

Technical Report No. 125
CURRICULUM VITAE OF SCIENTISTS TO PARTICIPATE
IN THE U.S. IBP GRASSLAND BIOME STUDIES
PROPOSED FOR 1972 AND 1973

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Colorado State University
Fort Collins, Colorado

Grassland Biome
U.S. INTERNATIONAL BIOLOGICAL PROGRAM

July 1971

ABSTRACT

This report is intended to serve as a directory of all participants for the proposed U.S. IBP Grassland Biome studies in 1972 and 1973. All entries in this report are in alphabetical order, and are written in a comparable format and contain background information on academic training and professional experience, major interests, professional activities, and all publications and technical reports. Preceding the individual vitae is an overall list of all participants contained herein, together with their formal organizational affiliation.

NAME	INSTITUTION
Baldwin, P. H.	Colorado State University
Becker, C. F.	University of Wyoming
Bell, R. T.	University of Vermont
Bement, R. E.	Agricultural Research Service
Birney, E. C.	University of Minnesota
Bledsoe, L. J.	Colorado State University
Blinn, D. W.	University of North Dakota
Blocker, D. H.	Kansas State University
Bokari, U.	Colorado State University
Bonde, E. K.	University of Colorado
Bonham, C. D.	Colorado State University
Breymeyer, A.	Polish Academy of Sciences
Burman, R. D.	University of Wyoming
Burzlauff, D. F.	University of Nebraska
Christensen, M.	University of Wyoming
Clark, F. E.	Agricultural Research Service
Cole, V. C.	Colorado State University
Coleman, D. C.	University of Georgia
Collins, D. D.	Montana State University
Cook, C. W.	Colorado State University
Cook, K. R.	University of Arkansas
Cringan, A. T.	Colorado State University
Crossley, D. A.	University of Georgia
Cuany, R. L.	Colorado State University
Doxtader, K. G.	Colorado State University
Fisser, H. G.	University of Wyoming
Francis, R. C.	Colorado State University
French, N. R.	Colorado State University
Gibson, J. H.	Colorado State University
Gorden, R. W.	Texas Tech University
Gross, J. E.	Bureau of Sport Fisheries and Wildlife
Hackbart, M. M.	University of Wyoming
Hadley, E. B.	University of Illinois
Hansen, R. M.	Colorado State University
Hanson, C. L.	Agricultural Research Service
Harris, J. O.	Kansas State University
Harris, L. D.	Colorado State University
Heady, H. F.	University of California
Hedstrom, W. E.	University of Wyoming
Herbel, C. H.	Kansas State University
Hoffmann, R. S.	University of Kansas
Huddleston, E. W.	Texas Tech University
Hulett, G. K.	Fort Hays Kansas State College
Hutcheson, H. L.	South Dakota State University
Hyder, D. N.	Agricultural Research Service
Innis, G. S.	Colorado State University

NAME	INSTITUTION
Jalal, S. M.	University of North Dakota
Jameson, D. A.	Colorado State University
Johanningsmeier, A. G.	Boston University
Jones, J. K.	University of Kansas
Kadlec, J. A.	University of Michigan
Kannowski, P. B.	University of North Dakota
Kemper, G. A.	University of North Dakota
Klein, D. A.	Colorado State University
Klein, W. M.	Colorado State University
Knieval, D. P.	University of Wyoming
Knight, D. H.	University of Wyoming
Lavigne, R.	University of Wyoming
Lewis, J. K.	South Dakota State University
Lloyd, J. E.	University of Wyoming
Mayeux, J. V.	Martin-Marietta Corporation
McColl, J. G.	University of Minnesota
McDaniel, B.	South Dakota State University
Miller, L. D.	Colorado State University
Moir, W. H.	Colorado State University
Moore, R. E.	Montana State University
Morris, M. S.	University of Montana
Nagy, J. G.	Colorado State University
Nell, L. G.	Colorado State University
O'Brien, C. W.	Texas Tech University
O'Brien, R. T.	New Mexico State University
O'Farrell, T. P.	Battelle Memorial Institute
Packard, R. L.	Texas Tech University
Pengra, R. M.	South Dakota State University
Pfadt, R. E.	University of Wyoming
Pieper, R. D.	New Mexico State University
Pochop, L. O.	University of Wyoming
Porter, L. K.	Colorado State University
Raitt, R. J.	New Mexico State University
Rasmussen, J. L.	Colorado State University
Reuss, J. O.	Colorado State University
Rice, R. W.	University of Wyoming
Rickard, W. H.	Battelle Memorial Institute
Risser, P. G.	University of Oklahoma
Ryder, R. A.	Colorado State University
Sherrod, L. B.	Texas Tech University
Shushan, S.	University of Colorado
Sims, P. L.	Colorado State University
Smith, F. M.	Colorado State University
Smolik, J. D.	South Dakota State University
Staffeldt, E. E.	New Mexico State University
Streeter, C. L.	Colorado State University
Striffler, W. D.	Colorado State University
Swartzman, G.	Colorado State University

NAME	INSTITUTION
Thatcher, T. O.	Colorado State University
Tomanek, G. W.	Fort Hays Kansas State College
Trlica, M. J.	Colorado State University
Van Dyne, G. M.	Colorado State University
Van Horn, D. H.	University of Colorado
Van Wyk, J. J. P.	Potchefstroom University, South Africa
Vennes, J. W.	University of North Dakota
Waite, W. P.	University of Arkansas
Wali, M. K.	University of North Dakota
Wallo, O. C.	Rocky Mountain Forest & Range Experiment Station
Watts, J. G.	New Mexico State University
Weinberg, L.	University of Wyoming
Weaver, T. W.	Montana State University
Weinberg, L.	University of Wyoming
Whicker, F. W.	Colorado State University
Whitman, W. C.	North Dakota State University
Wiens, J. A.	Oregon State University
Williams, G. J.	University of Denver
Williams, O.	University of Colorado
Wright, R. G.	Colorado State University
Wunder, B. A.	Colorado State University

Name: Paul H. Baldwin

Born: 1913

Academic Training:

Degree	Year	Institution	Major
B.A.	1936	University of California	Zoology
B.S.	1939	University of Hawaii	Zoology
Ph.D.	1950	University of California	Zoology

Special Training:

Harvard Graduate School, 1939-1940, Zoology.

Professional Experience:

Date	Position	Institution
1941-1946 1946	Assistant to Superintendent Curator of Collections	Hawaii National Park Bernice P. Bishop Museum Honolulu, Hawaii
Summer 1954 1955-1962	Visiting Assistant Professor Visiting Professor	University of Texas University of Montana (Summers)
1950-1956 1956-1964 1964	Assistant Professor, Zoology Associate Professor, Zoology Professor, Zoology	Colorado State University Colorado State University Colorado State University

Professional and Honorary Societies:

Ecological Society of America
American Ornithologists Union
Wilson Ornithological Society
Western Bird-banding Society
Cooper Ornithological Society

Sigma Xi
Western Forest Insect Work Conference

Major Interests:

Population relations of woodpeckers in coniferous forests; feeding ecology of insectivorous birds and forest insects in coniferous forests; predator-prey and trophic ecology.

Current Professional Activities:

Teaching: Zoology, Vertebrate Biology, Ornithology

Research: Feeding ecology of herbivorous and insectivorous grassland birds

Publications, Technical Reports:

Baldwin, P. H. 1939. A study of temperature resistance in the Decapoda.
B.S. Thesis, Univ. Hawaii. 53 p.

- Baldwin, P. H. 1940. Environmental relationships of birds in the Kilauea Section, Hawaii National Park. Hawaii Nat. Park Natur. Hist. Bull. 6. 26 p. (Mimeo).
- Baldwin, P. H. 1941. Checklist of the birds of the Hawaii National Park, Kilauea-Mauna Loa Section, with remarks on their present status and a field key. Hawaii Nat. Park Natur. Hist. Bull. 7. 38 p. (Mimeo).
- Baldwin, P. H. and G. O. Fagerlund. 1943. The effect of cattle grazing on Koa reproduction in Hawaii National Park. Ecology 24:118-122.
- Baldwin, P. H. 1944. Birds of Hawaii National Park. Audubon Mag. 46:147-154.
- Baldwin, P. H. 1945. The Hawaiian Goose, its distribution and reduction in numbers. Condor 47:27-37.
- Baldwin, P. H. and H. I. Fisher. 1945. A recent trip to Midway Islands, Pacific Ocean. Elepaio 6:11-13.
- Baldwin, P. H. 1945. Fate of the Laysan Rail. Audubon Mag. 47:343-348.
- Baldwin, P. H. and H. I. Fisher. 1946. War and the birds of Midway. Paradise of the Pacific 48:4-9.
- Baldwin, P. H. and H. I. Fisher. 1946. War and the birds of Midway Atoll. Condor 48:3-15.
- Baldwin, P. H. 1946. Bulwer Petrel breeding on eastern Hawaiian Islands. Condor 48:3-15.
- Baldwin, P. H. and H. I. Fisher. 1947. Notes on the Red-billed Leiothrix in Hawaii. Pacific Sci. 1:45-51.
- Baldwin, P. H. 1947. Life history of the Laysan Rail. Condor 49:14-21.
- Baldwin, P. H. 1947. Foods of the Hawaiian Goose. Condor 49:108-120.
- Baldwin, P. H. 1948. Discovery of tapeworm parasites in three genera of Hawaiian honey suckers. Elepaio 9:1.
- Baldwin, P. H. 1949. A Review: "Some Hawaiian ecological notes." I. La Rivers, 1948. Wasmann Collector 7:85-110. In Elepaio 10:15-16.
- Baldwin, P. H. and D. B. Hubbard. 1949. The Hawaiian Dark-rumped Petrel reappears on Hawaii. Condor 51:231-232.
- Baldwin, P. H. 1950. Comparative ecology of certain Hawaiian Honey Creepers (Family *Drepaniidae*). Ph.D. Thesis, Univ. California 250 p.
- Baldwin, P. H. 1950. Occurrence and behavior of the Hawaiian bat. J. Mammal. 31:455-456.

