Although we were unable to attend the Congress, the following information was provided by Drs. R.L.C. Pilgrim, T. D. Galloway and E.R. Easton.

"The Congress, sub-titled 'Living with Insects', was held in the Beijing International Convention Centre. Participants were accommodated in the adjoining Grand Continental Hotel or the more modest Hui-yuan Apartments. The entire complex, some nine km north of the centre of Beijing, is built around the former Chinese Olympic Centre; it is self-contained with excellent facilities for conventions as well as for immediate shopping needs. The only official event held outside this area was the Opening Ceremony and Reception, at the Great Hall of the People, in Tiananmen Square.

"Section 12 S5, 'Recent Advances in the study of Siphonaptera', was a full day session (July 2), attended by an enthusiastic audience of 30-40 persons. Presented contributions were devoted largely to systematics, biogeography, plague studies, morphology & ultrastructure, rearing and larval taxonomy. Poster displays were focused on distributional aspects, taxonomy and teratology.

"It was regrettable that Professor Cluff Hopla, a very active section organizer, was unable to attend the Congress. His place as a session chairman was taken by Professor M.K. Rust (University of California [-Riverside], USA) in collaboration with Professor WANG Dun-qing

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were presented in English, the participants from the host country demonstrating remarkable linguistic facility such that westerners were not embarrassed by any inability to communicate in Chinese. In this and in all aspects of contact, the Chinese were outstandingly hospitable and made most successful efforts to ensure the whole meeting was a very memorable event. Apart from the formal sessions, profitable personal relationships were developed and the possibilities for further communication and exchange of reprints, material and information were fostered.

R.L.C.P. & T.D.G.

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Following is a listing of the presentations of both papers and posters.

PAPERS

WU Hou-yong & ZHANG Jin-tong. Fleas as plague vectors in natural foci and their distribution in China.

M.K. RUST. Recent developments in cat flea control.

R. TRAUB & L.A. DURDEN. No fleas or lice to call their own. (Not presented)

E.R. EASTON. Ecological studies of Siphonaptera associated with small mammals at Lake Omba on the English Peaks, the Owen Stanley Mtn. range in Papua New Guinea.

LI Cheng-yi & WU Hou-yong. Studies on overwintering of the flea Citellophilus tesquorum sungaria (Siphonaptera: Ceratophyllidae).

YE Rui-yu, YU Xin & ZHANG Jin-tong. The morphology, behavior and metamorphosis of fleas representing 4 families.

T.D. GALLOWAY & C.N. CHALLIES. Seasonal dynamics of Parapsyllus longicornis (Siphonaptera: Rhopalopsyllidae) associated with the white-flippered penguin on Banks Peninsula, New Zealand.


WANG Shan-qing, LIU Zhi-ying & WU Hoc-yong. Comparisons between four subspecies of Citellophilus tesquorum on their physiological and biochemical characters and ultrastructures.

S.S. SEGHAL & M.K. NAYAK. A morphometric comparison of two populations of plague vector, Xenopsylla cheopis - from an endemic area and a pure line laboratory strain.

PING Jen. Studies on the mouthparts and proventriculus of fleas.


LIU Quan & WU Hou-yong. Revision and supplement of the generic characters of the genus Paradoxopsyllus (Siphonaptera: Leptopsyllidae) with a discussion on the relationship between the genus and its closer relatives.

R.L.C. PILGRIM. Taxonomy of flea larvae: Higher taxonomy and the differentiation among lower taxa.

P.M. LINARDI. A taxonomic review of genera and subgenera of Rhopalopsyllinae (Siphonaptera) by phenetic and
cladistic methods.

POSTERS

CAI Li-Yun, ZAHN Xin-Ru, WU Wen-Zhen & LI Chao. On the flea fauna of Qinghai-Xizang Plateau, China.

M. KIEFER & O.O. SZERHANOVI. Development of fleas in Central Asia.

WANG Dun-qiing & LIAO Hau-rong. Monstrosities appeared in a colony of Leptopsylla segnis rearing in the laboratory over a long period of time.

M. KIEFER. The reasons for territorial spreading of fleas.

A. DUDICH. Competitive coexistence and competitive exclusion in fleas.

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Professor Pilgrim also included the following commentary on the use of Chinese personal names.

"Chinese custom is to write the family name first, followed by given name(s). At the Congress, as well as in the preliminary Announcements, the Program and the Abstracts, the custom was reversed in favour of given name(s) followed by family name. This was no doubt a thoughtful concession to westerners, to make the situation more easily understood by us.

"Unfortunately, in practice it was not wholly consistent. Since the vast majority of Chinese family and given names are each of one syllable/character, the uninitiated were even more confused. It does not help westerners to find that some names (e.g. Gao, Rui, Wu, Yu) also appear to be used either as family or as given names - they look identical when written in Pinyin, though of course in Chinese characters they are quite distinct.

"It helps considerably when given names are hyphenated (in Pinyin translation) but this is not, or has not been, universal practice; in any case a single given name is not uncommon.

"To avoid these complications, I adopted a habit of conforming to the Chinese pattern, but of capitalizing the entire family name while using lower case for given names (with initial capitals only). Several Chinese at the Congress were quite taken with this and I offer and use it here in the hope that it might gain popularity.

