerlateral, one innerlateral and one anterodorsal—all being simple; tibiotarsus—2 unequal simple setae on innerlateral surface, proximal one small, distal one larger, 4 setae present on the

anterior tip. Chelicera pointed, broadest at base, extending beyond palp genu, fixed digit absent, movable digit small with one seta. Gnathosoma subtriangular, attenuate distally. Propodosoma with a shield, hysterosoma without shield with fine striations, setae  $L_1$ ,  $D_1$ - $D_5$  shorter. Coxal setal formula : 2 : 1 : 2 : 1. Ventrally five pairs of simple setae located between coxae II and distal tip of body ; four pairs of setae on genital plate, all similar in length. Leg IV being longest ; tarsi longer than other leg segments ; tarsi I-IV with 2 claws. Body 430 long, 300 wide. Leg chaetotaxy of basifemur, telofemur, genu, tibia and tarsus of legs : I—2, 3, 5, 4+1 duplex seta+1 solenidion ; II—4, 2, 4+1 solenidion, 3+1 solenidion, 13+1 solenidion III—2, 2, 4, 4, 14 ; IV—1, 2, 4, 3, 10.



**Text-fig. 5.** *Cunaxa cynodona* sp. nov., A—Dorsal surface of female (legs omitted), B—Palp, C—Tarsus I.

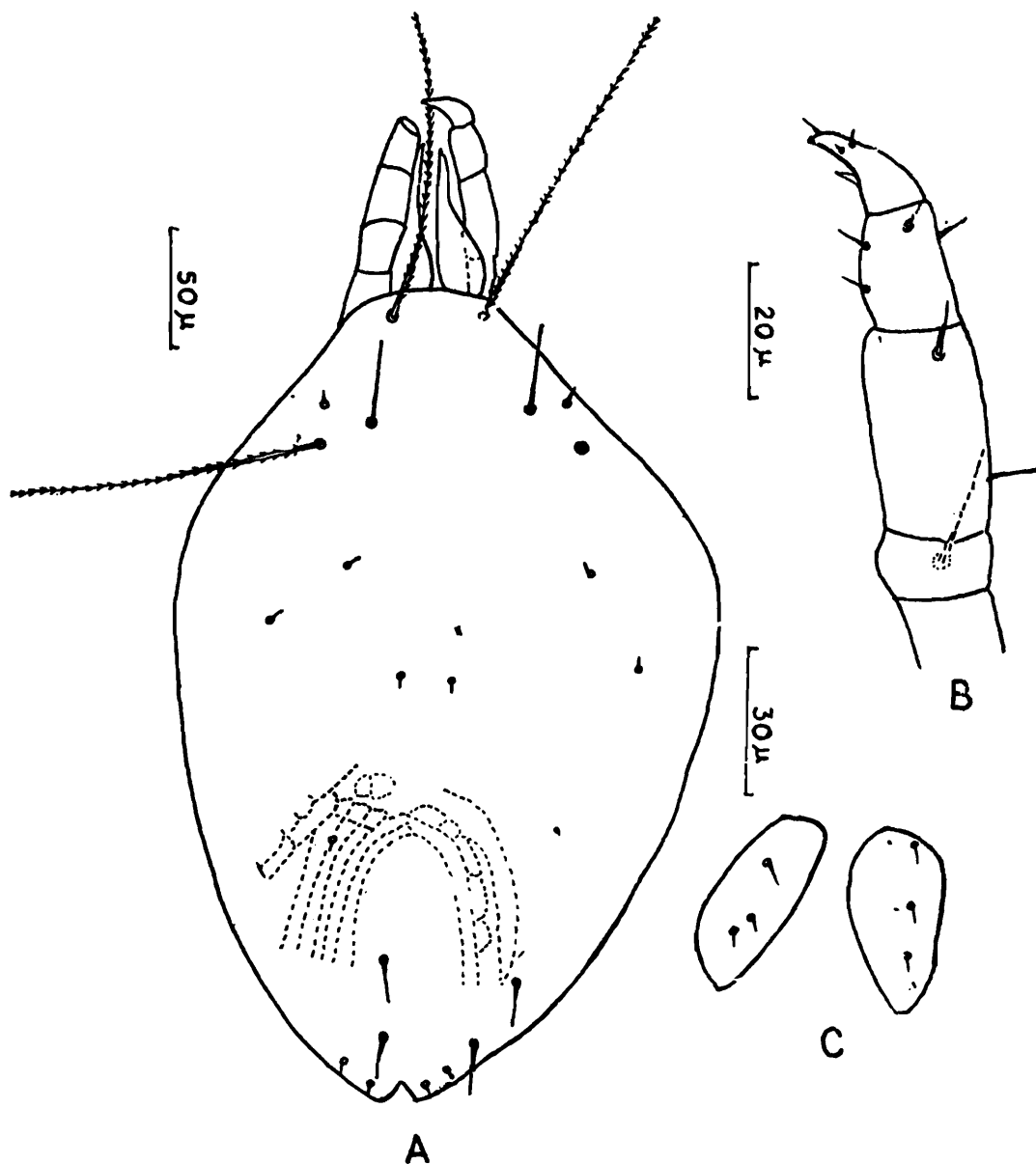
*Holotype*.—♀, INDIA, Car Nicobar Isl., on *Cynodon* sp., 25. xii. 1972. (Z.S.I. Reg. No. 3151/17)

