



CHAPTER III

RESULTS

Measurements of length and width of filament, scale index, ratio of medulla and cortex do not seem to have much taxonomic value (Histogram on page 52). Regrouping of bats of Thailand in the following table is based on shape of filament, medulla, scale pattern and pigmentation.

Group No.	Structures	Species	Taxonomic levels
1	Straight filament.	<u>Pteropus lylei</u>	SO1,F1,SF1
	Medulla:fragment.	<u>P. hypomelanus</u>	" _____ "
	Irregular mosaic with smooth margin scale	<u>P. vampyrus</u>	" _____ "
2	Straight filament.	<u>Cynopterus brachyotis</u>	SO1,F1,SF1
	Medulla:uniserial	<u>C. sphinx</u>	" _____ "
	ladder with clump of pigment granules at base of medullary vacuoles. Entire coronal scale.	<u>C. horsfieldi</u>	" _____ "
		<u>Chironax melanocephalus</u>	" _____ "

Group No.	Structures	Species	Taxonomic levels
3	Straight filament. Medulla:uniserial ladder with clump of pigment granules at base of medullary vacuoles. Repand coronal scale.	<u>Balionycteris maculata</u>	S01,F1,SF1
4	Straight filament. Medulla:uniserial ladder with clump of pigment granules at base of medullary vacuoles. Broad lobate coronal scale.	<u>Rousettus leschenaulti</u>	S01,F1,SF1
5	Straight filament. Medulla:uniserial ladder with clump of pigment granules at base of medullary vacuoles. Unequal hastate coronal scale.	<u>Sphaerias blanfordi</u> <u>Megaerops niphae</u> <u>M. ecaudatus</u> <u>Rousettus amplexicaudatus</u> <u>Craseonycteris thonglongyai</u> <u>Megaderma lyra</u> <u>M. Spasma</u>	S01,F1,SF1 "____" "____" "____" S02,F4 S02,F6 "____"

Group No.	Structures	Species	Taxonomic levels
6	Straight filament.	<u>Macroglossus sobrinus</u>	S01,F1,SF2
	Medulla:uniserial	<u>M. minimus</u>	"_____"
	ladder with clump		
	of pigment granules.		
	Repand coronal scale.		
7	Straight filament.	<u>Eonycteris spelaea</u>	S01,F1,SF2
	Medulla:absent.		
	Broad lobate coronal		
	scale. Densed pigment.		
8	Straight filament.	<u>Emballonura monticola</u>	S02,F3
	Medulla:absent.	<u>Saccolaimus saccolaimus</u>	"____"
	Toothed edge	<u>Cheiromeles torquatus</u>	S02,F10
	coronal scale.	<u>Tadarida plicata</u>	"____"
	Dispersed pigment.		
9	Straight filament.	<u>Taphozous longimanus</u>	S02,F3
	Medulla:absent.	<u>T. melanopogon</u>	"____"
	Toothed edge	<u>T. theobaldi</u>	"____"
	coronal scale.	<u>Chaerephon plicata</u>	S02,F10
	Cross-banding pigment.		

Group No.	Structures	Species	Taxonomic levels
10	Straight filament.	<u>Rhinopoma microphyllum</u>	S02,F2
	Medulla:absent.	<u>Nycteris tragata</u>	S02,F5
	Hastate coronal scale.	<u>Hipposideros galeri</u>	S02,F8
	Dispersed pigment.	<u>H. lekauli</u>	" "
		<u>H. larvatus</u>	" "
		<u>H. diadema</u>	" "
		<u>H. armiger</u>	" "
		<u>Tylonycteris pachypus</u>	S02,F9
		<u>Scotomanes ornatus</u>	" "
		<u>Kerivoula minuta</u>	" "
11	Straight filament.	<u>Hipposideros bicolor</u>	S02,F8
	Medulla:absent.	<u>H. ater</u>	" "
	Hastate coronal scale.	<u>H. cineraceus</u>	" "
	Densed pigment.	<u>H. halophyllus</u>	" "
		<u>Glischropus tylophus</u>	S02,F9
		<u>Eptesicus serotinus</u>	" "
		<u>E. dermissus</u>	" "
		<u>E. pachyotis</u>	" "
		<u>Hesperoptenus blanfordi</u>	" "
		<u>Nyctalus noctula</u>	" "
		<u>Scotophilus kuhli</u>	" "
		<u>Phoniscus atrox</u>	" "
	<u>Kerivoula picta</u>	" "	

Group No.	Structures	Species	Taxonomic levels
12	Straight filament.	<u>Hipposideros</u> <u>lylei</u>	S02,F8
	Medulla:absent.	<u>H. turpis</u>	" "
	Hastate coronal scale.	<u>Coelops</u> <u>frithi</u>	" "
	Densed-band pigment.	<u>C. robinsoni</u>	" "
		<u>Aselliscus</u> <u>stoliczkanus</u>	" "
		<u>Myotis</u> <u>muricola</u>	S02,F9
		<u>M. siligorensis</u>	" "
		<u>M. annectans</u>	" "
		<u>M. rosseti</u>	" "
		<u>M. horsfieldi</u>	" "
		<u>M. hasselti</u>	" "
		<u>M. chinensis</u>	" "
		<u>Ia</u> <u>io</u>	" "
		<u>Hesperoptenus</u> <u>tickelli</u>	" "
		<u>Tylonycteris</u> <u>robustula</u>	" "
		<u>Murina</u> <u>tubinaris</u>	" "
		<u>M. cyclotis</u>	" "
	<u>Kerivoula</u> <u>papillosa</u>	" "	
	<u>K. hardwickei</u>	" "	
	<u>Harpiocephalus</u> <u>harpia</u>	" "	
13	Constrictor filament.	<u>Pipistrellus</u> <u>irvanicus</u>	S02,F9
	Medulla:absent.	<u>Miniopterus</u> <u>tubinaris</u>	" "
	Repand coronal scale.	<u>M. macrodens</u>	" "
	Densed-band pigment.		

Group No.	Structures	Species	Taxonomic levels
14	Constrictor filament.	<u>Pipistrellus coromandra</u>	SO2,F9
	Medulla:absent	<u>P. tenuis</u>	" "
	Hastate coronal scale.	<u>P. mimus</u>	" "
	Densed band pigment.	<u>P. cardornae</u>	" "
		<u>P. pulveratus</u>	" "
		<u>P. circumdatus</u>	" "
		<u>Miniopterus schreiber</u>	" "
15	Constrictor filament.	<u>Rhinolohpus malayanus</u>	SO2,F7
	Medulla:absent.	<u>R. stheno</u>	" "
	Hastate coronal scale.	<u>R. thomasi</u>	" "
	Dispersed pigment.	<u>R. affinis</u>	" "
		<u>R. robinsoni</u>	" "
		<u>R. lepidus</u>	" "
		<u>R. acuminatus</u>	" "
		<u>R. pusillus</u>	" "
		<u>R. macrotis</u>	" "
		<u>R. pearsoni</u>	" "
		<u>R. yunanensis</u>	" "
		<u>R. coelophyllus</u>	" "
		<u>R. marshalli</u>	" "
		<u>R. shameli</u>	" "
		<u>R. paradoxolophus</u>	" "
<u>R. trifoliatus</u>		" "	
<u>R. luctus</u>		" "	

Figures group B

The arrangement of photomicrograph in each figure:

- Upper row = Scanning electron micrographs of the cuticular scale.
- Middle row = Photomicrographs of types of medulla and pigmentation.
- Lower row = Photomicrographs of cross-section from the widest part of the middle portion of hair.

Each vertical column represents one species.

All photomicrographs are taken from 1000x.