- Baldwin, P. H. 1951. The role of foods in avian evolution as shown by the Hawaiian Honey Creepers. J. Colorado-Wyoming Acad. Sci. 4:82. (Abstr.)
- Baldwin, P. H. 1952. A Review: "The Hawaiian Honeycreepers (Aves, Drepaniidae)." D. Amadon, 1950. Amer. Mus. Natur. Hist. Bull. 95:153-262. In Auk 69:92-98.
- Baldwin, P. H., C. W. Schwartz, and E. R. Schwartz. 1952. Life history and economic status of the mongoose in Hawaii. J. Mammal. 33:335-356.
- Baldwin, P. H. 1952. Reproduction of the mongoose in Hawaii. J. Colorado-Wyoming Acad. Sci. 4:90-91. (Abstr.).
- Baldwin, P. H. and O. P. Pearson. 1953. Reproduction and age structure of a mongoose population in Hawaii. J. Mammal. 34:436-447.
- Baldwin P. H. 1953. Annual cycle, environment, and evolution in the Hawaiian Honeycreepers (Aves: Drepaniidae). Univ. California Zool. Pub. 52:285-398.
- Baldwin, P. H. and L. P. Richards. 1953. Recent records of some Hawaiian Honeycreepers. Condor 55:221-222.
- Baldwin, P. H. 1953. The chromosomes of the Red-wing and the Yellow-headed Blackbird (Family Icteridae). J. Colorado-Wyoming Acad. Sci. 4:60.
- Baldwin, P. H. and S. Makino. 1954. The chromosomes of the American blackbirds, *Agelaius phoeniceus* and *Xanthocephalus xanthocephalus* (Family Icteridae). Cytologia 19:217-224.
- Baldwin, P. H. and E. G. Reed. 1954. A chronology of nesting for the Hoary Redpoll (*Acanthis hornemanni*) at Umiat, Alaska in 1953. J. Colorado-Wyoming Acad. Sci. 4:62-63.
- Baldwin, P. H. and J. R. Stocker. 1954. A preliminary comparison of daily spermatogenic rhythm in passerine birds of arctic and temperate latitudes. J. Colorado-Wyoming Acad. Sci. 4:63-64.
- Baldwin, P. H. 1955. The breeding ecology and physiological rhythms of some arctic birds at Umiat, Alaska. Arctic Inst. North Amer., Proj. ONR-121. 112 p. (Mimeo).
- Baldwin, P. H. 1955. Book Review: An introduction to ornithology. G. J. Wallace, 1955. Macmillan Co., New York, 443 p. In Wilson Bull. 67:313-314.
- Baldwin, P. H. 1955. Chromosome elimination in birds. J. Colorado-Wyoming Acad. Sci. 4:63-64. (Abstr.).
- Baldwin, P. H. and E. B. Reed. 1955. Reproductive cycle in birds of the Arctic Plateau. J. Colorado Wyoming Acad. Sci. 4:64. (Abstr.).
- Baldwin, P. H. and E. B. Reed. 1955. Adaptations in the molt of Arctic birds. J. Colorado-Wyoming Acad. Sci. 4:64-65. (Abstr.).

- Baldwin, P. H. 1956. Breeding record of Brewer Sparrow in northwestern Montana. *Wilson Bull.* 68:251.
- Baldwin, P. H. 1960. Overwintering of woodpeckers in bark beetle-infested spruce-fir forests of Colorado. *Int. Ornithol. Congr., Proc.*, 12:71-84.
- Baldwin, P. H. and G. D. Amman. 1960. A comparison of methods for censusing woodpeckers in spruce-fir forests of Colorado. *Ecology* 41:699-706.
- Baldwin, P. H. 1961. Book Review: XII International Ornithological Congress, Helsinki, Proceedings. 1958, 6:5-12. G. Bergman, K. O. Donner and L. von Haartman [ed.], 1960. 2 Vols. 1:1-436; 2:437-822. *In* *Wilson Bull.* 73:302.
- Baldwin, P. H. 1961. Distribution, overlap, and hybridization of two species of redpolls in Alaska. *Ecol. Soc. Amer. Bull* 42:152. (Abstr.).
- Baldwin, P. H. 1961. Occurrence of woodpeckers at infestations of the Engelmann spruce beetle. *J. Colorado-Wyoming Acad. Sci.* 5:49-50. (Abstr.)
- Baldwin, P. H. 1962. Book Review: Morphological differentiation and adaptation in the Galapagos finches. R. I. Bowman, 1961. Univ. California Pub. 58, 302 p. *In* *Wilson Bull.* 74:295-297.
- Baldwin, P. H. 1962. Problems in the study of bird and bark beetle relationships. *Annu. Western Forest Insect Work Conf., Proc.*, 13:57.
- Baldwin, P. H. and W. F. Hunter. 1962. Nesting of the black swift in Montana. *Wilson Bull.* 74:409-416.
- Baldwin, P. H. and W. F. Hunter. 1963. Nesting and nest visitors of the Vaux's swift in Montana. *Aug* 80:81-85.
- Baldwin, P. H. 1963. Nesting specializations of the swifts of the Rocky Mountains. *J. Colorado-Wyoming Acad. Sci.* 5:39. (Abstr.)
- Baldwin, P. H. and N. K. Zacskowski. 1963. Breeding biology of the Vaux swift. *Condor* 65:400-406.
- Baldwin, P. H. and R. W. Schneider. 1963. Flight in relation to form of wing in the Lewis' woodpecker. *J. Colorado-Wyoming Acad. Sci.* 5:58-59. (Abstr.).
- Baldwin, P. H. and D. E. Oehlerts. 1964. The status of ornithological literature, 1964. *Stud. Biol. Lit. Commun.* 4. Biological Abstracts, Inc., Philadelphia. 53 p.
- Baldwin, P. H. and J. R. Koplin. 1964. The Boreal owl and its status in Colorado. *J. Colorado-Wyoming Acad. Sci.* 4:46-47.

- Baldwin, P. H. 1965. Woodpecker - bark beetle relationships. 1965 Combined Western and Cent. Forest Insect Work Conf., Proc. p. 79.
- Baldwin, P. H. 1966. Book Review: A survey of birds of Kauai, Hawaii. F. Richardson and J. Bowles, 1964. Bernice P. Bishop Mus. Bull. 227, Honolulu, Hawaii. 51 p. In Bird-Banding 37:144-145.
- Baldwin, P. H. and J. R. Koplin. 1966. The Boreal owl as a Pleistocene relict in Colorado. Condor 68:299-300.
- Baldwin, P. H. 1966. The consumption of adult Engelmann spruce beetles by insectivorous birds. J. Colorado-Wyoming Acad. Sci. 5:96. (Abstr.)
- Baldwin, P. H. 1968. Woodpecker feeding on Engelmann spruce beetles in wind-thrown trees. Rocky Mountain Forest and Range Exp. Sta., USDA. U.S. Forest Service Res. Note RM-105:1-4.
- Baldwin, P. H. 1968. *Acanthis hornemanni* exilipes (Coues) Hoary Redpoll, p. 400 to 407. In O. L. Austin, Jr. [ed.] Life histories of North American cardinals, grosbeaks, buntings, towhees, finches sparrows, and allies. U.S. Nat. Mus. Bull. 237.
- Baldwin, P. H. 1968. Vertebrate predation. Annu. Western Forest Insect Work Conf., Berkeley, California, Proc., 19:26-29.
- Baldwin, P. H. 1969. Predator-prey relationships of birds and spruce beetles. North Cent. Branch - Entomol. Soc. Amer., Proc., 23:90-99.
- Baldwin, P. H. 1969. The Hawaiian Hawk from 1938 to 1949. Elepaio 29:95-98.
- Baldwin, P. H. 1969. The 'Alala (*Corvus tropicus*) of western Hawaii Island. Elepaio 30:41-45.
- Baldwin, P. H., J. D. Butterfield, P. D. Creighton and R. Shook. 1969. Summer ecology of the lark bunting Pawnee Site. Grassland Biome - U.S. Int. Biol. Program. Tech. Rep. No. 29.
- Baldwin, P. H., W. C. Marquardt, D. J. Nash and T. A. Woolley. 1970. Manual for animal biology. Kendall/Hunt Pub. Co., Dubuque, Iowa. 151 p.
- Baldwin, P. H. and J. R. Koplin. 1970. Woodpecker predation on an endemic population of Engelmann spruce beetles. The Amer. Midland Natur. 83:510-515.
- Baldwin, P. H. 1970. The feeding regime of granivorous birds in shortgrass prairie of Colorado. Int. Biol. Program, Working Group on Granivorous Birds - PT Section, 4:26-30, Warszawa. Abstr.
- Baldwin, P. H. and R. S. Shook. 1970. Woodpecker predation on bark beetles in Engelmann spruce logs as related to stand density. The Can. Entomol. 102:1345-1354.

