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flea NEWS

60



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Announcement

It has now been 20 years since I took over the production of Flea News from the capable hands of F.G.A.M. Smit. Much has happened during that time to expedite the retrieval and dissemination of information, and resources are now available to the researcher that could only have been imagin-ed in 1980. This, coupled with the fact that the number of students of the Siphonaptera has seriously declined during this period and the cost of printing and postage has increased, has convinced me that the time has come to discontinue production of printed copies of Flea News. Electronic copies of the last 14 numbers are available

on the web and any future numbers, if any are forthcoming, will be added to them. Readers are urged to continue to send reprints and other material that may be of interest to pulicologists for inclusion therein. I wish to take this opportunity to thank the many colleagues who have cooperated in the past for their contributions and assistance in making Flea News a useful, if not particularly elegant, means of communicating with the scientific community.

R. E. Lewis

Obituary

Shortly after hearing of the death of Frans Smit I set about writing an obituary based upon information I had requested from him some 10 years ago. After completing it I was contacted by Julius, his eldest son, and provided with a copy of a document outlining Smit's life and career, evidently writ-ten by Smit himself. Though it is sim-ilar to the material presented in my original obituary I am substituting his account out of respect for a colleague and long-time friend. Any annota-tions by me are enclosed in brackets, i.e. []

**Franciscus Gerardus Albertus Maria
Smit**

7-June-1920 • 28-January-2000

"Franciscus G. A. M. Smit was born at Zutphen, The Netherlands, on 7 June 1920. Having only just survived a lengthy illness during his early teens, he subsequently managed to finish [his] secondary school education in Nijmegen. For health reasons and because of his intense interest in natural history, he was advised to attend a local horticultural college for two years. This was followed by working at a florist's as a volunteer for six months while another six months were spent at the office of an estate agent (the only employment available at the time). In March, 1940, however, the enthusiasm which Frans had displayed at the horticultural college for the subject of entomology resulted in an appointment by the Ministry of Agriculture, enabling him to embark upon a study of the life-cycle and control measures of the apple-blossom weevil (*Anthonomus pomorum* L.). That work had to be carried out at Geldermalsen in a fruit-growing region north of the river Waal. When, on 10 May, 1940, Germans invaded to occupy the country, the bridges over that river were blown up which made continual travel and further research impossible. Work was hard to come by in those days but Frans managed to earn a few guilders by gardening and teaching violin-playing. In 1941 he found employment at the office of a transport firm in Venlo. During that year he was given permission by his employer to spend one day a week attending entomology lectures at the Agricultural University of Wageningen (travelling there by bicycle in all weathers, three hours each direction). In 1942 he obtained a clerical position at the Government Coal Office in Nijmegen, thereby obviating the risk of being sent to Germany to work in a

factory. During these war years Smit was able to study garden architecture and successfully passed examinations in 1944.

"Having collected insects in general from boyhood onwards, Frans had started to specialize in beetles but when, in 1941, he realized that fleas and lice were totally neglected in his country he gropingly tried to find his way into the literature on those insects. He soon decided to leave the comparatively well-studied beetles alone and instead to pay attention to the smaller orders which, in any case, would be less costly and time-consuming as a pure hobby, which the pursuit was supposed to remain. When he had left the Coal Office in the autumn of 1946, Frans first spent two weeks at Tring, England, where he became utterly fascinated by the Rothschild flea collection housed in the Zoological Museum of the British Museum of Natural History. After returning home he failed to get started, as planned, in garden architecture and instead spent the winter writing a popular book in Dutch on fleas and lice (*Vlooien en Luizen*) which was finally published in 1951. In 1947 his luck turned and in September Frans was appointed entomologist at the Phyto-pathological Institute at Wageningen, a job he really cherished. Another holiday was spent at Tring in February [of] 1948. When, in the summer of that year, the Hon. Miriam Rothschild enquired whether he would be interested in coming over to work in the Flea Room at Tring as a temporary assistant with the possibility of succeeding Mr. F. Cox (who had been the assistant for some 50 years), Frans gratefully accepted the opportunity with both hands. So, he burned his boats and arrived at Tring on 2 January, 1949 carrying all his belongings: a microscope, a violin and a suitcase. When, in 1950, Mr. Cox did retire, Frans Smit became the Custodian of the

Rothschild Collection of Siphon-aptera, a position which he held until his retirement in 1980. During those years he published just over 200 books [201] and articles and described more than 200 [192] new forms of fleas. Mr. Smit was re-employed by the British Museum of Natural History as a part-timer to continue work on volume VII of the monumental Rothschild Flea Catalogue until 1983. After another two years of voluntary work to finish the Catalogue, Frans had to sever his links with flea-studies in 1985, much to his intense regret.

