

## Fred Carl Harmston (1911-1995)

Richard L. Hurley\*, Justin B. Runyon\*\*, and Paul H. Arnaud, Jr.\*\*\*

*\*Department of Entomology, Montana State University, Bozeman, Montana 59717 USA (e-mail: rhurley@montana.edu); \*\*Department of Entomology, Pennsylvania State University, 501 ASI Building, University Park, PA 16802 USA (e-mail: jbrunyon@psu.edu); \*\*\*Department of Entomology, California Academy of Sciences, California Academy of Sciences, 875 Howard Street, San Francisco, California 94103 USA (e-mail: parnaud@calacademy.org)*

Fred Carl Harmston, actually registered Carl Frederick Leon Harmston at birth, was born October 31, 1911, in Roosevelt, Utah, to Marion Eugene Harmston and Isabella Thurston Harmston. He was their fourth child, having two older brothers and an older sister, and was their only child born in Utah. The Harmston branch of the family tree traces its roots back to Lincolnshire, England, where a town bears their name. His father was born in Missouri in 1861 and died in Roosevelt, in 1922. His mother was born in Maine in 1869 and also died in Roosevelt, in 1937. Fred's parents met in Hyannis, Nebraska, and were married November 27, 1897, in Wessington Springs, South Dakota, the first couple to be wed in the new Congregational Church.



Figure 1. Fred C. Harmston, 1983.

Fred's father was a pharmacist, and a graduate of the College of Optometry in Chicago, Illinois. He operated drug stores in Telluride Colorado, Weiser Idaho, White Lake and Wessington Springs in South Dakota, and finally in Roosevelt Utah. The family arrived in Roosevelt four years after it was settled. Marion was a good horticulturist, and surrounded the house with large orchards. Fred traces his interests in horticulture and entomology to his experiences watching his father working in the orchard and mixing chemicals to control pest insects. Marion became a victim of the influenza pandemic in 1922, when Fred was 11 years old, an event that visited great hardship on the family. Although Marion took in what should have been a comfortable income, they lost the property because of their inability to pay the taxes and their inability to collect on the credit his father had extended, because

of the depression.

The Thurstons had migrated west from Maine, settling in Grant County, Nebraska, where they purchased land in “The Sand Hills” and became ranchers. Fred’s mother, Isabella, graduated from Chadron Academy, in Chadron, Nebraska, to become a school teacher, and later, superintendent of schools for Grant County. After Marion’s death, she converted the drugstore into a hotel with three bedrooms upstairs, and three bedrooms plus a large dining room and kitchen downstairs. Fred recalled these as difficult times financially, with his mother making most of their clothes, even though prices were low (e.g. bib overalls - \$.90, work shirts - \$.75, enough steak for a family dinner - \$.25).

Roosevelt was a primitive place during these early years. The streets were muddy trails, and the town boasted only three steam autos. Gasoline-driven cars arrived after WWI, but there were no service stations. Fred saw his first plane in 1920, when a small plane arrived over Roosevelt and flew around. There were neither electricity nor indoor plumbing, with outdoor privies meeting sanitation needs. Fred’s youthful free time was spent exploring his rural surroundings and fishing in the Uinta Mountains, activities that engendered in him the appreciation of nature that was to characterize his lifelong outlook.

During this period, alfalfa seed production was a leading agricultural activity in the Uintah Basin. Production had been good during the early years, but had



Figure 2. Fred (on right) with brothers, Paradise Valley, Utah, ca. 1920's



Figure 3. Fred with car, Preston, Idaho, 1936.

then begun to decline. Reduced yields or failure of the alfalfa seed crop were believed to result from activities of the false chinch bug (*Nysius ericae* (Shilling)), and several men from the Utah Forest Research Station came to town to see what could be done to improve the situation. The researchers lodged at the hotel, and as they sat around the lobby discussing various aspects of the problem, their conversations caught Fred's attention. He dates his interests in insect control to these overheard conversations. Also, the fact that these men had good jobs when many had none, instilled in Fred an appreciation of the value of an education, and from that point, he determined to follow a similar path. It was largely



Figure 4. Prof. G. F. Knowlton (left) and Fred, 1937.

the influence of Professor C. J. Sorenson, who had been among those staying at the hotel, that led Fred to enroll at the Utah State Agricultural College (USAC) in the fall of 1935. During his teen years, Fred worked at a number of jobs. He mixed mortar, carried hod, and worked in hayfields and orchards, earning \$2/day for a very hard day's work. He later hauled coal from Price to Roosevelt.

Beyond the limits of Roosevelt, there was a gulch where Fred collected insects with his homemade net. As cars became more numerous in the area, the gulch became the disposal site for dead autos, which were simply pushed over the edge. Showing great ingenuity, Fred and his friends managed to scavenge enough parts from these abandoned wrecks to build themselves a functioning vehicle!

In 1935, Fred set off for USAC (now Utah State University) where he was befriended by Dr. George F. Knowlton, State Entomologist, and Professor at USAC. Knowlton helped Fred get a job as an assistant in the entomology laboratory, collecting, sorting, pinning and labeling insects. He later recalled the many collecting trips with Knowlton as among "the most pleasant times of my life". Knowlton also signed a note to cover his tuition. Fred joined the National Youth Administration, a program designed to assist young men to go to college; he made \$.25/hr. In 1936 Fred worked in the Cache Valley on strawberry root aphid (*Aphis forbesi* Weed), strawberry root weevil (*Otiorhynchus ovatus* (Linnaeus)) and strawberry leafroller (*Ancylis comptana* (Froelich)) control. For the summer of 1937, Fred was hired by the U. S. Bureau of Plant Quarantine to travel throughout Utah to meet with County Agents, and keep them supplied with

bait for the grasshopper-control program. Grasshoppers were superabundant, devouring everything, including fence posts and shovel handles! They were collected *en masse* in Iron County, Utah, for a role in the 1937 Academy Award winning movie, "The Good Earth", by riders on horseback with large nets extended between them. While providing farmers with bran and sodium arsenate to be



Figure 5. Entomology Laboratory, Utah State Agricultural College, Fred (center), 1937.

mixed for bait, Fred became well acquainted with all of the County Agents, and many farmers, and sometimes traveled where there were no established roads. One route took him through what is now Capitol Reef National Park. At the time, there was no road, but Fred and his Model T were undaunted. He became the first to drive through the steep-sided canyon, taking care before proceeding that there were no clouds in sight, since it was impossible to turn around if a storm came up. On one such trip, he climbed on top of his car, and wrote his name on the rocks. He and Jane revisited the site in 1980, and were thrilled to find it still there.

During this period, Dr. David G. Hall, a good friend of Knowlton's from the United States National Museum, was in the area. When informed of Fred's general interests, he pointed out that the authority for dolichopodids, Millard Carr Van Duzee (1860-1934), had died and this would be a good group for Fred's attention. Fred now began collecting insects, especially Dolichopodidae, and did indeed find "these colorful flies a delightful subject of study". However, the year 1937 also had its heartbreaks. His mother, to whom he had been very close, died of a massive heart attack.

In 1939, Fred married a classmate, Verna Hawley. They were soon transferred by the Bureau of Entomology to the Imperial Valley of California to survey for Egyptian alfalfa weevil (*Hypera brunneipennis* Boheman). The weevil had been accidentally introduced on date palms, and it was feared that it would spread to alfalfa crops in the U. S. In 1941, they returned to Logan, where Fred completed a BS in Entomology. It had taken him six years because it had been necessary for him to be gainfully employed to support his family. His first son, George, was born; and they were transferred to Yakima, Washington, to study pear psylla (*Cacopsylla pyricola* Foerster). They spent one and a half years at this post.

With the outbreak of World War II, Fred returned to Salt Lake City to take the Civil Service examination for a position in the U. S. Public Health Service

(USPHS). A group was being organized to control malaria around military establishments. Fred passed the examination, and after about six months in the Civil Service, was commissioned a 1st Lieutenant in the USPHS. At this time, Julian, their second son, was born. Fred was then transferred to Fort Pierce, Florida, for training in malaria and mosquito control. Seven months later, they were transferred to Indianapolis, Indiana, where they were responsible for malaria and mosquito control in Indiana, Kentucky and Mississippi.

A third son, Brian, was born in Indianapolis on January 14, 1944. However, Fred's wife Verna contracted polio soon after, and suffered severe physical and mental problems as a result. Fred was able to work from home for six months, enabling him to care for his wife and three children. Fred's brother Rogers and sister Helene traveled to Indianapolis from Salt Lake City, and took Verna and the children back with them. Verna was confined to an iron lung. Fred remained in Terre Haute, Indiana, for two to three months, then was transferred back to Salt Lake City to take charge of malaria control efforts around military establishments in Utah, Idaho and Colorado.

Fred's duties took him to Bushnell Army Hospital, in Brigham City, Utah, where a secretary, Jane Trolson, took note of this man with a bug net! They were married January 16, 1946, in Elko, Nevada. Fred's brother looked after the boys, while Fred and Jane took a train to Elko, were married and honeymooned for



Figure 6. Fred on horseback, grasshopper control, Dewey, Utah, June 1938.



Figure 7. Fred with deer, Logan, Utah, 1938.

three or four days. Jane returned to a readymade family of two, four, and five year old boys. In 1946, Fred and Jane purchased, and moved into, the home that they would hold onto for life. At this time, it was on the outskirts of Salt Lake City, fronted by a dirt road along which sheep frequently made their way. Son, John Carl, was born soon after, and daughter, Mary, in 1948.

After WWII, DDT was released for civilian use, and since it had proven so effective in control of malaria mosquitoes, USPHS launched an extended malaria control program whose aim was the eradication of malaria from North America. Fred worked in this program for a number of years. Fred also became involved in the rat control program for Utah, Colorado, Wyoming, Idaho and Montana, whose goals were to promote rat-proofing ordinances and better laws to control these pests. Some of the largest houses in Salt Lake City are now located on the old dump where Fred and Jane went in the evenings to hunt rats with a slingshot. Fred was an excellent shot, and made his own slingshots. A former colleague, Bob Olson, in a September 1975 testimonial letter presented as part of Fred's retirement celebration wrote, "The first time we worked together on a mosquito survey in southern Idaho in the middle '50s, you made a lasting impression on me. I decided it was the better part of valor to agree with all the recommendations of a man who could pick off beer bottles along the highway with a slingshot while traveling 40 miles/hour". Later, the family would visit this dump on Sunday afternoons, setting up bottles and competing with slingshots for



Figure 8. Fred (left) with "Hopper Bait" crew, Parowan, Utah, 1938.

title of “best shot”. In 1960, Fred published a report summarizing his investigations of the Norway rat (*Rattus (Rattus) norvegicus* (Berkenhout)). At that time, much of the northern Rocky Mountain area was still free of this pest, and the report warned that control measures being used at the time (poisoning) were ineffective, and without new measures to eradicate existing populations and prevent their spread, this animal would become a destructive pest and serious menace to public health.