*Paratypes*.—1 ♀, data same as for holotype (Z.S.I. Reg. No. 3151/17); 3 ♀♀, Andaman Isl.; Ferrargunj, on black berry (*Sizigium cuminii*), 14. i. 1973. (Z.S.I. Reg. No. 3152/17)

*Remarks*.—It differs from *C. taurus* (Kramer) in lacking large mesal process between tibia and tarsus.

7. *Cunaxa bambusae* sp. nov.

(Text-fig. 6)



Text-fig. 6. *Cunaxa bambusae* sp. nov., A—Dorsal surface of female (legs omitted), B—Palp, C—Genital plate.

*Female*.—Palpi 5 segmented, 130 long, chaetotaxy of palp : trochanter—nil, basifemur—one midventral seta ; telofemur—one outerlateral and one anteromiddorsal seta ; genu—2 setae innerlateral, one outerlateral and one anteromiddorsal ; tibiotarsus—one strong spine on innerlateral surface, anterior to it one small seta and 2 setae on outerlateral surface, anterior one longer and stronger. Chelicera broad at base, gradually tapering anteriorly, movable digit sharp. Gnathosoma somewhat covered under propodosoma. Propodosoma apparently with no shield, with 2 finely branched sensory setae and 2 fairly long simple setae. Hysterosoma without shield and with setae  $L_1$ ,  $D_1$ - $D_5$   $D_4$  and  $D_5$  fairly long. Coxal setal formula 3 : 1 : 2 : 2. Five pairs of setae present ventrally between coxae II and caudal tip of body (excluding those on genital and anal regions) ; 4 pairs of setae on genital plate, legs I and II broken, chaetotaxy of basifemur, telofemur, genu, tibia and tarsus of legs : III—1, 4, 4, 4, 14 ; IV—1, 2, 4, 4, 16. Body 409 long, 275 wide.

*Holotype*.—♀, INDIA ; Andaman Isl., Ferrargunj, on bamboo (*Banbusa arundinacea* Willd.), 6. i. 1973. (Z.S.I. Reg. No. 3153/17)

*Paratype*.—1 ♀, Data same as for holotype. (Z.S.I. Reg. No. 3153/17)

*Remarks*.—This species is easily differentiated from *C. myabunderensis* sp. nov. and *C. cynodona* sp. nov. in having chelicera slightly longer than tibiotarsus. Besides, they also differ in palpal chaetotaxy. Further, it is distinguished from *C. womersleyi* Baker & Hoffman, 1948. in lacking spur like femoral process.

## Family II. TENUIPALPIDAE

### Genus 5. *Brevipalpus* Donnadieu

#### 8. *Brevipalpus essigi* Baker

*Brevipalpus essigi* Baker, 1949. *Amer. midl. Nat.* 42 : 367.

*Diagnosis*.—Hysterosoma with reticulations evenly distributed along dorsomedian ridge ; dorsocentral hysterosomals setiform ; anterior and posterior medioventrals greatly unequal, tarsus II with single sensory rod and hysterosoma with six pairs of dorsolaterals.

*Material examined*.—1 ♀, Car Nicobar Isl., Lapathi, on sponge gourd (*Luffa aegyptica* Mill.), 28. xii. 1972.

*Distribution*.—California, MEXICO ; INDIA : Car Nicobar Isl.

*Remarks*.—This species is reported here for the first time from India.

Genus 6. *Tenuipalpus* Donnadieu9. *Tenuipalpus quadrisetosus* Lawrence

*Tenuipalpus quadrisetosus* Lawrence, 1940. *J. ent. Soc. Sth. Afr.*, 3 : 114.

*Diagnosis.*—Hysterosoma without a flagellate dorsolateral seta ; dorsocentral hysterosomals well developed and leaf like.

*Material examined.*—2 ♀ ♀, Andaman Isl., Manclutan, on an undetermined host, 17. xii. 1972.

*Distribution.*—AFRICA : Natal ; INDIA : Andaman Isl.

*Remarks.*—This species is reported here for the first time from India.

10. *Tenuipalpus hastaligni* De Leon

*Tenuipalpus hastaligni* De Leon, 1956. *Florida Ent.* 39 (2) : 57.

