

Robert Traub (1916–1996)

LANCE A. DURDEN, RICHARD C. ROBBINS,¹ ABDU F. AZAD,² CLUFF E. HOPLA,³
PHYLLIS T. JOHNSON,⁴ AND MIRIAM ROTHSCCHILD⁵

Institute of Arthropodology & Parasitology, Georgia Southern University, P. O. Box 8056, Statesboro, GA 30460–8056.

J. Med. Entomol. 35(4): 346–353 (1998)

ROBERT TRAUB, ONE of the most accomplished and respected medical entomologists of this or any generation, died on 21 December 1996 at the National Naval Medical Center in Bethesda, MD, after an extended illness. Although he is best known for his encyclopedic knowledge of fleas, his name stands for much more. He leaves a legacy of pioneering research accomplishments in several disciplines, especially flea systematics, chigger taxonomy, and the epidemiology of both scrub typhus and murine typhus. Because Dr. Traub was instrumental in founding the *Journal of Medical Entomology* in 1964 in which several of his substantial manuscripts were published, it is appropriate to present his obituary here and to dedicate this issue of the journal to him.

Robert Traub was born in Manhattan, NY, on 26 October 1916. In New York, he met a young girl named Renée Gluck who would later become his wife; they were married in 1939. Bob attended the College of the City of New York (now City University of New York) and graduated with a Bachelor of Science degree cum laude in 1938. He then attended Cornell University in Ithaca, NY, and the following year earned an M.S. degree in medical entomology, with a minor in veterinary bacteriology. Later in 1939, he started his Ph.D. studies in medical entomology at the University of Illinois in Urbana, concentrating on the Mexican flea fauna and the morphology of the aedeagus in male fleas. However, Bob's studies were abruptly interrupted by World War II, and in 1942 he joined the U.S. Army. In 1947, Bob completed his dissertation in absentia from the University of Illinois, and to this day it remains a standard work in flea systematics. It was published as a monograph by the Field Museum of Natural History (Chicago, IL) in 1950.

Robert Traub's illustrious career in medical entomology perhaps started in 1941, when he and Renée

joined Harry Hoogstraal's 4th parasitological expedition to Mexico. Fleas collected during that and other expeditions in Mexico provided the basis for Bob's dissertation research. Harry Hoogstraal and Bob were concurrently enrolled in Ph.D. programs at the University of Illinois, and a close friendship developed that endured for the rest of their lives. It seems fitting that two of the most influential medical entomologists of this century were good friends from the outset. Harry Hoogstraal was larger than life and smoked cigars passionately even at that time. His smoking habit drew the ire of Bob and Renée's landlady. Eventually, the landlady could tolerate Harry's smoking visits no longer. This, however, did not stop Harry. When he heard her hurried footsteps up the stairs, he simply hid in the closet with lit cigar in hand and listened to her rantings about "that horrible cigar-smoking man," while Bob desperately tried to conceal the evidence.

From 1942 to 1962, Bob served in the U.S. Army (Fig. 1) and led pioneering investigations in scrub typhus, murine typhus, Korean hemorrhagic fever, and other diseases affecting Allied troops during and after World War II. Based in Southeast Asia for much of this time, he was Commanding Officer of the U.S. Army Medical Research Unit at the Institute for Medical Research in Kuala Lumpur, Malaysia, from 1955 to 1959 (Fig. 2). He led medical expeditions throughout Asia, including Myanmar (Burma), India, Korea, and Malaysia, with the aim of improving sanitary conditions for troops in the field. Frequently, he presented the National Zoological Park in Washington, DC, with rare or unusual mammals such as orangutans, gibbons, and giant squirrels that were collected during these expeditions.

Other Army assignments included membership in the United States of America Typhus Commission in Burma and Washington, DC (1944–1946), director of the Field Unit of the Commission on Hemorrhagic Fever in Korea (1952–1953), and member of the Armed Forces Epidemiological Board on Hemorrhagic Fever (1952–1955). He also was Chief of the Department of Entomology/Parasitology at the Walter Reed Army Institute of Research in Washington, DC, from 1946 through 1955, and field director of numerous epidemiological investigations.

¹ Armed Forces Pest Management Board, Walter Reed Army Medical Center, Washington, DC 20307-5001.

² Department of Microbiology & Immunology, University of Maryland School of Medicine, 660 W. Redwood Street, Baltimore, MD 21201.

³ Department of Zoology, University of Oklahoma, 730 Van Fleet Oval, Room 314, Norman, OK 73019-0235.

⁴ 4721 East Harbor Drive, Friday Harbor, WA 98250.

⁵ Ashton Wold, Peterborough PE8 5LZ, UK.



Fig. 1. Robert Traub. In U.S. Army uniform, about 1942 (produced with permission from Iowa State University Press).