Throughout this time, Fred was also involved in the control of plague. Rodent burrows were treated weekly with insecticide, and to monitor the effectiveness of their efforts, they would trap rodents, comb out the fleas, and ship them in vials to San Francisco for analysis. While awaiting shipment, the fleas resided in the family refrigerator! In February 1952, Fred was transferred to St. Louis, Missouri, where there had been an outbreak of St. Louis Encephalitis (SLE) the preceding year. At this time, the vector was not known with certainty. However, unlike Eastern Equine Encephalitis (EEE) and Western Equine



Figure 9. Capitol Wash, Utah, 1938.



Figure 10. Fred on grasshopper survey, New Harmony, Utah, 1939.

Encephalitis (WEE), humans appeared to be the only vertebrates affected. There were several hundred cases of SLE and many deaths. The USPHS team determined that the principal vector was *Culex quinquefasciatus* Say, which bred in quarries and the numerous highly polluted catch basins. In the Sunday, June 7, 1953 issue of the *St. Louis Post-Dispatch*, in a full double-page article entitled "Mosquito Control", Fred was quoted as saying "it is a hopeless task to try to control mosquitoes adequately unless there is an overall integrated district program".

In July 1952, Fred and family were moved to Lubbock, Texas, where WEE was becoming a problem as a result of the greatly increased use of deep-well irrigation and the resulting increase in surface water. The vector was *Culex tarsalis* Coquillett. In connection with this research, Fred traveled throughout west Texas. In June 1953, the Harmstons were transferred to Plainview, Texas, where work on WEE continued. In December of that year, as Jane was completing the decorating of their Christmas tree, Fred arrived home to inform her that they were moving again! Her dismay was short lived when she learned that this move



Figure 11. Left to right, Dr. Merlin W. Allen, Fred, Dr. G. F. Knowlton and Dr. D. Elmo Hardy, 1939.

was back to Logan, Utah .... home! The Logan assignment was to focus on water resources and the insect problems associated with irrigation and the construction of reservoirs. At this time, the Logan USPHS consisted of 15-20 men, plus secretaries. The Harmstons were soon joined in Logan by George Schultz and family, best friends from Plainview. In Logan, Fred met Louis J. Ogden, who was to become his closest friend. In 1957, daughter Katherine was born in Logan. Another highlight of the Logan years was Fred's purchase of a Model A, which became the usual means of traveling to work for Fred and his two friends, Schultz and Ogden.

In the summer of 1958, the move was to Greeley, Colorado, where the USPHS unit was set up in an old, two-story house in Island Grove Park. This was a large group, whose focus was the study of vector-borne diseases, including encephalitis, plague, Colorado Tick Fever, Rocky Mountain Spotted Fever and tularemia. The work entailed much travel throughout the U. S., but especially in the western states. During the Greeley years, Fred attended Colorado State University (CSU), Fort Collins, and in 1963 was awarded a Master's degree in Entomology, writing his thesis on "Mosquitoes of Colorado". In 1967, Fred was transferred to Fort Collins, where USPHS had constructed a large complex on the West Campus of CSU. This was also the year that Hurricane Beulah hit west



Figure 12. Left to right, Dorst, Stains, Fred, Thornly, Knowlton, Hardy and Nye, September 12, 1940.

Texas, creating concerns about the possibilities of an encephalitis outbreak. Their furniture was still on the truck when Fred received orders to go to Texas. He was gone about six weeks, spraying to control the mosquito vectors.

During the Colorado years, Fred worked with Dr. William (Bill) F. Rapp, Jr., a Nebraska State Sanitarian. From this collaboration emerged two papers on the dolichopodids of Nebraska. In 1973, Fred attended the Boy Scout Jamboree in Sand Point, Idaho, where he was assigned the duty of organizing and conducting insect control. This was an extremely dry year, very favorable for yellow jackets, which found the showers an ideal spot to collect water. In spite of his best efforts, spraying and fogging with Dursban, many scouts were stung.

Fred was an avid horseshoe player, and got great satisfaction from playing against, and sometimes beating, his friend Louis Ogden. On September 1, 1975, both Fred and long-time friend, Louis Ogden retired. Fred had been with USPHS for 32 years in the Commissioned Corps, and retired with the rank of Navy Captain. This was in addition to the seven years he had worked in other Civil



Figure 13. Fred, during WW2 service, Terre Haute, Indiana, May 1944.



Figure 14. Fred, portrait taken in Salt Lake City, Utah, 1946.



Figure 15. Fred with elk he had shot, 1947.

Service positions.

Perhaps the best insight into how this man was able to accomplish so much can be gained from his description of his feelings towards his job. He found his work so gratifying and pleasant, and loved it so much, that it never seemed like work! He looked forward to every workday, as one would a hobby! In fact, Fred's extensive work on dolichopodids was a hobby, done entirely in his spare time. Fred had a microscope at home, and spent every spare moment looking through it. He rarely made it to bed before midnight.

On August 4, 1976, the Harmstons returned to the house in Salt Lake City in which they had started their married life. Fred's brother, Rogers, who had been living in the house, had died in 1975. The next 15 years were filled with the things that gave them both pleasure: camping, gardening, travel, photography, and of course, collecting dolichopodids. Their travels took them to Australia, New Zealand, Tahiti, China, Europe, Canada, and every state in the U. S. From 1990, Fred's health began to deteriorate. He was frequently hospitalized, with pneumonia and with a series of small strokes. On June 27, 1995, after taking a nap, he collapsed on the kitchen floor and broke a hip. He spent three months in the hospital, much of it in ICU. In early October, he was moved to a rehabilitation center, and died October 13, 1995, at the age of 83.

Fred is remembered as a wonderful husband, father and grandfather. He was an ardent supporter of education, and all of their children graduated from college, and continued for higher degrees. He seldom went anywhere without his net, cyanide tube, dipper, and vials for storing the catch. Jane's fondest memories are of sitting on a rock in the river, watching Fred collect. Fred always hoped that one of his sons or grandsons, would follow him in collecting, but that was not to be.

Fred was a calm, reserved individual, very dedicated to anything that captured his interest. No partial efforts for him! He gave generously of time and specimens, identifying dolichopodids for institutions throughout the country, and donating specimens to augment their collections. His large, green, typed labels

are to be found in all of the major, and many of the minor, collections of North America. He was an outstanding collector, and a professional and helpful colleague.

Prior to his death, Fred oversaw the sorting and shipping (by Jane) of his extensive collection that was passed on to institutions where it would be available for continuing study. The major parts went to Utah State University, Logan, Utah, and to the Florida State Collection of Arthropods, Gainesville, Florida. Material also was donated to the California Academy of Sciences, San Francisco, California, including the genus *Medetera* (Medeterinae). The Hydrophorinae and *Pelastoneurus* (Dolichopodinae) were donated to Richard L. Hurley, then at Humboldt State University, Arcata, California, and accompanied him to Montana State University, Bozeman, Montana. Fred Harmston donated over 11,700 insect specimens to the California Academy of Sciences, recorded in 21 accessions, between August 25, 1940 and October 10, 1995. Over 10,500 of these are Dolichopodidae, over 750 Culicidae, and the remaining, miscellaneous Diptera and Hymenoptera. The largest of these donations was the last with 8,394 specimens, of which 8,356 are Dolichopodidae, with 6,804 pinned and 1,552 specimens mounted on 1,112 microscope slides. All of the pinned specimens of this last donation are labeled with a Fred Harmston collection label, and when iden-



Figure 16. Fred (center) with George Schultz and Rainey, joshing, 1956.

tified, also with a determination label as identified by Fred Harmston. These labels were applied by volunteer Madeline M. Arnaud from labels composed by PHA.

Some patronyms named in Harmston's honor include: *Pipunculus harmstoni* Hardy and Knowlton, 1939 (Diptera: Pipunculidae); *Fimbriaphis harmstoni* Knowlton, 1943 (Homoptera: Aphididae); *Rhyacophila harmstoni* Ross, 1944 (Trichoptera: Rhyacophilidae); *Gonomyia harmstoni* Alexander, 1948 (Diptera: Tipulidae); *Harmstonia* Robinson, 1985 (Diptera: Dolichopodidae); *Hydrophorus harmstoni* Hurley 1985 (Diptera: Dolichopodidae); *Chrysotus harmstoni* Meuffels and Grootaert, 1999 (new name for *C. nudus*) (Diptera: Dolichopodidae); and *Tachytrechus harmstoni* Meuffels and Grootaert, 1999



Figure 17. Fred (center, back) with colleagues, U. S. Department of Health, Education and Welfare, Logan, Utah, 1957.

(new name for *T. californicus*) (Diptera: Dolichopodidae).

In his "History of Nearctic Dipterology", Alan Stone includes Fred Harmston in the biographical sketches and statements of the achievements of the 54 authors who have each proposed more than 100 names for Nearctic Diptera (1980:55-56, *Flies of the Nearctic Region*, 1(1):1-62; edited by Graham C. D. Griffiths).

#### ACKNOWLEDGMENTS

The authors (RLH & JBR) would like to acknowledge the great assistance received from Mrs. Jane Harmston and for her generous hospitality on their visits to her home in Salt Lake City. The major part of this information was gained from a series of four videotapes that Fred and Jane made shortly before Fred Harmston's death. The third author (PHA), at the California Academy of Sciences, would like to acknowledge with thanks Library assistance from Lawrence Currie, Patricia Shea-Diner and Michele Welck, and in the Entomology Department technical and computer assistance from Patrick R. Craig, Vincent F. Lee, Paul Marek, Keve Ribardo and Heather Tennison. Dr. Alan E. Leviton greatly assisted PHA in the use of QuarkXPress and in the production of this publication. Mrs. Harmston is in the process of donating materials of his-



Figure 18. LaVerne Miller, collecting in Jordan Valley, Oregon, June 1963.



Figure 19. Fred at desk at USPHS, Greeley, Colorado, 1965.

torical significance on Fred Harmston to the Archives of the California Academy of Sciences.

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Figure 20. Fred with Ray Myklebust, August 1966.

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Figure 21. "Fred earning his salary the hard way with a little fun thrown in. Note flipper in his hand. When deadeye shoots its the end for this rat at the Denver City-County Dump, in Denver", Colorado, "1968".