*Diagnosis.*—Podosoma with one pair of anterior medioventral and one pair of posterior medioventral ; hysterosoma with a differentiated expansion anterior to coxae III, second dorsolateral longer than distance between second and third dorsolaterals ; third dorsal propodosomal attenuate and about 1/2 as long as distance between its base and posterior margin of propodosoma.

*Material.*—2 ♀ ♀, Andaman Isl. Port Blair, Zoo. Horticultural garden, on black berry (*Sizigium cumini* L.), 11 xii. 1972.

*Distribution.*—U.S.A. : Florida ; INDIA : Andaman Isl.

*Remarks.*—This species is recorded here for the first time from India.

11. *Tenuipalpus micheli* Lawrence

*Tenuipalpus micheli* Lawrence, 1940. *J. ent. Soc. Sth. Afr.* 3 : 111.

*Diagnosis.*—Dorsocentral hysterosomals minute and setiform ; anterolateral expansion of hysterosoma broad and subquadrate.

*Material examined.*—2 ♀ ♀, 2 ♂ ♂, Andaman Isl. Manclutan, on arecanut (*Areca catechu* L.) 17. xii. 1972.

*Distribution.*—AFRICA : Natal, INDIA : Karnataka, Andaman Isl.

*Remarks.*—Nagesha Chandra & Channa Basavanna (1974) reported this species from India on *Sizigium* sp,

### 12. *Tenuipalpus tetrazygiae* De Leon

*Tenuipalpus tetrazygiae* De Leon, 1956. *Florida ent.* 39 (2) : 55.

*Diagnosis.*—Hysterosoma with 4 pairs of nonflagellate setae caudally and dorsocentral hysterosomals narrowly lanceolate.

*Material examined.*—2 ♀ ♀, Andaman Isl, Chiriatapu, on cashewnut (*Anacardium occidentale* L.), 20. xii 1972.

*Distribution.*—U. S. A. : Florida ; INDIA : Andaman Isl.

*Remarks.*—This species is recorded for the first time from India.

### Family III BDELLIDAE

#### Genus 7. *Bdellodes* Oudemans

#### Subgenus *Hoploscirus* Thor

### 13. *Bdellodes (Hoploscirus) affinis* Atyeo

*Bdellodes (Hoploscirus) affinis* Atyeo, 1963. *Bull. Univ. Nebraska Sta. Mus.*, 4 (8) : 185-187.

*Diagnosis.*—Chelicera with a single seta ; palpal tibiotarsus with 8 setae.

*Material examined.*—1 ♀, Andaman Isl. : Rangat Isl., Panchawati, on arecanut (*Areca catechu* L.), 8. i. 1973.

*Distribution.*—AUSTRALIA ; INDIA : Andaman Isl ; Rangat Isl.

*Remarks.*—This species is reported here for the first time from India.

### 14. *Bdellodes (Hoploscirus) sp. nr. procincta* Atyeo

*Bdellodes (Hoploscirus) procincta* Atyeo, 1963. *Bull. Univ. Nebraska Sta. Mus.*, 4 (8) : 143-145.

*Material examined.*—1 ♀, Andaman Isl.; Ferrargunj, on black berry (*Sizigium cumini* L.), 8. i. 1973.

*Distribution.*—AUSTRALIA ; INDIA : Andaman Isl.

*Remarks.*—The identity of the specimen is somewhat doubtful but it appears to be very close to *procincta* Atyeo if not the same one.

Subgenus **Bdellodes** Oudemans15. **Bdellodes (Bdellodes) sp.**

*Material examined.*—2 ♀ ♀, Andaman Isl., Port Blair, Zoo. Horticultural garden on “Chalta”, (*Dillenia indica* L.) 11. xii. 1972.

*Remarks.*—Specific identity could not be ascertained from the literature available to the authors. However, it appears to be an undescribed one.

## Family IV CHEYLETIDAE

Genus 8. **Chelacaropsis** Baker16. **Chelacaropsis moorei** Baker

*Chelacaropsis moorei* Baker, 1949. *Proc. U. S. Nat. Mus.* 99 : 315-316.

*Diagnosis.*—Palpal claw long and narrow, palp tarsus with 2 sickle and 1 comb like setae ; dorsal shield absent, dorsum covered with striations ; dorsal setae squamiform, 6 pairs of propodosomal and 8 pairs of hysterosomal setae ; femur of legs with squamiform setae.

*Material examined* — 1 ♀, Andaman Isl., Ferrargunj, on paddy (*Oryza sativa* L.), 18. i. 1973.

*Distribution.*—U. S. A. : Florida ; INDIA : Andaman Isl.

*Remarks.*—This species was not hitherto known from India.

## Family V TYDEIDAE

Genus 9. **Pronematus** Canestrini17. **Pronematus fleschneri** Baker

*Pronematus fleschneri* Baker 1968. *Ann. ent. Soc. America* 61 (5) : 1092-1093.