Baldwin, P. H. 1970. Avian food studies at the Pawnee Site, p. 84-85. *In* R. T. Coupland and G. M. Van Dyne [eds.] Grassland Ecosystems: Reviews of Research. Range Sci. Ser. No. 7, Colorado State Univ.

Baldwin, P. H. 1971. The feeding regime of granivorous birds in shortgrass prairie of Colorado. Int. Biol. Program, Working Group on Granivorous Birds - PT Section, Proc. 30 p. (In press)

Name: Clarence F. Becker

Born: 1920

Academic Training:

Degree	Year	Institution	Major
B.S.	1943	North Dakota State University	Agricultural Engr.
M.S.	1949	North Dakota State University	Agricultural Engr.
Ph.D.	1956	Michigan State University	Agricultural Engr.
	1944	Professional Certificate in Meteorology, UCLA	

Professional Experience:

Date	Position	Institution
1949	Asst. Professor Agr. Engr.	University of Wyoming
1957	Associate Professor	University of Wyoming
1959	Professor	University of Wyoming
1964-1966	U.N. Consultant, Tunisia, Iran	
1966-Present	Department Head	University of Wyoming
1968-1970	Chief of Wyoming Team	Kabul University, Afghanistan

Major Interests:

Meteorology, statistics, farm mechanization.

Professional and Honorary Societies:

Registered Professional Engineer - Wyoming
Sigma Xi
American Society of Agricultural Engineers

Publications, Technical Reports:

- Becker, C. F. 1957. Solar radiation availability of surface in the United States as affected by season, orientation, latitude, altitude and cloudiness. J. Solar Energy Sci. Engr. 1.
- Becker, C. F. 1958. Determining available solar radiation. Air Cond. Heat. Vent. 54(6).
- Becker, C. F. 1961. Availability of solar energy. Agr. Engr. 42:302-306.
- Becker, C. F. 1963. The effect of relative humidity on the application of pesticides to agricultural crops. Inter. Symp. Humidity Moisture.
- Becker, C. F. 1964. Temperature probabilities in Wyoming. Wyoming Agr. Exp. Sta. Bull. 415.
- Becker, C. F. 1965. The effect of relative humidity on the application of pesticides to agricultural crops. Humidity Moisture 2:226-230.
- Becker, C. F. 1965. Precipitation probabilities in Wyoming. Wyoming Agr. Exp. Sta. Bull. 416.

Name: Ross T. Bell

Born: 1929

Academic Training:

Degree	Year	Institution	Major
B.S.	1949	University of Illinois	Zoology
M.S.	1950	University of Illinois	Entomology
Ph.D.	1953	University of Illinois	Entomology

Professional Experience:

Date	Position	Institution
1955-	Instructor, Zoology	University of Vermont
	Assistant Professor, Zoology	University of Vermont
	Associate Professor, Zoology	University of Vermont

Major Interests:

Morphology, systematics and ecology of Carabid beetles.

Professional Societies:

Coleopterist's Society
Entomological Society of America
Entomological Society of Washington

Publications, Technical Reports:

- Bell, R. T. 1955 Species of the *Pallipes* group of *Nebria* in the eastern U. S. Entomol. Soc. Washington, Proc. 57:265-267.
- Bell, R. T. 1957. *Carabus auratus* L. in North America. Entomol. Soc. Amer., Proc. 59:254.
- Bell, R. T. 1958. Intraspecific variation in *Chlaenius tomentosus*. Ann. Entomol. Soc. Amer. 51:432-435.
- Bell, R. T. 1959. A new species of *Scaphinotus*, intermediate between *Scaphinotus s. str.* and *Irichroa newman*. Entomol. Soc. Washington, Proc. 61:11-13.
- Bell, R. T. 1960. Revision of the genus *Chlaenius* in North America. Entomol. Soc. Amer. Misc. Pub. 1:98-166.
- Bell, R. T. 1962. The taxonomic position of the Rhysodidae. Coleop. Bull. 16:99-106.
- Bell, R. T. 1964. *Platypatrobus lacustris* Darlington in Vermont. Entomol. Soc. Washington, Proc. 66.
- Bell, R. T. 1964. Does *Gehringia* belong to the Isochaeta? Coleop. Bull. 18:59-61.

- Bell, R. T. 1965. Coxal cavities and the phylogeny of the Adephaga. Int. Congr. Entomol., Proc. 12:80-81.
- Bell, R. T. 1966. Coxal cavities and the classification of the Adephaga. Ann. Entomol. Soc. Amer. 60:101-107.
- Bell, R. T. 1966. *Trachypachus* and the origin of the Hydradephaga. Coleop. Bull. 20:107-112.
- Bell, R. T. 1966. *Chlaenius patruelis* Leconte, a valid species. Entomol. Soc. Washington, Proc. 68:321-322.
- Bell, R. T. 1970. The Rhysodini of North America, Central America and the West Indies. Entomol. Soc. Amer. Misc. Pub. 6:289-324.

Name: Robert Earl Bement

Born: 1918

Academic Training:

Degree	Year	Institution	Major
B.S.	1940	Colorado A & M College	Forestry
M.F.	1947	Colorado A & M College	Range Management
Ph.D.	1968	Colorado State University	Range Science

Special Training: Army Command and General Staff Course - 1957-1961

Professional Experience:

Date	Position	Institution
1940-1946	2nd Lt. to Lt. Col.	US Army
1947-1948	Instructor	Colorado State University
1948-1955	Range Conservationist	Soil Conservation Service
1956-present	Range Scientist	Agricultural Research Service
1967-present	Graduate Faculty	Colorado State University

Professional and Honorary Societies:

Ecological Society of America	Sigma Xi
American Society of Range Management	Gamma Sigma Delta
American Society of Animal Science	Phi Kappa Phi

Major Interests: Relations of season and intensity of grazing use to the vegetation and animal gain per head and per acre; measure of quantity and quality of forage consumed by grazing animals.

Current Professional Activities:

Range Scientist in charge of the ARS Forage and Range Branch Program at Fort Collins

Teaching: Graduate Faculty - 4 graduate students

Publications, Technical Reports:

Bement, R. E. and D. W. Davis. 1958. How much feed can this range produce? J. Range Manage. 11:281-282.

Bement, R. E. and G. E. Klipple. 1959. A pasture-comparison method of estimating utilization of range herbage on the Central Great Plains. J. Range Manage. 12:296-297. Presented Ann. Meeting Amer. Soc. Range Manage., Tulsa, Oklahoma, January 1959.

- Klipple, G. E. and R. E. Bement. 1961. Light grazing--is it economically feasible as a range-improvement practice. J. Range Manage. 14:57-62. Presented Ann. Meeting Amer. Soc. Range Manage., Tulsa, Oklahoma, January 1959.
- Bement, R. E., D. F. Hervey, A. C. Everson, and L. O. Hylton, Jr. 1961. Use of asphalt-emulsion mulches to hasten grass-seedling establishment. J. Range Manage. 14:102-109.
- Hylton, L. O., Jr. and R. E. Bement. 1961. Effects of environment on germination and occurrence of sixweeks fescue. J. Range Manage. 14: 257-261.
- Hyder, D. N. and R. E. Bement. 1964. Sixweeks fescue as a deterrent to blue grama utilization. J. Range Manage. 17:261-264.
- Hyder, D. N., R. E. Bement, E. E. Remmenga, and C. Terwilliger, Jr. 1965. Frequency sampling of blue grama range. J. Range Manage. 18:90-93.
- Bement, R. E., R. D. Barmington, A. C. Everson, L. O. Hylton, Jr., and E. E. Remmenga. 1965. Seeding of abandoned croplands in the Central Great Plains. J. Range Manage. 18:53-57.
- Hyder, D. N., R. E. Bement, E. E. Remmenga, and C. Terwilliger, Jr. 1966. Vegetation-soils and vegetation-grazing relations from frequency data. J. Range Manage. 19:11-17.
- Hyder, D. N., R. E. Bement, J. J. Norris, and M. J. Morris. 1966. Evaluating herbage species by grazing cattle, Part 1, Food Intake. Int. Grassland Congr., Proc., 10(4):970-974.
- Hyder, D. N., R. E. Bement, J. J. Norris, and R. R. Wheeler. 1966. Evaluating herbage species by grazing cattle, Part 2, Food Quality. Int. Grassland Congr., Proc., 10(4):974-977.
- Bement, R. E. 1968. Plains pricklypear: Relation to grazing intensity and blue grama yield on Central Great Plains. J. Range Manage. 21: 83-86.
- Bement, R. E. 1968. Herbage growth rate and forage quality on shortgrass range. Ph.D. Dissertation, Colorado State University. 53 p.
- Hyder, D. N., R. E. Bement, and J. J. Norris. 1968. Sampling requirements of the water-intake method of estimating forage intake by grazing cattle. J. Range Manage. 21:392-397.
- Bement, R. E. 1969. A stocking-rate guide for beef production on blue-grama range. J. Range Manage. 22:83-86.
- Hyder, D. N. and R. E. Bement. 1969. A micro-ridge roller for seedbed modification. J. Range Manage. 22:54-56.

Everson, A. C., D. N. Hyder, H. R. Gardner, and R. E. Bement. 1969.
Chemical versus mechanical fallow of abandoned croplands. Weed
Sci. 17:548-551.

