PARASITES OF ZOO-ANIMALS IN THE NETHERLANDS AND OF EXOTIC ANIMALS II

by

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INTRODUCTION

The first list of identified parasites of zoo-animals has been published in 1959 (SWIERSTRA et al.). This supplementary paper presents a list of material, examined and identified in the period 1959-1963.

Most of the parasites have again been collected by DR. P. ZWART and DRs. F. G. POELMA, now at the Department of Exotic Animals, Institute for General Pathology, Veterinary Faculty, Utrecht, whose cooperation is gratefully acknowledged.

Our thanks are also due to several taxonomists who identified parasites belonging to special groups, as stated in accompanying notes.

The material is in the collection of the Institute for Veterinary Parasitology, State University, Utrecht (Biltstraat 172). A part of several samples has been handed over to the State Museum of Natural History, Leiden.

Abbreviations:

H, Hexapoda (Insecta); A, Acarina; T, Trematoda; C, Cestoda; N, Nematoda; Ac, Acanthocephala; Hir., Hirudinea; P, Pentastomide.

Asterisks indicate new host-parasite records.

Numbers behind the names of parasites or hosts refer to footnotes.

MAMMALIA

PRIMATES

Apes:

Anthropopithecus troglodytes

Enterobius vermicularis (Linnaeus, 1758) N

Bertiella studeri (Blanchard, 1891) C

Gorilla gorilla

Pneumonyssus cf. *congoensis* Ewing, 1929 A

Hylobates sp.

cf. *Prosthenorchis elegans* Travassos, 1917 Ac

Symphalangus syndactylus

Ascaris cf. *lumbricoides* Linnaeus, 1758 N

Saimiri sciurea

Longistriata dubia Travassos, 1921 N

Molineus torulosus (Molin, 1861) N

Dipetalonema gracile (Rudolphi, 1809) N

Prosthenorchis elegans Travassos, 1917 Ac

Phanerosolus orbicularis (Diesing, 1850) T

Lobatorobius sceleratus (Travassos, 1925) N

Lagothrix lagothricha

Dipetalonema gracile (Rudolphi, 1809) N

"South American monkey"

Necator americanus (Stiles, 1902) N

LEMURIDAE

Nycticebus coucang

Prosthenorchis elegans Travassos, 1917 Ac

CARNIVORA

Acinonyx jubatus

Toxascaris leonina (Linstow, 1902) N

Felis bengalensis

Toxocara cati (Schränk, 1788) N

Paragonimus westermanni (Kerbert, 1878) T

Old world monkeys:

Cercopithecus hamlyni

Armillifer annulatus (Baird, 1853) P

Cercopithecus talapoin

Pithecostrongylus digitatus Jansen, 1964 N

New world monkeys:

Callithrix jacchus

Subulura jacchi (Marcel, 1857) N

<i>Thalarctos maritimus</i>		ARTIODACTYLA	
<i>Toxascaris transfuga</i> (Rudolphi, 1819)	N	<i>Bos indicus</i>	
<i>Potos flavus</i>		<i>Capillaria bilobata</i> Bhalerao, 1933	N
<i>Molineus</i> cf. <i>paraensis</i> Travassos, 1937	N	* <i>Nematodirus helvetianus</i> May, 1920	N
<i>Procyon cancrivorus</i> ¹⁾		<i>Saiga tatarica</i>	
<i>Toxocara</i> cf. <i>canis</i> Werner, 1782	N	<i>Camelostrongylus mentulatus</i> (Railliet & Henry, 1909)	N
<i>Capillaria entomelas</i> (Dujardin, 1845)	N	<i>Cysticercus tenuicollis</i> Rudolphi, 1819	C
<i>Putorius putorius</i>		<i>Ovis aries musimon</i>	
<i>Filaroides martis</i> (Werner, 1782)	N	<i>Skrjabinema ovis</i> (Skrjabin, 1915)	N
<i>Euparyphium melis</i> (Schrank, 1788)	T	<i>Ammotragus lervia</i>	
PINNIPEDIA		<i>Haemonchus contortus</i> (Rudolphi, 1803)	N
<i>Otaria byroni</i>		<i>Trichostrongylus axei</i> (Cobbold, 1879)	N
<i>Anisakis</i> cf. <i>similis</i> (Baird, 1853)	N	<i>Trichostrongylus colubriformis</i> (Giles, 1892)	N
<i>Zalophus californianus</i>		<i>Trichostrongylus vitrinus</i> Looss, 1905	N
<i>Parafilaroides</i> cf. <i>decorus</i> Dougherty & Herman, 1947	N	<i>Stadelmannia circumcincta</i> (Stadelmann, 1894)	N
"sea-lion"		<i>Stadelmannia trifurcata</i> (Ransom, 1907)	N
<i>Contracaecum osculatum</i> (Rudolphi, 1802)	N	<i>Capillaria bovis</i> (Schnyder, 1906)	N
<i>Zalophotrema hepaticum</i> Stunkard & Alvey, 1929	T	<i>Capra hircus reversa</i>	
<i>Odobenus rosmarus</i>		<i>Trichostrongylus axei</i> (Cobbold, 1879)	N
<i>Antarctophthirus trichechi</i> (Boheman, 1865)	H	<i>Damaliscus albifrons</i>	
PROBOSCIDEA		<i>Trichostrongylus axei</i> (Cobbold, 1879)	N
<i>Elephas indicus</i>		<i>Ranfiger tarandus</i>	
<i>Quilonia travanca</i> Lane, 1914	N	<i>Oedemagena tarandi</i> (Linnaeus, 1758)	H
<i>Grammocephalus hybridatus</i> van den West-huysen, 1938	N	<i>Dama dama</i>	
<i>Pseudodiscus collinsi</i> (Cobbold, 1875)	T	<i>Spiculopteragia asymmetrica</i> (Ware, 1925)	N
<i>Hawkesius hawkesi</i> (Cobbold, 1875)	T	<i>Stadelmannia lasensis</i> (Asadov, 1953)	N
<i>Fasciola jacksoni</i> Cobbold, 1869	T	<i>Stadelmannia trifurcata</i> (Ransom, 1907)	N
		<i>Trichostrongylus axei</i> (Cobbold, 1879)	N
		<i>Ostertagia mossi</i> Dikmans, 1931	N
		<i>Oesophagostomum venulosum</i> (Rudolphi, 1809)	N
		<i>Camelus bactrianus</i>	
		<i>Dictyocaulus cameli</i> Boev, 1952 ⁴⁾	N
		<i>Fasciola hepatica</i> Linnaeus, 1758	T
HYRACOIDEA			
<i>Procavia syriaca</i>		RODENTIA	
* <i>Grassenema hyracis</i> (Ezzat, 1954) nov. comb. ²⁾	N	<i>Castor</i> sp.	
PERISSODACTYLA		<i>Travassosius rufus</i> Khalil, 1922	N
<i>Equus asinus</i>		<i>Cynomys ludovicianus</i>	
<i>Echinococcus granulosus</i> Batsch, 1796 (Larva)	C	<i>Trichostrongylus texanus</i> Dikmans, 1937	N
<i>Equus zebra</i>		<i>Sciurus prevosti</i>	
<i>Parascaris equorum</i> (Goeze, 1782)	N	<i>Ancylostoma gilsoni</i> Geddoelst, 1917	N
<i>Equus caballus</i> × <i>Equus zebra</i> (zebroid)		<i>Ratufa bicolor</i>	
<i>Parascaris equorum</i> (Goeze, 1782) ³⁾	N	<i>Orchopeas howardi howardi</i> (Baker, 1895 ⁵⁾)	H
		<i>Notoedres centrifera</i> Jansen, 1963	A
¹⁾ Caught in Surinam.			
²⁾ As far as we are aware <i>Cobboldina hyracis</i> Ezzat, 1954 has not yet been transferred to the genus <i>Grassenema</i> Petter, 1959 which we consider a valid genus to contain the attractid nematodes of the <i>Procavia</i> spp. Moreover, the occurrence of <i>Grassenema hyracis</i> (Ezzat, 1954) n. comb. constitutes a new host-parasite record.			
³⁾ In a zebroid of a circus which died in a cachectic condition 1357 adult specimens of <i>Parascaris equorum</i> , weighing 2950 gram were found.			
⁴⁾ The lungworms of <i>Camelus bactrianus</i> are named <i>Dictyocaulus cameli</i> according to the nomenclature of BOEV (1954). There are, however, no morphological differences with <i>Dictyocaulus viviparus</i> of cattle.			
⁵⁾ Identification confirmed by Mr. F. G. A. M. Smit, Tring (Great Britain).			

EDENTATA

*Tamandua tetradactyla*¹⁾*Graphidiops major* Travassos, 1949

N

MONOTREMATA

*Tachyglossus aculeatus**Nicollina tachyglossa* (Baylis, 1930)

N

MARSUPIALIA

Macropus sp.*Dipetalonema* cf. *websteri* (Cobbold, 1879)⁶⁾

N

AVES

PASSERIFORMES

*Serinus canaria**Sternostoma tracheacolum* Lawrence, 1948⁷⁾

A

*Cissa chinensis**Dermanyssus gallinae* (De Geer, 1778)

A

TROGONIFORMES

*Pharomachrus mocino**Strigea caluri* Dubois, 1962

T

PSITTACIFORMES

*Melopsittacus undulatus**Ornithomyia* cf. *avicularia* (Linnaeus, 1758)

H

GALLIFORMES

*Phasianus mongolicus**Heterakis isolonche* Linstow, 1906

N

*Crossoptilon auritum**Heterakis isolonche* Linstow, 1906

N

*Tragopan satyrus**Heterakis gallinarum* (Schränk, 1788)