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Figure 1

Suborder Megachiroptera

Family Pteropodidae

Genus Cynopterus

- a. Cynopterus brachyotis
- b. Cynopterus sphinx
- c. Cynopterus horsfieldi

Genus Chironax

- d. Chironax melanocephalus

Genus Balionycteris

- e. Balionycteris maculata

Genus Sphaerias

- f. Sphaerias blanfordi

Genus Megaerops

- g. Megaerops niphanae
- h. Megaerops ecaudatus

ศูนย์อนุรักษ์นกและสัตว์เลี้ยงลูกด้วยนม
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Figure 1

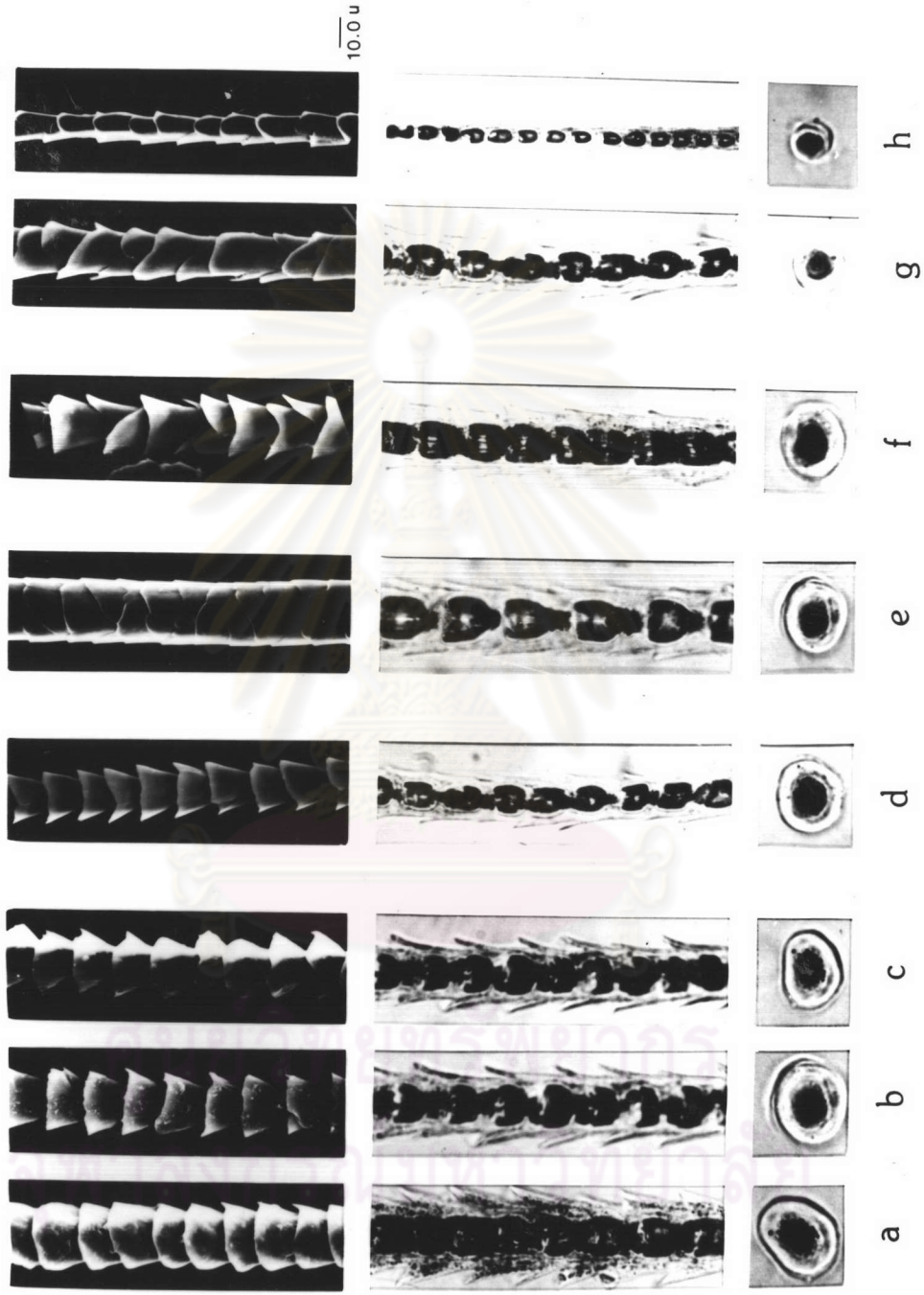


Figure 2

Genus Rousettus

a. Rousettus amplexicaudatus

b. Rousettus leschenaulti

Genus Pteropus

c. Pteropus lylei

d. Pteropus hypomelanus

e. Pteropus vampyrus

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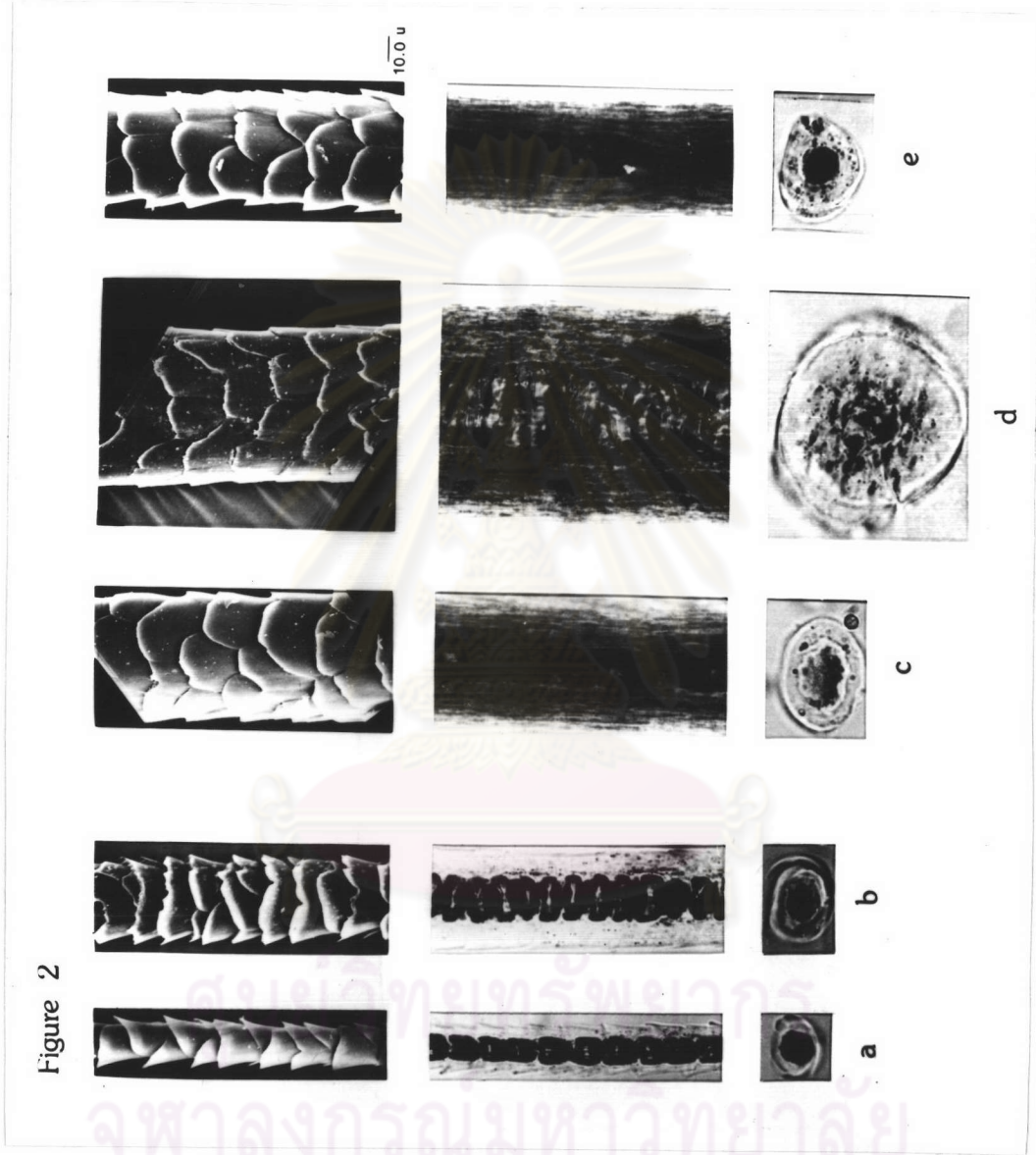


