

DISTIGMESIKYA, NEW GENUS,
AND FIVE NEW SPECIES OF FEATHER MITES
(ACARINA : PTEROLICHIDAE)
FROM NEW WORLD PARROTS (AVES : PSITTACIDAE) ¹

BY W. T. ATYEO ², J. GAUD ³ and T. M. PÉREZ ⁴

TAXONOMY OF FEATHER MITES
ABSTRACT : A new genus, *Distigmesikya*, is established. The five new species are from larger New World parrots of the genera *Ara* and *Anodorhynchus*. The new species and their hosts are : *D. setulata* from *Ara severa*, Brazil, Colombia, Venezuela (type species) and *Ara couloni* from Peru ; *D. proportionata* from *Ara manilata*, Brazil, Guyana, Peru ; *D. ramosa* from *Anodorhynchus hyacinthinus*, Brazil ; *D. hoffmannae* from *Ara militaris*, México, Peru ; and *D. blakei* from *Ara chloroptera*, Columbia, Venezuela and *Ara macao* from Panama, Surinam, Venezuela.

TAXONOMIE DES ACARIENS PLUMICOLES
RÉSUMÉ : Nous établissons le nouveau genre *Distigmesikya*. Ses cinq espèces, toutes nouvelles, ont été capturées sur les grands perroquets du Nouveau Monde des genres *Ara* et *Anodorhynchus*. Ces espèces nouvelles et leurs hôtes sont : *D. setulata* sur *Ara severa*, Brésil, Colombie, Vénézuëla (espèce type) et sur *Ara couloni*, Pérou ; *D. proportionata* sur *Ara manilata*, Brésil, Guyane, Pérou ; *D. ramosa* sur *Anodorhynchus hyacinthinus*, Brésil ; *D. hoffmannae* sur *Ara militaris*, Mexique, Pérou ; et *D. blakei* sur *Ara chloroptera*, Colombie, Vénézuëla et sur *Ara macao*, Panama, Surinam, Vénézuëla.

Museum collecting from parrot study skins produces a diverse array of feather mites with many specimens of certain taxa and occasional specimens of other taxa. This pattern is repeated many times because almost every parrot has a high parasite load. In recent field work in México we have discovered that the parrots have been partitioned by feather mites and that some

taxa occur on the exposed surfaces of the flight and tail feathers (hence easily collected from study skins) and other taxa occur only in the protected regions such as the wing and tail coverts and/or the body.

A curious species of feather mite was described for a medium-sized Mexican parrot [*Aratinga canicularis* (L.), Orange-fronted Conure] from

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2. Department of Entomology, University of Georgia, Athens, Georgia 30602, U.S.A.
3. Laboratoire de Parasitologie, Faculté de Médecine, 06034, Nice, France.
4. Laboratorio de Acarología, Departamento de Biología, Facultad de Ciencias (UNAM), 04510 México, D.F., México.

southwestern México. This mite, *Aralichus venustissimus* [= *Pterolichus* (P.) *venustissimus* Trouessart, 1899], has been almost impossible to recollect — from about 100 museum study skins we have less than 10 specimens. We now know from our field work that this species of feather mite is restricted to the protected (ventral) vanes of the secondary coverts, tertials, and axillaries. With our techniques for obtaining mites from museum skins, it is understandable why we have been unable to obtain any series of this species.

Over the last two years we have accumulated specimens of another curious group of feather mites (*Distigmesikya*, n. g., n. spp.) from large macaws of the genera *Ara* Lacépède and *Anodorhynchus* Spix. Our collections from these birds have a pattern similar to collections from the medium-sized *Aratinga* species, large numbers of some mites, occasional specimens of other mites, including *Distigmesikya* species. With our information on site preferences on *Aratinga* coupled with information from museum collecting, we can assume that the new taxa to be described from *Ara* and *Anodorhynchus* occur in the protected areas of the wings and tail, that is, in the medium-sized feathers on the basal half of the wing and the upper and lower tail coverts.

Distigmesikya species display considerable variation in the relative development of the scapular setae between sexes and between species. With the exception of *D. setulata* which has minute scapulars in both sexes, the internal scapulars are more developed in the female (cf. figs. 5-12). Additionally, the external scapular setae are variable between species, minute (e.g. 10 μ m in *D. setulata*, n. sp.) to long (e.g., 35 μ m in *D. blakei*, n. sp.).

In the descriptions the terminology for the feather mites follows ATYEO and GAUD (1966) and the parrot systematics follow FORSHAW (1978). In the Type Data sections the accession numbers for the bird specimens and for the mite collections are given in parentheses after the collection data. Abbreviations for the institutions : American Museum of Natural History (AMNH), Field Museum of Natural History (FMNH), National Museum of Natural History (NMNH), University

of Georgia (UGA) and Youngstown State University (YSU). In addition, types are deposited in the collections of J. GAUD (Nice) and T. M. PÉREZ (Mexico City). If structures are lacking from the holotype, measurements from paratypes are given in brackets. Finally, distances between setae are measured between setal bases from center-to-center.

FAMILY PTEROLICHIDAE

Distigmesikya, new genus

Type-species : *Distigmesikya setulata*, new species.