"The system could be advantageous in non-Chinese periodicals; editorial policies vary as to how multi-authored papers are to be entered in References and Bibliographies at the end of publications. Some journals print all authors' family names followed by their respective initials or given names; other journals insist on that order for first author only, additional authors being printed with family names last. This has resulted in various unwitting mis-citations of Chinese references by subsequent writers, leading to frustrating searches on the part of readers, librarians, et al."

R.L.C.P.

[This sounds like an excellent idea and will be employed in this and subsequent issues of this newsletter. R.E.L.]

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Following are titles of presentations given at the 57th Annual Meeting of the American Association of Veterinary Parasitologists.
S.C. PARKS. Results of clinical trials in cats and dogs, using Lufenuron, an insect development inhibitor.

B.L. BLAGBURN, C.M. HENDRIX, J.L. VAUGHAN, D.S. LINDSAY & S. BARNETT. Efficacy of Lufenuron, a benzoxyphenyl urea, for control of pre-adult stages of Ctenocephalides felis on cats.

W.R. CAMPBELL. Safety evaluation of Lufenuron in dogs and cats.

A.A. MARCHIONDO, S. ACKERS, S.W. FOGT & D.L. HEIMBICHNER. Efficacy and safety of fenoxycarb pet spray for control of Ctenocephalides felis infestations on dogs and cats.

M.W. DRYDEN & A.B. BROCE. Severe flea infestation in dairy calves.

J.R. GEORGI & M.E. GEORGI. A gentileperson's guide to practical fleas-keeping.

M.W. DRYDEN. Fleas on dogs and cats - control of insecticide resistance.

Following are titles of presentations given at the annual meeting of the Entomological Society of America.

J.A. VAUGHAN & A.F. AZAD. Patterns of host erythrocyte digestion by bloodsucking insects: implications in pathogen acquisition.

N.C. HINKLE, P.G. KOEHLER & R.S. PATTERSON. Management of cat flea (Ctenocephalides felis Bouché) populations through larval suppression.


M.W. DRYDEN, A.B. BROCE & K.E. HAMPTON. Design and development of a flea trap.

W.H. KERN & P.G. KOEHLER. The relationship between host activity patterns and cat flea larval distribution.

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MISCELLANEA

Dr. The Honorable Miriam Rothschild recently accepted an invitation to complete the term of Sir Cyril Clarke as the President of the Royal Entomological Society. She will continue to occupy the office until the Annual Meeting of the Society in June of 1994.

Dr. Lance A. Durden, formerly of the U.S. Army Medical Research Institute, Fort Detrick, Frederick, MD has assumed the position of Assistant Curator and Assistant Professor at the U.S. National Tick Collection at the Institute of Arthropodology and Parasitology, Georgia Southern University, Statesboro, GA. He retains the title of Research Associate with the Department of Entomology at the Smithsonian Institution.

Ms. Nancy C. Hinkle is finishing her work for the Ph.D. in Entomology at the University of Florida, Gainesville. She has accepted the position of Extension Veterinary Entomologist in the Department of Entomology, University of California - Riverside, Riverside, CA 92521.

Kim Larsen and Alice Olsen (side Eille, 1992) of the Danish Pest Infestation Laboratory report the following studies on fleas in progress in their institution:
8.1 Abundance and control of fleas on farmed mink. 8.2 Biology of Monopsyllus sciuorum (includes host relationships, rearing studies and survival and development related to temperature and humidity). 8.3 Laboratory and field evaluation of insecticides for control of Monopsyllus sciuorum. 8.4 Efficacy of Empire 20 against the cat flea.

Following are notes gleaned from the Technical Information Bulletin of the Armed Forces Pest Management Board.

**New Flea Product.** Zoécon, Inc. has produced a new flea control product composed of 0.15% pyrethrins and 0.25% of the juvenile hormone analog, methoprene. The pyrethrins control adult fleas, while the methoprene interrupts the development of immature stages. The product, Petcor®, is reported to prevent 90% of cat fleas, Ctenocephalides felis, from hatching when the product is applied on dogs held in dirt runs. Another study reports 100% inhibition of egg hatch when the product is applied in a home environment containing flea-infested cats. For more information contact: Zoécon Corporation, 12200 Denton Drive, Dallas, TX 75234; (800) 248-7763.

**Ultrasound Maker Charged.** Sonic Technology Products, Inc., Grass Valley, CA has been charged by the Federal Trade Commission with making false and unsubstantiated promotional claims for its ultrasonic devices: Pestchaser and Pestrepeller. The FTC maintains that "the devices do not eliminate rodent and flea infestation in the home, as claimed." Two of Sonic Technology's officers were also cited. According to the FTC the citation is not a finding or a ruling that Sonic Technology Products has violated the law, but if the complaint is upheld in a formal hearing, the agency could prohibit the promotional claims.


**Pi Chi Omega Bibliographies.** A series of annotated bibliographies is being published by Pi Chi Omega, the professional fraternity of the pest control industry. Available already is a bibliography on cockroaches and fleas, compiled by Daniel Suiter and Nancy Hinkle of the University of Florida. One on ants by Dan Wojcik, USDA, Gainesville, and a bibliography on rodents compiled by Harry Pratt, Dale Kaukenen and Rex March will soon be ready. They may be obtained from Dr. William Jackson, Department of Biological Sciences, Bowling Green State University, Bowling Green, OH 43403, for $10.00 each.

--- Pest Control, MAR. 92, 60: 26.