Figure 3

Genus Macroglossus

a. Macroglossus sobrinus

b. Macroglossus minimus

Genus Eonycteris

c. Eonycteris spelaea

Suborder Microchiroptera

Family Rhinopomatidae

Genus Rhinopoma

d. Rhinopoma microphyllum

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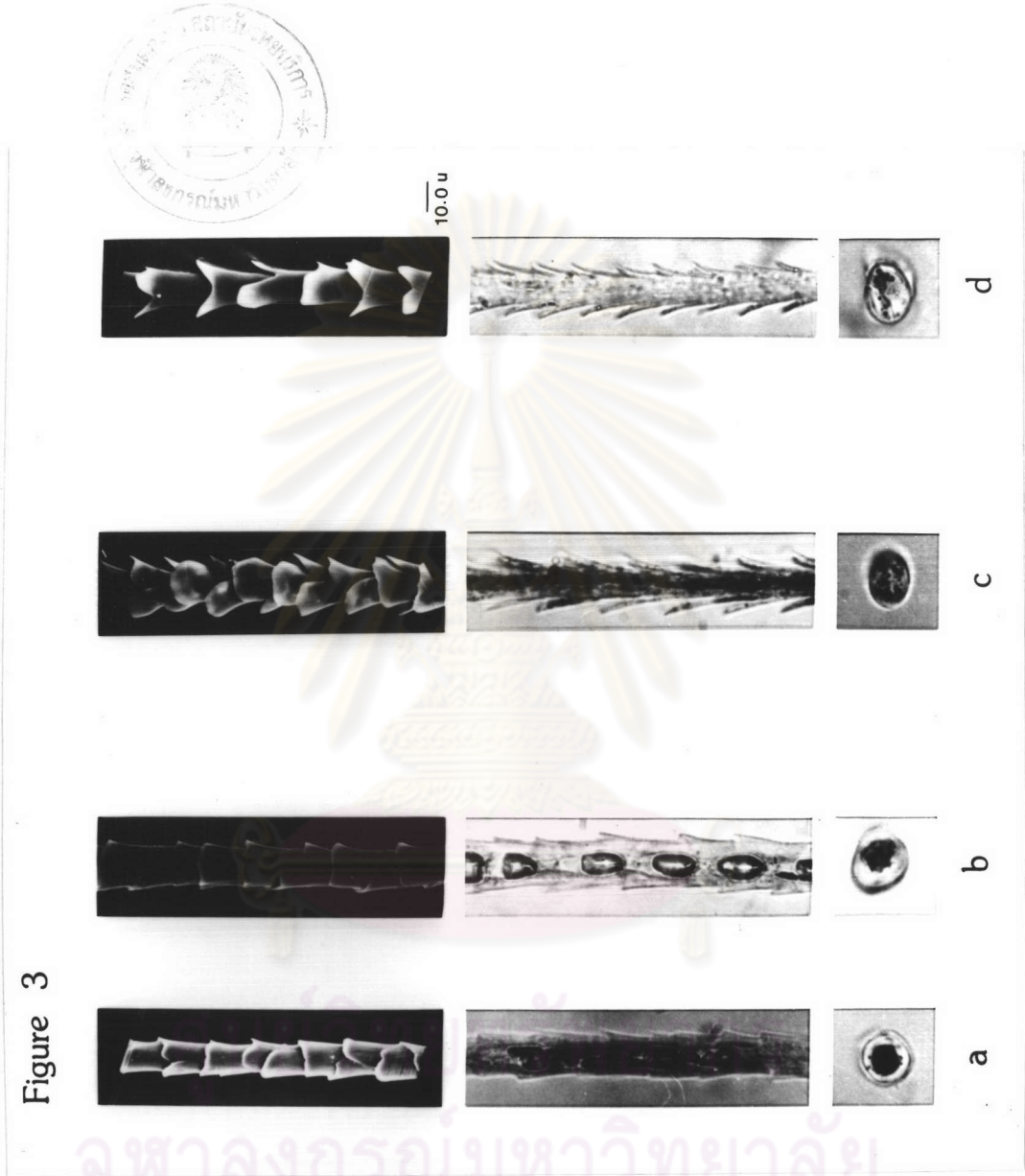


figure 4

Family Emballonuridae

Genus Emballonura

a. Emballonura monticola

Genus Saccolaimus

b. Saccolaimus saccolaimus

Genus Taphozous

c. Taphozous longimanus

d. Taphozous melanopogon

e. Taphozous theobaldi

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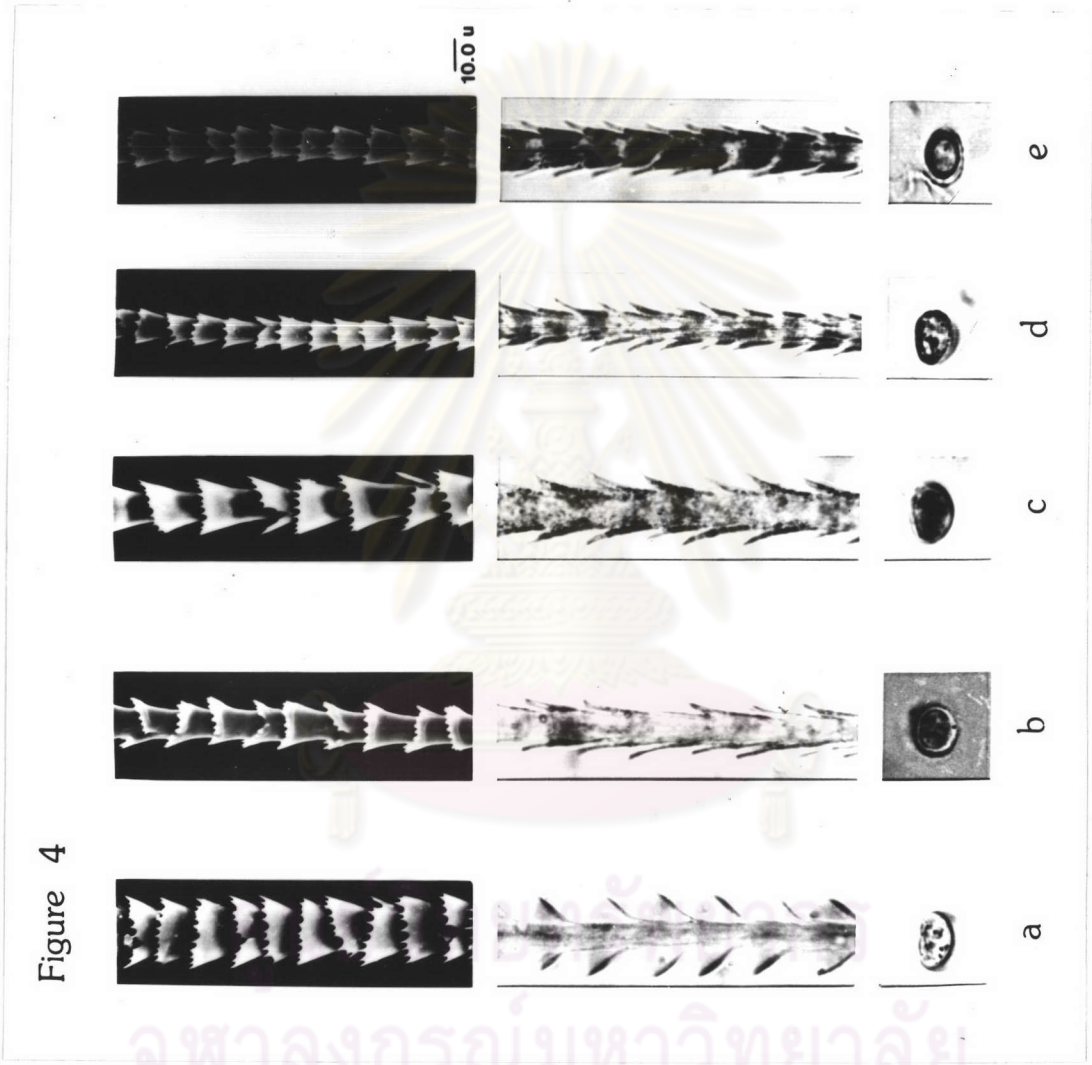