Etymology : From the Greek *di-* (double, two) + *stigma* (prick, point) + *sikya* (bottle gourd, cupping instrument) ; feminine.

Distigmesikya is within a complex of genera restricted to parrots (*Protolichus* Trouessart, *Mesolichus* Trouessart, and *Aralichus* Gaud) in which males have some development of the paragenital and paranal sclerites. The new taxon has males with the opisthosomata narrowing posterior to legs IV, other taxa have broad opisthosomata with truncated or bilobed termini.

The females of *Distigmesikya* are similar to those of the New World genus *Aralichus*. A constant difference between the two groups is the development of setae *l 4* and *pai* as coarsely serrated leaves in *Distigmesikya* and finely serrated leaves in *Aralichus*.

■ **DIAGNOSIS.** Pterolichid mites in which both sexes have epimerites I V-shaped ; scapular setae variable ; internal scapulars more developed in females than males, from minute to large, coarsely branched (7-55 μ m) ; external scapulars thin, minute to small (7-40 μ m) ; sub-humeral setae setiform, positioned immediately ventral to humeral setae ; hysterosoma usually with large pits (lacunae of authors) ; setae *d 4* absent ; tarsi of all legs noticeably longer than corresponding tibiae ; femora, genua, tibiae of legs I, II with apicoventral projections ; setae

mG of genua I, II positioned on projection bases; solenidia σ 1 present on legs I-III, shorter than half genual lengths.

■ **MALES.** Idiosoma in shape of bottle gourd or cupping glass; legs IV slightly larger than legs III, extending beyond idiosomal terminus at least by length of tarsus; tarsus IV with apioventral claw bearing 1 seta; long sclerotizations from genital region to terminus divided into paragenital, paranal sclerites (figs. 1, 3); genital discs widely separated, incorporated in paragenital sclerites; anterior genital setae, coxal IV setae in approximate horizontal line anterior to genital organ; adanal discs each with 2 heavy punctuations; setae *d* 3 posteriorly positioned anteromesal to setae *l* 3; setae *l* 3 large, basally bifurcated, unequal branches; setae *l* 4 leaflike; internal postanal setae spatulate.

■ **FEMALES.** Idiosoma quadrate; small pre-genital apodeme; genital discs between anterior, posterior genital setae; setae *d* 1, *l* 3 rarely branched; setae *l* 4, *pai* as coarsely serrated leaves; distances between levels of setae *d* 1, *d* 2, *d* 3, *l* 3 approximately equal.

KEY TO MALES OF *Distigmesikya*

1. Paragenital sclerites approximately two times longer than paranal sclerites; legs IV extending beyond idiosomal terminus by length of tarsus and most of tibia. 2
Paragenital sclerites and paranal sclerites subequal; legs IV extending beyond idiosomal terminus by length of tarsus. **proportionata**, n. sp.
2. Scapular setae obvious, internal scapulars often branched. 3
Scapular setae minute (about 7 μ m), subequal. **setulata**, n. sp.
3. Idiosoma plus gnathosoma usually over 550 μ m; internal scapular setae over 25 μ m, coarsely branched. 4
Idiosoma plus gnathosoma less than 540 μ m; internal scapular setae 15-20 μ m, rarely with fine branchings. **hoffmannae**, n. sp.

4. Legs IV long, e.g., tibia IV about 96 μ m, tarsus IV about 117 μ m. **ramosa**, n. sp.
Legs IV short, e.g., tibia IV about 72 μ m, tarsus IV about 90 μ m. **blakei**, n. sp.

