

# UNIT 1 B

## ACANTHOCEPHALA

(Thorny or Spiny-headed worms)

## CLASSIFICATION



- Scientific classification

- Kingdom : Animalia

- Clade : Gnathifera

- Phylum : Acanthocephala Koelreuter, 1771

- Class

- Palaeacanthocephala

- Archiacanthocephala

- Polyacanthocephala

- Eoacanthocephala

# Classification of the Acanthocephala

by Amin (1985)

- Class

1. CLASS **Archiacanthocephala** Meyer, 1931
2. CLASS **Eoacanthocephala** Van Cleave, 1936
3. CLASS **Palaeacanthocephala** Meyer, 1931
4. CLASS **Polyacanthocephala** Amin, 1987

# 1. CLASS **Archiacanthocephala** Meyer, 1931

## 1. ORDER **Apororhynchida** Thapar, 1927

- Family **Apororhynchidae** Shipley, 1899

GENUS ***Apororhynchus***

## 2. ORDER **Gigantorhynchida** Southwell et Macfie, 1925

- Family **Gigantorhynchidae** Hamann, 1892

GENUS ***Gigantorhynchus*** Hamann, 1892

GENUS ***Mediorhynchus*** Van Cleave, 1916

## 3. ORDER **Moniliformida** Schmidt, 1972

- Family **Moniliformidae** Van Cleave, 1924

GENUS ***Australiformis*** Schmidt et Edmonds, 1989

GENUS ***Moniliformis*** Travassos, 1915

GENUS ***Promoniliformis*** Dollfus et Golvan, 1963

## 4. ORDER **Oligacanthorhynchida** Petrochenko, 1956

### – Family **Oligacanthorhynchidae** Southwell et Macfie, 1925

- Genera/spp.:

- **Cucullanorhynchus** Amin, Ha et Heckmann, 2008,
- **Heptamegacanthus** Spencer-Jones, 1990,
- **Macracanthorhynchus** Travassos, 1917,
- **Multisentis** Smales, 1997,
- **Neonicola** Schmidt, 1972,
- **Nephridiacanthus** Meyer, 1931 (Species **N. gerberi** **N. kamerunensis** **N. longissimus** **N. major**),
- **Oligacanthorhynchus** Travassos, 1915 (**O. aenigma**, **O. atratus**, **O. bangalorensis**, **O. carinii**, **O. cati**, **O. circumflexus**),
- **Oncicola** Travassos, 1916 (**O. confusa** **O. dimorpha** **O. gigas** **O. luehei**, **O. machadoi** **O. macrurae**)
- **Pachysentis** Meyer, 1931 (**P. dollfusi**, **P. ehrenbergi**, **P. gethi**, **P. lenti**, **P. procumbens**, **P. rugosus**),
- **Paraprosthenorchis** Amin, Ha et Heckmann, 2008 (**P. ornatus**),
- **Prosthenorchis** Travassos, 1915 (**P. elegans**, **P. fraterna**, **P. lemuri**, **P. pardalis**, **P. sinicus**)

## 2.CLASS **Eoacanthocephala** Van Cleave, 1936

### 1. ORDER **Gyracanthocephala** Van Cleave, 1936

#### – 1. Family **Quadrigyridae** Van Cleave, 1920

- 1. Subfamily **Pallisentinae** Van Cleave, 1928

- Genera/spp.:

- » ***Acanthogyrus*** Thapar, 1927; Subgenus ***Acanthogyrus*** Thapar, 1927 [***A. (A.) acanthogyrus*** ***A. (A.) tripathii*** ***A. (A.) acanthuri*** ],
    - » Genus: ***Palliolisentis*** Machado Filho, 1960 [***P. ornatus*** ***P. polyonca*** ***P. quinqueungulis*** ],
    - » Genus: ***Pallisentis*** Van Cleave, 1928 SUBGENUS ***Brevitritospinus*** [SPECIES ***P. (B.) allahabadi*** ***P. (B.) cavasii*** ***P. (B.) croftoni*** ***P. (B.) fasciati*** ***P. (B.) fotedari*** ***P. (B.) guntei*** ***P. (B.) indica*** ],
    - » Genus: ***Pararaosentis*** Amin, Heckmann, Ha, Luc et Doanh, 2000 [***P. golvani*** ],
    - » Genus: ***Machadosentis*** Noronha, 1992 [***M. travassosi*** ],
    - » Genus: ***Quadrigyris*** Van Cleave, 1920 [***Q. brasiliensis*** ***Q. chinensis*** ***Q. guptai*** ***Q. machadoi*** ***Q. nickoli*** ]

## 2. Class Eoacanthocephala

contd....