Figure 5

Family Craseonycteridae

Genus Craseonycteris

a. Craseonycteris thonglongyai

Family Nycteridae

Genus Nycteris

b. Nycteris tragate

Family Megadermatidae

Genus Megaderma

c. Megaderma lyra

d. Megaderma spasma

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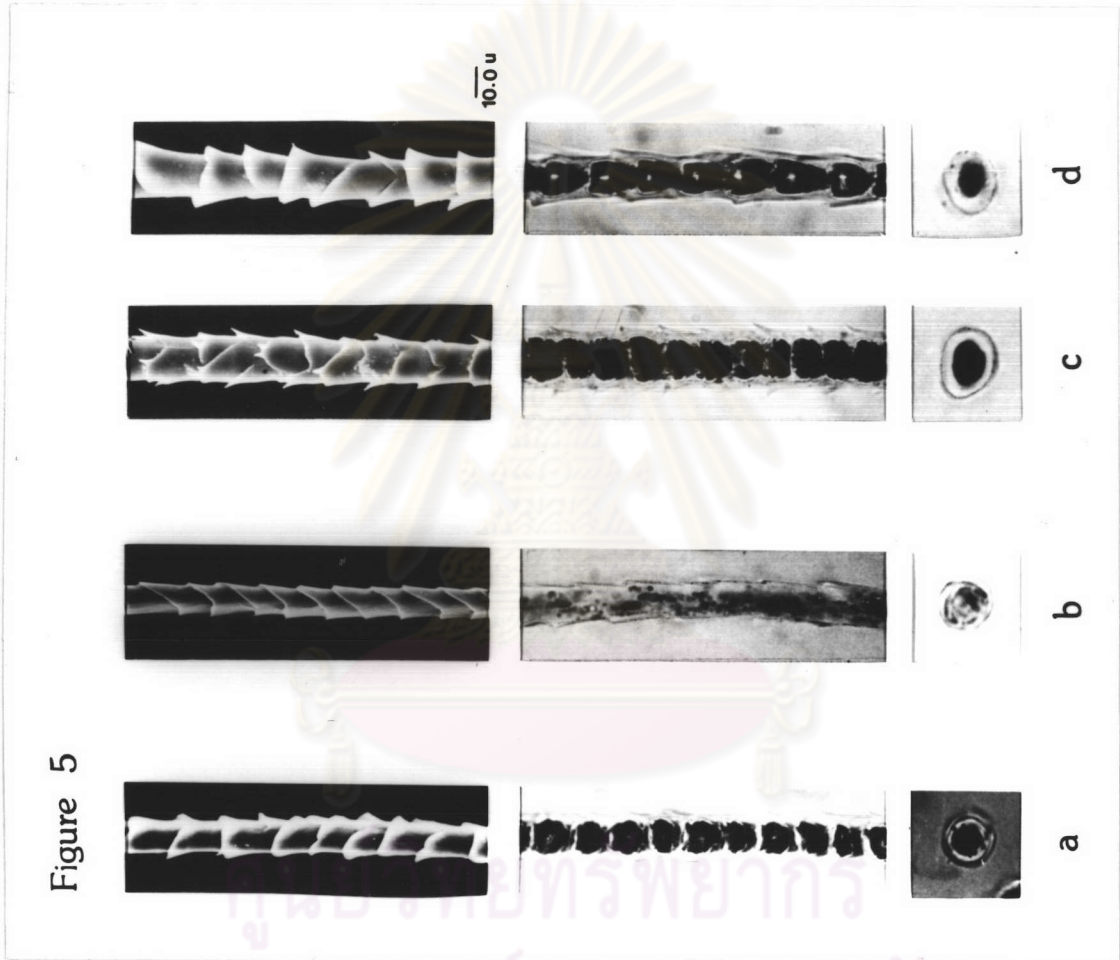


Figure 6

Family Rhinolophidae

Genus Rhinolophus

Vertical column A. Representative hair structure of the
structure part in common of this family.

- a. Rhinolophus malayanus
- b. Rhinolophus affinis
- c. Rhinolophus robinsoni
- d. Rhinolophus stheno
- e. Rhinolophus thomasi
- f. Rhinolophus lepidus
- g. Rhinolophus acuminatus
- h. Rhinolophus pusillus
- i. Rhinolophus macrotis
- j. Rhinolophus coelophyllus
- k. Rhinolophus shameli
- l. Rhinolophus marshali
- m. Rhinolophus paradoxolophus
- n. Rhinolophus trifoliatus
- o. Rhinolophus luctus
- p. Rhinolophus pearsoni
- q. Rhinolophus yunanensis