*Diagnosis.*—Terminal palpal segment short with distally placed solenidion ; 4 distal setae of tarsus I serrate.

*Material examined.*—1 ♀, Andaman Isl., Port Blair, Jungleghat, on paddy (*Oriza sativa* L.) 14. xi. 1972 ; 7 ♀ ♀, Rangat Isl., on bamboo (*Bambusa arundinacea* Willd.) 11. i. 1973.

*Distribution.*—INDIA : new Delhi, Andaman Isl., Rangat Isl.

*Remarks.*—Bamboo is the new host record for the species.

Genus 10. **Parapronematus** Baker

18. **Parapronematus acaciae** Baker

*Parapronematus acaciae* Baker, 1965. *Advances in Acarology*, 2 : 116-117.

*Diagnosis.*—P<sub>2</sub> seta on propodosoma lacking, forked seta on femur IV as long as width of the segment ; pl seta shifted between sensory setae.

*Material examined.*—2 ♀ ♀, Car Nicobar Isl., Kimus, on bamboo (*Bambusa arundinacea* Willd.), 27.xii.1972.

*Distribution.*—AFRICA : Belgian Congo, Ruanda Urundi, Trinidad ; U.S.A. : Florida, Hong Kong ; INDIA : Andaman Isl.

*Remarks.*—This species was not hitherto known from India.

19. **Parapronematus** sp.

*Material examined.*—2 ♀ ♀ Car Nicobar Isl., Agril. Farm, on mango (*Mangifera indica* L.), 26. xii. 1972.

*Remarks.*—The specific identity could not be ascertained with the literature available to the authors.

Genus 11. **Lorryia** Oudemans

20. **Lorryia africana** Baker

*Lorryia africanus* Baker, 1965. *Advances in Acarology*, 2 : 107.

*Lorryia africana* Baker, 1968. *Ann. ent. Soc. America*, 61 (4) : 1002.

*Diagnosis.*—Trochanter I without seta ; empodia with claws. and dorsal body setae lanceolate.

*Material examined.*—1 ♀, Rangat Isl., garden adjoining P. W. D. Bunglow, on cashewnut (*Anacardium occidentale* L.), 6. i. 1973.

*Distribution.*—AFRICA : Belgian Congo ; India : Rangat Isl.

*Remarks.*—This is the first record of this species from India.

Family VI TARSONEMIDAE

Genes 12. **Polyphagotarsonemus**

21. **Polyphagotarsonemus latus** (Banks)

*Tarsonemus latus* Banks, 1904. *Proc. U. S. Nat. Mus.* 32 (1553) : 615.



*Diagnosis.*—Terminal claw of leg IV of male reduced to a small tubercle.

*Material examined.*—4 ♀ ♀, 3 ♂ ♂, Car Nicobar Isl., Agril. Farm, on Chillies (*Capsicum* sp.), 29. xii. 1972.

*Distribution.*—Cosmopolitan.

*Remarks.*—This species is known from India on a number of hosts (Dhooria and Bindra, 1977).

#### Family VII STIGMAEIDAE

#### Genus 13. *Agistemus* Summers

#### 22. *Agistemus fleschneri* Summers

*Agistemus fleschneri* Summers, 1960. *Proc. ent. Soc. Wash.* 62 : 237-240.

*Diagnosis.*—One pair of paragenital setae ; main dorsal plates conspicuously reticulate with polygonal cells ; reticulum on median row with 12-14 cells. This conforms with the diagnosis of Gonzalez (1965).

*Material examined.*—4 ♀ ♀, Andaman Isl., Port Blair on guava (*Psidium guajava* L.) 11. xii. 1972 ; 1 ♀, Port Blair, Bamboo flat, on an undetermined host, 18. xii. 1972.

*Distribution.*—U. S. A. : California, Kansas, Nebraska, Lancaster, Wisconsin, Missouri, Illinois, Kentucky, Ohio, Virginia, North Carolina ; CHILE ; INDIA : Assam, Andaman Isl., Punjab.

#### Genus 14. *Cheyllostigmaeus* Willmann

#### 23. *Cheyllostigmaeus* sp.

*Material examined.*—1 ♀, Little Andaman Isl., on fig (*Ficus* sp), 31. xii. 1972.

*Remarks.*—This is a very interesting genus having two principal dorsal plates, chelicera prominent with fixed digit tapered, palpal claw robust with 13 pairs of dorsal setae. As the specimen was badly damaged, further identification was not possible. The genus was so far not known from India.