Name: Elmer C. Birney

Born: 1940

Academic Training:

Degree	Year	Institution	Major
B.S.	1963	Fort Hays Kansas State College	Biology
M.S.	1965	Fort Hays Kansas State College	Zoology
Ph.D.	1970	University of Kansas	Zoology

Professional Experience:

Date	Position	Institution
1963-65	Graduate Teaching Assistant	Fort Hays Kansas State College
1965-66	Instructor in Biology	Kearney State College
1966-69	Systematic and Evolutionary Biology Trainee	University of Kansas
1969	Curatorial Assistant, Museum of Natural History	University of Kansas
1970	Research Assistant	University of Kansas
1970-	Assistant Professor	University of Minnesota

Professional and Honorary Societies:

American Society of Mammalogists
Ecological Society of America
Society of American Naturalists
Society for the Study of Evolution
Southwestern Society of Naturalists
Society of Systematic Zoology
Biological Society of Washington
Kansas Academy of Science
Beta Beta Beta
Delta Epsilon
Phi Kappa Phi
Sigma Xi

Publications, Technical Reports:

- Birney, E. C. 1965. Missing teeth in the red and swift fox. Kansas Acad. Sci., Trans. 68:350-351.
- Birney, E. C. and E. D. Fleharty. 1966. Age and sex comparisons of wild mink. Kansas Acad. Sci., Trans. 69:139-145.
- Birney, E. C. and E. D. Fleharty. 1967. An aberrant hind limb of a mink. Kansas Acad. Sci., Trans. 69:358-359.
- Birney, E. C. and J. D. Rising. 1968. Notes on distribution and reproduction of some bats from Kansas, with remarks on incidence of rabies. Kansas Acad. Sci., Trans. 70:519-524.

- Birney, E. C. and J. R. Choate. 1968. Sub-recent Insectivora and Chiroptera from Puerto Rico, with the description of a new bat of the genus *Stenoderma*. J. Mammal. 49:400-412.
- Birney, E. C. and J. K. Jones, Jr. 1968. Vertebrates of the United States. J. Mammal. 49:577-578. (Review)
- Birney, E. C. and E. D. Fleharty. 1968. Comparative success in the application of aging techniques to a population of winter-trapped mink. Southwestern Natur. 13:275-282.
- Birney, E. C. and J. D. Gerber. 1968. Immunological comparisons of four subgenera of ground squirrels. Syst. Zool. 17:413-416.
- Birney, E. C. and C. J. Phillips. 1968. Taxonomic status of the vespertilionid genus *Anamygdon* (Mammalia; Chiroptera). Biol. Soc. Washington, Proc. 81:491-497.
- Birney, E. C. and S. L. Twomey. 1970. Effects of sodium chloride on water consumption, weight, and survival in the woodrats *Neotoma micropus* and *Neotoma fluoridana*. J. Mammal. 51:372-375.
- Birney, E. C., J. Knox Jones, Jr. and D. Michael Mortimer. 1971. The yellow-faced pocket gopher, *Pappogeomys castanops*, in Kansas. Kansas Acad. Sci., Trans. (In press)
- Birney, E. C., and J. E. Perez. 1971. Inheritance of multiple hemoglobins in two species of woodrats, genus *Neotoma* (Rodentia, Cricetidae). Kansas Sci. Bull. (In press)
- Birney, E. C. 1971. Systematics of three species of woodrats (genus *Neotoma*) in Central North America. Univ. Kansas Pub., Mus. Natur. Hist. (In press)
- Birney, E. C. and J. Knox Jones, Jr. 1971. Woodrats of the Mexican state of Sinaloa. (In preparation)

Name: Lewis J. Bledsoe

Born: 1942

Academic Training:

Degree	Year	Institution	Major
B.A.	1964	Univ. Tennessee	Mathematics
	1966	Univ. Michigan	Biophysics
M.S.	1968	Colorado State Univ.	Wildlife Biol., Statistics
Ph.D. Candidate		Colorado State Univ.	Systems Ecology

Professional Experience:

Date	Position	Institution
1961-1966	Mathematics Consultant	Oak Ridge Nat'l. Lab.
1961-1962	Programmer	Botany Dep., Univ. Tennessee
1964-1965	Programmer	Inst. Sci. & Tech., Univ. Michigan
1967-	Instructor	Colorado State University

Professional and Honorary Societies:

Association of Computing Machinery
 Analogue Computer Education Users Group
 Ecological Society of America

Major Interests:

Applications of Mathematics to Environmental Biology

Current Professional Activities:

Data Processing & Modeling Studies, Grassland Biome, IBP

Teaching: Systems Ecology

Research: Grassland Biome Modeling

Publications, Technical Reports:

Bledsoe, L. J. and J. S. Olson. 1967. COMSYS1: a stepwise compartmental simulation program. ORNL Tech. Mem. 2413.

Bledsoe, L. J. and G. M. Van Dyne. 1968. Simulation and Analytical computer programs for compartment analysis of ecological phenomena. ORNL Tech. Mem. 2414.

Bledsoe, L. J. 1968. Compartment Models and their use in the simulation of secondary succession. M.S. Thesis. Colorado State Univ. 112 p.

Bledsoe, L. J. and G. M. Van Dyne. 1969. A compartment model simulation of ecological succession, Chap. 8. In B. Patten [ed.] Ecological systems research. Academic Press, New York. (In press)

- Clymer, A. B. and L. J. Bledsoe. 1969. Hierarchy of models for the Jornada range ecosystem, p. I 75-99. *In* R. G. Wright and G. M. Van Dyne [eds.] Simulation and analysis of a semi-desert grassland. Range Sci. Dep. Sci. Ser. No. 6, Colorado State Univ., Fort Collins. 295 p.
- Bledsoe, L. J. and D. A. Jameson. 1969. Model structure for a grassland ecosystem, p. 410 to 435. *In* R. L. Dix and R. G. Beidleman [eds.] The grassland ecosystem: a preliminary synthesis. Colorado State Univ., Range Sci. Dep. Sci. Ser. No. 2. 437 p.
- Bledsoe, L. J. 1969. Simulation languages and large scale ecosystem models. Presented at the Conf. on Applications of Continuous System Simulation Languages, San Francisco. Submitted to Simulation.
- Van Dyne, G. M., W. E. Frayer, and L. J. Bledsoe. 1969. Optimization techniques and problems in the natural resource sciences, p. 95-124. *In* Studies in optimization, I. Soc. Ind. Appl. Math., Philadelphia. 137 p.
- Jameson, D. A. and L. J. Bledsoe. 1970. Models and selection of experiments, p. 111-134. *In* D. A. Jameson [ed.] Modelling and systems analysis in Range Science. Range Sci. Dep. Sci. Ser. No. 5, Colorado State Univ., Fort Collins. 134 p.
- Van Dyne, G. M., F. M. Smith and L. J. Bledsoe. 1970. Techniques in measuring biomass of producers, p. 62-64. *In* R. T. Coupland and G. M. Van Dyne [eds.] Grassland ecosystem: reviews of research. Range Sci. Dep. Sci. Ser. No. 7, Colorado State Univ., Fort Collins. 208 p.
- Bledsoe, L. J., R. C. Francis, G. L. Swartzman, and J. D. Gustafson. 1971. PWNEE: a grassland ecosystem model. US IBP Grasslands Biome Tech. Rep. No. 64. Natur. Resource Ecol. Lab., Colorado State Univ., Fort Collins. 179 p.
- Bledsoe, L. J. and P. L. Sims. 1971. A model for intraseasonal herbage dynamics. Southwestern and Rocky Mountain Division, Amer. Ass. Advance. Sci. Meeting, Las Vegas, New Mexico. (Ms. to be submitted to J. Range Manage.)

Name: Dean W. Blinn

Born: 1941

Academic Training:

Degree	Year	Institution	Major
B.A.	1964	Simpson College	
M.A.	1966	University of Montana	
Ph.D.	1969	University of British Columbia	

Professional Experience:

Date	Position	Institution
1963-64	Teaching Assistant	Simpson College
1964-66	Teaching Assistant	University of Montana
1967-69	Teaching Assistant	University of British Columbia
1969-	Assistant Professor	University of North Dakota

Major Interests:

The ecology of algae

Professional and Honorary Societies:

Phycological Society of America
International Phycological Society
British Phycological Society
Ecological Society of America
Limnological and Oceanographic Society of America
Great Lakes Foundation
Beta Beta Beta
Phi Sigma
Sigma Xi
North Dakota Academy of Science

Publications, Technical Reports:

- Blinn, D. W. and J. R. Habeck. 1967. An analysis of morainal vegetation in the upper Blackfoot Valley, Montana. Northwest Sci. 14:126-140.
- Blinn, D. W. and J. W. Markham. 1969. Development of gametophytes of *Alaria marginata* P. & R. and *Hedophyllum sessile* (C. Ag.) Setch in water from a saline pond near Kamloops, British Columbia. Phycologia 8:51-55.
- Blinn, D. W. 1970. Seasonal physical-chemical features of several inland saline lakes in South Central British Columbia. Submitted to Limnol. Oceanogr.
- Blinn, D. W. 1970. The influence of sodium on distribution and development of *Ctenocladus circinnatus* Borzi (Chlorophyceae). Submitted to Phycologia.

Blinn, D. W. 1970. Autecology of *Ctenocladus circinnatus* Borzi (Chlorophyceae) in saline environments. In press.

Blinn, D. W. and J. R. Stein. 1970. Distribution and taxonomic reappraisal of *Ctenocladus* (Chlorophyceae:Chaetophorales). J. Phycology

Wali, M. K., G. F. Gruendling and D. W. Blinn. 1970. Some biogeochemical aspects of Marion Lake, British Columbia. Oikos.