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**NORTH AMERICAN PLAGUE UPDATE**

Dr. Kenneth L. Gage of the CDC Laboratory, Fort Collins, CO submitted the following report. "As of December 8th, thirteen cases of human plague have been reported to CDC for 1992. Epidemiological and clinical findings associated with all but two of these cases were summarized in Morbidity and Mortality Weekly Report (MMWR) articles (Oct. 9, 1992, 41: 40 and Oct 23, 1992, 41: 42). Although New Mexico
and Arizona each reported four cases, one of the Arizona cases was exposed to plague while handling an infected cat during a visit to Colorado. One of the New Mexico cases also resulted from contact with an infected cat. The six remaining Arizona and New Mexico cases were acquired by flea bite but the actual flea species responsible for each of these cases were not determined. Epidemiological investigations associated with four of the six cases, however, revealed evidence of epizootics among rock squirrels, suggesting that Oropsylla (Diamantis) montana, which readily feeds on humans, were likely sources of infection. The three Arizona cases...also lived by or had visited areas where epizootics had occurred in prairie dogs. Plague positive O. (Opiscocristis) hirsuta were collected from these sites but were not considered to be likely sources of infection because this species only reluctantly feeds on humans. The five states reporting just one case and the probable sources of infection...are: Nevada (skinned and consumed infected Belding's ground squirrel); Utah (source unknown); Idaho (probable flea bite); California (probably bitten by flea while camping in area where ground squirrel epizootic had occurred); Wyoming (acquired plague when skinning infected bobcat shot in Montana). In addition to environmental investigations associated with seven of the above...cases, CDC personnel participated with local, state and federal agencies to investigate and initiate control actions during an epizootic that involved rock squirrels and fox squirrels within the city limits of Colorado Springs, CO. Another investigation was undertaken at Florissant Fossil Beds National Monument in Colorado where an epizootic involving Abert's squirrels, Richardson's (Wyoming) ground squirrels, and Gunnison's prairie dogs presented a potential risk for visiting tourists. Plague-positive O. (Opiscocristis) labis and O. (Oropsylla) idahoensis were collected by swabbing burrows on the monument grounds. Yersinia pestis was also isolated from two dead Abert's squirrels found along the monument trail system. During 1968, the Plague Section at CDC also identified fleas from over 800 pools submitted for analysis. The most commonly encountered fleas were: O. (Diamantis) montana and Hoplopsyllus anomalus collected from rock squirrels and their burrows; O. (Opiscocristis) hirsuta and O. (O.) tuberculata cynomuris from prairie dog burrows; Aetheca wagneri and numerous other fleas from Peromyscus sp; and Orchopeps sexdentatus and Anomopsyllus sp. from Neotoma sp. Many of the rock squirrel and prairie dog flea pools collected in Colorado, New Mexico and Arizona were positive. The results of this year's surveillance activities and reports of expanding rock squirrel and prairie dog populations in the southwest lead CDC to believe that plague activity is likely to increase over the next year or two."

BOOK REVIEWS


The first edition of this title was published in 1970 by the Commonwealth Scientific and Industrial Research Organization. It sold for $19.80 Australian, contained 1029 octavo pages, including eight colored plates and innumerable black and white photos and line drawings, and was generally heralded as one of the best entomology books ever published. This edition maintains the high standard of excellence of the first and consists of two quarto volumes of 1,160 pages. Only the section dealing with fleas will be dealt with in this review.


After a brief diagnosis of the order and a short introductory paragraph is a resumé of adult external and internal anatomy and the developmental stages. There follows a section on biology, including reproduction, life history, natural enemies and economic significance. A short section dealing with the special features of the Australian fauna is followed by a classification of the order into three superfamilies and 16 families, nine of which are represented in the area under consideration. The classification follows the more classical schemes of Jordan and Hopkins & Rothschild. (See Flea News 39: 330-331 (1989) for an alternative classification.) A key to the Australian genera is provided, accompanied by well prepared illustrations of the diagnostic features. The section ends with a brief discussion of the indigenous families, subfamilies and genera, along with passing commentary on host preferences and distribution. There is no separate bibliography since a complete section containing references concludes volume II.

Given our knowledge of the other faunal and floral elements of Australia one would expect a high degree of endemicity in the fleas and this proves to be the case. Of the 88 species and subspecies reported, almost half of them (41) belong to the family Pygiopsyllidae, a family mainly restricted to the southern and eastern hemispheres. The helmet fleas of the family Stephanocircidae show a Gondwanian distribution, with the nominate subfamily with two genera and nine species and subspecies restricted to Australia and New Guinea, while the species and subspecies of the Craneopsyllinae are found only in the Neotropical Region. The Macropsyllidae, retained as a separate family, is unique to the area with two monotypic genera. The one leptopayllid and three ceratophyllid species are introduced. The four rhopalopsyllids are circum-Antarctic. Five of the 18 species of pulicids are introduced but the remaining taxa are indigenous. The remaining nine taxa, two hystrichopsyllids and seven ischnopsyllids, are all endemic, the former on marsupials, the latter on bats.

In summary, the flea section is on par with the other sections of these two volumes in excellence of prose and illustrations, for which the authors are to be congratulated. In passing, $215.00 seems to be the going price for books as extensive as these two volumes (cf. Flea News 44: 453). R.E.L.