### 2. ORDER Neoechinorhynchida Southwell et Macfie, 1925 (3 Families)

- 1. Family **Neoechinorhynchidae** (Ward, 1917) Van Cleave, 1928
  - 1. Sub-family : **Atactorhynchinae** Petrochenko, 1956 (Genera/spp: **Atactorhynchus** Chandler, 1935 [*A. duranguensis* *A. verecundus* ], **Floridosentis** Ward, 1953 [*F. mugilis* *F. pacifica* ], **Tanaorhamphus** Ward, 1918 [*T. longirostris* ]
  - 2. Sub-family : **Eocollinae** Petrochenko, 1956 (Genus **Eocollis** Van Cleave, 1947 [*E. arcanus* *E. catostomi* *E. harengulae* ]
  - 3. Sub-family : **Gracilisentinae** Petrochenko, 1956 (Genus **Gracilisentis** Van Cleave, 1919 [*G. gracilisentis* *G. mugilus* *G. sharmai* *G. variabilis* ], **Pandosentis** Van Cleave, 1920 [*P. iracundus* *P. napoensis*], **Wolffhugelia** Mañé-Garzon et Dei-Cas, 1974 [*W. matercula* ]
  - 4. Sub-family : **Neoechinorhynchinae** (Ward, 1917) Travassos, 1926 (Genus **Dispiron** Bilqees, 1970 [*D. catlai* *D. heteroacanthus* *D. mugilis* ], **Gorytocephalus** Nickol et Thatcher, 1971 [*G. elongorchis* *G. plecostomorum* *G. spectabilis* *G. talaensis* ], **Hexaspiron** Dollfus et Golvan, 1956 [*H. nigericum* *H. spinibarbi* ], **Microsentis** Martin et Multani, 1966 [*M. wardae* ], **Neoechinorhynchus** Stiles et Hassall, 1905 [*N. (N.) africanus* *N. (N.) armenicus* *N. (N.) ascus* *N. (N.) australis* *N. (N.) beringianus* *N. (N.) brentnickolij* ], **Octospinifer** Van Cleave, 1919 [*O. macilentus* *O. rohitaii* *O. torosus* *O. variabilis*] Kraitscher, 1976], **Octospiniferoides** Bullock, 1957 [*O. australis* *O. chandleri* *O. incognita* ], **Paraechinorhynchus** Bilqees [*P. kalriai*], **Paulisentis** Van Cleave et Bangham, 1949 [*P. fractus* *P. missouriensis* ], **Zeylonechinorhynchus** Fernando et Furtado, 1963 [*Z. longinuchalis* ]

2. Family **Dendronucleatidae** Sokolovskaya, 1962

- GENUS ***Dendronucleata*** Sokolovskaya, 1962 (*D. americana* *D. dogieli* *D. petruschewskii* )

3. Family **Tenuisentidae** Van Cleave, 1936

- Genus ***Paratenuisentis*** Bullock et Samuel, 1975 [*P. ambiguous*]
- Genus ***Tenuisentis*** Van Cleave, 1936 [*T. niloticus*]