#### Genus 15. *Indostigmaeus* Gen. nov.

*Diagnosis.*—Body broadly rounded ; dorsum covered with single shield, beautifully reticulated with polygonal cells ; palp tarsus with

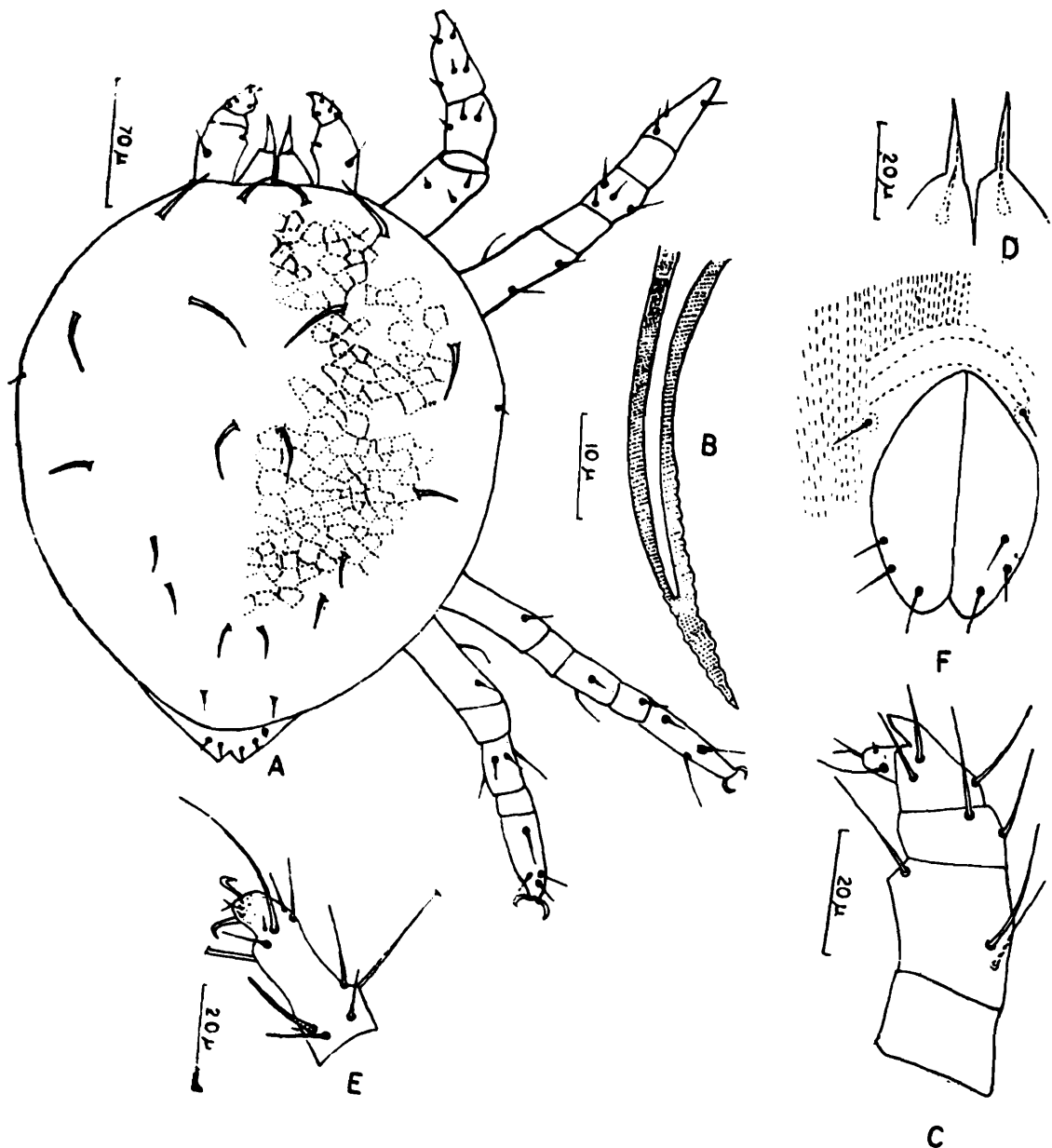
terminal sensillum bifid ; 13 pairs of strong thick setae on dorsum originating from weak tubercles ; 2 pairs of subcapitular setae.

Type *Indostigmaeus rangatensis* sp. nov.

*Remarks.*—Shape of body, reticulation, setae on dorsum and structure of palp tarsal sensillum are very distinctive by which it can be separated from the known genera of stigmaeidae.

24. *Indostigmaeus rangatensis* sp. nov.

(Text-fig. 7)



**Text-fig. 7.** *Indostigmaeus rangatensis* sp. nov., A—Dorsal surface, B—Enlarged view of dorsocentral dorsal seta, C—Palp, D—Chelicera, E—Tarsus of leg I, F—Opisthosomal portion.