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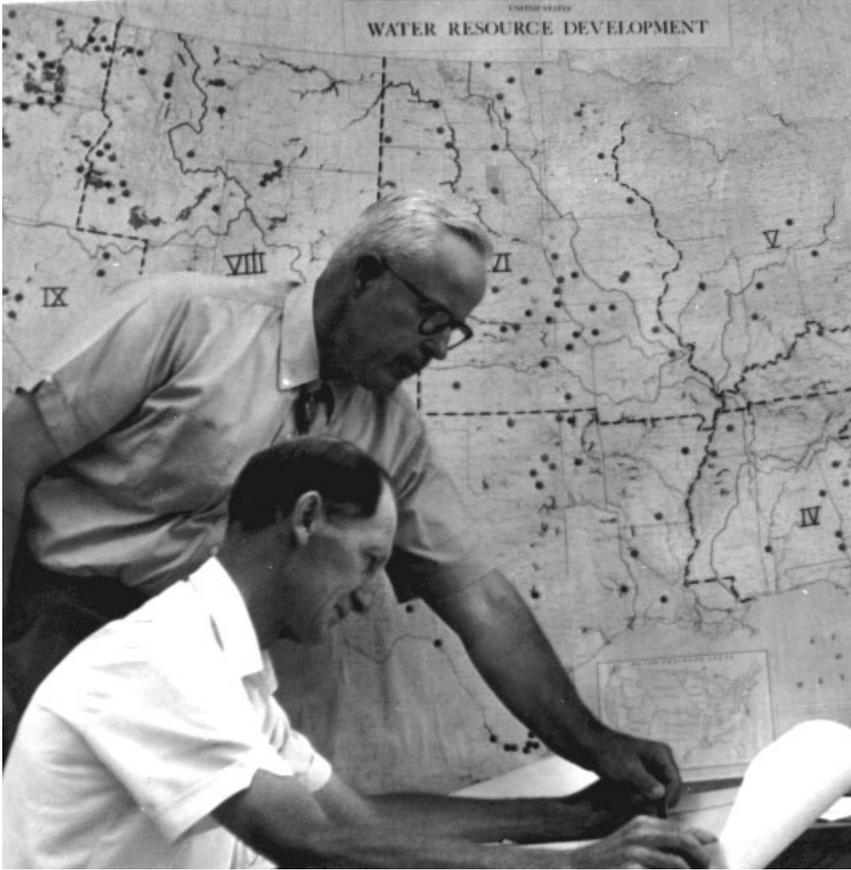


Figure 22. Fred (sitting) with Louis J. Ogden, water resource experts, 1972.

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Figure 23. Fred at Boy Scout Jamboree in Sand Point, Idaho, 1973.

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### 1943

32.—1943a.—Grasshoppers and crickets eaten by Utah birds. *Auk*, **60**(4):589-591. [by G. F. Knowlton and F. C. Harmston].

33.—1943b.—Five new western Dolichopodidae (Diptera). *Bulletin of the Brooklyn Entomological Society*, **38**(3):101-107. [by F. C. Harmston and G. F. Knowlton]. [*Dolichopus aboriginis*, *D. utahensis*, *Hercostomus wasatchensis*, *Medeterus idahoensis* and *Polymedon californicus*, new species].

34.—1943c.—New species of *Parasyntormon* from the United States (Diptera, Dolichopodidae). *The Canadian Entomologist*, **75**(4):63-65. [by F. C. Harmston and G. F. Knowlton]. [*Parasyntormom appendiculatus*, *P. classicus*, *P. nigripes* and *P. virens*, new species].



Figure 24. Fred teaching grandson John the art of pinning insects, New York, 1975.



Figure 25. "Fred at a happy moment swinging the bug net at "The Ole Pond" at Palmyra, N. Y. 1983.

#### 1944

35.—1944a.—A preliminary list of the mosquitoes of Indiana. *Journal of Economic Entomology*, **37**(1):110-111. [by G. R. Christensen and F. C. Harmston].

#### 1945

36.—1945a.—On the status of *Liancalus limbatus* Van Duzee (Diptera-Dolichopodidae). *Bulletin of the Brooklyn Entomological Society*, **40**(2):55-56. [by F. C. Harmston and G. F. Knowlton].

37.—1945b.—New Dolichopodidae from Michigan (Diptera). *Journal of the Kansas Entomological Society*, **18**(2):77-80. [by F. C. Harmston and G. F. Knowlton]. [*Dolichopus michiganus*, *Hercostomus dreisbachi*, *D. flutatus* and *Neurigona sombrea*, new species].

#### 1946

38.—1946a.—Insect food of the Mountain Bluebird. *Journal of Economic Entomology*, **39**(3):384. [by G. F. Knowlton and F. C. Harmston].

39.—1946b.—Two new *Paraclius* (Diptera: Dolichopodidae). *Journal of the Kansas Entomological Society*, **19**(1):23-25. [by F. C. Harmston and G. F. Knowlton]. [*Paraclius indianus* and *P. utahensis*, new species].

40.—1946c.—Observations on the habits of *Anopheles freeborni* in northern Utah and southern Idaho. *Mosquito News*, **6**(2):73-75. [by D. M. Rees and F. C. Harmston].



Figure 26. Fred with granddaughter Jenny helping her identify her insect collection, in Denver, Colorado, September 1984.

41.—1946d.—Three new western Dolichopodidae. *The Canadian Entomologist* (1945), **77**(8):137-139. [by F. C. Harmston and G. F. Knowlton]. [*Argyra condomina*, *A. idahona* and *Peloroepodes apicales*, new species].

42.—1946e.—Mosquito records from Idaho. *The Pan-Pacific Entomologist*, **22**(4):148-156. [by F. C. Harmston and D. M. Rees].

#### 1947

43.—1947a.—Notes on Utah Dolichopodidae (Diptera). *Proceedings of the Utah Academy of Sciences, Arts and Letters* (1945/1946), **23**:97-99. [by F. C. Harmston].

44.—1947b.—New and little known Dolichopodidae from Indiana (Diptera). *The American Midland Naturalist* (1946), **36**(3):671-674. [by F. C. Harmston and G. F. Knowlton]. [*Dolichopus indianus* and *Teuchophorus condylus*, new species]. [Published February 25, 1947].

#### 1949

45.—1949a.—Dipterous predators of the mosquito in Utah and Wyoming. *The Great Basin Naturalist* (1948), **9**(1/2):21-23. [by F. C. Harmston]. [Published January, 1949; received at CAS January 14, 1949].

46.—1949b.—Mosquito records from Wyoming and Yellowstone National Park (Diptera: Culicidae). *The Pan-Pacific Entomologist* (1948), **24**(4):148-156. [by D. M. Rees and F. C. Harmston]. [Published January 27, 1949].



Figure 27. Fred (right) with Harry Davis, Colorado Springs, Colorado, June 6, 1986.

47.—1949c.—Sylvatic Plague investigations in Utah. *U.S. Public Health Service, Communicable Disease Center*. pp:1-4, 1 chart. [by R. J. Myklebust, F. C. Harmston and D. R. Maddock].

#### 1950

48.—1950a.—An annotated list of mosquito records from Colorado. *The Great Basin Naturalist* (1949), 9(3/4):65-75. [by F. C. Harmston]. [Published February, 1950; received at CAS February 27, 1950].

#### 1951

49.—1951a.—New species of Dolichopodidae in the University of Kansas Collection (Diptera). *Journal of the Kansas Entomological Society*, 24(3):103-109. [by F. C. Harmston]. [*Chrysotimus occidentalis*, *Chrysotus intrudus*, *Dolichopus arizonicus*, *D. hardyi*, *D. neomexicanus* and *D. silvicolus*, new species].

50.—1951c.—The rat problem in Utah. *State Department of Health, Salt Lake City, Utah*, pp. 1-10, figures 1-5. [by F. C. Harmston].

51.—1951b.—New species of Dolichopodidae from California and Utah (Diptera). *The Great Basin Naturalist*, 11(1/2):11-17. [by F. C. Harmston]. [*Aphrosylus wirthi*, *Argyra utahna*, *Chrysotus silvicolus*, *Medeterus arnaudi*, *Neurigona torrida* and *Syntormon californicum*, new species].

#### 1952

52.—1952a.—New species of Dolichopodidae in the U.S. National Museum (Diptera). *Proceedings of the Entomological Society of Washington*, 54(6):281-294. [by

F. C. Harmston]. [*Aphrosylus californicus*, *Asyndetus scopiferus*, *Chrysotus dakotensis*, *C. kansensis*, *Dolichopus divigatus*, *D. hirsutitarsis*, *D. vegetus*, *Hercostomus coloradensis*, *H. consanguineus*, *H. flagellatus*, *H. indianus*, *H. orbicularis* and *Syntormon variegatum*, new species].

### 1953

53.—1953a.—A report of the mosquito problem in the city of St. Louis and St. Louis County Missouri 1952. *U.S. Public Health Service, Communicable Disease Center*. pp:1-46, 1 unnumbered figure, tables 1-12. [by F. C. Harmston].



Figure 28. Fred and Jane Harmston, 1987.

### 1955

54.—1955a.—The discovery of *Culex erythrothorax* Dyar in Texas. *Mosquito News*, **15**(4):235-236. [by G. C. Menzies, R. B. Eads and F. C. Harmston].

55.—1955b.—Los insectos de las Islas Juan Fernandez. 17. Dolichopodidae (Diptera). *Revista Chilena de Entomología*, **4**:35-38. [by F. C. Harmston]. [*Hydrophorus kuscheli* and *Sympycnus fernandezensis*, new species].

### 1956

56.—1956a.—Mosquitoes and encephalitis in the irrigated High Plains of Texas. *U.S. Public Health Reports*, **71**(8):759-766, figures 1-5, tables 1-4. [by F. C. Harmston, G. R. Shultz, R. B. Eads and G. C. Menzies].

### 1958

57.—1958a.—Mosquitoes in sewage stabilization ponds in the Dakotas. *Mosquito News*, **18**(4):293-296, figures 1-6, 1 table. [by L. D. Beadle and F. C. Harmston].

### 1960

58.—1960a.—Survey of log pond mosquitoes in Douglas County, Oregon, during 1956. *Mosquito News*, **20**(4):351-353, figures 1-2. [by F. C. Harmston, L. S. Miller and R. A. McHugh].

59.—1960b.—Distribution and control of rats in five *Rocky Mountain states*. *U.S. Public Health Reports*, **75**(11):1077-1084, 1 unnumbered figure. [by F. C. Harmston and C. T. Wright].

### 1961

60.—1961a.—New mosquito records from Nebraska, I. *Journal of the Kansas Entomological Society*, **34**(2):86-87. [by W. F. Rapp, Jr. and F. C. Harmston].

### 1962

61.—1962a.—Mosquito production in stabilization ponds. *Journal Water Pollution*

*Control Federation*, 34(3):302-306, figures 1-3, table 1. [by R. J. Myklebust and F. C. Harmston].

### 1963

62.—1963a.—New Dolichopodidae from North America (Diptera). *Journal of the Kansas Entomological Society*, 36(4):231-238. [by F. C. Harmston and G. F. Knowlton]. [*Chrysotus nudus*, *Diaphorus consanguineus*, *Dolichopus tarsipictis*, *Hercostomus purus*, *H. schlingeri*, *Hydrophorus dreisbachi*, *Neurigona georgianus* and *Tachytrechus californicus*, new species].