Distigmesikya setulata, new species

Figs. 1-3, 13, 14

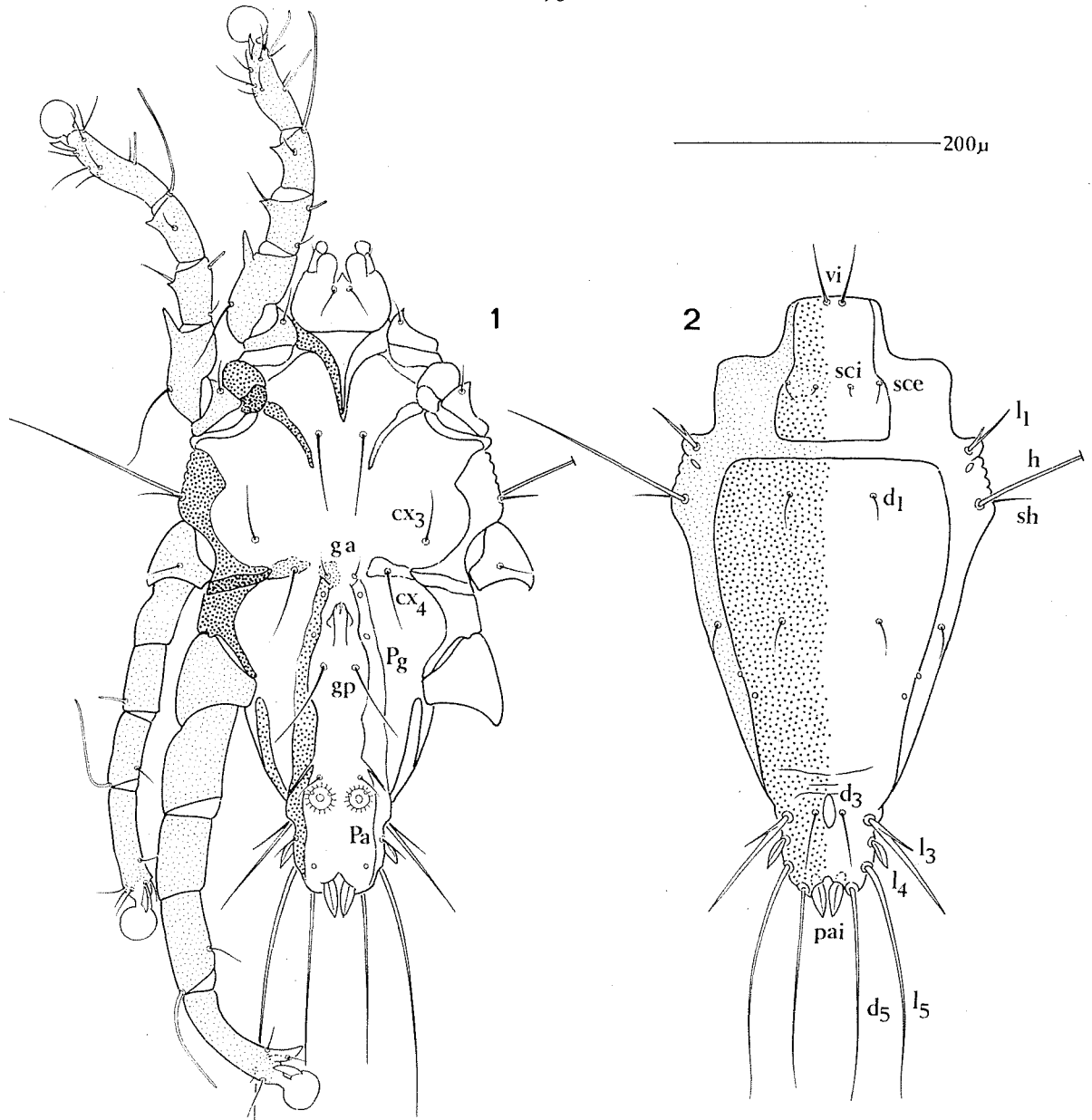
The small scapular setae are distinguishing features for this species. All other *Distigmesikya* species have the internal scapular setae modified as thickened to coarsely branched structures.

■ **MALE** (holotype, figs. 1, 2, 13). Length, including gnathosoma, 500 μ m; width at level of setae *h*, 285 μ m. Hysterosomal shield with subintegumental ornamentation in form of irregular hexigons. Scapular setae small; *sce* fine; *sci* short, slightly greater in diameter than *sce*. Paragenital sclerites about two times longer than paranal sclerites. Legs III extending to terminus, legs IV extending beyond terminus by lengths of tibiae and tarsi.

Measurements. Hysterosomal shield to terminus, 347 μ m. Setae : *sce*, 16 μ m; *sci*, 10 μ m; *d* 1, 29 μ m; *l* 1, 47 μ m; *l* 3, 98 μ m; *sce* : *sce*, 86 μ m; *sci* : *sci*, 33 μ m. Lengths of genua, tibiae, tarsi I-IV : 49/51/69; 55/55/86; 59/54/86; 66/73/100 μ m.

■ **FEMALE** (paratype, figs. 3, 14). Length, including gnathosoma, 493 μ m; width at level of setae *h*, 231 μ m. Hysterosomal shield with subintegumental ornamentation as in male. External scapular setae fine; internal scapulars small, slightly larger in diameter than *sce*. **Measurements.** Setae : *sce*, 39 μ m; *sci*, 16 μ m; *l* 1, 20 μ m; *sce* : *sce*, 80 μ m; *sci* : *sci*, 40 μ m.

Type data. From *Ara severa castaneifrons* Lafresnaye, Chestnut-fronted Macaw : σ holotype, 5 ♀♀ paratypes, San Antonio, Putumayo, Colombia, November 6, 1969, K. VON SNEIDERN [FMNH 286,761; UGA 11,542 (wings) and 11,543 (tail)]; 2 $\sigma\sigma$ paratypes, same data as holotype except November 4, 1969 [FMNH 286,746; UGA 11,540 (wings)]. From *Ara s. severa* (Linné) :



FIGS. 1-2 : *Distigmesikya setulata*, n. sp.

1. — Ventral and 2. — Dorsal aspects of male. Structures : *Pa*, paranal sclerite ; *Pg*, paragenital sclerite. Setae : *cx 3*, *cx 4*, coxals ; *d 1-5*, *l 1-5*, dorsal and lateral hysterosomals ; *ga*, *gp*, anterior and posterior genitals ; *h* humeral ; *pai*, internal postanal ; *sce*, *sci*, external and internal scapulars ; *sh*, subhumeral ; *vi*, internal vertical.