In 1962, Bob retired from the Army with the rank of colonel and embarked upon a successful career in academia as a professor of medical microbiology at the University of Maryland School of Medicine in Baltimore. There he pioneered research on several important vector-borne diseases, such as murine typhus and scrub typhus, and he organized medical research units working in Ethiopia, Indonesia, Japan, Mexico, New Guinea, Pakistan, Thailand, and the United States.

After retiring from the University of Maryland in 1983, Bob served as Honorary Curator of Siphonaptera at the Smithsonian Institution (U.S. National Museum Natural History) in Washington, DC. Deciphering intricacies of the evolution, systematics, biology, and medical importance of fleas was Bob's lifelong passion. He could examine a new flea specimen through the microscope and determine not only what kind of animal it parasitized but also its geographical origin and evolutionary history. By applying meticulous zoogeographical analyses to present-day flea distributions, with input from Miriam Rothschild, he also verified the theory of continental drift at a time when this theory was not popular. Bob personally amassed a large collection of fleas from around the world, which rivaled only by the Rothschild collection in the Natural History Museum, London. He described 154 new flea taxa (*Appendix 1*), and his collection includes

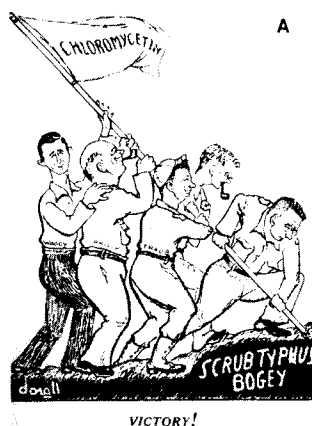


Fig. 2. Members of the U.S. Army Typhus Commission, Kuala Lumpur, Malaysia, 1948. (A) Cartoon from *The Malay Mail* newspaper, 9 June 1948. (B) Commission members seated outside the Institute for Medical Research (left to right) Herbert L. Ley, Jr., Cornelius B. Philip, Joseph E. Smadel, Theodore E. Woodward, and Robert Traub (both illustrations courtesy of U.S. Typhus Commission Archives—Theodore E. Woodward).

at least that many more undescribed species. Before his death, he donated his collection to the Carnegie Museum in Pittsburgh to serve as a legacy for others who might wish to study the systematics, evolution, zoogeography, and medical importance of fleas.

During his scientific career, Robert Traub authored more than 200 research papers, monographs, and books. Bob always was careful to ensure that his publications were of the highest standard, and he penned several monographic works, particularly on fleas, as sole author. His remarkably diverse abilities and interests are reflected in his literary legacy, which includes publications on chiggers (he described 136 new chigger taxa alone, see *Appendix 1*), fleas, mosquitoes, lice, leeches, mammals, hantaviruses, arboviruses, leptospirosis, rickettsial infections, plague, evolution, zoogeography, vaccines, control agents, repellents, and tropical biology.

A sampling of Bob's monographic works includes a systematic revision of the flea genus *Peromyscopsylla* (coauthored with Phyllis Johnson [1954]), an illustrated flea glossary (coauthored with Miriam Rothschild [1971]), 3 interrelated publications on the zoogeography, convergent evolution and taxonomy of Southeast Asian fleas (1972), a review on the ecology of scrub typhus (with Charles Wisseman Jr. [1974]), a review on the ecology of murine typhus (with Abdu Azad and Charles Wisseman Jr. [1978]), an analysis of the zoogeography and coevolution of fleas, lice, and mammals (1980), a book on the flea family Ceratophyllidae (with Miriam Rothschild and John Haddow [1983]), and a 143-page chapter on the coevolution of fleas and mammals (1985). With Helle Starcke, his close and dependable assistant for many years, Bob also coedited a book (1980) of the proceedings of the First International Conference on Fleas that convened at Ashton Wold, England, in 1977. Despite failing eyesight resulting from severe diabetes, Bob also recently co-wrote a textbook chapter on fleas with Lance Durden (1998).

Bob also applied his talents to administrative duties, and he invested much time assisting younger scientists or those from countries with meager research facilities. Notwithstanding his preeminence as a scientist, Bob was one of the most personable, good-humored, and generally knowledgeable people we have known. He was always willing to devote major blocks of time to help others and to discuss research projects or personal matters. Bob also was held in the highest regard by other scientists, as reflected by the fact that the Latin names of no fewer than 34 animals bear his name as patronyms (*Appendix 2*).

Bob's quick wit was remarkable. Once, while Lance Durden was helping him move items out of his office in Baltimore, they took a break for lunch at an exclusive restaurant. When Bob was handed the bill, Lance stated that he would be happy to pay his part of it. Bob glanced at the bill and instantly quipped, "Believe me, you'd be a lot happier if you didn't." Bob once raised eyebrows at the Smithsonian Institution by delivering a talk entitled "A member of the oldest profession looks at evolution and the transmission of zoonotic infections." As Bob reasoned, he was quoting Genesis, wherein God gave Adam the task of naming every living creature—in other words, like Bob, Adam was a taxonomist. Bob sometimes recounted a visit that he and his Canadian colleague George Holland had with Karl Jordan in London during the 1940s. As the 3 of them waited at a bus stop, Bob asked Dr. Jordan if he thought that female flea genitalia provided useful taxonomic characters. Dr. Jordan pondered this question as they climbed aboard a crowded bus. When they sat down, Dr. Jordan, who was hard of hearing, exclaimed in a loud voice, "I haven't looked at any female genitalia in years." Bob's good humor and remarkable powers of endurance never deserted him, even when times were difficult. He never bemoaned the many, and often uncomfortable, medical procedures he endured in his final years.