### 1964

63.—1964a.—Mosquitoes as actual and potential vectors of disease as now known for Utah. *Proceedings of the Seventeenth Annual Meeting of the Utah Mosquito Abatement Association*, pp. 25-27, table 1. [by F. C. Harmston and A. D. Hess].

64.—1964b.—Mosquitoes in sewage lagoons. *Proceedings of the North Central Branch, Entomological Society of America*, 19:114-115. [by F. C. Harmston and W. F. Rapp].

65.—1964c.—Report of mosquito studies, Lewis and Clark Reservoir, South Dakota-Nebraska, 1963 *U.S. Public Health Service, Greeley, Colorado*. pp. 1-14, figures 1-8, tables 1-3. [by F. C. Harmston].

### 1965

66.—1965a.—Notes on mosquitoes (Culicinae) of northwestern Nebraska.



Figure 29. Harmston family, front row left to right, Fred, June, Mary, and Katherine, back row left to right, John, Brian, George and Julian.

*Mosquito News*, **25**(3):302-306, figure 1. [by W. F. Rapp, Jr. and F. C. Harmston].

67.—1965b.—Gynandromorph of *Culex tarsalis* Coquillett from Colorado.

*Mosquito News*, **25**(4):488-489, figures 1-2. [by F. C. Harmston].

#### 1966

68.—1966a.—An outbreak of human tularemia associated with the American dog tick, *Dermacentor variabilis*. *American Journal of Tropical Medicine and Hygiene*, **15**(4):531-583, figure 1, tables 1-4. [by G. S. Saliba, F. C. Harmston, B. E. Diamond, C. L. Zmyet, M. I. Goldenberg and T. D. Y. Chin].

69.—1966b.—Eleven new *Dolichopus* from North America (Dolichopodidae: Diptera). *Entomological News*, **77**(1):1-17. [by F. C. Harmston]. [*Dolichopus abaftanus*, *D. factivittatus*, *D. footei*, *D. fulgerus*, *D. kyphotus*, *D. nigropleurus*, *D. shastaensis*, *D. sinualaris*, *D. smithae*, *D. squamiciliatus* and *D. zygomus*, new species].

70.—1966c.—New Dolichopodidae from Oregon (Diptera). *Journal of the Kansas Entomological Society*, **39**(2):223-226. [by F. C. Harmston]. [*Asyndetus oregonensis*, *Campsicnemus milleri*, *Diostracus mchughi* and *Tachytrechus milleri*, new species].

71.—1966d.—New and little known Dolichopodidae from the pacific northwest and intermountain areas (Diptera). *Proceedings of the Entomological Society of Washington*, **68**(2):88-93. [by F. C. Harmston and L. S. Miller]. [*Campsicnemus alaskensis*, *C. alexanderi*, *C. coloradensis*, *C. oregonensis*, *Syntormon myklebusti*, *Systemus oregonensis* and *S. utahensis*, new species; *Sympycnus parenti* and *S. rotundus*, new names].

72.—1966e.—Colorado tick fever – risk of infection. *Rocky Mountain Medical Journal*, **63**(6):64. [by G. W. Sciple, F. C. Harmston and L. C. LaMotte].

#### 1967

73.—1967a.—Mosquitoes of Colorado. *U.S. Department of Health, Education, and Welfare, Public Health Service, Bureau of Disease Prevention and Environmental Control, Atlanta*, pp. i-v, 1-140, plates 1-45. [by F. C. Harmston and F. A. Lawson].

#### 1968

74.—1968a.—New Dolichopodidae from Canada, Mexico, and the western United States (Diptera). *Entomological News*, **79**(1):13-27. [by F. C. Harmston]. [*Asyndetus crassipodus*, *A. nevadensis*, *Campsicnemus cinctipis*, *Chrysotus bajaensis*, *Dolichopus monarchus*, *Neurigona fuscularis*, *Systemus californicus*, *Sympycnidelphus californicus*, *S. texanus*, *Sympycnus arizonicus* and *Tachytrechus boharti*, new species].

75.—1968b.—New Dolichopodidae from Nebraska (Diptera). *Journal of the Kansas Entomological Society*, **41**(2):247-254. [by F. C. Harmston and W. F. Rapp, Jr.] [*Chrysotus agalmus*, *Neurigona valgusa*, *Peloropeodes magnicornis*, *P. pygidus*, *Psilopiella nebraskaense*, *Thinophilus vinculatus* and *Thrypticus squamiciliatus*, new species].

#### 1969

76.—1969a.—Separation of the females of *Aedes hendersoni* Cockerell and *Aedes triseriatus* (Say) Diptera: Culicidae by the tarsal claws. *Mosquito News*, **29**(3):490-491, figures 1-6. [by F. C. Harmston].

## 1970

77.—1970a.—Mosquito and arbovirus disease problems of irrigated areas in North America. *CRC Critical Reviews in Environmental Control*, November 1970:443-465, 3 tables. [A. D. Hess, F. C. Harmston and R. O. Hayes].

78.—1970b.—Vector and vector-borne disease problems associated with water and related land resources. *The Ecological Investigation Program, National Communicable Disease Center, Health Services and Mental Health + Environmental Protection Agency*. pp. 1-2 + 1-24. [by F. C. Harmston, L. J. Ogden and A. D. Hess].

## 1971

79.—1971a.—New Dolichopodidae from southeastern United States and Cuba (Diptera). *The Florida Entomologist*, 54(1):85-89. [by F. C. Harmston]. [*Chrysotus leucosetus*, *Diaphorus longilamellus*, *Pelastoneurus stentorius* and *Sciapus floridanus*, new species].

80.—1971b.—Evaluation of mosquito control problems associated with improved soil and water management practices in irrigated mountain meadows. *Proceedings 11th Annual Meeting of the Northwest Mosquito and Vector Control Association*, pp. 3-10. [by F. C. Harmston with L. J. Ogden].

81.—1971c.—Two mosaic gynandromorphs of *Culex tarsalis* Coquillett from Texas. *Mosquito News*, 31(2):222-223, figures 1-4. [by F. C. Harmston].

82.—1971d.—Suppression of male characteristics in *Aedes schizopinax* Dyar (Diptera: Culicidae) by thermal stress. *Mosquito News*, 31(2):224-226, figures 1-4. [by F. C. Harmston].

## 1972

83.—1972a.—Diptera and other arthropods of the Sukkertoppen Tasersiaq area, southwest Greenland. *Arctic, Journal of the Arctic Institute of North America*, 25(2):107-114, figures 1-4. [by P. W. Richard and F. C. Harmston].

84.—1972b.—New Dolichopodidae from California and Oregon (Diptera). *Entomological News*, 83(6):153-158. [by F. C. Harmston]. [*Melanderia californica*, *Neurigona californica*, *Pelastoneurus barri*, *Tachytrechus duplicatus* and *T. mchughi*, new species].

## 1973

85.—1973a.—Preimpoundment studies of vector-borne pathogens carried out during 1973 in the Narrows Unit, South Platte River, northeastern Colorado. *Eighty-sixth Annual Research Conference, Colorado State University*, Paper 233:86. [D. B. Francy, L. J. Ogden, F. C. Harmston, R. O. Hayes and J. D. Poland].

## 1975

86.—1975a.—Mosquito problems associated with the Bureau of Reclamation proposed Narrows Unit, South Platte Division, Missouri River Basin Project, Colorado. *Proceedings of Sixty-second Annual Meeting New Jersey Mosquito Extermination Association*, pp. 58-73, 1 unnumbered figure, 5 tables. [by L. J. Ogden and F. C. Harmston].

## 1983

87.—1983a.—The Dolichopodidae of Nebraska. *Novitates Arthropodae*, 1(4):i-ii, 1-75, figures 1-91, tables 1-2, map 1. [by F. C. Harmston and W. F. Rapp].

## LIST OF NEW TAXA PUBLISHED 1939-1972

Names are listed alphabetically by species. Each name is followed by its author(s), the year of publication, and a literature citation. The following additional information is given: Holotype (designated by "H") and its sex, followed in parentheses by the acronym of the collection in which the holotype was deposited [if location of type has changed, the acronym of the current location of the holotype is given in brackets], data as to locality, date of collection, and name of collector(s); Allotype (designated by "A") and its sex; Paratype(s) (designated by "P") and the number of specimens of each sex. In one instance, with the description of *Aphrosylus californicus* Harmston, the series of specimens are considered Syntypes (designated by "S"), *contra* Pollet et al. Finally, the current status (designated by "CS"), is given. The current status concurs with the assignment of names in the recent valued publication "Catalog of the Dolichopodidae (Diptera) of America North of Mexico" by Pollet, Brooks and Cumming (*Bulletin of the American Museum of Natural History*, 283:1-114, 2004). In most cases, the allotype is deposited together with the holotype, but not necessarily so, and paratypes are often deposited in more than one collection. These depositories are not indicated in our list, but the distribution of these may be found in the original descriptions. Lists of the acronyms of type depositories and the complete title of journals are:

ACRONYMS FOR JOURNAL CITATIONS: **AESA**—Annals of the Entomological Society of America; **AMN**—The American Midland Naturalist; **BBES**—Bulletin of the Brooklyn Entomological Society; **CE**—The Canadian Entomologist; **EN**—Entomological News; **FE**—The Florida Entomologist; **GBN**—The Great Basin Naturalist; **JKES**—Journal of the Kansas Entomological Society; **PESW**—Proceedings of the Entomological Society of Washington; **PPE**—The Pan-Pacific Entomologist; **RCE**—Revista Chilena de Entomología; **UASAL**—Utah Academy of Sciences, Arts and Letters.

ACRONYMS FOR TYPE DEPOSITORIES OF HOLOTYPES: **CAS**—California Academy of Sciences, San Francisco; **CNC**—Canadian National Collection, Ottawa; **CSU**—Colorado State University, Ft. Collins; **FSCA**—Florida State Collection of Arthropods, Gainesville; **ILNHS**—Illinois Naturally History Survey, Champaign; **UAES**—Utah Agricultural Experiment Station, Logan; **SDSU**—South Dakota State University, Brookings; **UCB**—University of

California, Berkeley; **UCD**—University of California, Davis; **UKC**—University of Kansas, Lawrence; **UMNH**—Utah Museum of Natural History, Salt Lake City; **USC**—Universidad de Chile, Santiago; **USNM**—National Museum of Natural History, Washington, D.C., [formerly United States National Museum].

One hundred sixty-two names are listed, of which 160 are for new species and two are new names for preoccupied species. The holotype depositories for the 160 new taxa consist of nine institutions, seven in the United States and one each in Canada and Chile. The holotypes are distributed as follows: 95 holotypes deposited in the National Museum of Natural History [formerly United States National Museum], Washington, D.C.; 38 deposited in the California Academy of Sciences, San Francisco; 11 deposited in the University of Kansas, Lawrence; 4 deposited in the Canadian National Collection, Ottawa; 4 deposited in the Florida State Collection of Arthropods, Gainesville; 3 deposited in the University of California, Davis; 2 deposited in the Illinois Natural History Survey, Champaign; 2 deposited in the Universidad de Chile, Sede Oriente, Santiago; and 1 deposited in the Utah Museum of Natural History, Salt Lake City.