Blinn, D. W. and R. Nordin. 1971. Analysis of a saline tall grass prairie ecosystem. IV. Preliminary investigation of soil algae. (To be presented at the 63rd Annual Meeting of North Dakota Acad. Sci.)

H. Derrick Blocker

Born: 1932

Academic Training:

Degree	Year	Institution	Major
B.S.	1954	Clemson University	Entomology
M.S.	1958	Clemson University	Entomology
Ph.D.	1965	No. Carolina State Univ.	Entomology

Special Training:

Summer Institute of Systematics III, Smithsonian Institution, Wash., D. C.
June 23 - July 11, 1969; sponsored by NSF and Society of Systematic Zoology

Professional Experience:

Date	Position	Institution
1954-1956	MSC Officer, U.S. Army	Clemson University
1956-1958	Grad. Res. & Teaching Asst.	So. Carolina Crop Pest Commission
1958	Entomologist	No. Carolina State University
1961-1964	Grad. Research Asst.	Kansas State University
1965-1970	Asst. Prof. Entomology	Kansas State University
1970-1971	Assoc. Prof. Entomology	Kansas State University

Professional and Honorary Societies:

Sigma Xi
Gamma Sigma Delta
Phi Sigma
Entomological Society of America
Society of Systematic Zoology
Kansas Central States Ento. Soc.

Major Interests:

Taxonomy and ecology of leafhoppers, particularly those of grassland and prairie; evolution and ecology of insects in general; ecology of grassland insects.

Current Professional Activities:

Curator of Insects

Teaching: Taxonomy of Insects, External Morphology of Insects

Research: Taxonomy of Leafhoppers; Taxonomy and Ecology of Grassland Insects; IBP Comprehensive site (Osage), Research on Insects

Publications, Technical Reports:

Blocker, H. D. 1967. Athysanella attenuata and a closely related new species from Kansas (Homoptera: Cicadellidae). J. Kansas Entomol. Soc. 40:576-578.

- Blocker, H. D. 1967. A classification of the Western Hemisphere Balclutha (Homoptera:Cicadellidae). U. S. Nat. Mus., Proc. 122:1-55.
- Blocker, H. D. 1968. A new species of Balclutha from Brazil and notes on new distribution of some existing species (Homoptera:Cicadellidae). J. Kansas Entomol. Soc. 41:207-209.
- Blocker, H. D. 1969. Impact of insects as herbivores in grassland ecosystems, p. 290-299. Dix, R. L. and R. G. Beidleman [ed.] The grassland ecosystem: a preliminary synthesis. Range Science Series No. 2 p. 437.
- Blocker, H. D. 1970. Book Review: "Principles of Systematic Zoology." Ernst Mayr. J. Kansas Entomol. Soc. 43:112-113.
- Blocker, H. D. A taxonomic study of the Genus Stragania in America, north of Mexico (Homoptera:Cicadellidae:lassinae). Annu. Entomol. Soc. Amer. 63:1424-34.
- Blocker, H. D., T. L. Harvey and J. L. Launchbaugh. 1971. Grassland leafhoppers I. Leafhopper populations of upland seeded pastures at Hays, Kansas (Homoptera: Cicadellidae). 20 p. (In review)
- Blocker, H. D. 1971. New distribution of Balclutha in the Bahama Islands, Newfoundland, and Panama. 4 p. (In review)

Name: Unab Bokari

Born: 1936

Academic Training:

Degree	Year	Institution	Major
B.S.	1960	Peshawar University	Agronomy
M.S.	1964	Colorado State University	Cooperative physiology
Ph.D.	1969	University of California	Plant physiology

Professional Experience:

Date	Position	Institution
1960-62	Farm Manager	Peshawar University, W. Pakistan
1964-66	Lecturer	Peshawar University, W. Pakistan
1969-70	Postdoctoral Research Assistant	University of California, Riverside
1970-	Principal Research Technician	US/IBP - Colorado State University

Major Interests:

Areas related to plant physiology -- nucleic acids, carbohydrates, nutrients.

Professional and Honorary Societies:

American Society of Agronomy
Sigma Xi

Publications, Technical Reports:

- Bokari, U. 1971. Effect of CCC on growth of wheat plants. (In press)
- Bokari, U. 1971. Interactions of CCC, GA and IAA on RNA and protein of wheat coleoptiles. (In press)
- Bokari, U. 1971. Effect of CCC, GA and IAA on incorporation of P^{32} into RNA and C^{14} aminoacids into protein of wheat coleoptiles. (In press)
- Bokari, U. 1971. Effect of CCC, GA and IAA on RNase of wheat coleoptiles. (In press)

Name: Erik K. Bonde

Born:

Academic Training:

Degree	Year	Institution	Major
B.A.	1947	University of Colorado	
M.A.	1948	University of Colorado	
Ph.D.	1951	University of Chicago	

Professional Experience:

Date	Position	Institution
1951-53	Research Associate	University of California, L.A.
1953-54	Postdoctoral Fellow	California Institute of Technology
1954-55	Assistant Professor of Botany	University of Missouri
1955-59	Assistant Professor of Biology	University of Colorado
1959-67	Associate Professor	University of Colorado
1967-	Professor	University of Colorado

Professional and Honorary Societies:

American Society of Plant Physiologists
 Ecological Society of America
 Botanical Society of America
 American Association for the Advancement of Science
 American Institute of Biological Sciences
 Society of Sigma Xi
 Scandinavian Society for Plant Physiology

Publications, Technical Reports:

- Bonde, E. K. 1965. Studies on the germination of seeds of Colorado alpine plants. Univ. Colorado Studies, Ser. Biol., No. 14. 16 p.
- Bonde, E. K. and W. Dusek. 1965. Effects of gibberellic acid, indoleacetic acid, and maleic hydrazide on *Azolla mexicana*. Phytol. 22:51-54.
- Bonde, E. K. 1966. Effects of gibberellic acid on growth and parthenocarp in the Dwarf Telephone pea. Physiol. Plantarum 19:356-364.
- Bonde, E. K. and L. Tieszen. 1967. The influence of light intensity on growth and chlorophyll in arctic and alpine populations of *Deschampsia caespitosa* and *Trisetum spicatum*. Univ. Colorado Studies, Ser. Biol., No. 25. 21 p.
- Bonde, E. K. 1968. Studies on the survival of seedlings of an alpine clover. Ecology 49:1193-1195.
- Bonde, E. K. 1969. Plant disseminules in wind-blown debris from a glacier in Colorado. Arctic and Alpine Res. 1:135-139.

Name: Charles D. Bonham

Born: 1937

Academic Training:

Degree	Year	Institution	Major
B.S.	1955	Abilene Christian College	Range Management
M.S.	1965	Utah State University	Range Management
Ph.D.	1966	Colorado State University	Plant Ecology

Professional Experience:

Date	Position	Institution
1960-62	Graduate Assistant	Utah State University
1962-64	Range Conservationist	Colorado State University
1964-66	Graduate Assistant	Colorado State University
1966-67	Statistical Plant Ecologist	Cornell Aero. Lab
1967-69	Assistant Professor and Assistant Statistician	University of Arizona
1969-70	Associate Professor	University of Arizona
1970-	Associate Professor	Colorado State University

Major Interests:

Statistical Ecology, Research Methods

Professional and Honorary Societies:

Biometrics Society
Ecological Society
American Society of Range Management
American Museum of Natural History
Arizona Academy of Sciences
Xi Sigma Pi
Sigma Xi

Publications, Technical Reports:

Bonham, C. D. 1965. The effects of date and rate of application of 2,4-D on big and little rabbitbrush. M.S. Thesis, Utah State Univ., Logan.

Cook, C. W., P. D. Leonard and C. D. Bonham. 1965. Rabbitbrush competition and control on Utah rangelands. Utah State Univ., Agr. Exp. Sta. Bull. 454.

Angleton, G. M., C. D. Bonham and L. L. Shannon. 1966. Direct processing of field data. J. Range Manage. 19:143-144.

- Bonham, C. D. 1966. An ordination of alpine hairgrass meadows. Ph.D. Diss., Colorado State Univ., Fort Collins.
- Bonham, C. D. 1966. Some preliminary determinations of canopy parameters for test sites and world data base. CAL JEEP Memo. 15. 9 p.
- Bonham, C. D. and E. E. Remmenga. 1966. Computerized collection and assessment of ecological data. Amer. Ass. Advance. Sci.
- Bonham, C. D. 1967. Forest canopy quantification. CAL JEEP Memo. No. 75. 24 p.
- Bonham, C. D. 1967. A summary of mathematical models used to describe various tree parameters. CAL JEEP Memo. No. 44. 6 p.
- Bonham, C. D. 1967. A summary of forest canopy component relationships as established by ecologists. CAL JEEP Memo. No. 35. 17 p.
- Bonham, C. D. 1967. Criteria for ordination of species. Ecol. Seminar, Rutgers Univ.
- Remmenga, E. E. and C. D. Bonham. 1967. Automated acquisition and evaluation of ecological data. 6th Int. Biometrics Conf., Sydney, Australia. (Abstr. processed)
- Fye, R. E., R. O. Kuehl and C. D. Bonham. 1969. Distribution of insect plots in cotton fields. USDA Misc. Pub. No. 1140. 32 p.
- Fye, R. E. and C. D. Bonham. 1969. Estimating temperatures and heat flux in insect environments in stubbed cotton fields in the winter. J. Econ. Entomol. 62:823-829.
- Bonham, C. D. 1969. A statistical study of basic ecological variations in a shortgrass prairie site. AEC Tech. Progress Rep. No. C00-1821-1. 72 p.
- Fye, R. E. and C. D. Bonham. 1969. Modification of temperature by four types of insect cages. J. Econ. Entomol. 62:1019-1023.
- Fye, R. E. and C. D. Bonham. 1969. Temperatures at the surface of cotton leaves. J. Econ. Entomol. 62:1519-20.
- Bonham, C. D. and R. E. Fye. 1970. Acquisition of insect data for the optical scanner. J. Econ. Entomol. 63:1371-1373.
- Bonham, C. D. and R. E. Fye. 1970. Estimation of wintertime soil temperatures. J. Econ. Entomol. 63:1051-1053.
- Bonham, C. D. and R. T. Ward. 1970. Phytosociological relationships in alpine tufted hairgrass (*Deschampsia caespitosa* (L.) Beav.) meadows. Arctic and Alpine Res. 2:267-275.
- Bonham, C. D. 1970. The role of ecology in industrial research programs. Arizona Rev. 19:8-11.