# 3. Class Palaeacanthocephala Meyer, 1931

- 1. ORDER **Echinorhynchida** Southwell et Macfie, 1925
  - 1. Family **Arhythmacanthidae** Yamaguti, 1935 (3 subfamilies: Arhythmacanthinae Yamaguti, 1935, Neoacanthocephaloidinae Golvan, 1960 and Paracanthocephaloidinae Golvan, 1969)
    - **Genus: Acanthocephaloides** Meyer, 1932 [*A. claviformis* *A. cyrusi* *A. delamuri* *A. distinctus* *A. geneticus*], **Bolborhynchoides** Achmerov et Dombrovskaja, 1959 [*B. exiguous*], **Breizacanthus** Golvan, 1969 [*B. aznari* *B. chabaudei* *B. golvani* *B. irenae* *B. ligur* ], **Euzetacanthus** Golvan et Houin, 1964 [*E. chorinemusi* *E. golvani* *E. simplex* ], **Heterosentis** Van Cleave, 1931 [*H. brasiliensis* *H. fusiformis* *H. heteracanthus* ], **Hypoechinorhynchus** Yamaguti, 1939 [*H. alaeopis* *H. golvani* *H. magellanicus* *H. robustus* *H. thermaceri* ], **Paracanthocephaloides** Golvan, 1969 [*P. cabelleri* *P. chabanaudi* *P. golvani* *P. incrassatus*], **Solearhynchus** de Buron et Maillard, 1985 [*S. kostylewi* *S. soleae*] **Spiracanthus** Muñoz et George-Nascimento, 2002 [*S. bovichthys*]
  - 2. Family **Cavisomidae** Meyer, 1932
    - **Genus Caballerorhynchus** Salgado-Maldonado, 1977 [*C. lamothei* ], **Cavisoma** Van Cleave, 1931 [*C. magnum* ], **Echinorhynchoides** Achmerov et Dombrovskaja-Achmerova, 1941 [*E. dogieli*], **Femogibbosus** Parukhin, 1973 [*F. assi*], **Filisoma** Van Cleave, 1928 [*F. acanthocybii* *F. atropt* *F. bucerium* *F. fidum* *F. filiformis* *F. indicum* ], **Megapriapus** Golvan, Garcia-Rodrigo et Diaz-Ungria, 1964 [*M. ungriai* ], **Paracavisoma** Kritscher, 1957 [*P. impudica*], **Pseudocavisoma** Golvan et Houin, 1964 [*P. chromitidis*], **Rhadinorhynchoides** Fukui et Morista, 1937 [*R. miyagawai*]

## 3. Class Palaeacanthocephala

- **3. Family Diplosetidae** Tubangui et Masilungan, 1937
  - **Subfamily Allorhadinorhynchinae** Golvan, 1969
    - **Genus Allorhadinorhynchus** Yamaguti, 1959, [*A. segmentatus*, *Golvanorhynchus Noronha*, *G. golvani*]
  - **Subfamily Diplosetinae** Tubangui et Masilungan, 1937,
    - **Genus Amapacanthus** Salgado-Maldonado et Portes Santos, 2000 (*A. amazonicus*); *Diplosetis* Tubangui et Masilungan, 1937 (*D. amphacanthi*, *D. manteri*); *Pararhadinorhynchus* Johnston et Edmonds, 1947 (*P. coorongensis*, *P. mugilis*)
- **4. Family Echinorhynchidae** Cobbold, 1876)
  - **Subfamily Circinatechinorhynchinae** Bhattacharya, 2007
    - **Genus Circinatechinorhynchus** Bhattacharya, 2007 (*C. pseudorhombi*)
  - **Subfamily Echinorhynchinae** Cobbold, 1876
    - **Genus Acanthocephalus** Koelreuther, 1771 (*A. acutispinus*, *A. acutulius*, *A. alabamensis*, *A. amini*, *A. anguillae*)
    - **Genus Anuracanthorhynchus** Bursey, Vrcibradic, Hatano et Rocha, 2006 (*A. tritaxisentis*)
    - **Genus Brasacanthus** Thatcher, 2001 (*B. sphaeroides*)
    - **Genus Echinorhynchus** Zoega in Müller, 1776 (*E. abyssicola*, *E. alpinus*, *E. armoricanus*, *E. attenuates*, *E. baeri*, *E. bothniensis*)
    - **Genus Frilloechinorhynchus** (Gupta & Naqvi, 1986) Bhattacharya, 2007 (*F. meyeri*)
    - **Genus Pilum** Williams, 1976 (*P. pilum*)
    - **Genus Pseudoacanthocephalus** Petrochenko, 1956 (*P. betsileo*, *P. bigueti*, *P. bufonicola*, *P. bufonis*, *P. caspanensis*)
- **5. Family Fessisentidae** Van Cleave, 1931
  - **Genus Fessisentis** Van Cleave, 1931 (*F. acutulius*, *F. fessus*, *F. friedi*, *F. necturorum*, *F. tichiganensis*)
- **6. Family Heteracanthocephalidae** Petrochenko, 1956
  - **Sub Family Aspersentinae** Golvan, 1960
    - **Genus Aspersentis** Van Cleave, 1929 (*A. austrinus*, *A. dissothychi*, *A. johni*, *A. megarhynchus*, *A. minor*, *A. peltorhampi*, *A. zanclorhynchi*)
  - **Sub Family Heteracanthocephalinae** Petrochenko, 1956,
    - **Genus Bullockrhynchus** Chandra, Hanumantha Rao et Shyamasundari, 1985 (*B. indicus*)
    - **Genus Sachalinorhynchus** (*S. skrjabini*)