Robert Traub was an immensely complex yet very approachable man. This was partly reflected in the choice of portraits juxtaposed on a wall of his basement study and laboratory—the great flea expert Karl Jordan next to Stan Laurel and Oliver Hardy—3 people that he greatly admired. Bob also was steadfast with his friends, especially Bennett and Marilyn Elisberg. Bob would often state that he could not make a long trip without his accompanying personal physician, implying Bennett. Bob and Bennett first met in Malaya in 1955 and remained close friends for life. In fact, Bennett literally saved Bob's life on more than one occasion, including his diagnosis and intervention for an emergency appendectomy.

As his wife, Renée, will readily attest, Bob was not just a collector of fleas, but also of numerous other artifacts and memorabilia, such as stamps, gramophone records, books (more than most public libraries) and reprints, microscopes, primitive and aboriginal weapons, teak cabinets, Asian art, Laurel and Hardy nostalgia, gardening supplies, and more. These collections took up so much room that the entire basement and attic of their house, accounting for more than half of the total floor space, was crammed full. Bob would often lament that if he wanted to move a cabinet or stack of books, he would first have to move several other items to make space available. When Bob had office and research space in other locations, such as in Baltimore at the School of Medicine, or in Suitland, MD, at the Smithsonian Institution's Museum Support Center, he would take full advantage of his good fortune by temporarily moving some of his collections to these sites.

Numerous honors and awards were deservedly bestowed upon Robert Traub in recognition of his scientific and military achievements. In 1989, he was awarded the Hoogstraal Medal for "meritorious contributions to medical entomology" by the American Committee on Medical Entomology (ACME) of the American Society of Tropical Medicine and Hygiene, and in 1990, he received the Townsend Harris Distinguished Alumnus Medal from the City University of New York (Fig. 3). He was also the recipient of several medals of commendation from both the U.S. and British military including the U.S. Typhus Commission Medal. He was an integral member of a research team investigating scrub typhus that was nominated for a Nobel Prize in 1948. Bob belonged to many scientific organizations and was elected to honorary membership in several of them. As previously mentioned, he was a founding member of the *Journal of Medical Entomology*. His distinguished career as a medical entomologist was guided in large part by the needs of overseas U.S. and Allied military deployments, trails that he was always willing to blaze. Between overseas assignments, he lived in Bethesda, MD, from 1959 until his death. He is survived by his wife of 57 years, Renée, his son Roger (Birmingham, UK), and by 4 grandchildren and 1 great granddaughter. A daughter, Jeanette, died in 1989.

Robert Traub was among the last protagonists of a golden age. He was the last great field worker in



Fig. 3. Robert Traub holding the Townsend Harris Distinguished Alumnus Medal in his home in Bethesda, MD, 1990.

medical entomology. His 18-h days of intensive research in remote jungles or deserts for weeks at a time are legendary. He also fully recognized the importance of combining field investigations with careful laboratory and literary skills. All the while, he maintained close and amicable ties with colleagues, refusing to work in a competitive or hostile manner. Science, especially the study of fleas, was just too much fun to do that. Robert Traub, scientist, connoisseur, raconteur, friend, lives on in our hearts, ever inspiring us to excellence.

Acknowledgments

Several persons provided biographical and anecdotal information for this obituary. We are especially grateful to Bennett L. and F. Marilyn Elisberg, Renée G. Traub, Roger D. Traub, Nixon Wilson, Ronald A. Ward, Charles L. Wiseman, Jr., and Theodore E. Woodward for their cooperation. We gratefully acknowledge Zeneca AAA (Fernhurst, UK) for funding the publication of this obituary and Michael J. Perich (Department of Entomology, Walter Reed Army Institute of Research) for his enthusiastic coordination of financing.

Received for publication 4 August 1997; accepted 18 December 1997.