**abaftanus**, *Dolichopus*, Harmston 1966 EN 77(1):6-8. H male (USNM), USA: Oregon: Howard Prairie Lake Reservoir, 21 miles east of Ashland, 24 Jul. 1963, (L. S. Miller). A female, P 21 males, 7 females. CS: Same.

**aboriginis**, *Dolichopus*, Harmston and Knowlton 1943 BBES 38(3):102-103. H male (USNM), USA: Utah: Mountain Home, 21 Jul. 1939, (G. F. Knowlton and F. C. Harmston). A female, P 4 males. CS: Same.

**accidentalis**, *Dolichopus*, Harmston and Knowlton 1941 JKES 14(3):93-95, figs. 2, 8. H male (UKC), USA: Colorado: Spring Creek Pass, 29 Jun. 1937, (C. L. Johnson). CS: Same.

**agalmus**, *Chrysotus*, Harmston and Rapp 1968 JKES 41(2):252. H male (CAS), USA: Nebraska: Glen, 22 Aug. 1960, (F. C. Harmston and W. F. Rapp, Jr.). CS: Same.

**alaskensis**, *Campsicnemus*, Harmston and Miller 1966 PESW 68(2):88. H male (CAS), USA: Alaska: Sterling Highway: Clam Beach, 3 Aug. 1954, (C. P. Alexander). CS: Same.

**albipodus**, *Hercostomus*, Harmston and Knowlton 1941 CE 73(7):131, figs. 8, 9, 11, 13. H male (USNM), USA: Utah: Kanosh Canyon, 12 Jul. 1940, (G. F. Knowlton and F. C. Harmston). A female, P 5 males. CS: Same.

**alexanderi**, *Campsicnemus*, Harmston and Miller 1966 PESW 68(2):89-90. H male (CAS), USA: Alaska: Taylor Highway, West Fork Dennisan River: Mile Post 49, 13 Aug. 1954, (C. P. Alexander). P 2 males. CS: Same.

**alpinus**, *Medeterus*, Harmston and Knowlton 1941 JKES 14(3):95-96, fig. 5. H male (UKC), USA: California: Alpine, 9 Jul. 1929, (R. H. Beamer). CS: *Medetera walschaertsi* Gosseries.

**apicales**, *Peloropecodes*, Harmston and Knowlton 1946 (1945) CE 77(8):139. H male (USNM), USA: Idaho: Coeur d'Alene, 28 Sept. 1941, (F. C. Harmston). CS: *Peloropecodes apicalis* Harmston and Knowlton.

**appendiculatus**, *Parasyntormon*, Harmston and Knowlton 1943 CE 75(4):63-64. H male (USNM), USA: Utah: Manila, 17 Jul. 1940, (G. F. Knowlton and F. C. Harmston). A female, P 3 males. CS: Same.

**arizonicus**, *Dolichopus*, Harmston 1951 JKES 24(3):103-104. H male (UKC), USA: Arizona: Huachuca Mountains: Sunnyside Canyon, 9 Jul. 1940, (D. E. Hardy). A female, P 5 males, 4 females. CS: Same.

**arizonicus**, *Sympycnus*, Harmston 1968 EN 79(1):24-25. H male (CAS), USA: Arizona: Santa Catalina Mountains, 10 Jun. 1938, (O. Bryant). CS: *Calyxochaetus arizonicus* (Harmston).

**arnaudi**, *Medeterus*, Harmston 1951 GBN 51(1-2):12-13. H male (CAS), USA: California: Redwood City, 12 Jun. 1948, (P. H. Arnaud, Jr.). A female, P 35 males, 47 females. CS: *Medetera arnaudi* Harmston.

**bajaensis**, *Chrysotus*, Harmston 1968 EN 79(1):23-24. H male (CAS), Mexico: Bahia [error for Baja] California: Sierra San Pedro Martir, Rancho Viejo, 7,000 ft, 14 Jun. 1953, (P. H. Arnaud, Jr.). CS: Same.

**barri**, *Pelastoneurus*, Harmston 1972 EN 83(6): 153-154. H male (CAS), USA: California: Inyo County: Tecopa Hot Springs, 16 May 1965, (W. F. Barr). A female, P 22 males, 12 females. CS: Same.

**beameri**, *Dolichopus*, Harmston and Knowlton 1941 JKES 14(3):92-93, figs. 4, 6. H male (UKC), USA: Arizona: Chiricahua Mountains, 8 Jul. 1932, (R. H. Beamer). A female, P 3 males. CS: Same.

**binodatus**, *Sympycnus*, Harmston and Knowlton 1940 AESA 33(2):397, figs. 1-3, 7. H male (USNM), USA: Utah: Leeds, 13 Sept. 1939, (G. F. Knowlton and F. C. Harmston). CS: *Calyxochaetus binodatus* (Harmston and Knowlton).

**boharti**, *Tachytrechus*, Harmston 1968 EN 79(1):15-16. H male (UCD), USA: California: Sierra County: Yuba Pass, 7 Jul. 1964, (R. M. Bohart). CS: Same.

**cacheae**, *Hercostomus*, Harmston and Knowlton 1941 CE 73(7):131-132, figs. 3, 10. H male (USNM), USA: Utah: Avon-Liberty road, approx. 5 miles south of Avon, extreme south end of Cache Valley, 5 Jul. 1940, (G. F. Knowlton and F. C. Harmston). CS: Same.

**californica**, *Melanderia*, Harmston 1972 EN 83(6):155-156. H male (CAS), USA: California: San Diego, salt marsh along ocean, 10 Aug. 1966, (F. C. Harmston). A female, P 5 males, 7 females. CS: Same. *Melanderia (Wirthia) californica* Harmston.

**californica**, *Neurigona*, Harmston 1972 EN 83(6):154-155. H male (CAS), USA: California: Santa Cruz County: Greyhound Rock, 22 May 1952, (P. H. Arnaud, Jr.). CS: Same.

**californicum**, *Syntormon*, Harmston 1951 GBN 51(1-2):15-16. H male (UCB) [CAS], USA: California: Modoc County: 2 miles east of Canby, 12 Jul. 1947, (R. L. Usinger). CS: Same.

**californicus**, *Aphrosylus*, Harmston 1952 PESW 54(6):292-293. S (9 males, 8 females) (USNM), USA: California: Laguna, 1 Aug. 1932, (J. M. Aldrich). CS: *Paraphrosylus californicus* (Harmston).

**californicus**, *Polymedon*, Harmston and Knowlton 1943 BBES 38(3):105-106. H male (CAS), USA: California: Sonora, 8 Sept. 1941, (F. C. and V. H. Harmston). CS: *Tachytrechus californicus* (Harmston and Knowlton).

**californicus**, *Sympycnidelphus*, Harmston 1968 EN 79(1):23. H male (UCD), USA: California: Amador County: Fiddletown, 18 Jul. 1961, (L. A. Stange). P male. CS: Same.

**californicus**, *Systemus*, Harmston 1968 EN 79(1):16-17. H male (CAS), USA: California: Marin County: Mill Valley, 25 Jun. 1950, (H. B. Leach) [error for Leech]. CS: Same.

**californicus**, *Tachytrechus*, Harmston and Knowlton 1963 JKES 36(4):234-235. H male (CAS), USA: California: Trinity County: Trinity River Camp, 17 Jul. 1953, (A. T. McClay). A female, P 10 males, 16 females. CS: ***Tachytrechus harmstoni*** Meuffels and Grootaert, 1999, a new name.

**chaetlamellus**, *Hercostomus*, Harmston and Knowlton 1941 CE 73(7):127-129, fig. 1. H male (UKC), USA: California: Orange County, 14 Jul. 1929, (P. W. Oman). P male. CS: Same.

**chlanoflava**, *Chrysotus*, Harmston and Knowlton 1940 JKES 13(2):59-60, fig. 7. H male (UMNH), USA: North Dakota: Tower City, M.W.R., 23 Jun. 1906. A female, P 2 males, female. CS: ***Chrysotus chlanoflavus*** Harmston and Knowlton.

**cinctipis**, *Campsicnemus*, Harmston 1968 EN 79(1):17-18. H male (CAS), Canada: Northwest Territories: Aklavik, 18 May 1931, (O. Bryant). A female, P 2 males. CS: Same.

**classicus**, *Parasyntormon*, Harmston and Knowlton 1943 CE 75(4):64-65. H male (USNM), USA: Utah: San Juan County: Bluff, 21 May 1938, (G. F. Knowlton and F. C. Harmston). P 3 males. CS: ***Parasyntormon classicum*** Harmston and Knowlton.

**coloradensis**, *Campsicnemus*, Harmston and Miller 1966 PESW 68(2):90. H male (CAS), USA: Colorado: Ward, 21 Jun. 1962, (F. C. Harmston). A female, P 1 female. CS: Same.

**coloradensis**, *Hercostomus*, Harmston 1952 PESW 54(6):286. H male (USNM), USA: Colorado: Boulder, [No date], (J. M. Aldrich). P 2 males, 4 females. CS: Same.

**coloradensis**, *Scellus*, Harmston and James in Harmston and Knowlton 1942 CE 74(5):82-83, figs. 1, 5-6. H male (USNM), USA: Colorado: near Saguache, 12,000 ft., 5 Aug. 1940, (R. H. Painter). A female, P 5 males, 17 females. CS: Same.

**colutis**, *Rhaphium*, Harmston and James in Harmston and Knowlton 1942 CE 74(5):83-85, fig. 9. H male (CSU) [USNM], USA: Colorado: Pingree Park, 9 Jul. 1938, (M. T. James). A female, P 3 males, 3 females. CS: ***Rhaphium colute*** Harmston and James.

**condomina**, *Argyra*, Harmston and Knowlton 1946 (1945) CE 77(8):137-138. H male (USNM), USA: Utah: Wolf Creek Pass, 15 Aug. 1937, (G. F. Knowlton and F. C. Harmston). A female, P 22 males, 7 females. CS: Same.

**condylus**, *Teuchophorus*, Harmston and Knowlton 1946 AMN 36(3):671-672. H male (USNM), USA: Indiana: Terre Haute, 12 Sept. 1943, (F. C. Harmston). CS: Same.

**consanguineus**, *Diaphorus*, Harmston and Knowlton 1963 JKES 36(4):232-233. H male (CAS), USA: California: Los Angeles County: Tanbark Flat, 13 Jul. 1950, (J. C. Hall). CS: Same.

**consanguineus**, *Hercostomus*, Harmston 1952 PESW 54(6):287-288. H male (USNM), USA: Washington: Olympia, 2 Jun. 1895, (Kincaid). P male. CS: ***Gymnopternus consanguineus*** (Harmston).