1 ♂ paratype, Encontrados, Zulía, Venezuela, February 15, 1908, N. DEARBORN [FMNH 46,978 ; UGA 11,526 (wings)] ; 1 ♂ paratype as preceding except December 1, 1913 [FMNH 46,978 ; UGA 11,530 (wings)] ; 3 ♂ paratypes, Río Catatumbi, Zulía, Venezuela, September 16, 1910, R. F. RA-

VEN [FMNH 43,295 ; UGA 11,531 (wings) and 11,532 (tail)] ; 2 ♂ paratypes, Tapiuna, Río Tapajós, Pará, Brazil, August 12, 1959, A. M. OLALLA [FMNH 11,534 ; UGA 11,534 (tail)].

Additional material. From *Ara couloni* Sclater, Blue-headed Macaw : 1 ♂, Luisiana, Apurimaz

River, Cuzco, Peru, July 14, 1963, C. B. KOFORD (AMNH 781,783 ; UGA 10,358) ; 5 ♂♂, 5 ♀♀, Fundo Sinchona, Huánuco, Peru, August 10, 1947, J. M. SCHUNKE [FMNH 187,758 ; UGA 11,565 (wings) and 11,566 (tail)] ; 2 ♂♂, 1 ♀, as preceding [FMNH 187,759 ; UGA 11,567 (wings) and 11,568 (tail)]. The holotype and paratypes are deposited in FMNH, paratypes in AMNH, and the collections of the authors.

Etymology. The specific epithet for the type species of *Distigmesikya* is derived from the diminutive form of *seta* to call attention to the very small scapular setae.

Remarks. Most of the collections have been taken from the tail of the Blue-headed Macaw. It is assumed that this species occurs in the upper and lower tail coverts and possibly the internal secondary coverts. This could be expected as we have found that the fauna inhabiting these two regions are often very similar.

***Distigmesikya proportionata*, new species**
Figs. 4, 9, 10

The males of these new species are the easiest to distinguish among the *Distigmesikya* species as legs III and IV are relatively short and the ventral sclerites are subequal. Legs III extend approximately to the level of setae *l* 3 and legs IV extend beyond the terminus by the lengths of the tarsi. In other species legs III extend to the terminus and legs IV extend beyond the terminus by the lengths of the tibiae and tarsi.

■ MALE (holotype, figs. 4, 9). Length, including gnathosoma, 525 μ m ; width at level of setae *h*, 255 μ m. Hysterosomal shield with large pits. Scapular setae subequal in lengths ; *sce* fine, *sci* short, branched, extending approximately half distance to posterior margin of prodorsal shield. Paragenital, paranal sclerites subequal in lengths, heavily sclerotized. Legs III extending to level of setae *l* 3, legs IV extending beyond terminus by length of tarsi. *Measurements.* Hysterosomal

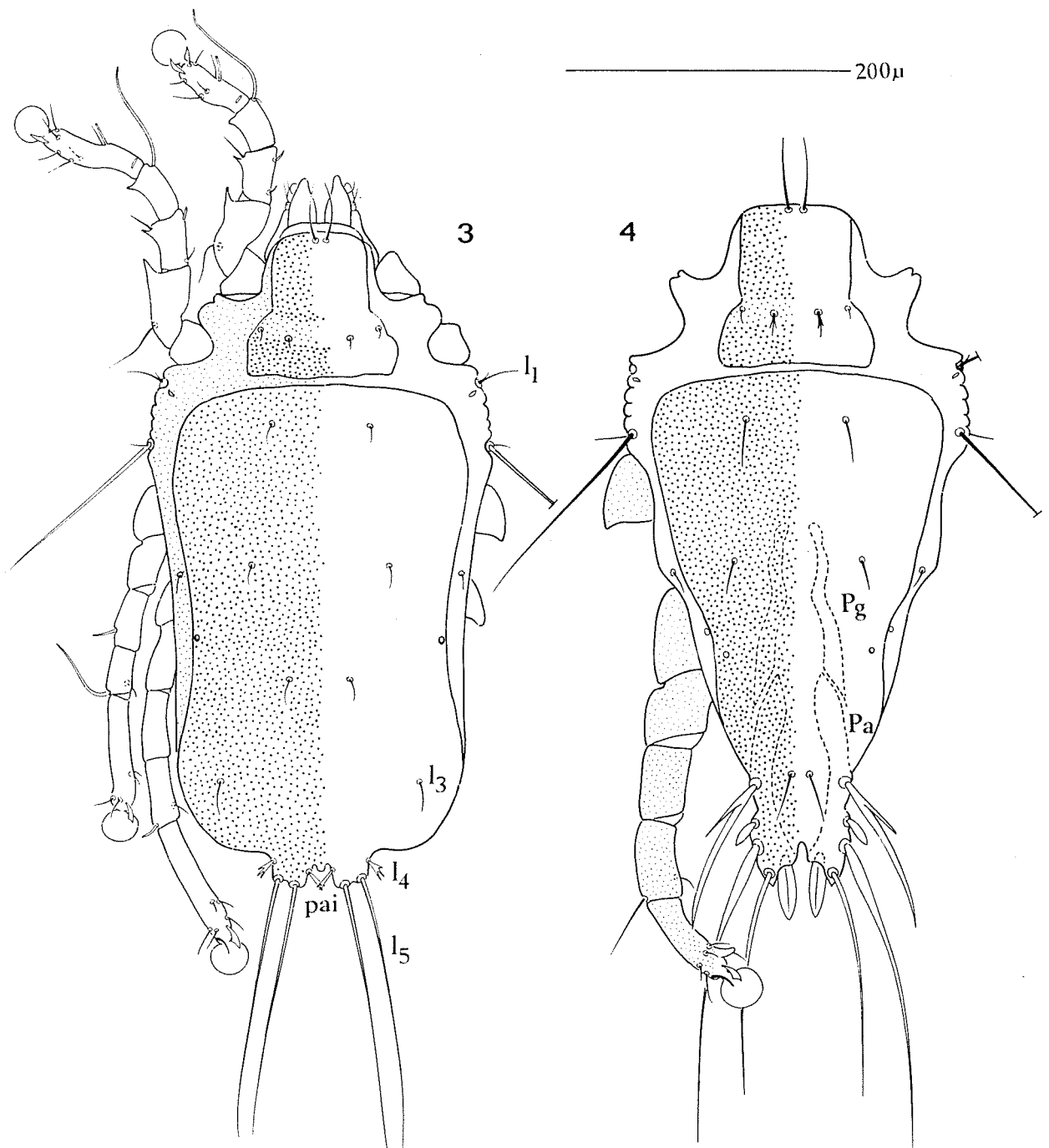
shield to terminus, 362 μ m. Setae : *sce*, 20 μ m ; *sci*, 20 μ m ; *d* 1, 37 μ m ; *l* 1, [25.5 μ m] ; *l* 3, 112 μ m ; *sce* : *sce*, 80 μ m ; *sci* : *sci*, 33 μ m. Lengths of genua, tibiae, tarsi I-IV : 47/45/73 ; 51/55/80 ; 43/45/73 ; 55/57/71 μ m.