*Female*.—Body almost rounded ; 323 long, 275 wide ; body covered with a single plate covering both propodosoma and hysterosoma. Dorsum beautifully reticulate except towards margin, cells polygonal, larger centrally while smaller towards anterior and posterior parts as well as towards margin. Dorsal setae long, margin somewhat corrugated, set on weak tubercles. Dorsolateral dorsal setae small, while others are fairly large and almost of equal length, all the setae being shorter than the longitudinal intervals between successive bases. Two pairs of unequal paragenital setae ; 3 pairs of annogenital setae present. Ventral striations longitudinal between coxae I and II as well as between coxae III and IV, transverse striations centrally ; 1 pair of setae present between coxae I, another pair slightly above coxae III.

*Measurements of setae*.—ae-34, be-38, ce-34, he-10.5, a-38, b-34, c-20.5, la-24, lm-22, ln-20.5, li-14, le-17, e-17 ;—leg I 153 long.

*Holotype*.—♀, INDIA, Rangat Isl., Panchawati on citrus (*Citrus medica* L.) 6. i. 1973. (Z.S.I. Reg. No. 3154/17)

*Paratype*.—1 ♀, same data as for holotype. (Z.S.I. Reg. No. 3155/17)

#### Family VIII TETRANYCHIDAE

#### Genus 16. *Aponychus* Rimando

#### 25. *Aponychus corpuzae* Rimando

*Aponychus corpuzae* Rimando, 1966. *Philip. Agric.* 50 : 107.

*Diagnosis*.—Dorsocentral hysterosomal setae much shorter than intervals between them ; second pair of dorsolateral setae equal in length to 1st pair of dorsolaterals and first three pairs of dorsocentrals ; 1st to 3rd pair of dorsocentral hysterosomals subspatulate.

*Material examined*.—2 ♀ ♀, Rangat Isl., on paddy (*Oryza sativa* L.) 14. i. 1973.

*Distribution*.—PHILIPPINE Isl. ; JAPAN ; THAILAND ; INDIA : Rangat Isl.

*Remarks*.—Earlier this species was recorded from Rangat Isl. on bamboo (Gupta, 1976).

#### Genus 17. *Eotetranychus* Oudemans

#### 26. *Eotetranychus hirsti* Pritchard and Baker

*Tetranychus fici*. Hirst, 1926. *Proc. zool. Soc. Lond.* 2 : 828.

*Eotetranychus hirsti* Pritchard and Baker, 1955, *Pacific Coast Ent. Soc. Mem. Ser.*, 2 : 200.

**Diagnosis.**—Dorsum with 14 pairs of setae, clunals minute, aedeagus bent dorsal and upward portion slender, tapering and sigmoid.

**Material examined.**—18 ♀ ♀, 2 ♂ ♂, Car Nicobar Isl., Kakana, on fig. (*Ficus cunea* Ham.), 25. xii. 1972.

**Distribution.**—INDIA : Punjab, Karnataka, Delhi, Andhra Pradesh, Bihar, Tamil Nadu, West Bengal, Car Nicobar Isl.

**Remarks.**—This species is recorded here for the first time from Nicobar Isl.

### Genus 18. *Schizotetranychus* Tragardh

#### 27. *Schizotetranychus andropogoni* (Hirst)

*Tetranychus* (*Schizotetranychus*) *andropogoni* Hirst, 1926. *Proc. zool. Soc. Lond.* 2 : 829.

**Diagnosis.**—Aedeagus distally forms a dorsally directed sigmoid curve ; idiosomal setae broad at base gradually tapering at the tip.

**Material examined.**—26 ♀ ♀, 6 ♂ ♂, Andaman Isl., Humphrygunj, on paddy (*Oryza sativa* L.), 17. xii. 1972.

**Distribution.**—THAILAND ; PAKISTAN ; INDIA : Punjab, West Bengal, Bihar, Tamil Nadu, Delhi, Andaman Isl.

**Remarks.**—This mite is known from India on a number of hosts (Gupta, 1976). It is recorded for the first time from Andaman Isl.

### Genus 19. *Oligonychus* Berlese

#### 28. *Oligonychus indicus* (Hirst)

*Paratetranychus indicus* Hirst, 1923. *Proc. zool. Soc. Lond.* 1923 : 990.

**Diagnosis.**—Aedeagus forms an acute angle with the axis of the shaft.

**Material examined.**—5 ♀ ♀, Andaman Isl., Port Blair, South Point, on grass, 2. i. 1973.

**Distribution.**—PAKISTAN ; MEXICO ; INDIA : Punjab, West Bengal, U. P., Andhra Pradesh, Bihar, Haryana, Karnataka, Orissa, Tamil Nadu, Delhi, Andaman Isl.

**Remarks.**—This species is known from India on a number of hosts

(Gupta, 1976). However, this is for the first time that the species is recorded from Andaman Isl.

Genus 20. *Tetranychus* Dufour

29. *Tetranychus fijiensis* Hirst

*Tetranychus fijiensis* Hirst, 1924. *Ann. Mag. nat. Hist.* (9) 14 : 523.