**crassipodus**, *Asyndetus*, Harmston 1968 EN 79(1):20-21. H male (CAS), USA: California: Kern County: Red Rock Canyon, 18 May 1937, (E. P. Van Duzee). CS: Same.

**cryptus**, *Hercostomus*, Harmston and Knowlton 1941 CE 73(7):130, figs. 4-6, 14. H male (USNM), USA: Utah: near Manila: Sheep Creek, 17 Jul. 1940, (G. F. Knowlton and F. C. Harmston). A female, P 8 males, 6 females. CS: Same.

**dakotensis**, *Argyra*, Harmston and Knowlton 1939 JKES 12(3):85, figs. 7-8. H male (UAES) [USNM], USA: South Dakota: Pineridge, 8 Jul. 1924, (H. C. Severin). CS: Same

**dakotensis**, *Chrysotus*, Harmston 1952 PESW 54(6):290. H male (USNM), USA: South Dakota: Brookings, [no date], (J. M. Aldrich). P 2 males. CS: Same.

**diminuocosta**, *Teuchophorus*, Harmston and Knowlton 1942 AESA 35(1):21-22, figs. 7, 13. H male (USNM), USA: Utah: Logan Canyon, 4 Aug. 1940, (G. F. Knowlton and F. C. Harmston). A female, P 8 males, female. CS: Same.

**divigatus**, *Dolichopus*, Harmston 1952 PESW 54(6):284. H male (USNM), USA: Oregon: Mt. Hood: Mt. Hood Meadows, 13 Jul. 1932, (J. M. Aldrich). CS: Same.

**dreisbachi**, *Hercostomus*, Harmston and Knowlton 1945 JKES 18(2):80. H male (USNM), USA: Michigan: Midland County, 19 Jun. 1941, (R. R. Dreisbach). CS: =*Hercostomus chetifer* Walker.

**dreisbachi**, *Hydrophorus*, Harmston and Knowlton 1963 JKES 36(4):231-232. H male (USNM), USA: Michigan: Midland County, 24 May 1951, (R. R. Dreisbach). CS: Same.

**duplicatus**, *Tachytrechus*, Harmston 1972 EN 83:157. H male (CAS), USA: Oregon: Baker, 25 Jul. 1965, (F. C. Harmston). CS: Same.

**facirecedens**, *Dolichopus*, Harmston and Knowlton 1939 JKES 12(3):83-84, figs. 4-6. H male (SDSU) [USNM], USA: South Dakota: Waubay, 22 Jun. 1936, (H. C. Severin). A female, P male, female. CS: Same.

**factivittatus**, *Dolichopus*, Harmston 1966 EN 77(1):10-12. H male (USNM), USA: Indiana: Terre Haute, 4 Jul. 1944, (F. C. Harmston). P 3 males. CS: Same.

**fernandezensis**, *Sympycnus*, Harmston 1955 RCE 4:37-38. H male (USC), Chile: Juan Fernandez Islands: Masafuera: Quebrada de las Casas, 19 Jan. 1952, (G. Kuschel). A female, 18 P males, 53 females. CS: Same.

**flagellatus**, *Hercostomus*, Harmston 1952 PESW 54(6):293-294. H male (USNM), USA: Alabama: Mobile, (collected in hold of a ship containing cargo of bananas from Panama), 2 Apr. 1924, "Mobile, No. 1984". CS: *Paraclius flagellatus* (Harmston).

**floridanus**, *Sciapus*, Harmston 1971 FE 54(1):85-86. H male (FSCA), USA: Florida: Monroe County: Everglades National Park: Middle Cape Sable, 7 Apr. 1966, (H. V. Weems). P male. CS: *Amblypsilopus floridanus* (Harmston).

**flutatus**, *Hercostomus*, Harmston and Knowlton 1945 JKES 18(2):79. H male (USNM), USA: Michigan: Bay County, 24 May 1941, (R. R. Dreisbach). CS: Same.

**footei**, *Dolichopus*, Harmston 1966 EN 77(1):4-5. H male (USNM), USA: Idaho: Priest Lake: Kalispell Bay, 7 Jul. 1959, (B. A. Foote). A female, P 2 males, 2 females. CS: Same.

**fulgerus**, *Dolichopus*, Harmston 1966 EN 77(1):14-15. H male (USNM), Canada: British Columbia: Alaska Highway: Muncho Lake: Mile Post 455, 28 Jun. 1952, (C. P. Alexander). A female, P male. CS: Same.

*fuscularis*, *Neurigona*, Harmston 1968 EN 79(1):26-27. H male (CAS), USA: Arizona: Santa Catalina Mountains, 15 Jun. 1938, (O. Bryant). A female, P 4 males, 4 females. CS: Same.

*fuscitibialis*, *Sympycnus*, Harmston and Knowlton 1940 AESA 33(2):400-401, figs. 5, 12, 19, 22, 24. H male (USNM), USA: Utah: Duchesne County: Carrant Creek, 29 Jun. 1939, (G. F. Knowlton and F. C. Harmston). CS: =*Calyxochaetus cilifemoratus* (Van Duzee).

*georgianus*, *Neurigona*, Harmston and Knowlton 1963 JKES 36(4):234. H male (USNM), USA: Georgia: Atlanta, 6 Jun. 1943, (H. D. Pratt). CS: Same.

*hardyi*, *Dolichopus*, Harmston 1951 JKES 24(3):105-106. H male (UKC), USA: Arizona: Chiricahua Mountains: Rustler's Park, 5 Jul. 1940, (R. H. Beamer). A female, P 3 males, 3 females. CS: Same.

*hardyi*, *Sympycnus*, Harmston and Knowlton 1940 AESA 33(2):397-398, figs. 8-9, 18; H male (USNM), USA: Utah: Hooper, 15 Jun. 1937, (D. E. Hardy). CS: *Calyxochaetus hardyi* (Harmston and Knowlton).

*hendersoni*, *Parasyntormon*, Harmston and Knowlton 1939 EN 50(9):256-257, figs. 2, 5. H male (UAES) [USNM], USA: Utah: Monticello, 28 Jul. 1938, (G. F. Knowlton and F. C. Harmston). CS: Same.

*hirsutitarsis*, *Dolichopus*, Harmston 1952 PESW 54(6):281-282. H male (USNM), USA: California: Klamath River, near mouth, 11 Jul. 1930, (J. M. Aldrich). A female, P 7 males, 2 females. CS: Same.

*idahoensis*, *Medeterus*, Harmston and Knowlton 1943 BBES 38(3):106-107. H male (CAS), USA: Idaho: Sandpoint, 28 Sept. 1941, (F. C. and V. H. Harmston). CS: =*Medetera crassivenis* Curran.

*idahona*, *Argyra*, Harmston and Knowlton 1946 (1945) CE 77(8):138-139. H male (USNM), USA: Idaho: Sandpoint, 28 Sept. 1941, (F. C. Harmston). P male. CS: Same.

*indianus*, *Dolichopus*, Harmston and Knowlton 1946 AMN 36(3):672-673. H male (USNM), USA: Indiana: Indianapolis, 21 Mar. 1943, (F. C. Harmston). P 11 males. CS: Same.

*indianus*, *Hercostomus*, Harmston 1952 PESW 54(6):285. H male (USNM), USA: Indiana: Lafayette, 4 Jul. 1916, (J. M. Aldrich). P 3 males, 3 females. CS: =*Hercostomus tibialis* (Van Duzee).

*indianus*, *Paraclius*, Harmston and Knowlton 1946 JKES 19(1):24-25. H male (USNM), USA: Indiana: Indianapolis, 11 Jun. 1944, (F. C. Harmston). A female, P 8 males, 10 females. CS: *Tachytrechus indianus* (Harmston and Knowlton).

*intrudus*, *Chrysotus*, Harmston 1951 JKES 24(3):107-108. H male (UKC), USA: Oklahoma: Commerce, 16 May 1940, (R. H. Beamer). A female, P 4 males. CS: Same.

*iowaensis*, *Dolichopus*, Harmston and Knowlton 1939 JKES 12(3):84-85, figs. 1-3. H male (SDSU) [USNM], USA: Iowa: Dickinson County, 24 Jun. 1938, (B. G. Berger). CS: Same.

*isoaristus*, *Sympycnus*, Harmston and Knowlton 1940 AESA 33(2):402-403, figs. 25-28. H male (USNM), USA: Utah: Cedar Breaks, 3 Aug. 1938, (G. F. Knowlton and F. C. Harmston). P 2 males. CS: *Calyxochaetus isoaristus* (Harmston and Knowlton).

*jamesi*, *Pelorocephodes*, Harmston and Knowlton 1939 EN 50(9):257-258, figs. 3-4. H male (USNM), USA: Utah: Blue Creek, R. R. Station, 30 Mar. 1939, (H. E. Dorst, M. W.

Allen, and F. C. Harmston). A female, P 7 males, 3 females. CS: =*Sympycnus latitarsis* Van Duzee.

**jaquesi**, *Dolichopus*, Harmston and Knowlton 1939 PESW 41(3):87-88, 3 figs. H male (USNM), USA: Iowa: Mt. Pleasant, 23 May 1938, (B. G. Berger). A female, P 5 males, 6 females. CS: Same.

**kansensis**, *Chrysotus*, Harmston 1952 PESW 54(6):289-290. H male (USNM), USA: Kansas: Lawrence, [no date], (J. M. Aldrich). P male. CS: Same.

**kennedyi**, *Syntormon*, Harmston and Knowlton 1942 PESW 44(2):23-24, figs. 3-4, 7, 11. H male (USNM), USA: Colorado: Cameron Pass, 18 Aug. 1940, (G. F. Knowlton). P male. CS: Same.

**knowltoni**, *Scellus*, Harmston 1939 UASAL 16:71-73, figs. 1-6. H male (UAES) [USNM], USA: Utah: Monticello, 27 Aug. 1938, (G. F. Knowlton and F. C. Harmston). P 2 males. CS: Same.

**kuscheli**, *Hydraphorus*, Harmston 1955 RCE 4:35-36. H male (USC), Chile: Juan Fernandez Islands: Masatierra: Bahía Cumberland, 25 Feb. 1951, (G. Kuschel). A female, P 33 males, 43 females. CS: *Hydatostega kuscheli* (Harmston).

**kyphotus**, *Dolichopus*, Harmston 1966 EN 77(1):15-17. H male (USNM), USA: Alaska: Matanuska Valley, 27 Jun. 1952, (C. O. Berg). CS: Same.

**leucosetus**, *Chrysotus*, Harmston 1971 FE 54(1):86-87. H male (FSCA), Cuba: U. S. Navy Base, Guantanamo Bay, 8-19 Feb. 1965. CS: Same.

**longilamellus**, *Diaphorus*, Harmston 1971 FE 54(1):87-88. H male (FSCA), USA: Georgia: Oatland Island, 31 Aug. 1968, (J. M. Harmston). P 2 males. SC: Same.