■ FEMALE (paratype, fig. 10). Length, including gnathosoma, 490 μ m ; width at level of setae *h*, 227 μ m. Hysterosomal shield with medium sized pits. External scapular setae fine ; internal scapulars large, coarsely branched, extending beyond posterior margin of prodorsal shield. *Measurements.* Setae : *sce*, 16 μ m ; *sci*, 35 μ m ; *l* 1, 19.6 μ m ; *sce* : *sce*, 80 μ m ; *sci* : *sci*, 41 μ m. Otherwise, similar to *D. setulata*.

Type data. From *Ara manilata* (Boddaert), Red-bellied Macaw : ♂ holotype, São Marcelo, Bahia, Brazil, March 22, 1914, R. H. BECKER [FMNH 46,980 ; UGA 11,552 (tail)] ; 1 ♂, 4 ♀♀ paratypes, Rio Tapajós, Santarém, Pará, Brazil, August 15, 1959, A. M. OLALLA [FMNH 257,850 ; UGA 11,550 (tail)] ; 1 ♂ paratype, Boa Vista, Rio Branco, Amazonas, Brazil, December 11, 1912, M. P. ANDERSON [FMNH 45,036 ; UGA 11,548 (tail)] ; 1 ♂, 2 ♀♀ paratypes, Río Ucayali, Yarina Cocha, Loreto, Peru, May 16, 1946, J. M. SCHUNKE [FMNH 185,553 ; UGA 11,546 (wings)] ; 2 ♂♂ paratypes, Abary River, East Demerara, Guyana, March 2, 1946, R. S. SINGH [FMNH 190,570 ; UGA 11,545 (tail)] ; 1 ♂ paratype, Limontuba, Rio Tapajós, Pará, Brazil, August 8, 1931, A. M. OLALLA (AMNH 228,214 ; UGA 10,350). The holotype and paratypes are deposited at FMNH ; paratypes are deposited with the authors.

Etymology. From the Latin *proportio*, -tus for the relatively equal lengths of the paragenital and paranal sclerites.

Remarks. As in *D. setulata*, most of the specimens have been collected from the tail. Therefore we assume that the sites for this species is the same, the upper and lower tail coverts and the smaller feathers of the secondaries.



FIGS. 3-4 :

3. — *Distigmesikya setulata*, n. sp., dorsal aspect of female. 4. — *D. proportionata*, n. sp., dorsal aspect of male with ventral sclerites indicated. Structures : *Pa*, paranal sclerite ; *Pg*, paragenital sclerite. Setae : *l* 1-5, lateral hysterosomals ; *pai*, internal postanal.

***Distigmesikya ramosa*, new species**

Figs. 5, 6

The two new species *Distigmesikya ramosa* and *D. blakei* have large, branched internal vertical setae in both sexes. The males of the two species are the largest in the genus, each measuring over 550 μm in length. However, in comparing the legs, those of *D. ramosa* are considerably shorter (cf. measurements in descriptions). In other comparisons between the two species, *D. ramosa* has setae *l 1* shorter and thicker and *sce* slightly shorter than *sci*. The differences in the females are not as pronounced; in general, measurements are needed to separate the species.