When most people think of fleas, they normally associate them with mammalian hosts, especially rodents. In fact, 5.56% of the roughly 2500 known flea taxa are ecto-parasites of birds, and more will certainly be discovered. A working knowledge of avian classification is thus quite useful to the pulicologist. Until recently, the standard ornithological reference was the Peters' Check-list of Birds of the World (1931-1951) series and subsequent volumes by other authors (1969-1987). While these volumes will doubtless continue to be of value, the present volume is likely to supersede them in importance in the years to come. I say this because the classification and phylogenetic implications in the tome are based upon DNA-DNA hybridization studies by the senior author and John Ahlquist, conducted since 1975 and published by the same press in a companion volume titled Phylogeny and Classification of the Birds of the World (1990). While this is not the place to pursue the subject, DNA hybridization studies are taken to demonstrate phylogenetic affinity more accurately than other less sophisticated routines, and the technology has only been developed during the past two or three decades.

After a brief one-page preface by the senior author, an introductory section explains the authors' approach to the classification, numbering system, the species accounts, taxonomic approach, English (common) names, abbreviations, symbols, place names, the gazetteer, index and acknowledgments. The following 784 pages contain the classification and species accounts of the 9672 taxa arranged in 2056 genera. Each account lists the genus, species (and subspecies where recognized), the author, standardized common name (in English) and the species number. This is followed by commentary about ecological preferences and geographic distribution. Frequently synonymy and alternative common names (in English) are also discussed. Pages 785 through 848 contain a list of world numbers for the recognized species. Pages 850 through 874 contain 25 maps to supplement the localities listed in the gazetteer on pages 875-906. Pages 907 through 939 list references, and the remaining 171 pages contain an elaborate and comprehensive index.

It is difficult to envision the staggering amount of effort required to assemble the data contained in this volume, even in the age of computers and word processors. Both the authors and the Yale University Press should be congratulated for the quality of the finished product. R.E.L.

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Contributors

most appreciated.

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Additional taxa described during 1982
Acta ent. sin. 35(2): 243-243, figs 1-4,
from Echidomys cachinus [=Grav-
mys grisicollus], PRC, Yunnan
Province, Lushui County, Mt. Gaolig-
gong, 26.01N 28.68E, 3100m, XII.1987.
HOLOTYPE ♂, RIED.

Acta zootax. sin. 17(3): 363-365, figs. 1-
3, from Ochotona jorresti osgoodi
[=Tibetana], PRC, Yunnan Province,
Lushui County, Mt. Gaoligong, 26.01N
28.68E, 3100m, XII.1987. HOLOTYPE
♂, RIED.

nushimensis GONG Zheng-da & L. Zhao-
17(2): 235-237, figs. 1-5, from Nasillus
[=Tupaius] gracilis, PRC, Yunnan
Province, Weixi County, Mt. Nusan,
27.55N 98.87E, X.1988. HOLOTYPE ♂,
RIED.

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LITERATURE ON SIPHONAPTERA
Although it may not be obvious from the
titles, citations included here pertain to
flies and the zooneses associated with
them. Additional information is available
upon written request.

1986 (List 13)

Synopsis of the parasites of vertebrates
of Canada: Ectoparasites of terrestrial
mammals. Edmonton, Alberta,
Canada; Animal Health Division,
Alberta Agriculture. 109 pp.

Supekar, P.G. & H.K. Mehta. Blaze - an
efficacious ectoparasite and hair
conditioner for the canines. Indian
No. 5: 35-37.

1987 (List 11)

Brun, J.G., P.B. Ribeiro, P.R.P. Costa &
C.M.B. Oliveira. Parasitic arthropods
of domestic animals in the southern
zone of Rio Grande do Sul state.
Arquivo Brasileiro de Medicina
Veterinária e Zootecnia 39(4): 533-
537.

Beltagy. A study of the flea fauna in
Burg El-Arab region, west of
Alexandria. Alexandria Journal of

Qian Cun-ning, Zhang Xiao-xu &
Feng Yu-ming. Experimental forma-
tion of blockage of plague bacilli in
Citellophilus tsequorum alaicus of
different physiological ages.

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Al-Khalidi, N.W., M.S. Daouad, A.H.
Shubber & T.I. Al-Alousi. A survey
for internal and external parasites in
dogs in Mosul (Iraq). Iraqi Journal of
Veterinary Sciences 1(1-2): 9-17.

Brown, A.E., S.R. Moek, N. Mancechai &
G.E. Lewis. Murine typhus among
Khmers living at an evacuation site on the Thai-Kampuchean border.  


1989 (List 8)


Craigie, J.E. Observations on flea bite allergic dermatitis (Correspondence). *Journal of the American Veterinary Medical Association* 195(9): 1191-1193.


1990 (List 6)


Keep, M.E. & J.L. Ledger. Lice (Phthir- aptera), fleas (Siphonaptera) and mites (Trombidiiformes, Sarcoptiformes and Nesostigmata) recorded from the larger game species in Natal. *Lammergeyer* 41: 23-29.


Merchant, S.R. Zoonotic diseases with cutaneous manifestations - Part I. *Compendium on Continuing Education for the Practicing Veterinarian*


1991 (List 4)


Dunnet, G.M. & D.K. Mardon. Siphonaptera (Fleas). In: The insects of


George, R.S. Three species of house martin fleas (Siphonaptera) added to the list for Co. Down. *Irish Naturalist's Journal* 23(12): 506-507.