"During the years at Tring, Frans and his family had lived in a house rented from the museum but which he was obliged to vacate in 1985. He and his wife Tineke (whom he had married in October, 1949) then moved to Peterborough where, in retirement, he was fully occupied with research into Dutch-engraved glasses of the 17th and 18th centuries. Frans had embarked upon these studies as a spare-time interest in 1970 and had also taught himself to engrave glass (which, in 1984, he had to give up because of eye-trouble). In 1980 he was elected a Fellow of the Guild of Glass Engravers. He became known as an authority on Dutch-engraved glass and published over 50 papers and mono-graphs relating to that subject.

"Frans Smit filled his spare time with work or other useful pursuits. Disliking proper holidays, he only travelled in connection with his flea- or glass-studies, greatly enjoying such trips. A simple life-style quite suited Frans; for instance, he never wanted a car or a television-set. Listening to good music, especially the violin repertoire, was his intense pleasure.

"Being rather an individualist, Frans shunned the flock. One of his mottoes used to be 'Always try to do something that is not done by others'.

He certainly did: the study of fleas (a unique career) and of old Dutch-engraved glass."

[Frans's wife, Caroline Ernestine Smit died in November of 1999. He is survived by four children, Julius, Remy, Emile and Deborah.]

Taxa Genera & Subgenera

Astivalius Smit, 1953
Aetheca Smit, 1983
Amaradix Smit, 1983
Ayeshsapsylla Smit, 1987
Baculomeris Smit, 1983
Ceratophyllus (Celeophilus) Smit, 1983
Ceratophyllus (Emmareus) Smit, 1983
Ceratophyllus (Rosickyiana) Smit, 1972
Dampfia Smit, 1954
Dasypsyllus (Neornipsyllus) Smit, 1976
Ectinorus (Ichyonus) Smit, 1987
Ernestinia Smit, 1953
Eumolpianus Smit, 1983
Foxella (Afoxella) Smit, 1983
Glaciopsyllus Smit & Dunnet, 1962
Idilla Smit, 1957
Igloffius Smit, 1983
Margopsylla Smit, 1983
Megabothris (Amegabothris) Smit, 1983
Megabothris (Gebrella) Smit, 1983
Megabothris (Kueichenlipsylla) Smit, 1983
Neotunga Smit, 1962
Nosopsyllus (Nosinius) Smit, 1960
Opisodasys (Oxypsylla) Smit, 1983
Oropsylla (Hubbardipsylla) Smit, 1983
Pagipsylla Smit, 1979
Plusaetis Smit, 1983

Pulicella Smit, 1964
Rothschildiana Smit, 1952
Serendipsylla Smit, 1975
Tetrapsyllis (Phylliver) Smit, 1987
Traubia Smit, 1953
Zyx Smit, 1953

Species & Subspecies 1950

Echidnophaga inexpectata = Phacopsylla i.

1951

Leptopsylla algira tuggertensis
Leptopsylla aethiopica nakuruensis
Dinopsyllus brachypecten

1952

Ischnopsyllus delectabilis
Chimaeropsylla haddowi
Ancistropsylla siamensis Smit & Tomanoff
Delotelis hollandi

1953

Nosopsyllus ceylonensis
Dorcadia ioffi
Chaetopsylla caucasica
Cleopsylla monticola
Plocopsylla phyllisae
Megarhroglossus jamesoni
Palaeopsylla similis peusi
Sigmactenus toxopeusi
Ernestinia eximia
Traubia egregia
Astivalius micropthalmus
Zyx notabilis
Acanthopsylla richardsoni
Acanthopsylla guba
Acanthopsylla divergens = *enderleini*
Acanthopsylla bella