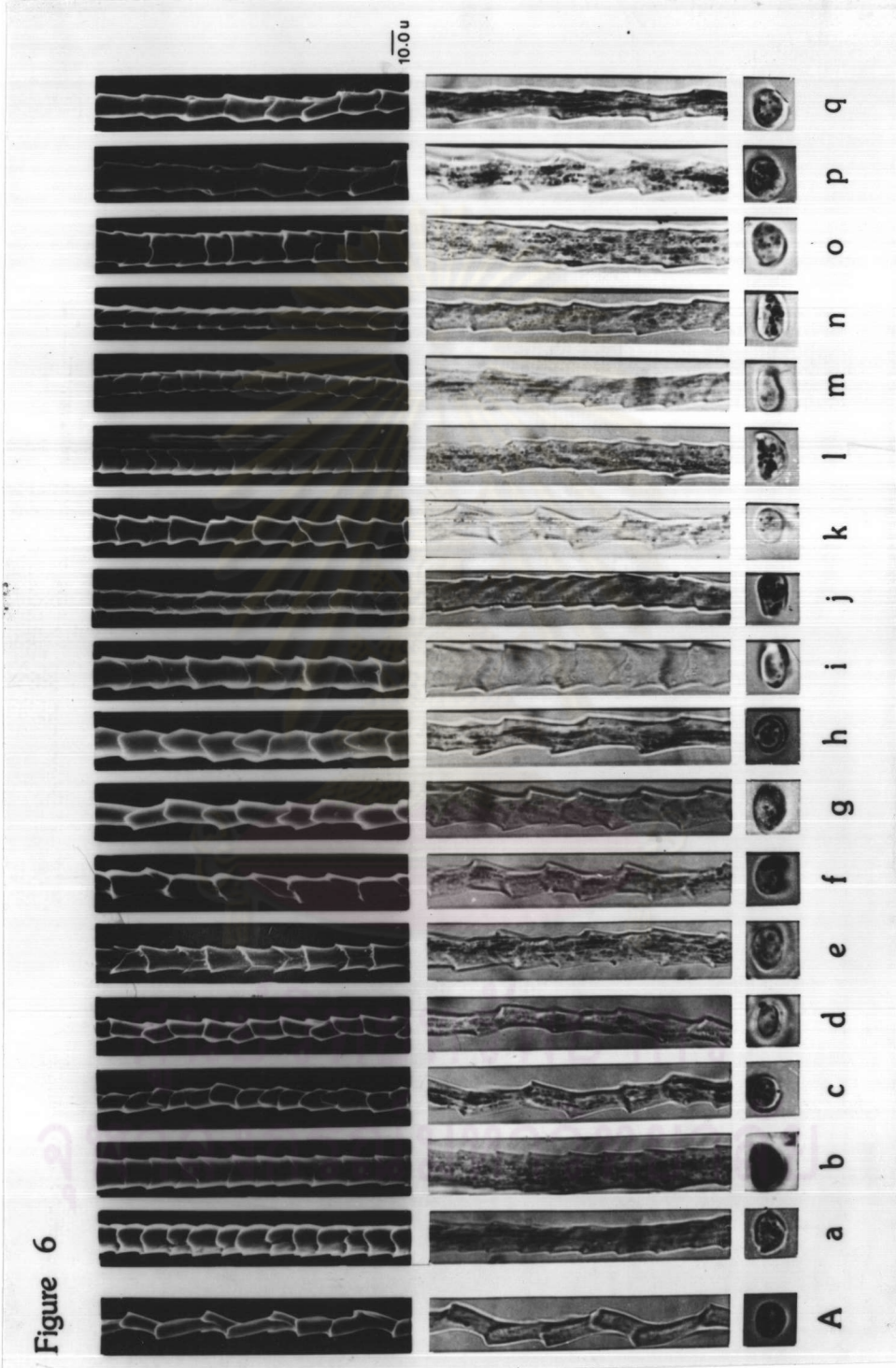


Figure 7

Family Hipposideridae

Genus Hipposideros

- a. Hipposideros bicolor
- b. Hipposideros ater
- c. Hipposideros cineraceus
- d. Hipposideros halophyllus
- e. Hipposideros galeritus
- f. Hipposideros lylei
- g. Hipposideros armiger
- h. Hipposideros turpis
- i. Hipposideros lekauli
- j. Hipposideros larvatus
- k. Hipposideros diadema