Appendix 1. Taxa described by Robert Traub

cas

Acropsylla girshami Traub, 1950 (syn. of *Acropsylla isena* Rothschild) (Leptopsyllidae)
Afristivalius Traub, 1980 (Pygiopsyllidae)
Agastopsylla hirsutior Traub, 1952 (Ctenophthalmidae)
Agastopsylla nylota Traub, 1952 (Ctenophthalmidae)
Agastopsylla pearsoni Traub, 1952 (Ctenophthalmidae)
Araeopsylla elbeli Traub, 1954 (Ischnopsyllidae)
Araeopsylla wassifi Traub, 1954 (Ischnopsyllidae)
Atyphloceras tancitari Traub & Johnson, 1952 (Hystriochopsyllidae)
Aviostivalius Traub, 1980 (Pygiopsyllidae)
Baculomeris schmidti (Traub, 1950) (Cerato-phyllidae)
Bibikovana Traub, 1980 (Pygiopsyllidae)
Bibikovana tiptoni (Traub, 1957) (Pygiopsyllidae)
Coronopsylla Traub & Dunnet, 1973 (Stephanociridae)
Corrodopsylla barrerae Traub & Evans, 1967 (Ctenophthalmidae)
Corrodopsylla curvata lira Traub, 1950 (Ctenophthalmidae)

Corrodopsylla hamiltoni (Traub, 1944) (Ctenophthalmidae)
Cratymius audyi (Traub, 1952) (Leptopsyllidae)
Cratymius crypticus Hopkins & Traub, 1955 (Leptopsyllidae)
Ctenophthalmus (Alloctenus) Traub & Barrera, 1966 (Ctenophthalmidae)
Ctenophthalmus cryptotis Traub & Barrera, 1966 (Ctenophthalmidae)
Ctenophthalmus expansus Traub, 1950 (Ctenophthalmidae)
Ctenophthalmus haagi Traub, 1950 (Ctenophthalmidae)
Ctenophthalmus hoogstraali Traub, 1963 (Ctenophthalmidae)
Ctenophthalmus myodosus Traub & Barrera, 1966 (Ctenophthalmidae)
Ctenophthalmus pseudagyrtes micropus Traub, 1950 (Ctenophthalmidae)
Ctenophthalmus sanborni Traub, 1950 (Ctenophthalmidae)
Ctenophthalmus tholatus Traub, 1963 (Ctenophthalmidae)
Doratopsylla wissemanni Traub & Evans, 1967 (Ctenophthalmidae)
Epitedia cavernicola Traub, 1957 (Ctenophthalmidae)

Epitedia stanfordi Traub, 1944 (Ctenophthalmidae)
Eumolpianus polumus (Traub & Johnson, 1952) (Cerato-phyllidae)
Evansipsylla Traub, 1968 (syn. of *Genoneopsylla* Wu, Wu & Liu) (Ctenophthalmidae)
Evansipsylla thysanota Traub, 1968 (syn. of *Genoneopsylla longisetosa* Wu, Wu & Liu) (Ctenophthalmidae)
Farhangia Traub, 1980 (Pygiopsyllidae)
Foxella hoogstraali Traub, 1950 (Cerato-phyllidae)
Gryphopsylla Traub, 1957 (Pygiopsyllidae)
Gryphopsylla hopkinsi Traub, 1957 (Pygiopsyllidae)
Hectopsylla knighti Traub & Gammons, 1950 (Pulicidae)
Hollandipsylla Traub, 1953 (Cerato-phyllidae)
Hollandipsylla neali Traub, 1953 (Cerato-phyllidae)
Hoogstraalia Traub, 1951 (Pygiopsyllidae)
Hoogstraalia turdella Traub, 1951 (Pygiopsyllidae)
Hopkinsipsylla Traub, 1963 (Leptopsyllidae)
Hopkinsipsylla occulta Traub, 1963 (Leptopsyllidae)
Hopkinsipsylla occulta praeceps, Traub, 1965 (Leptopsyllidae)
Hystriochopsylla kris Traub & Johnson, 1952 (Hystriochopsyllidae)
Jellisonia Traub, 1944 (Cerato-phyllidae)
Jellisonia bonia Traub & Johnson, 1952 (Cerato-phyllidae)
Jellisonia dybasi Traub, 1950 (Cerato-phyllidae)
Jellisonia hayesi breviloba Traub, 1950 (Cerato-phyllidae)
Jellisonia hayesi hayesi Traub, 1950 (Cerato-phyllidae)
Jellisonia klotsi Traub, 1944 (Cerato-phyllidae)
Johnsonaeopsylla Traub, 1952 (syn. of *Cratymius* Jordan) (Leptopsyllidae)
Jordanopsylla Traub & Tipton, 1951 (Leptopsyllidae)
Jordanopsylla allredi Traub & Tipton, 1951 (Leptopsyllidae)
Jordanopsylla becki Hastriter & Traub, 1998 (Leptopsyllidae)
Jordanopsyllini Traub & Tipton, 1951 (Leptopsyllidae)
Kohlsia Traub, 1950 (Cerato-phyllidae)
Kohlsia cora Traub, 1950 (Cerato-phyllidae)
Kohlsia gammonsii Traub, 1950 (Cerato-phyllidae)
Kohlsia graphis erana Traub, 1950 (Cerato-phyllidae)
Kohlsia osgoodi Traub, 1950 (Cerato-phyllidae)
Kohlsia uniseta Traub, 1950 (Cerato-phyllidae)
Kohlsia whartoni Traub & Johnson, 1952 (Cerato-phyllidae)
Lentistivalius Traub, 1972 (Pygiopsyllidae)
Lentistivalius (Destivalius) Traub, 1980 (Pygiopsyllidae)
Lentistivalius insolli (Traub, 1950) (Pygiopsyllidae)
Lentistivalius vomerus Traub, 1972 (Pygiopsyllidae)
Macrostylophora (Songshupsylla) Li & Traub, 1998 (Cerato-phyllidae)
Macrostylophora hastata malayensis Traub, 1950 (Cerato-phyllidae)