1954

Dampfia grahami equatoris
Thaumapsylla breviceps orientalis = *breviceps*

1955

Ceratopsyllus farreni chaoi Smit & Allan
Ctenophthalmus congener honshuensis
 = *congeneroides*
Ctenophthalmus congener hokkaidensis
 = *congeneroides*
Ctenophthalmus apertus allani
Ctenoparia jordani
Tetrapsyllus rhombus
Ctenophthalmus nobilis vulgaris
Ceratophyllus styx jordani
Leptopsylla algira costai

1956

Parapulex echinatus
Xenopsylla graingeri
Xenopsylla cornigera
Ctenophthalmus bisoctodentatus occidentalis
 = *heselhausi*
Hystrihopsylla talpae orientalis

1957

Lagaropsylla idae
Lagaropsylla consularis
Lagaropsylla obliqua
Lagaropsylla lipsi
Lagaropsylla hoogstraali
Rhadinopsylla dolomydis
Ctenophthalmus nifetodes martinorum
Ctenophthalmus dolomydis
Lagaropsylla anciauxi

Lagaropsylla leleupi
Notiopsylla enciari
Idilla caelebs
Rhadinopsylla mesoides
Rhadinopsylla isacantha continentalis
 = *isacantha*
Rhadinopsylla strouhali
Rhadinopsylla orama
Rhadinopsylla arborea
Rhadinopsylla media
Rhadinopsylla difficilis
Rhadinopsylla linta
Xenopsylla cunicularis
Xenopsylla blanci

1958

Libyastis proximus
Libyastis cognatus
Xenopsylla moucheti
Ceratophyllus affinis neglectus
Stivalius alienus = *Lentistivalius* a.
Stivalius curtiductus = *Afristivalius* c.
Stivalius parilis = *Afristivalius* p.
Stivalius fallaciosus = *Afristivalius* f.
Stivalius pirloti = *Afristivalius* p.
Stivalius cacuminis = *afer*
Polygenis vulcanius = *vazquezi*
Polygenis odiosus
Kohlsia felteni
Hoogstraalia vandiemeni
Araeopsylla lumareti
Araeopsylla immanis
Lagaropsylla turba

1959

Ctenophthalmus ominosus
Dinopsyllus dirus

1960

Ctenophthalmus andorrensis
Ctenocephalides arabis multispinosus
 = *arabis*
Xenopsylla dipodilli
Ctenophthalmus congener tenuistigmaticus
Ctenophthalmus iran persicus
Ophthalmopsylla volgensis palestina
Nosopsyllus sarinus aryanus
Nosopsyllus sarinus parthius
Nosopsyllus sinaiensis
Nosopsyllus iran attenuatus
Nosopsyllus henleyi israelicus
Nosopsyllus theodori
Nosopsyllus pumilionis
Palaeopsylla miranda
Palaeopsylla soricis rosickyi
Ctenophthalmus bifidatus
Ctenophthalmus capriciosus