■ MALE (holotype, fig. 5). Length, including gnathosoma, 563 μm ; width, at level of setae *h*, 323 μm . Hysterosomal shield with large pits. Scapular setae long; *sce* fine; *sci* thick, coarsely branched. Paragenital sclerites about two times longer than paranal sclerites. Legs III extending almost to terminus, legs IV extending beyond terminus by lengths of tarsi and part of tibiae. *Measurements*. Hysterosomal shield to terminus, 416 μm . Setae: *sce*, 33 μm ; *sci*, 35 μm ; *d 1*, 43 μm ; *l 1*, [43 μm]; *l 3*, 82 μm ; *sce*: *sce*, 102 μm ; *sci*: *sci*, 53 μm . Lengths of genua tibiae, tarsi I-IV: 53/51/67; 59/59/88; 63/54/90; 71/73/90 μm .

■ FEMALE (paratype, fig. 6). Length, including gnathosoma, 532 μm ; width at level of setae *h*, 293 μm . Hysterosomal shield with large pits. External scapular setae fine, longer than *sci*; internal scapular setae coarsely branched. *Measurements*. Setae: *sce*, 65 μm ; *sci*, 71 μm ; *l 1*, 43 μm ; *sce*: *sce*, 92 μm ; *sci*: *sci*, 53 μm . Otherwise similar to *D. setulata*.

Type data. From *Anodorhynchus hyacinthinus* (Latham), Hyacinth Macaw: σ holotype, 7 $\sigma\sigma$, 12 ♀♀ paratypes, Rio Tapajós, Pará, Brazil, April, 1931, A. M. OLALLA (AMNH 285,807; YSU 2763); 1 σ paratype, Rio Araguaia, Goiás, Brazil, June, 1906, G. A. BAER (AMNH 474,106;

YSU 2764). The holotype is deposited at AMNH, paratypes at UGA.

Etymology. From the Latin *ramosus* (branchy) to call attention to the large and coarsely branched internal scapular setae.

Remarks. In some of the females setae *d 1* and *l 3* are thicker than *d 1* and may have rudimentary branchings.