*Diagnosis.*—Aedeagus much elongated, bends upwards and tapers gradually ; female empodium with 2 pairs of empodial hairs, dorsal pair shorter than ventral pair.

*Material examined.*—5 ♀ ♀, 1 ♂, Andaman Isl., Jungleghat, on coconut (*Cocos nucifera* L.), 14. xii. 1972.

*Distribution.*—FIJI Isl. ; THAILAND ; Likiep Isl. ; Nakuoro Isl., INDIA : Andaman and Nicobar Isl., Assam, Karnataka, Tamil Nadu.

*Remarks.*—This was earlier known (Gupta, 1976) from Nicobar Isl. and now it is reported from Andaman Isl.

30. *Tetranychus* sp.

*Material examined.*—2 ♀ ♀, Andaman Isl., Bamboo flat, on banana (*Musa* sp.), 18. xii. 1972.

*Remarks.*—Since no male specimen was available, the specific identity was not possible.

*Key to the families, genera and species of  
Prostigmatid mites treated in this Paper*

1. Gnathosoma with minute palpi, lying closely approximate laterally ; chelae tiny and stylet like with 4 pairs of legs, stigma of female opening behind gnathosoma ; male without stigma or tracheae, empodium usually a membranous flap like organ attached to claws.

Family Tarsonemidae

males with body laterally compressed, tibia and tarsus or tibiotarsus slender, elongate more than 3 times as long as basal width of tibia or tibiotarsus ... ..

Genus *Polyphagotarsonemus*

leg IV of male ends in a small reduced, blunt, button like claw, hysterosoma of female with a pair of setae between coxae IV ... ..

*Polyphagotarsonemus latus*

- Gnathosoma usually conspicuqus with large chelicerae ; palpi usually well developed ; stigma opens at base of chelicera ; empodium free pad like or claw like arising from tarsus 2
- 2. Without a palpal thumb claw complex ... 3
- With a palpal thumb claw complex .... 19
- 3. Cheliceral bases fused, or if not fused, not capable of lateral scissors like motion over gnathosoma ... .. 4
- Chelicera free, attached at base and free to move like scissors laterally across gnathosoma 11
- 4. Chelicerae long recurved and whip like ; female genital opening transverse ; tarsal claws with tenent hairs ; palpi simple ... Family Tenuipalpidae - 5
- Chelicerae short needle like, genital opening not transverse ... .. Family - Tydeidae - 9
- 5. Palpus with 4 or 5 segments' ... .. Genus *Brevipalpus*
- Hysterosoma with 6 dorsolaterals, reticulations evenly distributed along dorsomedian ridge ... .. *Brevipalpus essigi*
- Palpus with 3 segments ... .. Genus *Tenuipalpus* 6
- 6. Hysterosoma without a flagellate dorsolateral setae ... .. *T. quadrisetosus*
- Hysterosoma with penultimate dorsolateral seta flagellate ... .. 7
- 7. Hysterosoma with dorsocentrals minute and setiform .. ... .. 8
- Hysterosoma with 3 pairs of dorsocentrals narrowly lanceolate ... .. *T. tetrazygiae*
- 8. Anterolateral expansion of hysterosoma broad and subquadrate ... .. *T. micheli*
- Anterolateral expansion of hysterosoma conical ... .. *T. hastaligni*
- 9. Hysterosomal seta L<sub>2</sub> in normal lateral position ... .. Genus *Lorryia*
- Coxa IV with one seta, palpal tarsus long, palpal tibia with one seta ... .. *Lorryia africana*
- Hysterosomal seta L<sub>2</sub> in dorsal position ... 10
- 10. Without anal setae, femora III and IV each with a prominent forked seta ... .. Genus *Parapronematus*
- P<sub>2</sub> seta lacking on propodosoma, forked

- seta of femur IV twice as long as width of the segment ... .. *P. acaciae*
- With a single pair of anal setae; setae normal on femora III and IV ... .. Genus *Pronematus*
- Terminal palpal segment short with distally placed solinidion ... .. *P. fleschneri*
11. With 2 pairs of genital suckers; the relatively long palpi turned inward, distal segment usually claw like ... .. Family Cunaxidae 12
- With 3 pairs of genital suckers; the relatively long palpi elbow like with distal setae ... .. Family Bdellidae 18
- Chela with inner surface of movable digit sickle shaped, dentate or edentate; cheliceal bases usually not inflated ... .. Genus *Bdellodes* 18
- Anterior and posterior pseudostigmata usually differently constricted neither goblet shaped; diameter of posterior stigmata less than depth; posterior sensilla usually reduced in size .. .. Subgenus *Hoploscirus* 18
12. Gnathosoma enormously developed, palpal tibia and tarsus modified for clasping organ ... .. Genus *Indocunaxa* gen. nov.
- Body robust, palpi 4 segmented, last two segments forming clasping organ ... .. *Indocunaxa smileyi* sp. nov.
- Gnathosoma normal, not enormously developed, tibia and tarsus do not form clasping organ ... .. 13
13. Palpi 3 segmented ... .. 14
- Palpi 5 segmented ... .. Genus *Cunaxa* 15
14. Dorsum without conspicuous shield or shields ... .. Genus *Cunaxoides*
- Spindle shaped body with distinct furrow, hysterosoma with 8 pairs of simple setae; venter with 6 pairs of short simple setae ... .. *Cunaxoides nicobarensis* sp. nov.
- Dorsum with conspicuous shield... .. *Neocunaxoides* ,
- Hysterosoma with 4 pairs of thick rod like setae ... .. *N. pradhani* sp. nov.
15. Palp telofemur with spine on inner anterolateral margin ... .. *Cunaxa setirostris*
- Palp telofemur without such spine ... .. 16
16. Chelicera longer than tibiotarsus ... .. *Cunaxa bambusae* sp. nov.
- Chelirera shorter than tibiotarsus ... .. 17
17. Chelicera barely reaches the base of genu ... .. *C. myabundrensis* sp. nov.