Ctenophthalmus tertius	= C. streeti Lewis
Ctenophthalmus arcanus	1975
Xiphiopsylla levis	Smitipsylla prodigiosa
Xiphiopsylla daemonicola	Serendipsylla marshalli
Xiphiopsylla tumida	Ctenophthalmus cophurus prolapsus
Listropsylla basilewskyi	Ctenophthalmus chrysochloridis
Ctenophthalmus blandulus	Ctenophthalmus evidens convexus
Ctenophthalmus verutus	Ctenophthalmus pilosus
1962	Ctenophthalmus wranghami
Tunga libis	Hystrihopsylla synaptica
Neotunga euloidea	Neopsylla secura separata
Lagaropsylla tauffliebi	Rhadinopsylla dahurica vicinoides
Ctenophthalmus nyikensis	Stenischia rhadinopsylloides
Ctenophthalmus allisoni	Stenischia lewisi
Glaciopsyllus antarcticus Smit & Dunnet	Frontopsylla spadix ghurka =spadix
1963	Paradoxopsyllus dictosus
Ctenophthalmus nivalis helveticus	Ctenophyllus martensi =Aconothobius m.
Ctenoparia topali	Ctenophyllus lacertosus =Geusibia l.
1964	Vermipsylla perplexa
Frontopsylla setigera	Sigmactenus cavifrons
Ctenophthalmus taiwanus	Aconothobius anthobius
Dinopsyllus hanneyi	Palaeopsylla soricis vesperis
Ctenophthalmus flagellatus	1976
Pulicella macrotheca	Ctenophthalmus audax anarcus
1965	Ctenophthalmus audax szaboi
Palaeopsylla soricis scobina Smit & Rosicky	Dasypsyllus plumosissimus
Ctenophthalmus uncinatus angustus Smit & Rosicky =C. u. koshanini	Ceratophyllus phrillinae
Ctenophthalmus assimilis erectus Smit & Rosicky	Doratopsylla coreana araea Smit & Rosicky
Parapsyllus nestoris	Palaeopsylla aporema Smit & Rosicky
Parapsyllus jacksoni	Palaeopsylla danieli Smit & Rosicky
Parapsyllus lynnae	Callopsylla dolabella Smit & Rosicky
Pagipsylla galliralli	1977
Lagaropsylla taeniola	Lagaropsylla alloides =Allopsylla a.
Ornithophaga mikulini Rosicky & Smit	Amphipsylla phaiomydis limonea
Ornithophaga sinaia Rosicky & Smit	Rhadinopsylla rhigalea
1967	1978
Echidnophaga tiscadaea	Ceratophyllus titicacensis
Ophthalmopsylla praefecta lenta	1979
Ctenophthalmus nivalis rhaeticus	Parapsyllus lynnae alynnae
1968	Parapsyllus lynnae mariae
Dinopsyllus foedus	Parapsyllus nestoris antichthones
Ectinorus splendidus	Parapsyllus mangerensis
1970	Parapsyllus struthophilus
Parapsyllus cedei	Parapsyllus valedictus
1971	Notiopsylla corynetes
Ptilopsylla leptina stubbei	Notiopsylla enciari regula
1972	Notiopsylla kerguelensis tenuata
Ectinorus onychius angularis Smit & Rosicky	Notiopsylla peregrinus
1973	Hoogstraalia imberbis
Neopsylla heckeli Smit & Rosicky	Pygiopsylla phiola
Rhadinopsylla alticolae Smit & Rosicky	1980
Callopsylla danieli Smit & Rosicky	Mesopsylla hebes clara
	1984
	Parapsyllus magellanicus largificus

1987

Ectinorus nomisis
Ectinorus onychius deplexus
Parapsyllus ambrosius
Tiamastus deflatus
Polygenis klagesi rangeli
Polygenis trapedoi mendezi

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1947

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1949

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1950

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1953

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A new bat-flea from Ghana. *Revue Zool. Bot. Afr.* 72(1-2): 135-137, figs. 1-5.

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345-351, figs. 1-14.

1968

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1971

Hubbard's eulogy on Harry Hopkins. Ent. News
82(7): 191-193.

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Brinck-Lindroth, G. & F.G.A.M. Smit. The
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Entomological Museum, Lund, with a check-list
of the fleas of Sweden. Entomol. Scand. 2(4):
269-286, figs. 1-13.

1972

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Mission G. F. de Witte 72(4): 115-116.

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via and notes on intersexuality and castration
in *Amphipsylla sibirica* Wagn. Entomol.
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figs. 1-16.

1974

Notes on two fictitious fleas from Nepal. Ent.
NachrBl., Wein 19(3): 130.

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The flea *Palaeopsylla soricis* as intermediate
host for the cestode *Hymenolepis scutigera*.
Ent. Ber., Amst. 34(5): 94-95, fig. 1.

A find of the east Asian flea *Monopsyllus*
anisus (Rothschild) (Siphonaptera:
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Gaz. 25(2): 124-126, figs. 1-2.

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Flea News 3: 8 pp.

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Smitipsylla prodigiosa, a new flea from India. *J. Nat. Hist.* 9(1): 29-32, figs. 1-8.