Robertson, I.D., S.E. Shaw & W.T. Clark.


1992 (List2)


Best, T.L. Dipolodmys venustus. *Mammalian Species* **403**: 1-4, 5 figs.


Collinson, R.L. A practitioner’s approach to flea and tick control. *Canine Practice* 17(4): 30.


Dawson, P. Control of fleas. *Veterinary Record* 131(15): 247.


Larsen, K.S. Fleas and flea control on mink farms. Dansk Pelsdyravl 55(2): 52-53. (in Danish)


Lehmann, T. Reproductive activity of Synoternus cleopatrae (Siphonaptera: Pulicidae) in relation to host factors.


Maddock, T.C. A practitioner's approach to flea and tick control. Canine Practice 17(5): 24-25.


Mejerland, T. Fleas and their control on mink farms. Vara Pældjur 85(3): 84-86.


Schwan, T.G. Xenopsylla bantorum is an

 **Seymour, R.M.** A study of the interaction of virulence, resistance and resource limitation in a model of myxomatosis mediated by the European rabbit flea *Spilopsyllus cuniculi* (Dale). *Ecological Modeling* 60(3-4): 281-305.


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Flea News is a biannual newsletter devoted to matters involving insects belonging to the order Siphonaptera. It is compiled and distributed free of charge by Robert E. and Joanne H. Lewis, with the support of the Department of Entomology at Iowa State University in Ames, IA and a grant in aid from the Zocon Corporation, a Sandoz Company based in Dallas, TX. It is mainly bibliographic in nature, but recipients are urged to check any citations given here before including them in publications. Many of our sources are abstracting journals and current literature sources such as Current Contents® and citations have not necessarily been checked for accuracy. Additional information will be provided upon written request. Further, recipients are urged to contribute items of interest to the profession for inclusion herein.

We wish you all a very Merry Christmas and a prosperous New Year.
Botha DeMeillon’s Contribution to the Systematics of South African Siphonaptera (Insecta) [1]

Abstract. The three genera, Cryptopsylla, Epirimia and Macroscelidopsylla and 45 species and subspecies of Siphonaptera described by Dr. Botha DeMeillon between 1930 and 1964 are listed. Each species account includes data on the type locality, type host, and other information including the depository of the primary type. A complete list of DeMeillon’s papers dealing with flea systematics is included in the literature cited.

Introduction

On the event of the ninetieth birthday of Dr. Botha DeMeillon it seems appropriate to review some of his contributions to arthropodology. From 1926 to 1965 Dr. DeMeillon was affiliated to the South African Institute of Medical Research in Johannesburg, South Africa, in one capacity or another. During much of this time he served as the officer in charge of the Department of Entomology at the Institute where he conducted research on the systematics, ecology and control of arthropod vectors of human pathogens. While he is certainly best known for his studies of mosquitoes, he also published extensively on sand flies, black flies, fleas, bed bugs and ticks. The purpose of this work is to enumerate the siphonapteran taxa described by him and to catalogue the data associated with the primary types. Where these are known, they are on deposit in the collections of the South African Institute of Medical Research in Johannesburg (SAIMR) or the British Museum of Natural History in London (BMNH).

Between 1930 and 1960, DeMeillon authored or coauthored 21 works dealing with the systematics of South African fleas. He was the sole author of 13 of these, and coauthor, with Felicity Hardy, Tilly Murch and G.H.E. Hopkins in the remaining eight. Collectively these works contain descriptions of three genera and 45 species and subspecies. All previous work on this group of insects in South Africa was summarized in DeMeillon et al. (1961). In this book, not only are there keys to the genera and species of fleas, but also the main features used to separate the species are given, as well as the geographical distribution, host associations and their status as vectors of plague. Today, nine of his taxa are considered junior synonyms but the remaining forms are thought to be valid.

DeMeillon and his co-workers provided the basis for subsequent studies on plague. Green et al. (1980) published a paper presenting evidence that Mastomys natalensis (the multimammate rat of medical importance throughout its distribution in Africa) is really a complex of species. Based on the chromosome number and haemoglobin electromorphs, Mastomys natalensis and Mastomys coucha could be separated. Today, Honacki et al. (1982) treat Mastomys as a subgenus of Prolomys and M. coucha as a junior synonym of M. natalensis. Nowak (1991) considers the two to be distinct genera and assigns both species to Mastomys.

Issacson et al. (1983) performed a study to determine whether M. natalensis and M. coucha (as well as other rodent species) had different potential as reservoirs for plague. They found that M. natalensis was significantly more resistant to the plague bacillus than was M. coucha. It is therefore of the utmost importance that the role that these two species play in the epidemiology of plague in particular be appraised and the fleas from each rodent species be checked for their capacity as vectors of the plague bacillus.

In the individual listings we have changed the names of the geopolitical regions to the current usage and indicated synonymy with respect to the names of the hosts. The species of Tatera have been named based on their known distribution as indicated in Ellerman et al. (1953) and Honacki et al. (1982).

In 1956, Hopkins and Rothchild erected the genus Demellonia to house Ctenopsyllus


Species & Subspecies

achilla DeMeillon, 1947. Xenopsylla [94717].