Genus Coelops

- l. Coelops frithi
- m. Coelops robinsoni

Genus Aselliscus

- n. Aselliscus stoliczkanus

Figure 7

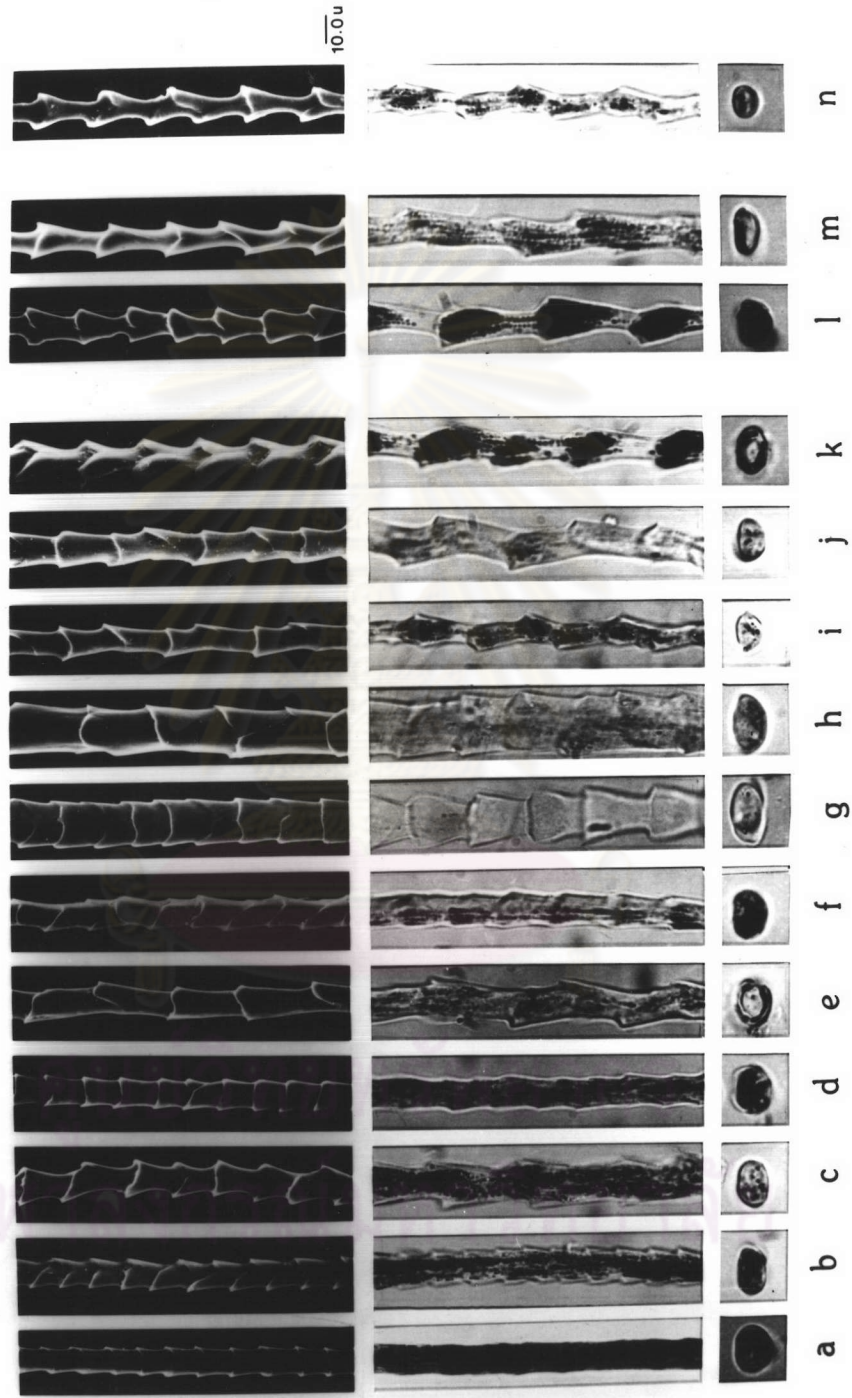


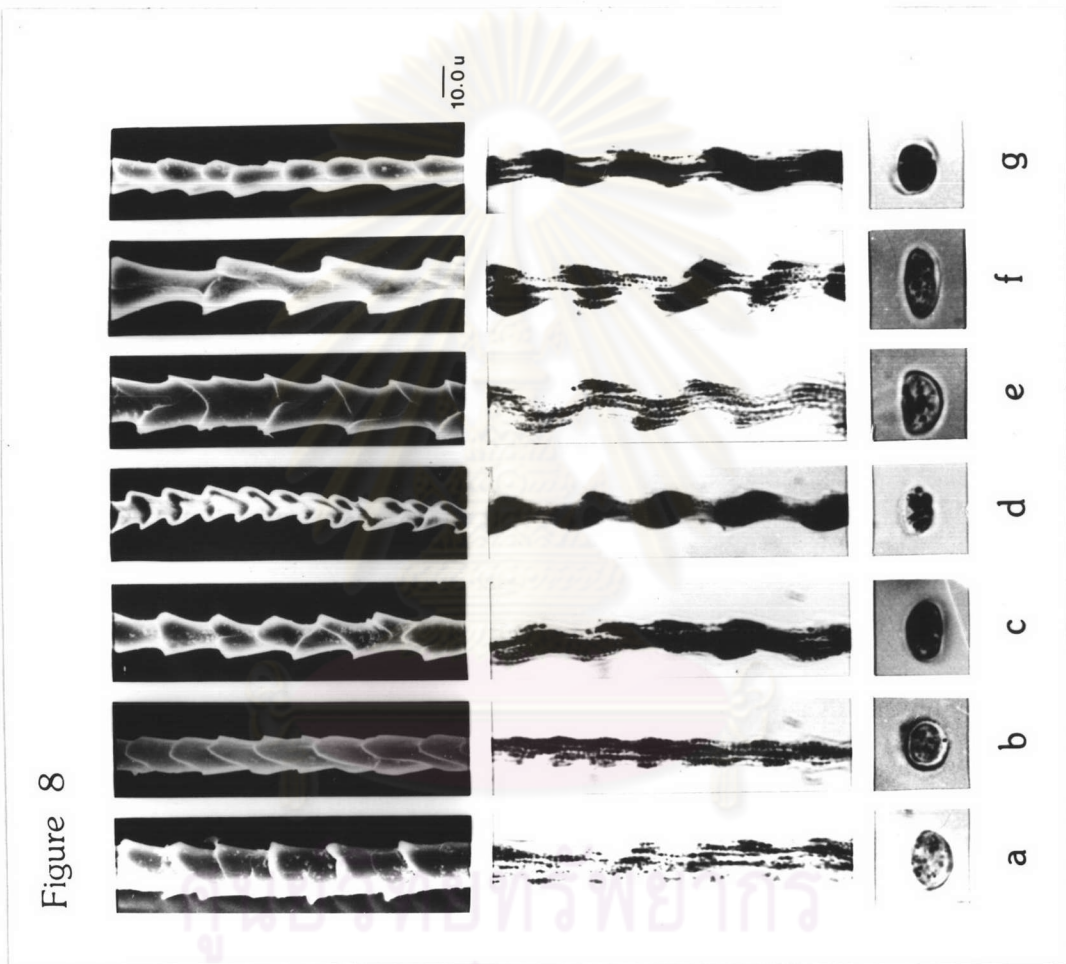
Figure 8

Family Vespertilionidae

Genus Myotis

- a. Myotis muricola
- b. Myotis siligorensis
- c. Myotis annectans
- d. Myotis rosseti
- e. Myotis horsfieldi
- f. Myotis hasseltii
- g. Myotis chinensis

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Figure 9

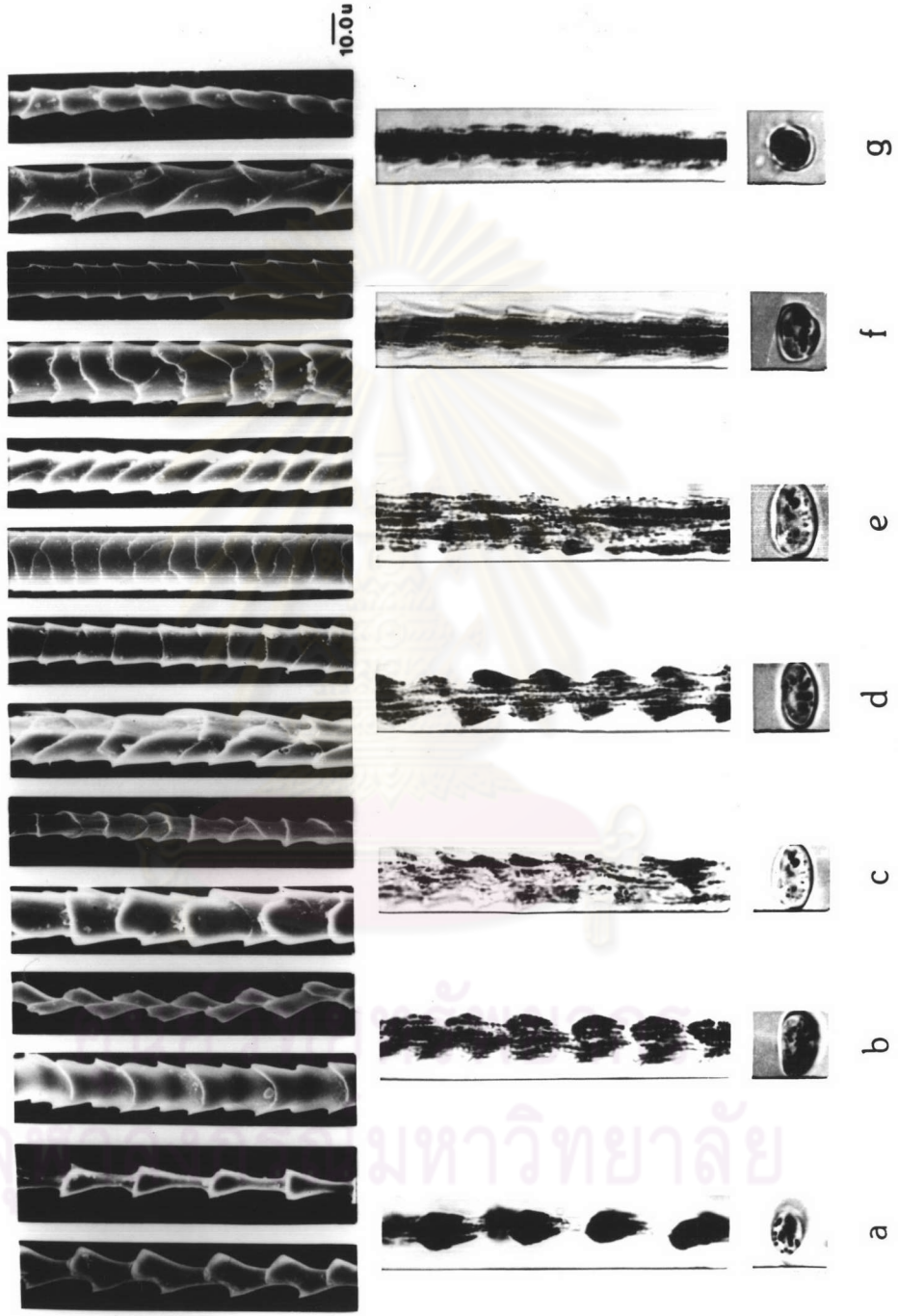
Photomicrographs of a-g on the upper row represent two different size of cuticular scale alternately appear along the filament.

Genus Pipistrellus

- a. Pipistrellus coromandra
- b. Pipistrellus tenuis
- c. Pipistrellus mimus
- d. Pipistrellus cadornae
- e. Pipistrellus javanicus
- f. Pipistrellus pulveratus
- g. Pipistrellus circumdatus