Macrostylophora hastata nepali Traub, 1950 (Cerato-phyllidae)
Medwayella Traub, 1972 (Pygiopsyllidae)
Medwayella angustata Traub, 1972 (Pygiopsyllidae)
Medwayella arcuata Traub, 1972 (Pygiopsyllidae)
Medwayella batibacula Traub, 1972 (Pygiopsyllidae)
Medwayella calcarata Traub, 1972 (Pygiopsyllidae)
Medwayella dryadosa Traub, 1972 (Pygiopsyllidae)
Medwayella limi Traub, 1972 (Pygiopsyllidae)
Medwayella phangi phangi Traub, 1972 (Pygiopsyllidae)
Medwayella phangi tana Traub, 1972 (Pygiopsyllidae)
Medwayella robinsoni hogora Traub, 1972 (Pygiopsyllidae)
Medwayella robinsoni peregrinata Traub, 1972 (Pygiopsyllidae)
Medwayella robinsoni tiomanica Traub, 1972 (Pygiopsyllidae)
Medwayella thurmani Traub, 1972 (Pygiopsyllidae)
Medwayella veruta Traub, 1972 (Pygiopsyllidae)
Meringis altipecten Traub & Hoff, 1951 (Ctenophthalmidae)
Mesopsylla tuschkan propinacta Traub & Evans, 1967 (Leptopsyllidae)
Migrastivalius Traub, 1980 (syn. of *Gryphopsylla* Traub) (Pygiopsyllidae)
Migrastivalius (Gryphopsylla) Traub, 1980 (syn. of *Gryphopsylla* Traub) (Pygiopsyllidae)
Migrastivalius (Migrastivalius) Traub, 1980 (syn. of *Gryphopsylla* Traub) (Pygiopsyllidae)
Muesebeckella Traub, 1969 (Pygiopsyllidae)
Muesebeckella mannae Traub, 1969 (Pygiopsyllidae)
Muesebeckella nadi Traub, 1969 (Pygiopsyllidae)
Myodopsylla nordina Traub & Hoff, 1951 (Ischnopsyllidae)
Neopsylla luma Traub, 1954 (Ctenophthalmidae)
Nestivalius Traub, 1980 (Pygiopsyllidae)
Nestivalius pomerantzi (Traub, 1951) (Pygiopsyllidae)
Nestivalius ralius (Traub, 1951) (Pygiopsyllidae)
Nosopsyllus (Penicus) Traub, 1963 (Cerato-phyllidae)
Nosopsyllus geneatus Traub, 1963 (Cerato-phyllidae)
Nosopsyllus londiniensis declivus Traub, 1963 (Cerato-phyllidae)
Ophthalmopsylla (Eremedosa) Traub, 1965 (Leptopsyllidae)
Ophthalmopsylla celata Traub, 1965 (Leptopsyllidae)
Ophthalmopsylla volgensis impersia Traub & Evans, 1967 (Leptopsyllidae)
Opisodasys hollandi Traub, 1947 (Cerato-phyllidae)
Orchopeas fulleri Traub, 1950 (Cerato-phyllidae)
Palaeopsylla apsidata Traub & Evans, 1967 (Ctenophthalmidae)
Palaeopsylla recava Traub & Evans, 1967 (Ctenophthalmidae)
Palaeopsylla remota nescicola Traub & Evans, 1967 (syn. of *P. remota* Jordan) (Ctenophthalmidae)