N

Capillaria phasianina Kotlán, 1940

N

*Phasianus colchicus**Trichostrongylus tenuis* (Mehlis, 1846)

N

*Alectoris graeca chukar**Ascaridia galli* (Schränk, 1788)

N

*Lophortyx californica**Capillaria caudinflata* (Molin, 1858)

N

Ascaridia galli (Schränk, 1788)

N

Heterakis gallinarum (Schränk, 1788)

N

*Pavo cristatus**Amyrsidea minuta* Emerson, 1961⁸⁾

H

*Pavo cristatus albus**Goniodes pavonis* (Linnaeus, 1758)

H

*Numida galatea**Ascaridia galli* (Schränk, 1788)

N

Heterakis gallinarum (Schränk, 1788)

N

*Afropavo congensis**Capillaria obsignata* Madsen, 1945

N

Gallus gallus ("nègre-soie")*Dermanyssus gallinae* (De Geer, 1788)

A

Menopon gallinae (Linnaeus, 1758)

H

ANSERIFORMES

*Aix galericulata**Cyathostoma brantae* (Cram, 1928)

N

*Aythya fuligula**Tracheophilus sisowi* Skrjabin, 1913

T

*Cairina moschata**Hypoderaeum conoideum* (Bloch, 1782)

T

*Anas acuta**Rhinonyssus rhinolethrum* (Trouessart, 1895)

A

*Branta cyanoptera**Cytodites nudus* (Visioli, 1870)

A

*Cygnus melanorhynchus**Echinuria uncinata* (Rudolphi, 1819)

N

Psilotrema spiculigerum (Mühling, 1898)⁹⁾

T

Psilotrema simillimum (Mühling, 1898)⁹⁾

T

*Cygnus olor**Echinuria uncinata* (Rudolphi, 1819)

N

Filicollis anatis (Schränk, 1788)

Ac

Cotylurus syriacus Dubois, 1934¹⁰⁾

T

PHOENICOPTERIFORMES

*Phoenicopterus ruber ruber**Leptotaenia ischnorhyncha* (Lühe, 1898)

C

CICONIIFORMES

*Sphenorhynchus abdimii**Cathaemasia variabilis* van den Broek, 1960

T

Choanotaenia riccii Fuhrmann & Baer, 1944¹¹⁾

C

*Ephippiorhynchus senegalensis**Chaunocephalus* sp. indet.¹²⁾

T

⁶⁾ In imported kangaroo-meat, one specimen only; see RAETHEL (1960).⁷⁾ Identified by Mr. G. L. van Eyndhoven, Amsterdam.⁸⁾ Identified by Dr. T. Clay, London.⁹⁾ Host kept in a pond, where especially the pulli were heavily infected by means of endemic snails; see HONER (1964).¹⁰⁾ Identified by Dr. G. Dubois, Neuchâtel (Switzerland).¹¹⁾ Identification confirmed by Prof. Dr. J. G. Baer, Neuchâtel (Switzerland).¹²⁾ This seems to be the first record of specimens of *Chaunocephalus* from this host. It is possible that they belong to a new species. However, not all descriptions of the various species of *Chaunocephalus* known thus far were available for comparison.

<i>Bubulcus ibis</i>					
<i>Nephrostomum ramosum</i> (Sonsino, 1895)	T				
<i>Cochlearius cochlearius</i>					
<i>Parastrigea brasiliensis</i> (Szidat, 1928) ¹³	T				
GRUIFORMES					
<i>Tetrapteryx paradisea</i>					
<i>Porrocaecum ardeae</i> Froelich, 1802	N				
PROCELLARIIFORMES					
<i>Fulmarus glacialis</i> ¹⁴					
<i>Stegophorus stellae-polaris</i> (Parona, 1901)	N				
PELECANIFORMES					
<i>Sula bassana</i> ¹⁴					
<i>Corynosoma strumosum</i> (Rudolphi, 1802)	Ac				
<i>Tetrabothrius heterosoma</i> Baird, 1853	C				
SPHENISCIFORMES					
<i>Spheniscus humboldti</i>					
<i>Contracaecum</i> cf. <i>spiculigerum</i> (Rudolphi, 1809)	N				
<i>Cotylurus cumilitestis</i> Dubois, 1962	T				
<i>Spheniscus</i> sp.					
<i>Cotylurus cumilitestis</i> Dubois, 1962	T				
<i>Cotylurus erraticus</i> (Rudolphi, 1809) ¹³	T				
SUMMARY					
A list is given of identified parasites of zoo-animals and exotic animals, collected in the years 1959-1963.					

LITERATURE

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¹³ Identification confirmed by Dr. G. Dubois, Neuchâtel (Switzerland).

¹⁴ Hosts collected in Scotland, parasites from the collection of the Zoological Museum, Amsterdam.