- Chelicera extends to tip of tibiotarsus ... *C. cynodona* sp. nov.
- 18. Chelicera with 2 setae ... .. *Bdellodes* (*H.*) nr. *procincta*
- Chelicera with 1 seta ... .. *B.* (*H.*) *affinis*
- 19. Cheliceral bases closely fused with gnathosoma and without indication of suture, peritreme usually 'M' shaped may be present on gnathosoma ... .. Family Cheyletidae
- Palp tarsus with 2 sickle and 1 comb like setae ; without dorsal shield ... .. Genus *Chelacaropsis*
- Setae on dorsum broadly squamiform ; palpal claw long and narrow ; 6 pairs of setae on propodosoma and 8 pairs of setae on hysterosoma ... .. *C. moorei*
- Cheliceral bases fused with each other but not with gnathosoma having suture conspicuous ; peritreme usually present on anterior portion of propodosoma ... 20
- 20. Movable chela forming a long whip like stylet curving within body ; cheliceral bases fused to form stylophore ... .. Family Tetranychidae 21
- Movable chela straight, stiff and relatively short, no stylophore ... .. Family Stigmaeidae 25
- 21. Tarsus I with single set or without closely associate duplex setae or dup ex setae absent Genus *Aponychus*
- 1st to 3rd pair of dorsocentral hysterosomals subspatulate ... .. *Aponychus corpuzae*
- Tarsus I with 2 pairs of duplex setae, the proximal member of each pair shorter than the distal member, empodium claw like or splits distally .. ... 22
- 22. With 2 pairs of paraanal setae ... .. 23
- With 1 pair of paraanal setae ... .. 24
- 23. Empodium claw like .. ... Genus *Schizotetranychus*
- Dorsal body setae as long as intervals between their bases, aedeagus less acutely turned distally ... .. *S. andropogoni*
- Empodium ending into tuft of hairs ... Genus *Eotetranychus*
- Distal portion of aedeagus sigmoid ... *E. hirsti*
- 24. Empodium claw like with proximoventral hairs, duplex setae of tarsus I distal and approximate ... .. Genus *Oligonychus*
- Aedeagus with distal end enlarged ... *O. indicus*



- Empodium splits distally, usually into 3 pairs of hairs, duplex setae of tarsus I well separated ... .. Genus *Tetranychus*
- Empodium with 2 pairs of empodial hairs, the dorsal pair shorter than ventral pair, mediodorsal spur of empodium nearly 1/2 as long as medioventral hairs ... .. *T. fijiensis*
25. Dorsum covered with a single shield with reticulation, margin without reticulations ... .. *Indostigmaeus* gen. nov.
- Polygonal cells larger centrally, smaller anteriorly and posteriorly with 13 pairs of thick setae on dorsum, 2 pairs of unequal paragenital setae ... .. *Indostigmaeus rangatensis* sp. nov.
- Dorsum covered with more than one shield 26
26. Propodosomal plate carries 3 pairs of setae Genus *Agistemus*
- Reticulum on median plate with 12-14 cells in median longitudinal row ... .. *A. fleschneri*
- Propodosomal plate carries 4 pairs of setae, chelicera adnate with septum persisting ... .. Genus *Cheylostigmaeus*

#### SUMMARY

A taxonomic account of 30 species of prostigmatid mites belonging to 8 families and 20 genera from Andaman and Nicobar Islands collected during December, 1972 — January, 1973 is presented in this paper. This includes 2 new genera one each of Cunaxidae and Stigmaeidae and 7 new species, 6 of Cunaxidae and 1 of Stigmaeidae. In addition, 9 species and 7 genera are represented here for the first time from India. All but 2 species are new reports from these islands. A key to the families, genera and species of prostigmatid mites treated in this paper is given.

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