- Fye, R. E. and C. D. Bonham. 1970. Analysis of populations of the bollweevil in one acre of cotton at Florence, South Carolina in 1957-59. J. Econ. Entomol. 63:1505-1510.
- Fye, R. E. and C. D. Bonham. 1970. Summer temperatures of soil surface and their effect in the survival of bollweevils in fallen cotton squares. J. Econ. Entomol. 63:1599-1602.
- Fye, R. E., J. E. Leggett and C. D. Bonham. 1970. Winter survival of the bollweevil in Arizona. J. Econ. Entomol. 63:1071-1074.
- Fye, R. E. and C. D. Bonham. 1971. Temperature in the plant parts of long staple cotton. J. Econ. Entomol. 64.
- Bonham, C. D. 1971. A note on testing for outlying observations in a sample group. J. Range Manage. 24. (In press)
- Bonham, C. D. and R. E. Fye. 1971. An empirical model for predicting boll weevil distribution on cotton plants. J. Econ. Entomol. 64.
- Bonham, C. D. and R. E. Fye. 1971. Computer mapping for ecological study of cotton insects. Arizona Agr. Exp. Sta. Tech. Bull. 189.
- Williams, K. B. and C. D. Bonham. 1971. Leaf variations in *Vauquelinia californica* populations of Arizona. J. Arizona Acad. Sci. (Ms. submitted)
- Bonham, C. D. 1971. Statistical estimates of ecological variances along geographical coordinates. Biometrics. (Ms. submitted)
- Fye, R. E. and C. D. Bonham. 1971. Relation of bollweevil complex in Arizona to temperature. USDA Production Res. Rep. (In press)

Name: Alicja Breymeyer

Born: 1932

Academic Training:

Degree	Year	Institution	Major
M.S.	1955	Warsaw University	Philosophy
Ph.D.	1964	Warsaw University	Ecology

Professional Experience:

Date	Position	Institution
1965-71	Head	Grassland Ecology Lab., Institute of Ecology, PAS, Warsaw

Major Interests:

General Ecology

Name: Robert D. Burman

Born: 1925

Academic Training:

Degree	Year	Institution	Major
B.S.	1950	University of Wyoming	General Engineering
M.S.	1961	University of Wyoming	Civil Engineering
Ph.D.	1969	Cornell University	Agricultural Engineering

Professional Experience:

Date	Position	Institution
1950-1951	Surveyor	Union Pacific Railroad
1952-1954	Junior Highway Engineer	Washington State Dep. of Highways
1963-1964	NSF Science Faculty Fellow	Cornell University
1956-Present	Associate Professor	Univ. Wyoming
July 1968	Acting Head, Agricultural Engineering	Univ. Wyoming

Professional and Honorary Societies:

American Society of Agricultural Engineers
Registered Professional Engineer and Land Surveyor, Wyoming
Sigma Xi

Major Interests: Micrometeorology, Hydrology, Irrigation

Current Professional Activities:

Teaching: Conservation Engineering, Open Channel Hydraulics, Flood Routing

Research: Meteorology, Hydrologic modelling Pawnee study, Irrigation
water supply and operation

Publications. Technical Reports:

Hough, H. W., R. D. Burman, and M. A. McNamee. 1957. Sugar beets and water. Wyoming Roundup.

Burman, R. D. 1958. Reservoirs for range stockwater development. Wyoming Agr. Exp. Sta. Circ. 67.

Burman, R. D. 1957. The 1957 Wyoming underground water law. Agr. Ext. Series Leaflet 39.

Burman, R. D. 1958. Wyoming's new underground water law helps fashion key to underground water use. Wyoming Stockman Farmer, (December).

- Burman, R. D. 1959. Engineer will play big part in agriculture of tomorrow. Wyoming Stockman Farmer.
- Burman, R. D. and D. Bohmont. 1961. Evaluating the growth rate of great northern beans as influenced by soil moisture level under greenhouse conditions. Agron. J. 53:354-355.
- Burman, R. D. and J. R. Partridge. 1962. Evapotranspiration of water by small grains, corn and beans in northwestern Wyoming. Wyoming Agr. Exp. Sta. Mimeo. Circ. 174.
- Burman, R. D., L. I. Painter, and J. R. Partridge. 1962. Irrigation and nitrogen fertilization of field corn in northwest Wyoming. Wyoming Agr. Exp. Sta. Bull. 389.
- Burman, R. D. and L. I. Painter. 1964. Influence of soil moisture on leaf color and foliage volume of beans grown under greenhouse conditions. Agron. J. 56:420-423.
- Ferguson, J. E., C. F. Becker, and R. D. Burman. 1966. The effect of summerfallow-tillage methods on the vertical energy balance. Amer. Soc. Agr. Eng. Paper 66-230. (Presented at Amer. Soc. Agr. Eng., Proc., Amherst, Mass., June 28, 1966).
- Burman, R. D. and T. L. Loudon. 1967. Evapotranspiration and irrigation efficiency studies, Farson Pilot Farm. Wyoming Agr. Exp. Sta. Res. J. 10.
- Burman, R. D. and T. L. Loudon. 1967. Evapotranspiration and microclimate of irrigated pastures and alfalfa under high altitude conditions. Amer. Soc. Agr. Eng., Trans. 11:123-125, 128.
- Burman, R. D. and R. D. Black. 1968. The inference of intake and hydraulic roughness parameters from plot runoff using kinematic wave theory. Amer. Soc. Agr. Eng., Trans. December 10-13, 1968, Chicago, Illinois.

Academic Training:

Degree	Year	Institution	Major
B.S.	1950	University of Wyoming	Agriculture
M.S.	1952	University of Wyoming	Botany
Ph.D.	1960	Utah State University	Range Science

Professional Experience:

Date	Position	Institution
1953-1961	Associate Professor, Agronomy	University of Nebraska
1962-	Professor, Agronomy	University of Nebraska

Major Interests:

Effects of fertilizer on range vegetation, soil and vegetative characteristics of grasslands.

Professional and Honorary Societies:

Sigma Xi
 American Society of Range Management
 American Society of Agronomy
 The American Forage and Grassland Council

Publications, Technical Reports:

- Burzlaff, D. F. 1962. A soil and vegetation inventory and analysis of three Nebraska range sites. Univ. Nebraska Res. Bull. 206. 33 p.
- Russell, J. S., E. M. Brouse, H. F. Rhodes and D. F. Burzlaff. 1965. Response of sub-irrigated meadow vegetation to application of nitrogen and phosphorus fertilizer. J. Range Manage. 18:242-247.
- Burzlaff, D. F. 1966. The Focal-point technique of vegetation inventory. J. Range Manage. 19:222-223.
- Clanton, D. C. and D. F. Burzlaff. 1966. Grazing cattle on sub-irrigated meadows. J. Range Manage. 19:151-152.
- Streeter, C. L., D. F. Burzlaff, D. C. Clanton and L. R. Rittenhouse. 1966. The effect of stage of maturity, method of storage and storage time on the nutritive value of sandhills upland hay. J. Range Manage. 19:55-59.
- Burzlaff, D. F., G. W. Fick and L. R. Rittenhouse. 1967. The effect of nitrogen fertilization on certain factors of a western Nebraska range ecosystem. J. Range Manage. 21:21-24.
- Rittenhouse, L. R. and D. F. Burzlaff. 1968. Seasonal and livestock influences in estimating foliage density of vegetation. J. Range Manage. 21:297-300.
- Brouse, E. M. and D. F. Burzlaff. 1968. Fertilizer and legumes on sub-irrigated meadows. Univ. Nebraska SB 501.

Burzlaff, D. F. and L. Harris. 1969. Yearling steer gains and vegetation changes of western Nebraska rangeland under three rates of stocking. Nebraska Agr. Exp. Sta. Bull. 505.

Burzlaff, D. F. 1969. The role of the abiotic factors in the structure and function of the grassland ecosystem, p. 117-124. *In* R. L. Dix and R. G. Beidleman [eds.] The grassland ecosystem: a preliminary synthesis. Range Sci. Dep. Sci. Ser. No. 2, Colorado State Univ., Fort Collins. 437 p.

Stubbendieck, J. and D. F. Burzlaff. 1970. Effects of temperature and day length on auxillary bud development in blue grama. J. Range Manage. 23:63-66.

Stubbendieck, J. and D. F. Burzlaff. 1971. Nature of phytomer growth in blue grama. J. Range Manage. 24:154-156.