A new bat-flea from Australia. *J. Ent. (B)* 42(2): 283-288, figs. 1-6.

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Siphonaptera from the Cherangani Hills in Kenya. *Revue Zool. Bot. Afr.* 89(1): 191-210, figs. 1-31.

Siphonaptera from some rodents in eastern Mongolia. *Parasit. Hung.* 7: 169-172.

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Sigmactenus cavifrons, a new flea from New Guinea. *Ent. Ber., Amst.* 35(5): 65-69, figs. 1-5.

Flea News 5: 6 pp.

Flea News 6: 6 pp.

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A new subspecies of shrew-flea, with a Lusitanian distribution. *Entomologist's Gaz.* 26(4): 274-276, figs. 1-3.

1976

Order XXIX: Siphonaptera. In: G. S. Kloet & W. D. Hincks (Eds.)- A check list of British Insects. (2) (5). *Handbk. Ident. Brit. Insects* 11(5): 121-123.

Flea News 7: 12 pp.

Two new east African mole-rat fleas (Siphonaptera: Hystrichopsyllidae). *Revue Zool. Afr.* 90(1): 46-52, figs. 1-9.

A new South American ceratophyllid bird-flea. *Ent. Ber., Amst.* 36(5): 65-67, figs. 1-3.

A new bird-flea from Nepal. *Senckenberg. Biol.* 57(1-3): 63-66, figs. 1-3.

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Flea News 9: 4 pp.

Smit, F.G.A.M. & B. Rosicky. Siphonaptera collected by Dr. M. Daniel in Nepal. *Folia Parasit.* 23(2): 135-159, figs. 1-37.

1977

Flea News 10: 16 pp.

An unusual form of the stick-tight flea *Echidnophaga gallinacea*. *Revue Zool. Afr.* 91(1): 198-199, figs. 1-2.

A new bat-flea from Nigeria (Siphonaptera: Ischnopsyllidae). *Beaufortia* 26(330): 39-42, figs. 1-5.

Flea News 11: 14 pp.

Some Siphonaptera from small mammals in Kashmir (Insecta). *Senckenbergia. Biol.* 58(1-2): 45-53, figs. 1-4, maps 1-2.

Flea News 12: 12 pp.

Notes on a collection of Siphonaptera from Nepal. *J. Nat. Hist.* 11(6): 693-702, figs. 1-13.

1978

Flea News 13: 16 pp.

A new bird-flea from Peru. *Zool. J. Linn. Soc.* 62(2): 189-192, figs. 1-2.

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Insects on stamps. A cross-referenced checklist. Tring (F.G.A.M. Smit). 78 pp. (Siphonaptera: 22).

Helminthosis in a British flea: a case of double infection. Entomologist's Mon. Mag. 113(1356-59): 155.

Flea News 14: 14 pp.

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1979

Flea News 15: 8 pp.

The fleas of New Zealand (Siphonaptera). J. R. Soc. N. Z. 9(2): 143-232, figs. 1-177.

Fleas from some Western Australian mammals. Rec. West. Aust. Mus. 7(3): 325-327.

Flea News 16: 8 pp.

Flea News 17: 5 pp.

1980

Flea News 18: 8 pp.

Flea News 19: 4 pp.

Some recent collections of Siphonaptera from Mongolia. Results of the Mongolian - German biological expeditions since 1962. No. 82. Mitt. Zool. Mus. Berl. 56(1): 73-84, figs. 1-5.

Flea News 20: 17 pp.

Missing and floating genitalia in male fleas. In: R. Traub & H. Starcke (eds.) - Proceedings International Conference on fleas, Ashton, England, June 1977. Rotterdam (A.A.Balkema): 351-356, figs. 1-10.

1981

A case of tarsal trichotomy in Siphonaptera. Ent. Ber., Amst. 41: 14-15.

The song of the flea - a stridulating mechanism in Siphonaptera? Ent. Scand. Suppl. 15: 171-172, figs. 1-4.

1982

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1983

Ceratophyllidae. Key to the genera and subgenera. In: R. Traub, M. Rothschild & J. Haddow - The Rothschild Collection of fleas. The Ceratophyllidae: zoogeography and key to the genera Cambridge University Press. pp. 1-36, figs. 1-205.