alaeopsylla setzeri Traub & Evans, 1967 (Ctenophthalmidae)
eromyscopsylla duma Traub, 1944 [syn. of *P. selenis* (thschild)] (Leptopsyllidae)
eromyscopsylla hamifer cuneata Johnson & Traub, † (Leptopsyllidae)
halacropsylla nivalis Barrera & Traub, 1967 (Ctenophthalmidae)
leochaetis paramundus Traub, 1950 (Ceratophyllidae)
usaetis equatoris asetus (Traub, 1950) (Ceratophyllidae)
usaetis mathesoni (Traub, 1950) (Ceratophyllidae)
usaetis parus (Traub, 1950) (Ceratophyllidae)
usaetis vermiformis (Traub, 1950) (Ceratophyllidae)
olygenis adocetus Traub, 1950 (Rhopalopsyllidae)
olygenis ambersoni Traub, 1952 [syn. of *P. dunni* (dan & Rothschild)] (Rhopalopsyllidae)
ulex sinoculus Traub, 1950 (Pulicidae)
hynchopsyllus megastigmata Traub & Gammons,) (syn. of *R. pulex* Haller) (Pulicidae)
othschildiana smiti Traub, 1957 (Ctenophthalmidae)
gnactenus Traub, 1950 (Leptopsyllidae)
gnactenus alticola Traub, 1954 (Leptopsyllidae)
gnactenus werneri Traub, 1950 (Leptopsyllidae)
nitella Traub, 1968 (Pygiopsyllidae)
nitella thambetosa Traub, 1968 (Pygiopsyllidae)
enoponia ponera Traub & Johnson, 1952 (Ctenophthalmidae)
ephanocircus domrowi Traub & Dunnet, 1973 (phanocercidae)
ephanocircus greeni greeni Traub & Dunnet, 1973 (phanocercidae)
ephanocircus greeni tasmanica Traub & Dunnet, } (Stephanocircidae)
ephanocircus harrisoni Traub & Dunnet, 1973 (phanocircidae)
ivalius cognatus bamus Traub, 1972 (Pygiopsyllidae)
ivalius ralius Traub, 1951 [syn. of *Nestivalius poantzi* (Traub)] (Pygiopsyllidae)
repsylla Traub, 1950 (Ctenophthalmidae)
repsylla dalmati Traub & Barrera, 1955 (Ctenophthalmidae)
repsylla davisae Traub & Johnson, 1952 (Ctenophthalmidae)
repsylla fautini Traub, 1950 (Ctenophthalmidae)
repsylla machadoi Barrera & Traub, 1963 (Ctenophthalmidae)
repsylla mina Traub, 1950 (Ctenophthalmidae)
repsylla schmidti Traub & Barrera, 1955 (Ctenophthalmidae)
repsylla taluna Traub & Johnson, 1952 (Ctenophthalmidae)
repsylla villai Traub & Barrera, 1955 (Ctenophthalmidae)
mgenopsyllus Traub, 1950 (Ceratophyllidae)
haumapsylla longiforceps Traub, 1951 (Ischnopsyllidae)

Tiflovia Traub, 1977 (Pygiopsyllidae)
Tiflovia pachnopoata Traub, 1977 (Pygiopsyllidae)
Tiflovia stellalpestris Traub, 1977 (Pygiopsyllidae)
Wagnerinini Hastriter, Egoscue & Traub, 1998 (Leptopsyllidae)
Wenzella Traub, 1953 (Ctenophthalmidae)
Wenzella obscura Traub, 1953 (Ctenophthalmidae)
Wenzellini Traub, 1953 (Ctenophthalmidae)
Chiggers
Ascoschoengastia masta Traub & Sundermeyer, 1950
Ascoschoengastia roluis (Traub & Audy, 1954)
Chatia hertigi Traub, Morrow & Lipovsky, 1958
Chatia nurahmadi Traub & Nadchatram, 1966
Chatia wisemani Traub & Nadchatram, 1966
Euschoengastia (Healspioides) Vercammen-Grandjean, Nadchatram & Traub, 1966
Euschoengastia arcaricola Traub, Morrow & Lipovsky, 1958
Euschoengastia asonluca Traub & Audy, 1954
Euschoengastia calumosa Traub & Audy, 1954
Euschoengastia comosa Vercammen-Grandjean, Nadchatram & Traub, 1966
Euschoengastia daria Traub & Audy, 1954
Euschoengastia ocellifera Traub & Audy, 1954
Gahrlepiea alpestris Traub & Evans, 1957
Gahrlepiea ampullata Traub & Morrow, 1955
Gahrlepiea argalea Traub & Morrow, 1957
Gahrlepiea arona Traub & Evans, 1954
Gahrlepiea barbigera Traub & Morrow, 1957
Gahrlepiea birella Traub & Evans, 1954
Gahrlepiea comataxilla Traub, Morrow & Lipovsky, 1958
Gahrlepiea cucurbitula Traub & Morrow, 1957
Gahrlepiea cupa Traub & Evans, 1957
Gahrlepiea cuspidata Traub & Evans, 1957
Gahrlepiea darita Traub & Morrow, 1955
Gahrlepiea dupliseta Traub & Morrow, 1955
Gahrlepiea elbeli Traub & Morrow, 1955
Gahrlepiea erana Traub & Evans, 1957
Gahrlepiea erula Traub & Evans, 1954
Gahrlepiea evansi Traub & Morrow, 1955
Gahrlepiea exilis Traub & Morrow, 1955
Gahrlepiea fenestrulata Traub & Morrow, 1957
Gahrlepiea fimbriata Traub & Morrow, 1955
Gahrlepiea gammonsii Traub & Evans, 1954
Gahrlepiea gemina Traub & Morrow, 1955
Gahrlepiea granulata Traub & Morrow, 1955
Gahrlepiea helata Traub & Evans, 1954
Gahrlepiea isonychia Nadchatram & Traub, 1964
Gahrlepiea kalrata Traub & Evans, 1954
Gahrlepiea kritochaeta Traub & Evans, 1957
Gahrlepiea laciniata Traub & Morrow, 1955
Gahrlepiea liota Traub & Evans, 1954
Gahrlepiea longidentata Nadchatram & Traub, 1964
Gahrlepiea lupella Traub & Evans, 1957
Gahrlepiea marshi Traub & Morrow, 1957
Gahrlepiea micropelta Traub & Evans, 1957
Gahrlepiea mima Traub & Evans, 1957
Gahrlepiea morrowae Traub & Evans, 1957
Gahrlepiea naniparma Traub & Evans, 1957
Gahrlepiea neterella Traub & Morrow, 1955