Burzlaff, D. F. 1971. Seasonal variations of the in vitro dry-matter digestibility of three sandhill grasses. J. Range Manage. 24:60-63.

Name: Martha Christensen

Born: 1932

Academic Training:

Degree	Year	Institution	Major
B.S.	1953	University of Nebraska	Botany - Soils
M.S.	1956	University of Wisconsin	Botany
Ph.D.	1960	University of Wisconsin	Botany (mycology, ecology)

Professional Experience:

Date	Position	Institution
1953-1954	High School Biology Teacher	Ralston, Nebraska
1954-1960	Research and Teaching Assistant	Univ. Wisconsin
1960-1963	Post-doctoral Project Associate	Univ. Wisconsin
1963-1968	Assistant Professor	Univ. Wyoming
1968-	Associate Professor	Univ. Wyoming

Professional and Honorary Societies:

Phi Beta Kappa
Sigma Xi
Phi Sigma
Mycological Society of America
The Ecological Society of America
British Mycological Society

Major Interests: Taxonomy and ecology of soil microfungi

Current Professional Activities:

Teaching: Mycology, Dendrology, Morphology of Cryptograms, General Botany
Research: The soil microfungi of a short-grass prairie;
Wyoming soil microfungi

Publications, Technical Reports:

- Christensen, M. and M. P. Backus. 1961. New or noteworthy penicillia from Wisconsin soils. *Mycologia* 53:451-463.
- Christensen, M. and M. P. Backus. 1962. A new penicillium from coniferous forest soils. *Mycologia* 54:573-577.
- Christensen, M., W. F. Whittingham, and R. O. Novak. 1962. The soil microfungi of wet-mesic forests in southern Wisconsin. *Mycologia* 54:374-388.
- Christensen, M. and D. I. Fennell. 1964. The rediscovery of *Aspergillus cervinus*. *Mycologia* 56:350-353.

- Christensen, M., D. I. Fennell, and M. P. Backus. 1964. *Aspergillus kanagawensis* and related species in Wisconsin forest soils. *Mycologia* 56:354-362.
- Christensen, M. and M. P. Backus. 1964. Two varieties of *Monocillium humicola* in Wisconsin forest soils. *Mycologia* 56:498-504.
- Christensen, M. and W. F. Whittingham. 1965. The soil microfungi of open bogs and conifer swamps in Wisconsin. *Mycologia* 57:882-896.
- Christensen, M. and Jack S. States. 1966. *Aspergillus leporis*, a new species related to *A. flavus*. *Mycologia* 58:738-742.
- Christensen, M. 1969. Soil microfungi of dry to mesic conifer-hardwood forests in northern Wisconsin. *Ecology* 50:9-27.
- Christensen, M. and A. M. Scarborough. 1969. Soil microfungi investigations, Pawnee Site. US IBP Grassland Biome, Fort Collins, Colorado. Tech. Rep. No. 23. 18 p.
- Davidson, D. E. and M. Christensen. 1971. *Emericellopsis stolckiae* sp. nov. from saline soils in Wyoming. *British Mycol. Soc., Trans.* 56. (In press)

Name: Francis E. Clark

Born: 1910

Academic Training:

Degree	Year	Institution	Major
B.A.	1932	University of Colorado	Biology
B.D.E.	1933	University of Colorado	Education
M.S.	1933	University of Colorado	Microbiology
Ph.D.	1936	University of Colorado	Bacteriology & Public Health

Professional Experience:

Date	Position	Institution
1936-Present	Jr. Microbiol. to Chief Microbiol.	Agr. Res. Service, USDA
1937-1941	Collaborator	Kansas State University
1942	Lecturer	So. Methodist University
1943-1946	Major	U. S. Army
1946-1954	Professor	Iowa State University
1962-1963	Fulbright Scholar	New Zealand & Australia
1957-	Faculty Affiliate	Colorado State University

Professional and Honorary Societies:

Soil Science Society of America	Societe de Microbiologie de Nancy, France
International Society of Soil Science	Phi Beta Kappa
American Society Agronomy	Kappa Delta Phi
Geochemical Society	Sigma Xi
Washington Academy of Science	

Major Interests:

Microbiology, Ecology

Current Professional Activities:

Regional Editor, J. Biol. & Biochem.; Associate Editor, Geoderma--Int. J. Soil Science

Publications, Technical Reports:

- Clark, F. E. 1933. The efficacy of bone marrow medium in producing exotoxins from *Staphylococcus aureus*. Univ. Colorado Studies 21:17.
- Clark, F. A. 1936. A study of *Bacillus bifementans* and *Bacillus centrosporogenes* with comparative notes on certain other closely related species of anaerobic bacteria. Univ. Colorado Studies 24:15-16.
- Clark, F. E. and Hall, I. C. A comparative study of *Bacillus bifementans* and *Bacillus centrosporogenes*. J. Bacteriol. 33:23-24.

- Clark, F. E. 1937. The relation of *Bacillus siamensis* and similar pathogenic sporeforming bacteria to *Bacillus cereus*. J. Bacteriol. 33:335-343.
- Smith, N. R. and F. E. Clark. 1937. A proposed grouping of the mesophilic aerobic sporeforming bacilli. SSSA Proc. 2:255.
- Clark, F. E. and N. R. Smith. 1938. Carbohydrate fermentation responses of the aerobic sporeforming bacteria. J. Bacteriol. 35:9-10.
- Smith, N. R. and F. E. Clark. 1938. Motile cobnies of *Bacillus alvei* and other bacteria. J. Bacteriol. 35:59-60.
- Thom, C., F. E. Clark, M. L. Fierke, and H. Fellows. 1938. Variations in the microflora of wheat roots. J. Bacteriol. 36:322.
- Clark, F. E. and N. R. Smith. 1939. Cultural requirements for the production of black pigments by bacilli. J. Bacteriol. 37:277-284.
- Clark, F. E. 1939. Nonmotile variants of *Bacillus alvei*. J. Bacteriol. 38:491-497.
- Clark, F. E. 1939. Effects of soil amendments upon the bacterial populations associated with roots of wheat. Kansas Acad. Sci. Trans. 42:91-96.
- Clark, F. E. and C. Thom. 1939. Effects of organic amendments upon the microflora of the rhizosphere of cotton and wheat. 3rd Comm. Int. Soc. Soil Sci. A:94-100.
- Clark, F. E. 1940. Notes on types of bacteria associated with plant roots. Kansas Acad. Sci. Trans. 43:75-84.
- Mitchell, R. B., Hooton, D. R. and Clark, F. E. 1941. Soil bacteriological studies on the control of the *Phymatotrichum* root rot of cotton. J. Agr. Res. 63:535-547.
- McCalla, T. M. and F. E. Clark. 1941. Dry adsorption by bacteria at varying H-ion concentrations. Stain Tech. 16:95-100.
- Stumbo, C. R., P. L. Gainey, and F. E. Clark. 1942. Microbiological and nutritional factors in the take-all disease of wheat. J. Agr. Res. 64:653-655.
- Mitchell, R. B. and F. E. Clark. 1942. Factors affecting the activity of *Pseudomonas-Phytomonas* fluorescent bacteria in soil. J. Bacteriol. 44:141.
- Clark, F. E. and R. B. Mitchell. 1942. Cell inclusions of globiforme and related types of microorganisms. J. Bacteriol. 44:529-532.
- Clark, F. E. and R. B. Mitchell. 1942. Antibiosis in the elimination of *Phymatotrichum omnivorum* sclerotia from soil. J. Bacteriol. 44:141.
- Clark, F. E. 1942. Experiements toward the control of the take-all disease of wheat and the *Phymatotrichum* root rot of cotton. USDA Tech. Bull. 835.

- Clark, F. E. and R. B. Mitchell. 1946. Root-surface microfloras and carbohydrate levels. J. Agr. Res. 72:153-154.
- Smith, N. R., R. E. Gordon, and F. E. Clark. 1946. Aerobic mesophilic sporeforming bacteria. USDA Misc. Pub. 559.
- Clark, F. E., R. J. Hervey, and L. M. Blank. 1947. Occurrence of cotton fiber contaminated by *Aerobacter cloacae*. USDA Tech. Bull. 935.
- Clark, F. E. 1948. Azotobacter inoculation of crops. III. Recovery of azotobacter from the rhizosphere. Soil Sci. 65:193-202.
- Bhaumik, H. D. and F. E. Clark. 1948. Soil moisture tension and microbiological activity. Soil Sci. Soc. Amer. Proc. 12:234-238.
- Clark, F. E. 1948. Rhizosphere microflora as affected by soil moisture changes. Soil Sci. Soc. Amer. Proc. 12:239-242.
- Thompson, L. M., C.A. Black, and F. E. Clark. 1949. Accumulation and mineralization of microbial organic phosphorus in soil materials. Soil Sci. Soc. Amer. Proc. 13:242-245.
- Goring, C. A. I. and F. E. Clark. 1949. Influence of crop growth on mineralization of nitrogen in the soil. Soil Sci. Soc. Amer. Proc. 13:261-266.
- Clark, F. E. 1949. Soil microorganisms and plant roots. Adv. in Agron. 1:241-288.
- Clark, F. E. and D. H. Smith. 1950. Occurrence of aerobic, mesophilic spore-forming bacteria on plant roots. Soil Sci. Soc. Amer. Proc. 14:199-202.
- Bartholomew, W. V. and F. E. Clark. 1950. Nitrogen transformations in soil in relation to the rhizosphere microflora. Trans. 4th Int. Cong. Soil Sci., Amsterdam 2:112-113.
- Clark, F. E. 1950. The use of ethylene oxide for soil sterilization. Trans. 4th Int. Cong. Soil Sci., Amsterdam 1:204-205.
- Clark, F. E. 1950. Changes induced in soil by ethylene oxide sterilization. Soil Sci. 70:345-349.
- Clark, F. E. 1951. Bacteria in the Soil. Experientia 7:78-80.
- Smith, D. H. and F. E. Clark. 1951. Anion-exchange chromatography of inositol phosphates from soil. Soil Sci. 72:353-360.
- Clark, F. E. and C. A. I. Goring. 1951. Growth of bacteria in the presence of radioactive phosphorus. J. Bacteriol. 62:352-354.
- Clark, F. E. 1951. Generic classification of certain cellulolytic bacteria. Soil Sci. Soc. Amer. Proc. 15:180-182.
- Clark, F. E. and P. H. Carr. 1951. Motility and flagellation of the soil corynebacteria. J. Bacteriol. 62:1-6.