***Distigmesikya hoffmannae*, new species**

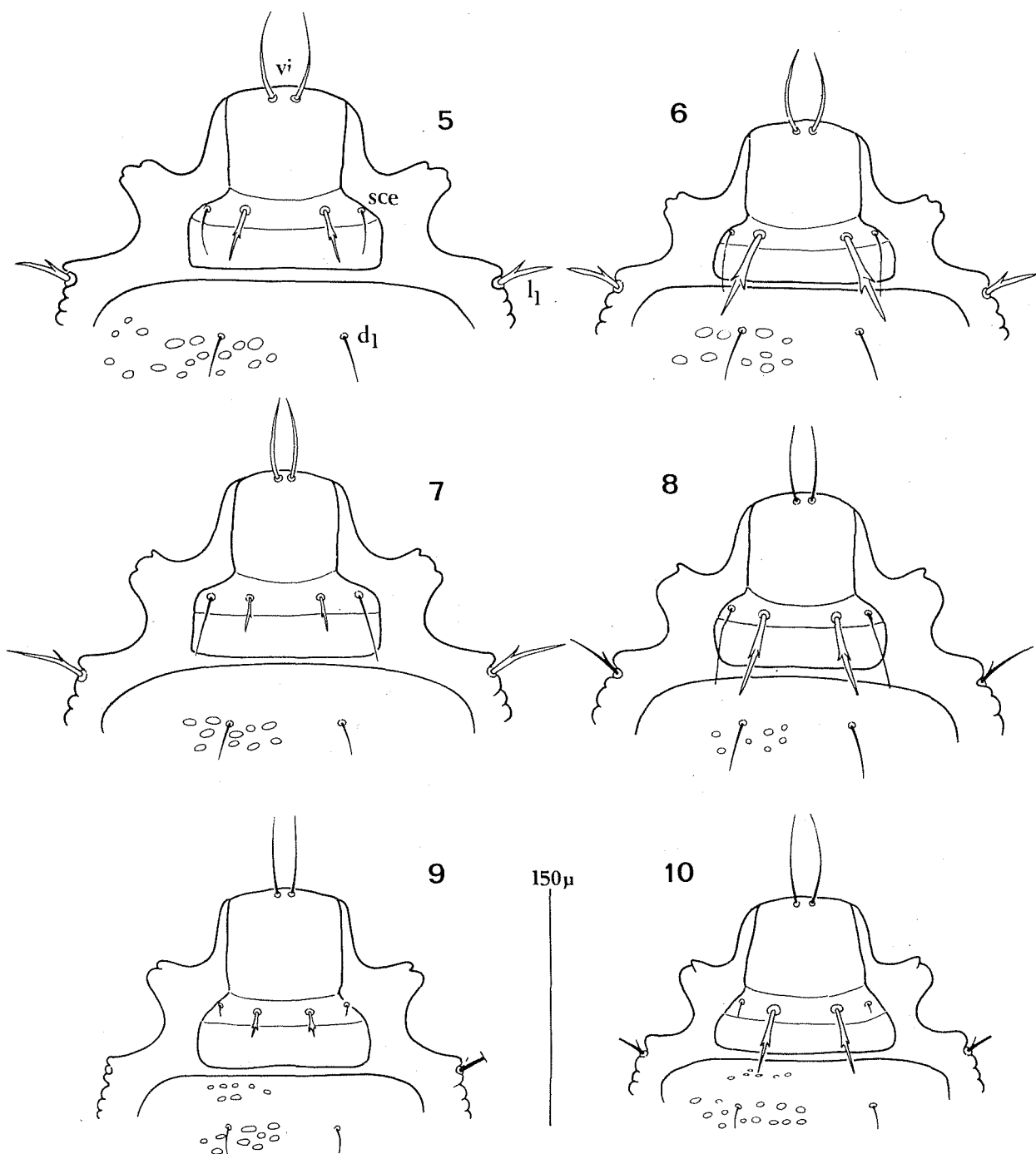
Figs. 11, 12

The males of this new species and those of *Distigmesikya setulata* are the smallest within the genus; each is less than 535 μm in length. The two species are easily distinguishable by the development of the internal scapular setae, 15-20 μm and rarely branched in *D. hoffmannae* and about 10 μm and simple in *D. setulata*.

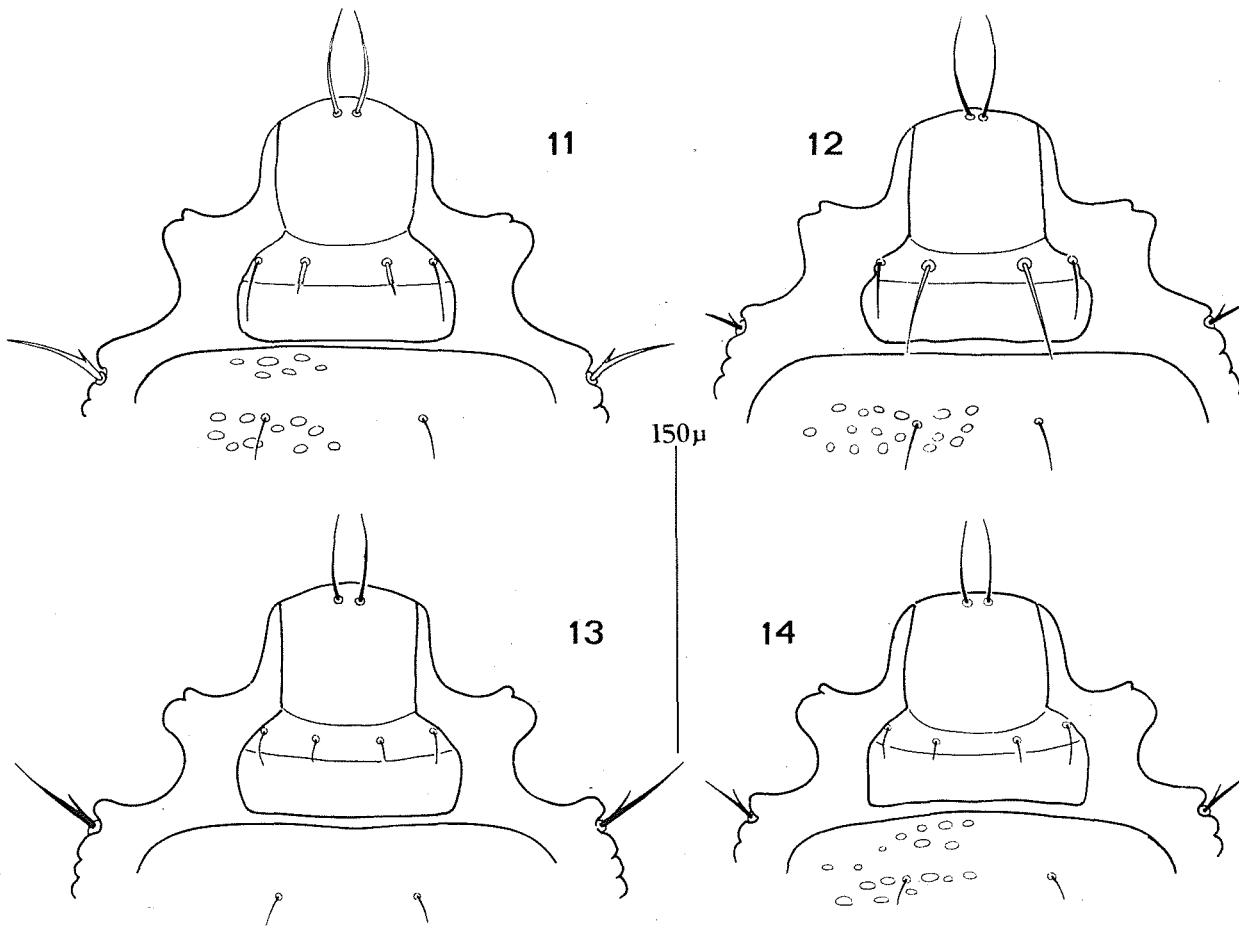
■ MALE (holotype, fig. 11). Length, including gnathosoma, 532 μm ; width at level of setae *h*, 193 μm . Hysterosomal shield with large pits. Scapular setae unequal; *sce* fine, longer than *sci*; *sci* minutely branched. Paragenital sclerites about two times longer than paranal sclerites. Legs III extending to terminus, legs IV extending beyond terminus by tarsus and 1/2 tibia. *Measurements*. Setae: *sce*, 29 μm ; *sci*, 18 μm ; *d 1*, 33 μm ; *l 1*, 49 μm ; *l 3*, 92 μm ; *sce*: *sce*, 92 μm ; *sci*: *sci*, 40 μm . Lengths of genua, tibiae, tarsi I-IV: 51/51/67; 59/61/82; 61/57/92; 69/80/104 μm .