Gahrlepiea ordinata Traub & Morrow, 1957
Gahrlepiea penetrans Traub & Morrow, 1955
Gahrlepiea picta Traub & Morrow, 1955
Gahrlepiea plurisetae Traub & Morrow, 1955
Gahrlepiea rectifunda Traub & Evans, 1957
Gahrlepiea simulata Traub & Evans, 1957
Gahrlepiea soricicola Traub & Evans, 1957
Gahrlepiea tenella Traub & Morrow, 1955
Gahrlepiea tessellata Traub & Morrow, 1955
Gahrlepiea tuberculata Traub & Morrow, 1955
Gahrlepiea tylana Traub & Morrow, 1955
Guntherana minima Nadchatram & Traub, 1969
Guntherana ornametata Nadchatram & Traub, 1969
Guntherana strandtmanni Nadchatram & Traub, 1969
Helenicula amicula Nadchatram & Traub, 1971
Helenicula discalis Nadchatram & Traub, 1971
Helenicula edibakeri Nadchatram & Traub, 1971
Helenicula hirtiptectoralis Nadchatram & Traub, 1971
Helenicula longipoda Nadchatram & Traub, 1971
Helenicula lukshumiae Nadchatram & Traub, 1971
Helenicula nepalensis Nadchatram & Traub, 1971
Helenicula ungomari Nadchatram & Traub, 1971
Helenicula wagamiya Nadchatram & Traub, 1971
Leptotrombidium abidi Traub & Nadchatram, 1967
Leptotrombidium aethrix Traub & Nadchatram, 1967
Leptotrombidium alopeciatum Traub & Nadchatram, 1967
Leptotrombidium arenicola Traub, 1960
Leptotrombidium armatum Traub, Nadchatram & Lakshana, 1968
Leptotrombidium atractimorphe Traub, Nadchatram & Lakshana, 1968
Leptotrombidium baluensis Traub & Audy, 1954
Leptotrombidium binbium Traub & Lakshana, 1966
Leptotrombidium dihumeralae Traub & Nadchatram, 1967
Leptotrombidium elisbergi Traub & Lakshana, 1966
Leptotrombidium frondosum Traub & Nadchatram, 1967
Leptotrombidium gateri Traub & Nadchatram, 1967
Leptotrombidium gemiticula (Traub, Morrow & Lipovsky, 1958)
Leptotrombidium halidasys (Traub, Morrow & Lipovsky, 1958)
Leptotrombidium hanseni Traub & Lakshana, 1966
Leptotrombidium imbricatum Traub & Nadchatram, 1967
Leptotrombidium irregulare Traub & Nadchatram, 1967
Leptotrombidium kianjoei Nadchatram & Traub, 1964
Leptotrombidium lepismatum Traub & Nadchatram, 1967
Leptotrombidium limi Traub & Nadchatram, 1967
Leptotrombidium macrosphenum Traub, Nadchatram & Lakshana, 1968
Leptotrombidium madiense Traub & Nadchatram, 1967