**longilamellus**, *Hercostomus*, Harmston and Knowlton 1940 PESW 42(9):127, figs. 1, 7. H male (USNM), USA: Utah: Kanosh Canyon, 20 Jun. 1939, (G. F. Knowlton and F. C. Harmston). CS: Same.

**magnicornis**, *Peloropecodes*, Harmston and Rapp 1968 JKES 41(2):248-249. H male (USNM), USA: Nebraska: Plymouth, 18 Aug. 1959, (F. C. Harmston and W. F. Rapp, Jr.). P 7 males. CS: Same.

**mchughi**, *Diostracus*, Harmston 1966 JKES 39(2):224-225. H male (CAS), USA: Oregon: Latourelle Falls, 2 Aug. 1962, (R. A. McHugh). P 2 males. CS: Same.

**mchughi**, *Tachytrechus*, Harmston 1972 EN 83(6):156-157. H male (CAS), USA: Oregon: Latourelle Falls, 2 Aug. 1962, (R. A. McHugh). P male. CS: Same.

**melanus**, *Campsicnemus*, Harmston and Knowlton 1942 BBES 37(1):11, fig. 8. H male (USNM), USA: Utah: Torrey, 20 Aug. 1939, (G. F. Knowlton and F. C. Harmston). A female, P 5 males, female. CS: Same.

**michiganus**, *Dolichopus*, Harmston and Knowlton 1945 JKES 18(2):78. H male (USNM), USA: Michigan: Saginaw County, 14 Jul. 1940, (R. R. Dreisbach). CS: =*Dolichopus setifer* Loew.

**milleri**, *Campsicnemus*, Harmston 1966 JKES 39(2):226. H male (CAS), USA: Oregon: Boi-Cope State Park, 25 Apr. 1963, (L. S. Miller). CS: Same.

**milleri**, *Tachytrechus*, Harmston 1966 JKES 39(2):223-224. H male (CAS), USA: Oregon: Crater Lake, 7 Aug. 1963, (L. S. Miller). A female, P 3 males, 11 females. CS: Same.

**monarchus**, *Dolichopus*, Harmston 1968 EN 79(1):13-15. H male (CAS), Canada: Northwest Territories: Aklavik, 27 Aug. 1931, (O. Bryant). A female, P 5 males, 6

females. CS: Same.

**montanus**, *Campsicnemus*, Harmston and Knowlton 1942 BBES 37(1):14, fig. 6. H male (USNM), USA: Montana: Gardner, 8 Sept. 1940, (F. C. and V. H. Harmston). CS: Same.

**myklebusti**, *Syntormon*, Harmston and Miller 1966 PESW 68(2):90-91. H male (CAS), USA: Washington: Ilwaco, 19 Jul. 1960, (R. J. Myklebust). A female, P female. CS: *Syntormon flexibile* Becker.

**nebraskaense**, *Psilopiella*, Harmston and Rapp 1968 JKES 41(2):251-252. H male (USNM), USA: Nebraska: Halsey: U. S. National Forest: Bessey Division, 11 Jun. 1959, (F. C. Harmston and W. F. Rapp, Jr.). A female, P 24 females. CS: *Sciapus nebraskaensis* (Harmston and Rapp).

**neocryptus**, *Hercostomus*, Harmston and Knowlton 1941 CE 73(7):130-131, fig. 15. H male (CNC), Canada: Alberta: Lethbridge, 18 Jul. 1923, (H. E. Gray). A female, P male. CS: Same.

**neomexicanus**, *Dolichopus*, Harmston 1951 JKES 24(3):104-105. H male (UKC), USA: New Mexico: Cloudcroft, 28 Jun. 1932, (R. H. Beamer). CS: Same.

**nevadensis**, *Asyndetus*, Harmston 1968 EN 79(1):18-20. H male (UCD), USA: Nevada: 15 miles southwest of Winnemucca, 9 Sept. 1959, (T. R. Haig). CS: Same.

**nigripes**, *Parasyntormon*, Harmston and Knowlton 1943 CE 75(4):64. H male (USNM), USA: Utah: Iron County: Little Salt Lake, 7 May 1939, (G. F. Knowlton and F. C. Harmston). CS: Same.

**nigropleurus**, *Dolichopus*, Harmston 1966 EN 77(1):1-2. H male (USNM), USA: Colorado: Dillon, 13 Aug. 1958, (F. C. Harmston). P 2 males. CS: Same.

**nomadus**, *Dolichopus*, Harmston and Knowlton 1942 AESA 35(1):18-19, figs. 2-4, 11. H male (CNC), Canada: Alberta: Cypress Hills, 10 Aug. 1939, (E. H. Strickland). CS: Same.

**nudus**, *Chrysotus*, Harmston and Knowlton 1963 JKES 36(4):233-234. H male (CAS), USA: California: Mono County: Sardine Canyon, 8,500 ft., 28 Jun. 1951, (J. W. MacSwain). A female, P 5 females. CS: *Chrysotus harmstoni* Meuffels and Grootaert, 1999, a new name.

**occidentalis**, *Chrysotimus*, Harmston 1951 JKES 24(3):109. H male (UKC), USA: Arizona: Huachuca Mountains: Sunnyside Canyon, 9 Jul. 1940, (D. E. Hardy). A female, P 24 males, 16 females. CS: Same.

**orbicularis**, *Hercostomus*, Harmston 1952 PESW 54(6):286-287. H male (USNM), USA: California: San Bernardino Mountains: Mill Creek Canyon, 9 Jun. 1924, (J. M. Aldrich). P 3 males, 11 females. CS: Same.

**oregonensis**, *Asyndetus*, Harmston 1966 JKES 39(2):225-226. H male (CAS), USA: Oregon: Ana River road, near Summer Lake, 21 Jun. 1963, (L. S. Miller). A female, P 3 males, 13 females. CS: Same.

**oregonensis**, *Campsicnemus*, Harmston and Miller 1966 PESW 68(2):88-89. H male (CAS), USA: Oregon: Barview State Park, 12 Mar. 1963, (L. S. Miller). A female, P 4 males. CS: Same.

**oregonensis**, *Syntormon*, Harmston and Knowlton 1942 PESW 44(2):25-26, figs. 2, 8. H male (USNM), USA: Oregon: Portland, 5 Sept. 1940, (F. C. and V. H. Harmston). CS: Same.

**oregonensis**, *Systemus*, Harmston and Miller 1966 PESW 68(2):91-92. H male (CAS), USA: Oregon: Wilsonville, 3 Jul. 1963, (K. Goeden). P male. CS: *Achalcus oregonensis* (Harmston and Miller).

**parenti**, *Sympycnus*, Harmston and Miller 1966 PESW 68(2):93. New name for *Sympycnus cilifemoratus* Parent, 1932.

**pennarista**, *Sympycnus*, Harmston and Knowlton 1940 AESA 33(2):399-400, figs. 4, 10-11, 23. H male (USNM), USA: Utah: Manila, 5 Sept. 1939, (G. F. Knowlton and F. C. Harmston). P 2 males. CS: *Calyxochaetus pennarista* (Harmston and Knowlton).

**pictipes**, *Sympycnus*, Harmston and Knowlton 1940 AESA 33(2):401-402, figs. 6, 13, H male (USNM), USA: Utah: Kanosh Canyon, 28 Jul. 1939, (G. F. Knowlton and F. C. Harmston). P male. CS: *Calyxochaetus pictipes* (Harmston and Knowlton).

**purus**, *Hercostomus*, Harmston and Knowlton 1963 JKES 36(4):237-238. H male (CAS), USA: California: Sacramento County: Galt, 27 Jul. 1952, (E. I. Schlinger). P male. CS: *Gymnopternus purus* (Harmston and Knowlton).

**pygidus**, *Peloropecodes*, Harmston and Rapp 1968 JKES 41(2):249-250. H male (CAS), USA: Nebraska: Mills, 16 Jun. 1959, (F. C. Harmston and W. F. Rapp, Jr.). P 3 males. CS: Same.

**refulgens**, *Dolichopus*, Harmston 1939 AESA 32(2):349-350, figs. 1-3. H male (CNC), Canada: Alberta: Fawcett, 6 Jun. 1934, (E. H. Strickland). CS: =*Dolichopus packardi* Van Duzee.

**rossi**, *Rhaphium*, Harmston and Knowlton 1940 JKES 13(2):60-61, figs. 1, 3, 5-6, 8. H male (ILNHS), USA: Illinois: Golconda, 18 Apr. 1914. A female, P 14 males, 7 females. CS: Same.

**rotundus**, *Sympycnus*, Harmston and Miller 1966 PESW 68(2):93. New name for *Sympycnus calcaratus* Parent, 1932. CS: Same.

**schlingeri**, *Hercostomus*, Harmston and Knowlton 1963 JKES 36(4):237. H male (CAS), USA: California: Glendale, 8 Jun. 1952, (E. I. Schlinger). A female, P 3 males, female. CS: *Gymnopternus schlingeri* (Harmston and Knowlton).

**scopiferus**, *Asyndetus*, Harmston 1952 PESW 54(6):288-289. H male (USNM), USA: Oregon: Hood River, 14 Jul. 1932, (J. M. Aldrich). P male. CS: *Asyndetus scopifer* Harmston.

**scopiventris**, *Thinophilus*, Harmston and Knowlton 1940 PPE 16(3):108-109, figs. 1-3. H male (CAS), USA: California: Newark, 27 Jun. 1939, (G. F. Knowlton). P female. CS: Same.

**severini**, *Asyndetus*, Harmston and Knowlton 1939 AESA 32(2):351-352, figs. 8-10. H male (UAES) [USNM], USA: South Dakota: Martin, 7 Jul. 1924, (H. C. Severin). CS: Same.

**shastaensis**, *Dolichopus*, Harmston 1966 EN 77(1):5-6. H male (USNM), USA: California: Shasta County: Cassel, 15 Jul. 1955, (W. H. Lange). A female, P 4 males, 9 females. CS: Same.

**silvicolus**, *Chrysotus*, Harmston 1951 GBN 51(1-2):11-12. H male (CAS), USA: California: Tuolumne County: Pinecrest, 29 Jun.–18 Aug. 1948 [labeled July 29, 1948], (P. H. Arnaud, Jr.). A female, P 26 males, 16 females. CS: *Chrysotus silvicola* Harmston.

**silvicolus**, *Dolichopus*, Harmston 1951 JKES 24(3):106-107. H male (UKC), USA: New Mexico: Cloudcroft, 27 Jun. 1940, (R. H. Beamer). P male. CS: *Dolichopus silvico-*

*la* Harmston.

*similis*, *Argyra*, Harmston and Knowlton 1940 JKES 13(2):58-59, figs. 2, 4, 9. H male (ILNHS), USA: Illinois: Dongola, 11 May 1917. CS: Same.

*sinualaris*, *Dolichopus*, Harmston 1966 EN 77(1):8-9. H male (USNM), USA: North Dakota: Bismarck, 25 Aug. 1961, (F. C. Harmston). CS: Same.