- **7. FAMILY Illiosentidae** Golvan, 1960
  - GENUS **Brentisentis** Leotta, Schmidt et Kuntz, 1982 (*B. chongqingensis* ,*B. uncinus* ,  
*B. yangtzensis*)
  - GENUS **Dentitruncus** Sinzar, 1955 (*D. truttae*)
  - GENUS **Dollfusentis** Golvan, 1969 (*D. bravoae*, *D. chandleri*, *D. ctenorhynchus*,  
*D. heteracanthus*, *D. longispinus* , *D. salgadoi*)
  - GENUS **Goacanthus** Gupta et Jain, 1980 (*G. panajiensis*)
  - GENUS **Indorhynchus** Golvan, 1969 (*I. indicus*, *I. pseudobagri*)
  - GENUS **Koronacantha** Monks et Pérez-Ponce de León, 1996 (*K. mexicana*, *K. pectinarius*)
  - GENUS **Metarhadinorhynchus** Yamaguti, 1959 (*M. cyprini* , *M. echeneisi* ,*M. lateolabracis*,  
*M. thapari* ,*M. valiyathurae*)
  - GENUS **Paradentitruncus** Moravec et Sey, 1989 (*P. longireceptaculis*)
  - GENUS **Pseudorhadinorhynchus** (*P. cinereus* , *P. cochinchensis*, *P. deeghai* , *P. dhari* ,  
*P. dussamicitatum*, *P. ernakulensis*)
  - GENUS **Tegorhynchus** Van Cleave, 1921 (*T. africanus* , *T. brevis*, *T. cetratus* ,*T. edmondsi* , *T.*  
*furcatus* ,*T. holospinosus*, *T. pectinarius*)
  - GENUS **Telosentis** Van Cleave, 1923 (*T. australiensis* ,*T. exiguus* , *T. lutianusi* , *T. mizellei* , *T.*  
*molini*)
- **8. FAMILY Isthmosacanthidae** Smales, 2012
  - GENUS **Isthmosacanthus** Smales, 2012 (*I. fitzroyensis*)

- 9. FAMILY **Pomphorhynchidae** Yamaguti, 1939
  - GENUS **Longicollum** Yamaguti, 1935 (*L. alemniscus*, *L. cadenati*, *L. chabanaudi*, *L. dattai*, *L. edmondsi*)
  - GENUS **Paralongicollum** Amin, Bauer et Sidorov, 1991 (*P. nemacheili*, *P. sergenti*)
  - GENUS **Pomphorhynchus** Monticelli, 1905 (*P. bosniacus*, *P. bufonis*, *P. bulbocolli*, *P. bullocki*, *P. cylindrica*)
  - GENUS **Pyriproboscis** Amin, Abdullah et Mhaisen, 2003 (*P. heronensis*)
  - GENUS **Tenuiproboscis** Yamaguti, 1935 (*T. bilqeesae*, *T. clupei*, *T. edmondi*, *T. ernakulensis*)