Leptotrombidium maxwelli Traub & Nadchatram, 1967
Leptotrombidium nakatae Nadchatram & Traub, 1964
Leptotrombidium oreophilum Nadchatram & Traub, 1964
Leptotrombidium paniculatum Traub, Nadchatram & Lakshana, 1968
Leptotrombidium panitae Nadchatram & Traub, 1964
Leptotrombidium peniculatum Traub & Lakshana, 1966
Leptotrombidium peniscutum Vercammen-Grandjean, Nadchatram & Traub, 1966
Leptotrombidium periosum Traub & Nadchatram, 1967
Leptotrombidium pilosum Traub & Lakshana, 1966
Leptotrombidium pumilis (Traub, Morrow & Lipovsky, 1958)
Leptotrombidium rupestre Traub & Nadchatram, 1967
Leptotrombidium sarisatum Traub & Nadchatram, 1967
Leptotrombidium scanloni Traub & Lakshana, 1966
Leptotrombidium sibynatum Traub, Nadchatram & Lakshana, 1968
Leptotrombidium spicata Traub, 1960
Leptotrombidium striatum Nadchatram & Traub, 1964
Leptotrombidium sylvestris (Audy & Traub, 1950)
Leptotrombidium tecta (Traub, Morrow & Lipovsky, 1958)
Leptotrombidium thurmani Traub, Nadchatram & Lakshana, 1968
Leptotrombidium variaculum Traub & Nadchatram, 1967
Leptotrombidium yooni Traub & Nadchatram, 1967
Leptotrombidium zeta (Traub, Morrow & Lipovsky, 1958)
Mackiena Traub & Evans, 1950
Mackiena empodiformia Traub & Evans, 1950
Microtrombicula alpicula Traub & Nadchatram, 1966
Microtrombicula anastosi Traub & Nadchatram, 1966
Microtrombicula batui (Philip & Traub, 1950)
Microtrombicula latens Traub & Nadchatram, 1966
Microtrombicula perissochaeta Traub & Nadchatram, 1966
Microtrombicula ventricosa Traub & Nadchatram, 1966
Tecomatlana (Trisetica) Traub & Evans, 1950
Tecomatlana melvini (Traub & Evans, 1950)
Trombicula flagellifera Traub & Audy, 1954
Trombicula hypodermata Nadchatram & Traub, 1966
Trombicula insolli Philip & Traub, 1950
Trombicula micula Traub & Audy, 1954
Trombicula pilalta Traub & Audy, 1954
Trombicula pipellae Traub & Audy, 1954
Trombicula tarsala Traub & Audy, 1954
Trombicula tuhana Traub & Audy, 1954
Trombicula vorca Traub & Audy, 1954

Trombiculindus cuneatus Traub & Evans, 1951
Trombiculindus foliaceus Traub & Evans, 1951

Laelapid mites

Haemolaelaps argentiventer Baker, Traub & Evans, 1962
Haemolaelaps audyi Baker, Traub & Evans, 1962
Haemolaelaps nadchatrami Baker, Traub & Evans, 1962
Haemolaelaps neoflagellata Baker, Traub & Evans, 1962
Haemolaelaps setacea Baker, Traub & Evans, 1962
Haemolaelaps setosa Baker, Traub & Evans, 1962
Haemolaelaps ultraspinosa Baker, Traub & Evans, 1962

Appendix 2. Patronyms named for Robert Traub

Lice

Geomydoecus traubi Price & Emerson, 1971 (Trichodectidae)
Hoplopleura traubi Durden & Musser, 1991 (Hoplopleuridae)
Limnathoides traubi (Rubin, 1946) (Polyplacidae)

Fleas

Acropsylla traubi Lewis, 1973 (Leptopsyllidae)
Anomiopsyllus traubi Barrera, 1951 (Ctenophthalmidae)
Bibikovana traubi (Holland, 1969) (Pygiopsyllidae)
Ctenidiosomus traubi Johnson, 1957 (Pygiopsyllidae)
Dinopsyllus traubi Beaucournu & Rahm, 1975 (Ctenophthalmidae)
Kohlsia traubi Tipton & Mendez, 1961 (Ceratophyllidae)
Lagaropsylla traubi Klein, 1967 (Ichnopsyllidae)
Mioctenopsylla traubi Holland & Jellison, 1952 (Ceratophyllidae)
Myxopsylla laverani traubi Lewis, 1966 (Ceratophyllidae)
Nearctopsylla traubi Hubbard, 1949 (Ctenophthalmidae)

Plocopsylla traubi Del Ponte, 1968 (Stephanocercidae)

Rectidigitus traubi Holland, 1969 (Pygiopsyllidae)
Traubella Prince, Eads & Barnes, 1976 (Ceratophyllidae)
Traubia Smit, 1953 (Pygiopsyllidae)

Flies

Armigeres traubi Macdonald, 1960 (Culicidae)
Basilis traubi Maa, 1968 (Nycteribiidae)
Culex traubi Colless, 1965 (Culicidae)
Noctiliostrebla traubi Wenzel, 1966 (Streblidae)
Sergentomyia traubi (Lewis, 1957) (Psychodidae)
Tabanus traubi Philip, 1960 (Tabanidae)

Beetle

Loberopsyllus traubi Martinez & Barrera, 1966 (Languriidae)

Mites

Haemolaelaps traubi (Strandtmann, 1948) (Laelapidae)
Eltonella Traubiella Vercammen-Grandjean, 1965 (Trombiculidae)
Euschoengastia (Walchiella) traubi (Womersley, 1952) (Trombiculidae)
Laelaps traubi Domrow, 1962 (Laelapidae)
Microtrombicula traubi Muliarskaia & Verdieva, 1974 (Trombiculidae)
Spinturnix traubi Morales-Malacara & López, 1998 (Spinturnicidae)
Traubacarus Audy & Nadchatram, 1957 (Trombiculidae)
Trombiculindus traubi (Womersley, 1952) (Trombiculidae)

Tick

Haemaphysalis traubi Kohls, 1955 (Ixodidae)

Mammal

Hyperacrius wynnei traubi Philips, 1969 (Muridae)

Received for publication 4 August 1997; accepted 18 December 1997.