J. ent. Soc. Sth Afr. 10: 122-123, figs. 3.

MOCAMBIQUE, Inhambane Province, Angonia, untraced, host unknown [probably Cricetomyia gambiana], date not given, L. Ferreira. 1♂ 3♀ SYNTYPES, SAIMR #87-990. The ♂ is here designated the LECTOTYPE.


albertyi DeMeillon & Marcus, 1958. Macrocephalopsylla [95843].


Deposition not indicated, but DeMeillon et al. (1961: 203) list them in SAIMR.

REMARKS: Hopkins & DeMeillon (1964: 40) described the male from a series of seven males and 10 females taken at the type locality from Elephas [vandami =mastiff] in June, 1951.

aricinae DeMeillon, 1949. Listopsylla [94931].

The Entomologist 82: 241-244, figs. 1-4.

SOUTH AFRICA, Cape Province, Calvinia District, Otjosongome, 50.11S 20.38E, from Asthomys namaquensis, 1956, W. Heesch. HOLOTYPE ♂, BMNH.

bechuanae DeMeillon, 1947. Xenopsylla [94718].

J. ent. Soc. Sth Afr. 10: 123-124, figs. 4a-d.

SOUTH AFRICA, Bechuanaland Protectorate, Sebena, 30 mi [48 km] on Francistown [21.11S 27.32E] - Nata [20.05S 26.10E] Road, from Saccostomus campestris, no date or collector given. HOLOTYPE ♂, SAIMR #736.

burtoni Marcus & DeMeillon, 1960. Synoesternus [96026].

Novos Taxa ent. 22: 3-6, figs. 1-3, pl. 1.

SOMALILAND, Rongo Well, 04.03N 46.51E, from Herpestes sanguineus, 21.V.1955, J. Meester. HOLOTYPE ♂, SAIMR #9358.

caffarea DeMeillon, 1940a. Chiosopsylla [94042].


HOLOTYPE ♂, by monotypy, SAIMR #608. 

caledonia DeMeillon, 1940a. Chiatopsylla octavi (94044).
Proc. R. ent. Soc. Lond. (B) 9: 143-153, no fig.
SOUTH AFRICA, Cape Province, Houw Hoek Pass, Caledon, 34.14S 19.25E, from "pigny shrew", 29.VIII.1939, D.H.S. Davis. SYNTYPE series [both sexes], SAIMR #612. A lectotype should be designated from this series.


carus DeMeillon & Hardy, 1953. Chiatopsylla (95305).
SOUTH AFRICA, Cape Province, near Avondrust Station, 33.27S 20.11E, from nest of Myotomys [=Otomyx] unisulcatus, 9.IX.1952. C. Muller. HOLOTYPE ♂, SAIMR #2073.

corax DeMeillon, 1942. Chiatopsylla (94211).
SOUTH AFRICA, Cape Province, along road between Willowmore, 33.18S 23.30E, Uniondale, 33.40S 23.07E and Aberdeen, 32.29S 24.04E, from Myotomys [=Otomyx] unisulcatus nest, 1.X.1941, no collector given. HOLOTYPE ♂, SAIMR #559.

Proc. R. ent. Soc. Lond. (B) 6: 146-148, fig. 5.
SOUTH AFRICA, Cape Province, Glen Grey District, Glen Grey Fails, Lady Frere, 31.42S 27.14E, from Mastomys coucha [=Prodomys natalensis], 4.VI.1939, l. Faurie. HOLOTYPE ♂, by monotypy, SAIMR #607.
=Chiatopsylla godfreyi Waterston, 1913. synonymized by Smit & Wright (1978: 25).

crossus DeMeillon, 1949b. Chiatopsylla (34048).
SOUTH AFRICA, Orange Free State, Kroonsd, 27.40S 27.15E, from Otomyx irroratus nest, 11.VIII.1939, D.H.S. Davis. HOLOTYPE ♂, by monotypy, SAIMR #608.

cryptonyma DeMeillon & Hardy, 1954. Xenopsylla (35428).
SOUTH AFRICA, Orange Free State, Hoesveld, Holfontein, 27.53S 27.05E, from Geocricus capensis [=Xerus inauris], 4.IV.1939, D.H.S. Davis. HOLOTYPE ♂, SAIMR #2494.
REMARKS. Earlier collections of this species are confused in the literature with Xenopsylla erilli (Rothschild, 1904).


SOUTH ATLANTIC, Tristan da Cunha group, Nightingale Island, 37.28S 12.32W, from Puffinus gravis, 10.IV.1956, B. Rowan. HOLOTYPE c, SAIMR #1373.

REMARKS. Originally described as a subspecies of Parapsyllus longicornis, this taxon was elevated to a full species by Dunnet (1964) in Carrick, R. M. Holdgate & J. Prévost (Eds.), Antarctic Biology, pp. 223-238, figs. 1-3, table I. Peris.

davisi DeMeillon, 1940a. Xenopsylla [94045].
Proc. R. ent. Soc. Lond. (B) 9: 151-152, figs. 9-11.
SOUTH AFRICA, Cape Province, Hopefield, 33.05S 18.26E, from Gerbillurus paeba nest, 22.IX.1939, D.H.S. Davis. HOLOTYPE c, SAIMR #758.

fouriei DeMeillon, 1937. Listropysylla [93729].
SOUTH AFRICA, Transvaal, Johannesburg, Pimville, 26.17S 27.55E, from Otomys irratus nest, 7.VI.1937, collector not given. HOLOTYPE c, SAIMR #714.