*smithae*, *Dolichopus*, Harmston 1966 EN 77(1):12-13. H male (USNM), USA: Alaska: Mt. McKinley National Park: Mile Post 29, 15 Jul. 1952, (M. E. Smith). A female, P 2 females. CS: Same.

*sombrea*, *Neurigona*, Harmston and Knowlton 1945 JKES 18(2):77-78. H male (USNM), USA: Michigan: Midland County, 6 Jun. 1941, (R. R. Dreisbach). P 2 males. CS: *Nepalomyia sombrea* (Harmston and Knowlton).

*spatulatus*, *Sympycnus*, Harmston and Knowlton 1940 AESA 33(2):398-399, figs. 14-15, 17. H male (USNM), USA: Utah: Hanksville, 1 Aug. 1939, (G. F. Knowlton and F. C. Harmston). P 2 males. CS: =*Calyxochaetus oreas* (Wheeler).

*spinitarsis*, *Asyndetus*, Harmston 1951 JKES 24(3):108-109. H male (UKC), USA: California: Palm City, 19 Jul. 1940, (R. H. Beamer). CS: Same.

*sporadicum*, *Dolichopus*, Harmston and Knowlton 1942 AESA 35(1):17-18, figs. 1, 10, 12. H male (UAES) [USNM], USA: Utah: Manila, 17 Jul. 1940, (G. F. Knowlton and F. C. Harmston). CS: *Dolichopus sporadicus* Harmston and Knowlton.

*squamiciliatus*, *Thrypticus*, Harmston and Rapp 1968 JKES 41(2):250-251. H male (USNM), USA: Nebraska: Crawford, 22 Aug. 1960, (F. C. Harmston and W. F. Rapp, Jr.). CS: Same.

*squamicilliatus*, *Dolichopus*, Harmston 1966 EN 77(1):2-4. H male (USNM), USA: Colorado: Red Feather Lake, 19 Jun. 1964, (F. C. Harmston). CS: Same.

*stanfordi*, *Hercostomus*, Harmston and Knowlton 1940 PESW 42(9):126-127, figs 2, 8-9. H male (USNM), USA: Utah: Cedar City, 12 Jul. 1939, (G. F. Knowlton and F. C. Harmston). P 4 males. CS: =*Hercostomus occidentalis* Cole.

*stentorius*, *Pelastoneurus*, Harmston 1971 FE 54(1):88-89. H male (FSCA), USA: Georgia: Oatland Island, 31 Aug. 1968, (J. M. Harmston). CS: Same.

*stricklandi*, *Dolichopus*, Harmston and Knowlton 1939 AESA 32(2):350-351, figs. 4-7. H male (CNC), Canada: Alberta: Gull Lake, 27 Jul. 1932, (E. H. Strickland). CS: Same.

*tahoensis*, *Tachytrechus*, Harmston and Knowlton 1940 CE 72(6):114-115, figs. 2, 5. H male (USNM), USA: California: Tahoe, 19 Jun. 1927, (J. M. Aldrich). P male, 6 females. CS: Same.

*tarsipictis*, *Dolichopus*, Harmston and Knowlton 1963 JKES 36(4):236. H male (USNM), USA: Oregon: Baker, 23 Jul. 1950, (D. R. Maddock and F. C. Harmston). CS: Same.

*texanus*, *Sympycnidelphus*, Harmston 1968 EN 79(1):21-23. H male (USNM), USA: Texas: Corpus Christi, 30 Aug. 1966, (F. C. Harmston). CS: Same.

*torrida*, *Neurigona*, Harmston 1951 GBN 51(1-2):14-15. H male (CAS), USA: California: Indio, 1 Apr. 1948, (R. Coleman). CS: Same.

*torridus*, *Hercostomus*, Harmston and Knowlton 1941 CE 73(7):129-130, figs. 2, 7, 12. H male (USNM), USA: Utah: Leeds, 22 Jun. 1940, (G. F. Knowlton and F. C. Harmston). A female, P 10 males, 5 females. CS: =*Hercostomus setosus* (Van Duzee).

***truncatus*, *Hercostomus***, Harmston and Knowlton 1940 PESW 42(9):127-128, figs 5-6. H male (USNM), USA: Utah: Kanosh Canyon, 28 Jul. 1939, (G. F. Knowlton and F. C. Harmston). P male. CS: Same.

***uinta*, *Neurigona***, Harmston and Knowlton 1942 CE 74(5):80, figs. 2, 4, 7. H male (USNM), USA: Utah: Uintah County: near Whiterocks, 25 Jun. 1940, (G. F. Knowlton and F. C. Harmston). P 15 males. CS: =*Neurigona flava* Van Duzee.

***uintaensis*, *Syntormon***, Harmston and Knowlton 1940 EN 51(5):130-132, figs. 3-4, 6. H male (USNM), USA: Utah: Altonah, 9 May 1939, (G. F. Knowlton and F. C. Harmston). A female, P 9 males, 6 females. CS: Same.

***utahensis*, *Asyndetus***, Harmston and Knowlton 1942 CE 74(5):85, figs. 8, 10. H male (USNM), USA: Utah: Price, 1 Jun. 1940, (G. F. Knowlton and F. C. Harmston). A female, P 3 males. CS: Same.

***utahensis*, *Campsicnemus***, Harmston and Knowlton 1942 BBES 37(1):13-14, figs. 3, 9. H male (USNM), USA: Utah: Heber, 29 May 1940, (G. F. Knowlton and F. C. Harmston). P 6 males. CS: Same.

***utahensis*, *Dolichopus***, Harmston and Knowlton 1943 BBES 38(3):101-102. H male (USNM), USA: Utah: Park City, 11 Jul. 1941, (G. F. Knowlton and F. C. Harmston). A female. CS: Same.

***utahensis*, *Hercostomus***, Harmston and Knowlton 1940 PESW 42(9):125-126, figs. 3-4. H male (USNM), USA: Utah: Moab, 19 Jul. 1939, (G. F. Knowlton and F. C. Harmston). A female, P 5 males, 3 females. CS: Same.

***utahensis*, *Paraclius***, Harmston and Knowlton 1946 JKES 19(1):23-24. H male (USNM), USA: Utah: St. George, 22 Jun. 1940, (F. C. Harmston). A female, P 10 males, 5 females. CS: Same.

***utahensis*, *Sympycnus***, Harmston and Knowlton 1939 EN 50(9):258-259, fig. 1. H male (UAES) [USNM], USA: Utah: Cedar Breaks, 3 Aug. 1938, (G. F. Knowlton and F. C. Harmston). P male. CS: Same.

***utahensis*, *Syntormon***, Harmston and Knowlton 1942 PESW 44(2):24, figs. 1, 5-6, 10. H male (USNM), USA: Utah: Marysvale, 20 Jun. 1940, (G. F. Knowlton and F. C. Harmston). CS: Same.

***utahensis*, *Systemus***, Harmston and Miller 1966 PESW 68(2):92. H male (CAS), USA: Utah: Moab, (moist cavity of cottonwood tree), 4 Aug. 1957, (F. C. Harmston). P male. CS: *Achalcus utahensis* (Harmston and Miller).

***utahensis*, *Tachytrechus***, Harmston and Knowlton 1940 CE 72(6):112-114, figs. 1, 3, 4. H male (USNM), USA: Utah: Torrey, 2 Aug. 1939, (G. F. Knowlton and F. C. Harmston). A female, P 3 males, 4 females. CS: Same.

***utahensis*, *Teuchophorus***, Harmston and Knowlton 1942 AESA 35(1):20-21, figs. 5-6, 8-9. H male (USNM), USA: Utah: Roosevelt, 19 Jul. 1940, (G. F. Knowlton and F. C. Harmston). A female, P 8 males. CS: Same.

***utahna*, *Argyra***, Harmston 1951 GBN 51(1-2):16-17. H male (CAS), USA: Utah: Monticello, 7 Jul. 1946, (F. C. Harmston). CS: Same.

***valgusa*, *Neurigona***, Harmston and Rapp 1968 JKES 41(2):248. H male (USNM), USA: Nebraska: Creighton, 23 Jun. 1961, (F. C. Harmston and W. F. Rapp, Jr.). CS: Same.

***variegatum*, *Syntormon***, Harmston 1952 PESW 54(6):291-292. H male (USNM), USA: California: Smith River, 21 Jul. 1932, (J. M. Aldrich). CS: Same.

**vegetus**, *Dolichopus*, Harmston 1952 PESW 54(6):283-284. H male (USNM), USA: Alaska: Mt. McKinley National Park, 1932, (F. W. Morand). P 8 males, 7 females. CS: Same.

**vernaae**, *Dolichopus* Harmston and Knowlton, 1940 EN 51(5):129-130, figs. 1-2, 5. H male (USNM), USA: Utah: Woodruff, 6 Jun. 1939, (G. F. Knowlton and F. C. Harmston). A female, P 11 males, 11 females. CS: Same.

**vinculatus**, *Thinophilus* Harmston and Rapp 1968 JKES 41(2):253-254. H male (USNM), USA: Nebraska: Antioch, 22 Aug. 1960 (F. C. Harmston and W. F. Rapp, Jr.). A female, P 6 males, 3 females. CS: Same.

**virens**, *Parasyntormon*, Harmston and Knowlton 1943 CE 75(4):65. H male (USNM), USA: Utah: Wayne County: Henry Mountains: about 15 miles south of Hanksville, 6 Jun. 1940 (G. F. Knowlton and F. C. Harmston). A female, P 4 males. CS: Same.

**wasatchensis**, *Hercostomus*, Harmston and Knowlton 1943 BBES 38(3):103-105. H male (USNM), USA: Utah: Mt. Timpanogos, 6 Jul. 1941, (F. C. and V. H. Harmston). A female, P male. CS: Same.

**wirthi**, *Aphrosylus*, Harmston 1951 GBN 51(1-2):13-14. H male (CAS), USA: California: San Mateo County: Moss Beach, 21 Mar. 1948 (W. W. Wirth). A female, P 10 males, 13 females. CS: *Paraphrosylus wirthi* (Harmston).

**xanthocal**, *Chrysotus*, Harmston and Knowlton 1940 PPE 16(3):110, fig. 4. H male (CAS), USA: California: Tracy, 15 Nov. 1939, (F. C. and V. H. Harmston). CS: Same.

**zionensis**, *Neurigona*, Harmston and Knowlton 1942 CE 74(5):81-82, fig. 3. H male (USNM), USA: Utah: Zion Canyon, 13 Jul. 1939, (G. F. Knowlton and F. C. Harmston). CS: Same.

**zygomus**, *Dolichopus*, Harmston 1966 EN 77(1):9-10. H male (USNM), USA: Alaska: Taylor Highway: West Fork Dennisan River: Mile Post 49, 15 Aug. 1954, (C. P. Alexander). CS: Same.

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