• **10. FAMILY Rhadinorhynchidae** Lühe, 1912

- 1. SUB FAMIL Y **Golvanacanthinae** Paggi et Orecchia, 1972, **GENUS *Golvanacanthus*** Paggi et Orecchia, 1972 (*G. blennii*)
- 2. SUB FAMIL Y **Gorgorhynchinae** Van Cleave et Lincicome, 1940, **GENUS *Australorhynchus*** Lebedev, 1967 (*A. tetramorphacanthus*), ***Cleaveius*** Subrahmanian, 1927 (*C. circumspiner*, *C. clupei*, *C. durdanae*, *C. fotedari*, *C. inglisi*), ***Edmondsacanthus*** Smales, 2009 (*E. blairi*), ***Gorgorhynchoides*** Cable et Linderoth, 1963 (*G. bullocki*, *G. cablei*, *G. elongatus*, *G. epinepheli*, *G. golvani*), ***Gorgorhynchus*** Chandler, 1934 (*G. celebensis*, *G. clavatus*, *G. lepidus*, *G. medius*, *G. nemipteri*, *G. ophiocephali*), ***Leptorhynchoides*** Kostylew, 1924 (*L. aphredoderi*, *L. polycristatus*, *L. plagicephalus*), ***Metacanthocephaloides*** Yamaguti, 1959 (*M. zebrini*), ***Metacanthocephalus*** Yamaguti, 1959 (*M. campbelli*, *M. dalmori*, *M. johnstoni*), ***Micracanthorhynchina*** Strand, 1936 (*M. chandrai*, *M. cynoglossi*, *M. dakusuiensis*, *M. golvani*, *M. hemiculturus*), ***Paracanthorhynchus*** Edmonds, 1967 (*P. galaxiasus*), ***Pseudauchen*** Yamaguti, 1963 (*P. epinepheli*), ***Pseudoleptorhynchoides*** Salgado-Maldonado, 1976 (*P. lamothei*), ***Sclerocollum*** Schmidt et Paperna, 1978 (*S. robustum*, *S. rubrimaris*, *S. saudi*)
- 3. SUB FAMILY **Rhadinorhynchinae** Lühe, 1912, **GENUS *Cathayacanthus*** Golvan, 1969 (*C. bagarii*, *C. exilis*), ***Corynosomoides*** Wang et Zhang, 1987 (*C. hemibargi*), ***Megistacantha*** Golvan, 1960 (*M. horridum*), ***Neogorgorhynchoides*** Gupta et Fatma, 1987 (*N. cablei*), ***Paragorgorhynchus*** Golvan, 1957 (*P. albertianus*, *P. chariensis*), ***Pseudogorgorhynchus*** Moravec, Wolter et Körting, 2000 (*P. arii*), ***Raorhynchus*** Tripathi, 1959 (*R. cadenati*, *R. guptai*, *R. inexpectatus*, *R. megalaspisi*, *R. meyeri*, *R. thapari*), ***Rhadinorhynchus*** Lühe, 1911 (*R. africanus*, *R. atheri*, *R. bicircumspinis*, *R. cadenati*, *R. capensis*, *R. carangis*), ***Slendrorhynchus*** Amin et Sey, 1996 (*S. breviclaviproboscis*)
- 4. SUB FAMIL Y **Serrasentinae** Petrochenko, 1956, **GENUS *Serrasentis*** Van Cleave, 1923 (*S. chauhani*, *S. engraulisi*, *S. fotedari*, *S. golvani*, *S. lamelliger*)
- 5. SUB FAMIL Y **Serrasentoidinae** Parukhin, 1982, **GENUS *Serrasentoides*** Parukhin, 1971 (*S. fistulariae*)

- **11. FAMILY Transvenidae** Pichelin et Cribb, 2001
  - GENUS *Trajectura* Pichelin et Cribb, 2001 (*T. ikedai*, *T. perinsolens*)
  - GENUS *Transvena* Pichelin et Cribb, 2001 (*T. annulospinosal*)
  
- **12. FAMILY Sauracanthorhynchidae** Bursey, Goldberg et Kraus, 2007
  - GENUS *Sauracanthorhynchus* Bursey, Goldberg et Kraus, 2007 (*S. sphenomorphicola*)

- ORDER **Heteramorphida** Amin et Ha, 2008
  - FAMILY **Pyrrhynchidae** Amin et Ha, 2008,
    - GENUS ***Pyrrhynchus*** Amin et Ha, 2008 (*P. heterospinus*)
- ORDER **Polymorphida** Petrochenko, 1956
  - 1. FAMILY **Centrorhynchidae** Van Cleave, 1916 (Golvan 1960),
    - GENUS ***Centrorhynchus*** Lühe, 1911 (*C. acanthotrias*, *C. albensis*, *C. albidus*, *C. aluconisi*),
    - GENUS ***Neolacunisoma*** Amin et Canaris, 1997 (*N. geraldshmidti*),
    - GENUS ***Sphaerirostris*** Golvan, 1956 (*S. areolatus*, *S. batrachus*, *S. bipartitus*)