frayi DeMeillon, 1937. Xenopsylla [93728].
SOUTH AFRICA, northern Zululand, Maget [=Magudu, 27.32S 31.39E], from Mastomys coucha [=Praomys coucha], 6.VI.1937, Fray. HOLOTYPE c, SAIMR #787.

gariepensis DeMeillon & Haréy, 1953. Chistopsylla [95304].
J. ent. Soc. Sth Afr. 16: 17-18, figs. 1c, c.
SOUTH AFRICA, Cape Province, Neiilserdrift, on Orange River opposite Keimoes, 28.41S 20.59E, from Aethomys namaquensis, 13.VII.1952, C. Muller. HOLOTYPE c, SAIMR #2061.

goldhuyzi DeMeillon, 1949. Xenopsylla [94932].
The Entomologist 82: 244, figs. 4a-d.
SOUTH AFRICA, Zululand, Maputa, N runway of Maputa Aerodrome, 29.59S 32.45E, from Tatera braunsi, 18.V.1947, R. Rose Innes, P.J. Goldhuyzi & P. Engelbrecht. HOLOTYPE c, SAIMR #793.

heardi DeMeillon, 1952. Parapsyllus magellanicus [95219].
INDIAN OCEAN, Australia, Heard Island, Cape Crozet, 52.07S 73.20E, from Macronectes giganteus nest, 20.XII.1949, collector not given. HOLOTYPE c, SAIMR #1345.

hipponax DeMeillon, 1942. Xenopsylla [94212].
J. ent. Soc. Sth Afr. 5: 85-87, figs. 3a-c.
SOUTH AFRICA, Transvaal, Louis Trichardt, 23.05S 29.56E, from Tatera lobenguiae [=africa], IV.1926, collector not given. HOLOTYPE c, SAIMR #778.

ingrami DeMeillon, 1938. Cryptopsylla [93809].
Z. Farasitenk. 10: 464-465, fig. 1.
SOUTH AFRICA, W. Pro. [=Cape Province], from unknown host, VIII.1937,
klavariana DeMeillon, 1940a. *Chiasstopyla numae* [94043].
SOUTH AFRICA, Cape Province, Klaver [=Klaveri], or Doorn River, 31 46S 18.37E, from *Paratomy s luteolus [=brantsi]*, no date, C.V. Muller. c♂ SYNTYPES, SAIMR #610, #611. We here designate the ♂ of the LECTOTYPE.


lobengulae DeMeillon, 1930b. *Xenopylla* [93036].
Novit. zool. 36: 139-142, figs. 1, 3, 5, 8-10.  
SOUTH AFRICA, Cape Province, Worcester, Chavonnes, 33.34S 19.22E, from *Tatera lobengulae* [=afros], 5.X.1928, B.J. Kock. HOLOTYPE ♂, BMNH.

miriamae Hopkins & DeMeillon, 1964. *Demeillonia* [96144].
SOUTH AFRICA, South West Africa [=Namibia], Aus, 28.40S 16.15E, from *Eupholanthus vandani [=sinuatus], VI.1961, P.J. Albertyn. HOLOTYPE ♂, BMNH.

monticola DeMeillon & Hardy, 1954. *Chiasstopyla* [95425].
J. ent. Soc. sth. Afr. 17: 75-78, figs. 5a-c.  
SOUTH AFRICA, Basutoland [=Lesotho], on mountain pass near Mashai River ford, untraced, 7600 ft (2316m), from *Myotoma [=Otomy] s lagogetti*, 26.IX.1953, R. Rose Innes & K. Hechter-Schulz. HOLOTYPE ♂, SAIMR #2462.

monticogens DeMeillon & Hardy, 1954. *Hypsophthalmus* [95427].
J. ent. Soc. sth. Afr. 17: 77-78, figs. 6a-d.  
SOUTH AFRICA, Basutoland (=Lesotho), Menaoneng area, 29.36S 28.52E, 8500 ft (2591m), from *Otomy s trota*, 21.IX.1953, R. Rose Innes, K. Hechter-Schulz & R. Bryden. HOLOTYPE ♂, SAIMR #2491.

mulleri DeMeillon, 1947. *Xenopylla* [94716].
J. ent. Soc. sth. Afr. 10: 121-122, fig. 3e-g.  
SOUTH AFRICA, Cape Province, 19.3 mi (=31 km) from Kuruman, 27.28S 23.27E, from *Tatera lobengulae* [=brantsii], 23.VI.1845, C.V. Muller. HOLOTYPE ♂, SAIMR #899.

numa DeMeillon & Hardy, 1951. *Chiasstopyla* [95112].
SOUTH AFRICA, Namibia, Keetmanshoop, 26.36S 18.08E, from *Graphiurus* sp., 10.III.1950, R. Rose Innes & P.J. Goldenhuys. HOLOTYPE ♂, SAIMR #1002.

natalensis Marcos & DeMeillon, 1960. *Ctenophthalmus (Ethicotenophthalmus)* [96027].  
Novos Taxa ent. 22: 6-8, figs. 1-4, pl. 2.  
SOUTH AFRICA, Natal, Nottingham Road, 29.22S 30.00E, from *Otomy* sp. nest, 28.IV.1950, J.J. de Beer & A.J. Prinsloo. HOLOTYPE ♂, SAIMR #2451.