1984

Parapsyllus magellanicus largificus, a new flea from the Bounty Islands. N. Z. J. Zool. 11(1): 13-16, figs. 1-7.

1987

An illustrated catalogue of the Rothschild collection of fleas (Siphonaptera) in the British Museum (Natural History). With keys for the identification of families, genera, species and subspecies of the order. VII. Malacopsylloidea (Malacopsyllidae & Rhopalopsyllidae). London (Brit. Mus. Nat. Hist.) 380 pp, pls. I-V, figs. 1-710.

1996

Flea-Bits - A selection of flea drawings by F.G.A.M. Smit. Fisherprint, Peterborough, England. 44 pp. (Published privately).



MISCELLANEA

Journal Renamed

As of January 2000 the name of the Journal of the Helminthological Society of Washington was changed to Comparative Parasitology. The change was made to better reflect the types of papers published in the journal. Parasite diversity is enormous and extends beyond the helminths. The journal is international in scope and reaches libraries in many countries. The editors invite manuscripts describing new taxa of fleas, flea life cycle studies, flea surveys, flea physiology, behaviour, biochemistry, etc. Not only works on fleas, but other groups of ectoparasites as well are welcome. Manuscripts may be sent to the editor, Willis A Reid, Jr., 6210 Hollins Drive, Bethesda, MD 20817. Society membership dues are \$25.00 domestic, \$28.00 foreign. See the home page for more information. <<http://www.gettysburg.edu/~shendrix/helmsoc.html>> (Ralph Eckerlin).

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Book Review

Sifonapteros do Brasil. Pedro Marcois Linardi & Lindolpho Rocha Guimaraes. Sao Paulo, Museu de Zoologia USP/FAPESP, 2000. 291 pp.

The following is paraphrased copy of the English abstract:

"Brazil consists of several biomes, centers of origin or dispersal, and refugia of mammalian species, with large unexplored areas in which the fauna is poorly known, including the fleas (Siphonaptera) with which these animals are associated.

"This volume represents an attempt to summarize our knowledge of the Brazilian flea fauna and is divided into two parts. Part one is a general account of the Siphonaptera in the light of recent discoveries. It consists of seven chapters and deals

with their parasitological importance, methods of study, host-parasite relationships, life history and biology, control, morphology and systematics. It is hoped that this will serve as a general introduction to the study of fleas.

"Part two deals with taxonomy and reviews the synonymies, differential characters, geographical distribution and hosts of the Brazilian species. It also includes comments on flea biology, ecology and pathogens. Illustrated keys for genera, species and subspecies are included. Check lists of geographical distribution by state and host-flea relationships are provided in the appendices.

"To date eight families, 20 genera and 59 species and subspecies have been reported from Brazil. Approximately 15% of the genera and 29% of the species are endemic, with 31 species originally described from Brazilian localities. Several new state records of species, and one new species record for Brazil are presented. Approximately 200 host species are known to harbor fleas in Brazil and new host records are also given.

"Finally, some trends and perspectives in pulicology are discussed with a view to stimulating future research by Brazilian students."

Interested parties may contact the senior author at the Departamento de Parasitologia ICB, Universidade Federal de Minas Gerais, Caixa Postal 486, 30.161-970, Belo Horizonte, Minas Gerais, BRASIL, or by e-mail at:

<linardi@mono.icb.ufmg.br>. The price of the volume is U.S. \$34.00 plus postage.

Flea Species

In Flea News 55 (January, 1998) I listed all of the new species of fleas known to me at the time that had been described between the 1994 (December) issue and the end of 1997. Following is a list of taxa that have since come to my attention to date.