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Figure 9



มหาวิทยาลัย

Figure 10

Genus Glischropus

a. Glischropus tylopus

Genus Eptesicus

b. Eptesicus serotinus

c. Eptesipus demissus

d. Eptesipus pachyotis

Genus Ia

e. Ia io

Genus Hesperoptenus

f. Hesperoptenus blanfordi

g. Hesperoptenus tickelli

Genus Nyctalus

h. Nyctalus noctula

Genus Tylonycteris

i. Tylonycteris pachypus

j. Tylonycteris robustula

Genus Scotomanes

k. Scotomanes ornatus

Genus Scotophilus

l. Scotophilus kuhlii

Figure 10

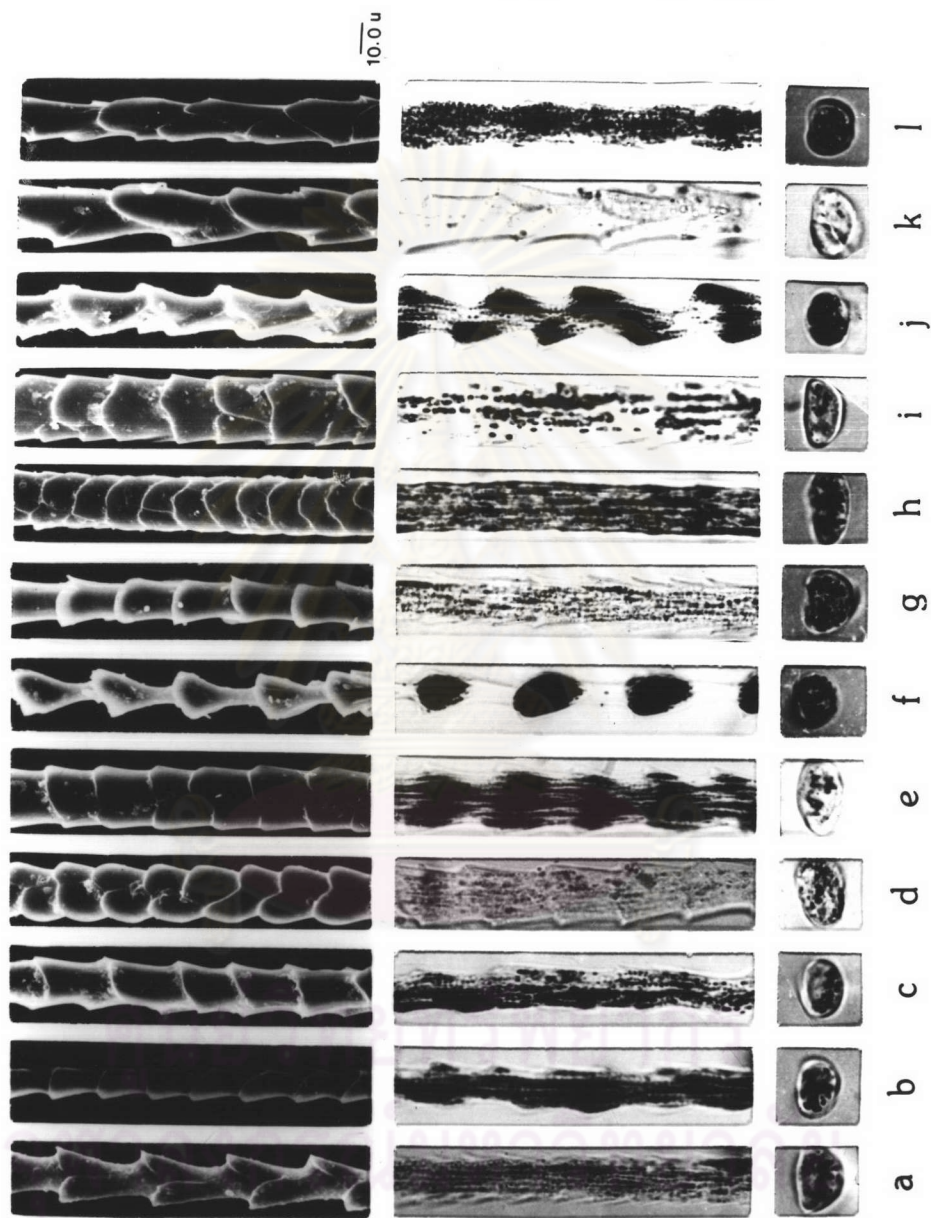


Figure 11

Photomicrographs of a-c on the upper row represent two different size of cuticular scale alternately appear along the filament.

Genus Miniopterus

- a. Miniopterus macrodens
- b. Miniopterus haradai
- c. Miniopterus medius

Genus Murina

- d. Murina cyclotis
- e. Murina huttoni

Genus Harpiocephalus

- f. Harpiocephalus harpia

Genus Kerivoula

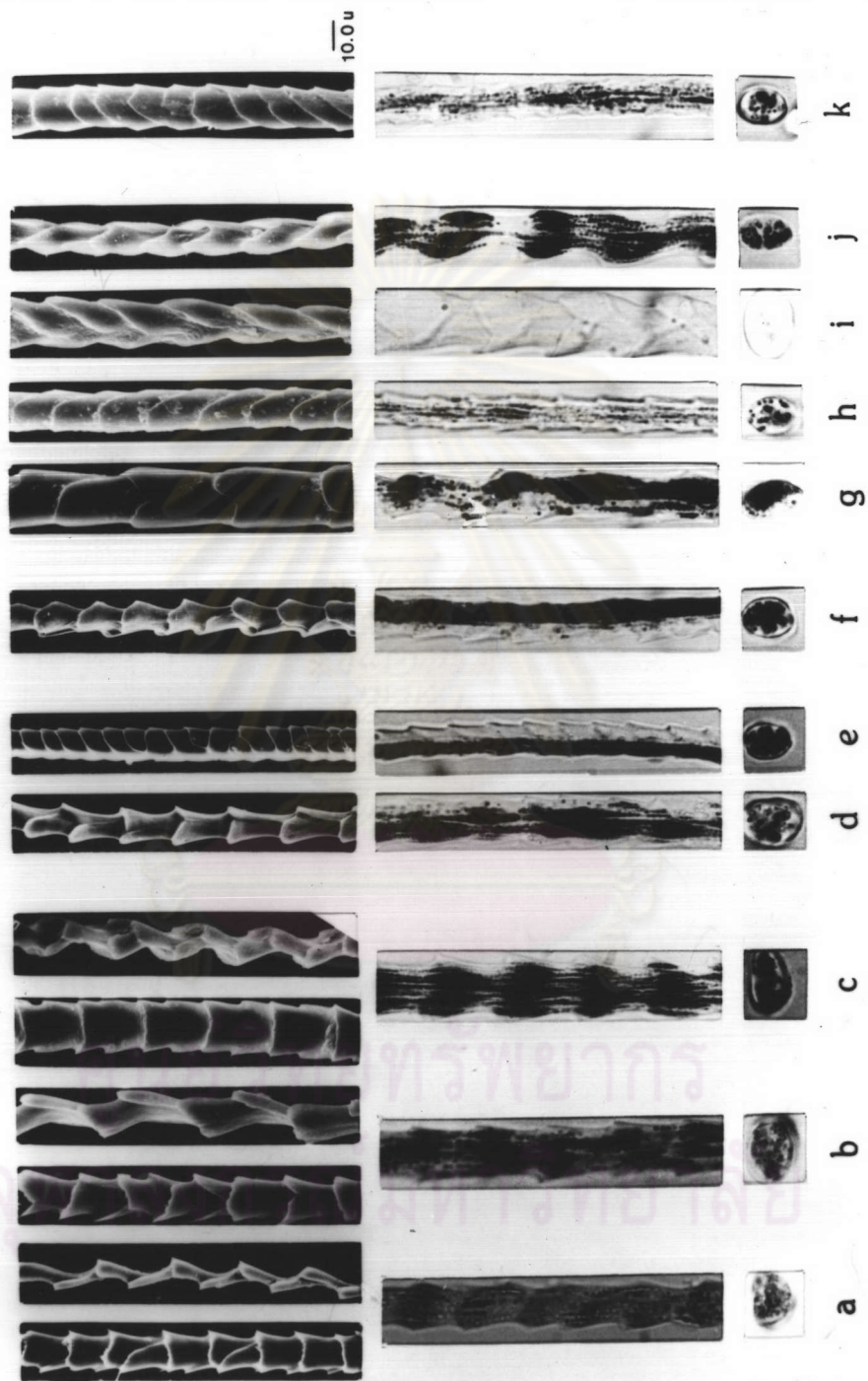
- g. Kerivoula papillosa
- h. Kerivoula picta
- i. Kerivoula minata
- j. Kerivoula hardwickei