occidentalis DeMeillon, 1938. *Xenopylla* [93810].  
Z. Parasitenk. 10: 465-467, figs. 2-3, 6.  
orientalis Marcus, DeMeillon & Davis, 1960. Xenopsylla trifaria [96016]
Novos Taxa ent. 20: 3-8, fig. 3.
MOCAMBIQUE, Nampula Province, Niete, 16 km W Lumbo, 15.02S 40.41E, from Tatera leucogaster, 25.III.1959, D.H.S. Davis. HOLOTYPE ♂, SAIMR #3383.

paniphas DeMeillon, 1947. Xenopsylla [94715].
SOUTH AFRICA, Cape Province, Clanwilliam District, Het Kruis, 37 mi [60 km] N, ca. 32.33S 18.44E, from Tatera afric, 121.943, C.V. Muller. HOLOTYPE ♂, SAIMR #3716.

phyllomae DeMeillon, 1934. Xenopsylla [93413].
SOUTH AFRICA, Transvaal, Altdays, 22.41S 29.06E, Zoutpansberg, from Aethomys chrysophilus, XII.1933, V. Walsh. HOLOTYPE ♂, SAIMR #910.

placidia DeMeillon & Hardy, 1951. Xenopsylla hirsuta [95111].
SOUTH AFRICA, Cape Province, 3.6 mi [5.8 km] from Stanford, 34.26S 19.26E, on road to Gansbaai, 34.35S 19.20E, from Tatera sp. nest, 17.I.1950, C.V. Muller. HOLOTYPE ♂, SAIMR #1012.

quadristia DeMeillon, 1930a. Chiaiopsylla [93024].
Novit. zool. 35: 250-253, figs. 6-8.
SOUTH AFRICA, Cape Province, Klaver [=Klaver], on Doorn River, 31.46S 18.37E, from Paratomys luteolus [=brantsi], VIII.1928, C.V. Muller. HOLOTYPE ♂, BMNH.

roseinnesi DeMeillon & Hardy, 1954. Chiaiopsylla [95426].
J. ent. Soc. sth. Afr. 17: 276-277, figs. 5d-g.
SOUTH AFRICA, Basutoland [=Lesotho], Menaeneng area, 29.36S 28.52E, 8500 ft [2591m], from Otomys stroggetti, 28.IX.1953, collector not given. HOLOTYPE ♂, SAIMR #2474.

selindae DeMeillon, 1940a. Libystus [94040].
Proc. R. ent. Soc. Lond. (B) 9: 146, figs. 3-4.
ZIMBABWE, Melsetter, 19.48S 32.50E, Mt. Selindae, 20.24S 32.43E, from Paraxerus palliatus, collector not given. [HOLOTYPE ♂, SAIMR #704.
REMARKS. The slide of Libystus infestus selindae in the collection has TYPE 704 written on the label in red ink. There are two other slides, each bearing a female, and the numbers 708 and 709, respectively, labeled paratypoids.

SOUTH AFRICA, Transvaal, Randfontein, 26.10S 27.43E, from gerbil nest, IX.1925, A. Ingram. HOLOTYPE ♂, SAIMR #656.
=Cenophthalmus (Ethiocienophthalmus) calceatus calceatus Waterston, 1912.
Synonymized by DeMeillon, (1950b: 35).

smithersi DeMeillon, 1950a. Cenophthalmus (Ethiocienophthalmus) [95076]
SOUTHERN RHODESIA [=Zimbabwe], Vumba, Umtali, 19.06S 22.40E, from Crevidura lunata [=lunca], 1.I.1949, National Museum Bulawayo. HOLOTYPE ♂, SAIMR #688.

tanganyikensis Marcus, DeMeillon & Davis, 1960. Xenopsylla [96015].
Novos Taxa ent. 20: 3-8, figs. 1-2.
TANGANYIKA [=Tanzania], Ruwya Province, Mpanda, Iku, 06.55S 31.10E, from Tatera labora [=ziolida], 22.XI.366, R.F. Chapman & I.A.D. Robertson. HOLOTYPE ♂, SAIMR #3382.

temporis DeMeillon, 1940a. Hypopsphalmus [94039].
SOUTH AFRICA, Orange Free State, Groempunt, Bethlehem, 28.55S 28.19E, from Otomyx sp. [=O. irroratus], no date or collector given. HOLOTYPE ♂, SAIMR #676.

thalia DeMeillon, 1949. Leptopsylla aestiptica [94930].
The Entomologist: 82: 241, figs. 1a-b.
SOUTHERN RHODESIA [=Zimbabwe], Matopos, 20.27S 28.30E, Rebs School, from Aethomys chrysophilus, 26.XI.1948, no date or collector given. HOLOTYPE ♂, SAIMR #683.

trifarius DeMeillon, 1930a. Xenopsylla [93023].
Novr. zool. 35: 256-253, figs. 2-5.
SOUTH AFRICA, Cape Province, Klaver [=Klawer], on Dorn River, 31.46S 18.57E, from Tatera lobengulae [=afra] nest, 11.VII.1928, C.V. Muller. HOLOTYPE ♂, BMNH.

zuluensis DeMeillon, 1930a. Dinopsyllus [94046].
SOUTH AFRICA, Natal, Zululand [Kwazulu], Eshowe, 28.54S 31.22E, from a "mole", 10.II.1937, collector not given. HOLOTYPE ♂, SAIMR #671.

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