1994

hubeiensis LIU, WANG & YANG. *Doratomyssa coreana*. Acta Zootaxonomica Sinica 19(2): 243-245. Ex. *Sorex cylindricauda*, China, NW Hubei Province, Shennongjia Forest Area, 31.15-57N 109-110.56-58E, 7.IX. 1989. Holotype male, in Institute of Parasitic Diseases, Hubei Academy of Medical Sciences, Wuhan.

muysensis LIU & WANG. *Macrostylophora* (*Songshupsylla*). Acta Zootaxonomica Sinica 19(2): 238-242. Ex. *Petaurista clarkei*, China, NW Hubei Province, Shennongjia Forest Area, 31.15-57N 109-110.56-58E, 1000-1700 m, V.1989. Holotype male, allo-type female in Institute of Parasitic Diseases, Hubei Academy of Medical Sciences, Wuhan.

wushanensis LIU & WANG. *Palaeopsylla*. Acta Zootaxonomica Sinica 19(3): 367-369. Ex. *Anourosorex squamipes*, China, NW Hubei Province, Shennongjia Forest Area, 31.15-57N 109-110.56-58E, 1500 m, 24.IV.1990. Holotype male, allotype female in Institute of Parasitic Diseases, Hubei Academy of Medical Sciences, Wuhan.

1995

bashanensis LIU & WANG. *Typhlo-myopsyllus*. Acta Zootaxonomica Sinica 20(2): 243-245. Ex. *Typhlomys cinereus*, China, NW Hubei Province, Shennongjia Forest Area, 31.15-57N 109-110.56-58E, 1000-1700 m, V.1989. Holotype male, allotype fem-

ale in Laboratory of Medical Entomology, Fujian Medical College, Fuzhou.

1996

wui WANG & LIU. *Ceratophyllus*. Acta Entomologica Sinica 39(1): 90-93. Ex. *Collocalia brevirostris*. No locality given other than Hubei Province. Holotype male, allotype female deposited in the Institute of Microbiology and Epidemiology, presumably in Fujian Medical College, Fuzhou.

1997

bana Beaucournu & Sountsov. *Neopsylla*. Bulletin de la Societe Entomologique de France 102(3): 205-209. Ex. *Mus caroli*. South Vietnam Plateau de Tay Nguyen, Buon Loi, 14.10N 108.40E, 11.V.1993. Holotype male in collection of the senior author.

caiae ZHENG & WU. *Rhadinopsylla* (*Actenophthalmus*). Acta Zootaxonomica Sinica 22(3): 317-320. Ex. *Microtus oeconomus*. China, Qinghai Province, Guinan County, 35.05N 100.07E, 2400 m, IX.1985. Holotype male in RIED.

opacusa GONG & FENG. *Palaeopsylla*. Acta Zootaxonomica Sinica 22(2): 209-214. Ex. *Nasillus gracilis*. China, Yunnan Province, Dali City, 25.13N 100.00E, Mt. Cangshan, 3200 m. Holotype male in the Institute of Epidemiology of Yunnan.

qinghaiensis WANG, LI & CAI. *Callopsylla* (*Callopsylla*). Endemic Diseases Bulletin. 12(3): 62-63. Ex. *Ochotona gloveri*. China, Jiegu, Jie-long & Yushu Counties, Qinghai Province. No other data.

ulangensis CAI & WU. *Rhadinopsylla* (*Actenophthalmus*). Acta Zootaxonomica Sinica 22(2): 215-218. Ex. *Lagurus luteus*. China, West

Qinghai, Ulan, 3000 m, IX.1977.
Holotype male in RIED.

wangi LIU. *Chaetopsylla* (*Chaetopsylla*). Acta Zootaxonomica Sinica 41(1): 82-85. Ex. *Vulpes vulpes*. China, NW Hubei Province, Shennongjia Forest Area, 31.15-57N 109-110.56-58E, 1400 m, no date. Holotype male in Institute of Parasitic Diseases, Hubei Academy of Medical Sciences.

xizangensis CAL, LI & ZHENG. *Rhadinopsylla* (*Actenophthalmus*). Acta Zootaxonomica Sinica 22(2): 215-218. Ex. *Ochotona macrotis*. China, north Xizang, Nagou, 4500 m, IX.1976, no other data. Holotype male in RIED.

1998

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It should be understood that all Russian and Chinese citations listed here are in Russian or Chinese, although they may have summaries or abstracts in English or some other language. Additional information is available upon request (including e-mail) and recipients are urged to report citations of articles on Siphonaptera, particularly those published in rare sources or those in journals peripheral to the field of Entomology.

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