Genus Phoniscus

- k. Phoniscus atrox



Figure 11



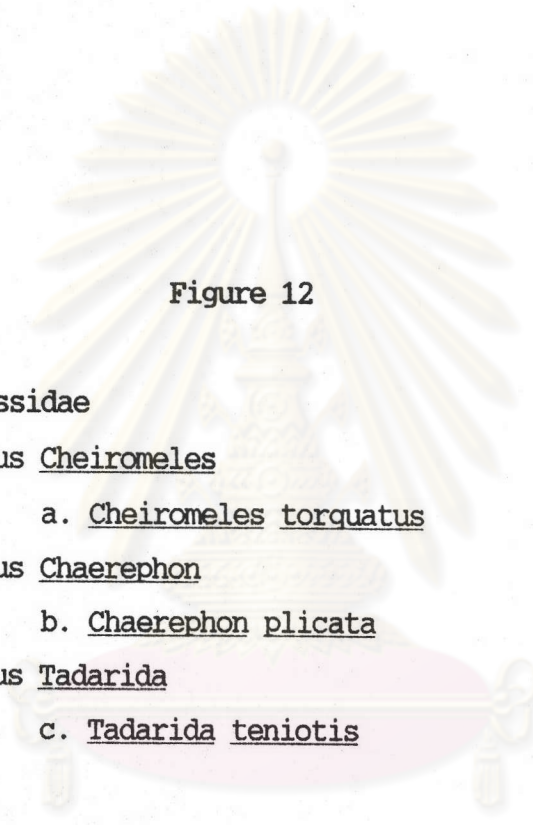


Figure 12

Family Molossidae

Genus Cheiromeles

a. Cheiromeles torquatus

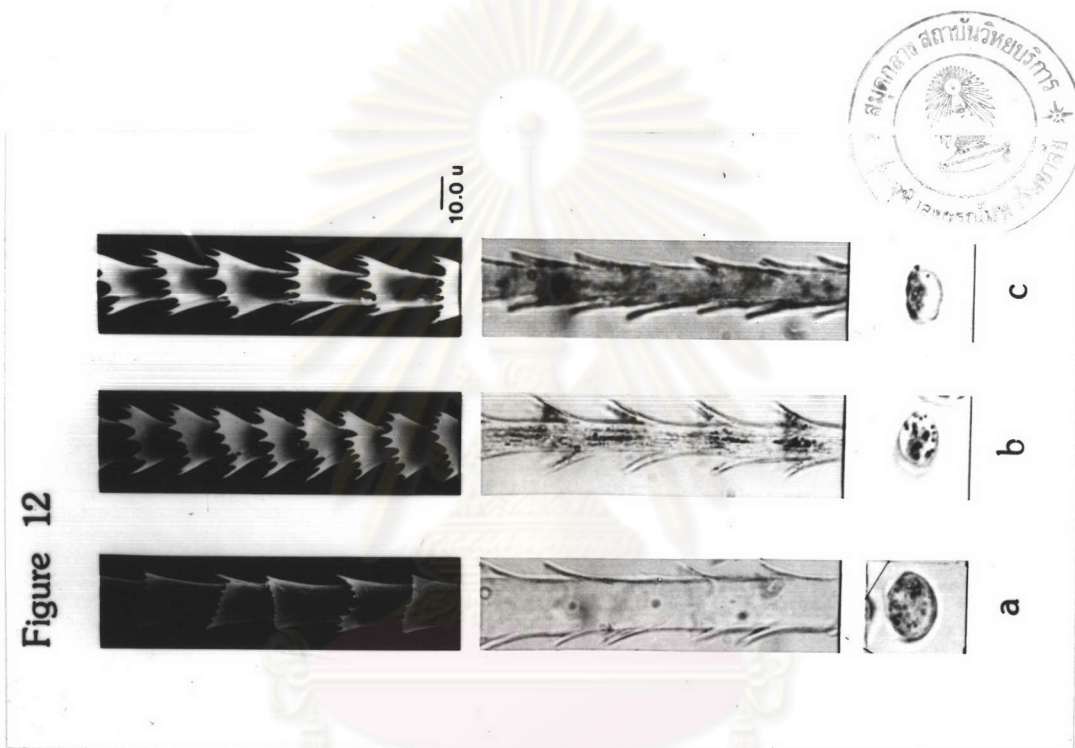
Genus Chaerephon

b. Chaerephon plicata

Genus Tadarida

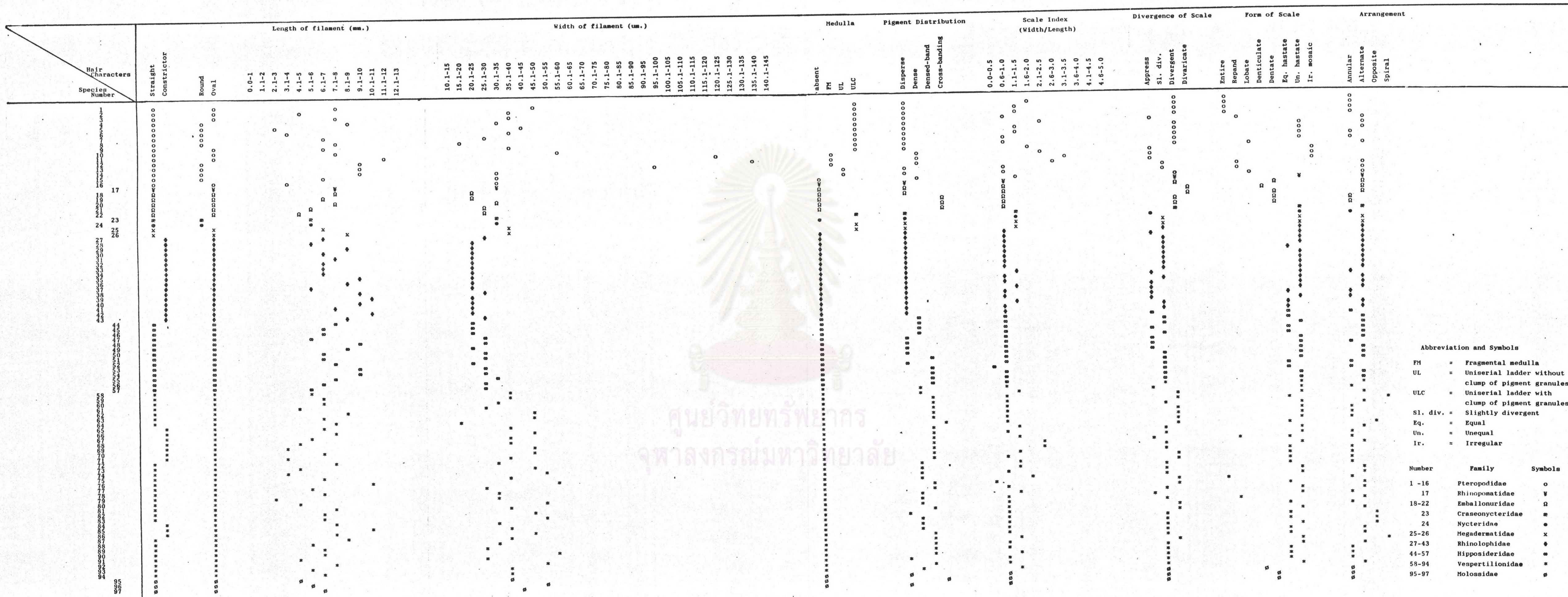
c. Tadarida teniotis

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Histogram of hair structure



Abbreviation and Symbols

FM = Fragmental medulla
 UL = Uniserial ladder without clump of pigment granules
 ULC = Uniserial ladder with clump of pigment granules
 Sl. div. = Slightly divergent
 Eq. = Equal
 Un. = Unequal
 Ir. = Irregular

Number	Family	Symbols
1-16	Pteropodidae	o
17	Rhinopomatidae	v
18-22	Emballonuridae	Ω
23	Craseonycteridae	⊙
24	Nycteridae	•
25-26	Megadermatidae	x
27-43	Rhinolophidae	⊕
44-57	Hipposideridae	⊙
58-94	Vespertilionidae	*
95-97	Molossidae	⊖