Type data. From *Ara m. militaris* (Linné), Military Macaw: σ holotype, 1 σ , 3 ♀♀ paratypes, Huachipa, Huánuco, Peru, September 7, 1922, J. T. ZIMMER [FMNH 59,540, UGA 11,510 (tail)]; 3 $\sigma\sigma$ paratypes, Fundo Sinchona, Huánuco, Peru, August 2, 1947, J. M. SCHUNKE [FMNH 187,756; UGA 11,506 (tail)]. From *Ara m. mexicana* Ridgway: 3 $\sigma\sigma$ paratypes, Las Peñas, Jalisco, México, April 26, 1909, P. L. OSBURN (AMNH 393,339; UGA 10,316). The holotype and paratypes are deposited at FMNH, paratypes in AMNH in the author's collection.

Etymology. This species is named for Dr. Ani-



FIGS. 5-10 : Propodosomata, anterior hysterosomata of males (on left) and females (on right) :
 5, 6. — *Distigmesikya ramosa*, n. sp. ; 7, 8. — *D. blakei*, n. sp. ; 9, 10. — *D. proportionata*, n. sp. Setae : *d 1*, *l 1*, dorsal and lateral hysterosomals ; *sce*, *sci*, external and internal scapulars ; *vi*, internal vertical.



FIGS. 11-14 : Propodosomata, anterior hysterosomata of males (on left) and females (on right) :
11, 12. — *Distigmesikya hoffmannae*, n. sp. ; 13, 14. — *D. setulata*, n. sp.

ta HOFFMANN, *Jefe de Laboratorio de Acarología*, Universidad Nacional Autónoma de México, who has given us much needed assistance and encouragement in our study of the feather mites of Mexican parrots.

***Distigmesikya blakei*, new species**
Figs. 7, 8

The differences between the related new species *Distigmesikya blakei* and *D. ramosa* have been given in the previous description.

■ MALE (holotype, fig. 7). Length, including gnathosoma, 563 μ m ; width at level of setae *h*,

316 μ m. Hysterosomal shield with subintegumental pattern (pits in some specimens). Scapular seta long ; *sce* fine ; *sci* thick, branched. Paragenital sclerites about two times longer than paranal sclerites. Legs III extending slightly beyond terminus, legs IV extending beyond terminus by tarsus and 2/3 of tibia. *Measurements*. Setae : *sce*, [63 μ m] ; *sci*, 20 μ m ; *d 1*, 33 μ m ; *l 1*, 61 μ m ; *l 3*, 118 μ m ; *sce* : *sce*, 96 μ m ; *sci* : *sci*, 45 μ m. Lengths of genua, tibiae, tarsi I-IV : 59/61/74 ; 67/65/94 ; 67/69/106 ; 74/94/118 μ m.

■ FEMALE (paratype, fig. 8). Length, including gnathosoma, 540 μ m ; width at level of setae *h*, 270 μ m. Hysterosomal shield with large pits. External scapular setae fine, longer than *sci* ;

internal scapular setae coarsely branched. *Measurements*. Setae : *sce*, 49 μ m ; *sci*, 55 μ m ; *l 1*, 33 μ m ; *sce* : *sce*, 91 μ m ; *sci* : *sci*, 45 μ m. Otherwise, similar to *D. setulata*.

Type data. From *Ara chloroptera* G. R. Gray, Green-winged Macaw : σ holotype, 9 $\sigma\sigma$, 2 ♀♀ paratypes, Puerto Valdivia, Cauca River, Antioquia, Colombia, December 19, 1914, L. E. MILLER and H. S. BOYLE (AMNH 133,009 ; UGA 10,338) ; 1 ♀ paratype, Río Arauca, Arauca, Colombia, March 30, 1947, K. VON SNEIDERN (FMNH 261,080 ; UGA 11,382) ; 1 ♀ paratype, Cuturú, Antioquia, Colombia, August 4, 1947, K. VON SNEIDERN (FMNH 190,745 ; UGA 11,379) ; 1 σ paratype, Machiques, Zulia, Venezuela, February 14, 1920, OSGOOD and CONOVER (FMNH 110,180 ; UGA 11,386).

Additional material. From *Ara macao* (Linné), Scarlet Macaw : 1 σ , 2 ♀♀ , Isla de Coiba, Panama, January 15, 1956, A. WETMORE (NMNH

460,654 ; UGA 9,668) ; 1 σ , Mt. Duida, Amazona, Venezuela, December 6, 1928, OLALLA Brothers (AMNH 372,383 ; UGA 11,253) ; 1 σ , Kaiserberg Airstrip, Zuid River, Surinam, October 13, 1960, H. A. BEATTY [FMNH 260,146 ; UGA 11,513 (wings)].

Etymology. Dr. Emmet R. (Bob) BLAKE has collected many birds in México ; he is a delightful person who has given us advice and assistance when we were working at the Field Museum of Natural History. This species is to give due recognition to Dr. BLAKE.

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Paru en mars 1984.