- **2. Family Plagiorhynchidae** Golvan, 1960
  - **Sub Family Plagiorhynchinae** Meyer, 1931, GENUS *Paralueheia* Saxena et Gupta, 2008 (*P. guptai*), *Plagiorhynchus* Lühe, 1911 (*P. (P.) allisonae*, *P. (P.) charadrii*, *P. (P.) charadriicola*)
  - **Sub Family Porrorchinae** Golvan, 1956, GENUS *Lueheia* Travassos, 1919 (*L. adlueheia*, *L. cajabambensis*, *L. inscripta*, *L. karachiensis*), *Oligoterorhynchus* Monticelli, 1914 (*O. campylurus*), *Owilfordia* Schmidt et Kuntz, 1967 (*O. olseni*, *O. schmidti*, *O. teliger*), *Porrorchis* Fukui, 1929 (*P. aruensis*, *P. bazae*, *P. brevicanthus*, *P. centropi*), *Pseudogordiorhynchus* Golvan, 1957 (*P. antonmeyeri*), *Pseudolueheia* Schmidt et Kuntz, 1967 (*P. arunachalensis*, *P. boreotis*, *P. korathai*, *P. pittae*)
  - **Sub Family Sphaerechinorhynchinae** Golvan, 1956, GENUS *Sphaerechinorhynchus* Johnston, 1929 (*S. macropisthospinus*, *S. maximesospinus*, *S. ophiograndis*)
- **3. Family Polymorphidae** Meyer, 1931, GENUS *Andracantha* Schmidt, 1975 (*A. baylisi*, *A. clavata*), *Ardeirhynchus* Dimitrova et Georgiev, 1994 (*A. spiralis*), *Arhythmorhynchus* Lühe, 1911 (*A. capellae*, *A. comptus*, *A. distinctus*), *Bolbosoma* Porta, 1908 (*B. australis*, *B. balaenae*, *B. brevicolle*, *B. caenoforme*), *Corynosoma* Lühe, 1904 (*fide* Van Cleave 1945) (*C. alaskensis*, *C. australe*, *C. baylisi*, *C. bullosum*), *Diplospinifer* Fukui, 1929 (*D. serpenticola*), *Filicollis* Lühe, 1911 (*F. anatis*, *F. trophimenkoi*), *Ibirhynchus* García-Valera, Pérez-Ponce de León, Aznar et Nadler, 2011 (*I. dimorpha*), *Polymorphus* Lühe, 1911 (*P. actuganensis*, *P. acutis*, *P. arctocephali*, *P. arius*), *Profilicollis* Meyer, 1931 (*P. altmani*, *P. antarcticus*, *P. arcticus*, *P. botulus*), *Pseudocorynosoma* Aznar, Pérez-Ponce de León et Raga, 2006 (*P. anatarium*, *P. constrictum*, *P. enrietti*), *Southwellina* Witenberg, 1932 (*S. hispida*, *S. macracanthus*, *S. sacra*)



## 4. CLASS **Polyacanthocephala** Amin, 1987

- ORDER **Polyacanthorhynchida** Amin, 1987
  - Family **Polyacanthorhynchidae** Golvan, 1956,
    - Genus ***Polyacanthorhynchus*** Travassos, 1920
      - Species *P. caballeroi*, *P. kenyensis*, *P. macrorhynchus*, *P. rhopalorhynchus*

# Fossil Acanthocephalan Reported from China

- **Family: Zhijinitidae** Qian, 1978 [Fossil]
  - Genus ***Cambroclavus*** Mambetov in Mambetov et Repina, 1979
    - Species ***C. paradoxus*** Yi et Yin, 1984
  - Genus ***Parazhijinites*** Yi et Yin, 1984
    - Species ***P. quizhouensis*** Yi et Yin, 1984
  - Genus ***Zhijinites*** Yi, 1978
    - Species ***Z. cordiformis*, *Z. panduriformis*, *Z. triangularis***