- Goring, C. A. I. and F. E. Clark. 1952. Radioactive phosphorus and the growth and metabolic activities of soil microorganisms. Soil Sci. Soc. Amer. Proc. 16:7-9.
- Smith, D. H. and F. E. Clark. 1952. Chromatographic separations of organic phosphorus compounds. Soil Sci. Soc. Amer. Proc. 16:170-172.
- Clark, F. E. 1952. The generic classification of the soil corynebacteria. Int. Bull. Bact. Nomen. & Taxon. 2:45-56.
- Jansson, S. L. and F. E. Clark. 1952. Losses of nitrogen during decomposition of plant material in the presence of inorganic nitrogen. Soil Sci. Soc. Amer. Proc. 16:330-334.
- Smith, N. R., R. E. Gordon, and F. E. Clark. 1952. The aerobic mesophilic spore-forming bacteria. Agr. Monogr. No. 16, USDA. 148 p.
- Clark, F. E. 1953. Criteria suitable for species differentiation in *Cellulomonas*, and a revision of the genus. Int. Bull. Bact. Nomen. & Taxon. 3:179-199.
- Adams, A. P., W. V. Bartholomew, and F. E. Clark. 1954. Measurement of nucleic acid components in soil. Soil Sci. Soc. Amer. Proc. 18:40-46.
- Clark, F. E. 1954. A perspective of the soil microflora. Soil Microbiol. Conf. Proc., Purdue Univ.
- Clark, F. E. 1955. Designation of *Corynebacterium ureafaciens* Krebs and Eggleston as *Arthrobacter ureafaciens* comb. nov. Bact. Reviews 4:273.
- Miller, P. R. and F. E. Clark. 1955. Water and microorganisms, p. 25 to 35. In Water. 1955 Yearbook of Agr.
- Clark, F. E. 1955. Designation of *C. ureafaciens* as *Arthrobacter ureafaciens* comb. nov. Int. Bull. Bact. Nomen. and Taxon. 5:119.
- Clark, F. E. and J. W. Resnicky. 1956. Some mineral element levels in the soil solution of a submerged soil in relation to rate of organic matter addition and length of flooding. 6th Int. Cong. Soil Sci. (Paris) Proc. C:545-548.
- Clark, F. E. 1956. Legume inoculation - wet or dry? J. Soil and Water Conserv. 11:239.
- Erdman, L. W., H. W. Johnson, and F. E. Clark. 1956. A bacterial-induced chlorosis in the Lee soybean. Plant Dis. Reporter 40:646.
- Clark, F. E. 1956. Should legume inoculant be used with or without added water? Seed World 79:12-14.
- Erdman, L. W., H. W. Johnson, and F. E. Clark. 1957. Varietal responses of soybeans to a bacterial-induced chlorosis. Agron. J. 49:267-271.
- Clark, F. E. 1957. Midseason leaf discolorations on soybeans. Soybean Dig. 17:8-9.

- Clark, F. E. 1957. Wet inoculants best in USDA tests. *Soybean Dig.* 17:36.
- Clark, F. E. 1957. Nodulation responses of two isogenic lines of the soybean. *Can. J. Microbiol.* 3:113-123.
- Clark, F. E. 1957. Some factors in the microbiology of the rhizosphere. *Phytonematology Conf. Proc.*, Knoxville, Tennessee.
- Clark, F. E. 1957. Inter-relationships of rhizobia strains and soybean varieties. 8th Ann. Meeting Nat. Soybean Crop Improvement Advisory Board Proc., Minneapolis, Minnesota.
- Clark, F. E. 1957. Living organisms in the soil, p. 157 to 165. *In Soil. 1957 Yearbook of Agr.*
- Clark, F. E., W. J. Zaumeyer, and J. R. Presley. 1957. Sailborne plant diseases, p. 333 to 339. *In Soil. 1957 Yearbook of Agr.*
- Clark, F. E., D. C. Nearpass, and A. W. Specht. 1957. Influence of organic additions and flooding on iron and manganese uptake by rice. *Agron. J.* 49:586-589.
- Clark, F. E. 1957. The genus *Cellulomonas* (Bergey et al.) Clark. *Bergey's Manual of Determinative Bacteriology*. Williams and Wilkins, Baltimore, 7th Ed. p. 601-605.
- Soulides, D. A. and F. E. Clark. 1958. Nitrification in grassland soils. *Soil Sci. Soc. Amer. Proc.* 22:308-311.
- Clark, F. E. 1958. Exploring the rhizosphere. *Conf. on Methods and Approaches in Soil Microbiology Proc.*, Chicago, Illinois. p. 8-22.
- Johnson, H. W., U. M. Means, and F. E. Clark. 1958. Factors affecting the expression of the bacterial-induced chlorosis of soybeans. *Agron. J.* 50:571-574.
- Johnson, H. W. and F. E. Clark. 1958. Role of the root nodule in the bacterial-induced chlorosis of soybeans. *Soil Sci. Soc. Amer. Proc.* 22:527-528.
- Johnson, H. W., U. M. Means, and F. E. Clark. 1959. Seedling responses to extracts of soybean nodules bearing selected strains of rhizobia. *Nature* 83:308-309.
- Clark, F. E. 1959. Losses to the atmosphere of applied fertilizer nitrogen. 1959 Fertilizer Evaluation Conf. Proc., Wilson Dam, Alabama. p. 15-16.
- Clark, F. E. 1959. The soil life. 6th Ann. Rocky Mountain Turf. Conf. Proc., Fort Collins, Colorado. p. 30.
- Clark, F. E. and D. H. Smith. 1959. Use of gas-solid chromatography for soil nitrogen studies. *Agron. Abstr.*, Cincinnati, Ohio. p. 16.
- Clark, F. E. and W. E. Beard. 1960. Influence of organic matter on volatile loss of nitrogen from soil. 7th Int. Cong. Soil Sci. Proc. 2:501-508.

- Clark, F. E., W. E. Beard, and D. Smith. Dissimilar nitrifying capacities of soils in relation to losses of applied nitrogen. *Soil Sci. Soc. Amer. Proc.* 24:5054.
- Smith, D. H. and F. E. Clark. 1960. Some useful techniques and accessories for adaptation of the gas chromatograph to soil nitrogen studies. *Soil Sci. Soc. Amer. Proc.* 24:111-115.
- Smith, D. N., F. S. Makayama, and F. E. Clark. 1960. Gas-solid chromatographic determination of nitrogen dioxide in the presence of oxygen. *Soil Sci. Soc. Amer. Proc.* 24:145-146.
- Clark, F. E., A. P. Mazurak, A. J. Bear, J. C. Tedrow, D. P. White, F. J. Stevenson, D. D. Smith, and S. A. Taylor. 1960. Supplemental report of approved definitions in Soil Science. *Soil Sci. Soc. Amer. Proc.* 24:235-236.
- Nearpass, D. C. and F. E. Clark. 1960. Availability of sulfur to rice plants in submerged and upland soil. *Soil Sci. Soc. Amer. Proc.* 24:385-387.
- Clark, F. E. 1960. Book Review: A translation of "Problems in the Classification of Antagonistic Actinomycetes". D. Gottlieb [ed.]. (Trans. by Fritz Danga, 1959, American Institute of Biological Sciences, Washington, D. C. 165 p.) *Soil Sci. Soc. Amer. Proc.* 24:6.
- Smith, D. H. and F. E. Clark. 1960. Volatile losses of nitrogen from acid or neutral soils or solutions containing nitrite and ammonium ions. *Soil Sci.* 90:86-92.
- Clark, F. E. 1960. New nitrogen loss revealed in study at USDA Laboratory. *Crops and Soil* 13:17.
- Clark, F. E. 1961. Influence of the microbial population of the rhizosphere on plant development. *Recent advances in botany*, p. 614-618. Univ. Toronto Press.
- Clark, F. E. Losses of nitrogen accompanying nitrification. *New Zealand Int. Soil Conf. Proc.* p. 173-176.
- Beard, W. E. and F. E. Clark. 1962. Nitrification in relation to composition of the soil atmosphere. *Agron. Abstr.* p. 23.
- Clark, F. E., R. D. Jackson, and H. R. Gardner. 1962. Measurement of microbial thermogenesis in soils. *Soil Sci. Soc. Amer. Proc.* 26:155-160.
- Olsen, S. R., F. Watanabe, W. D. Kemper, and F. E. Clark. 1962. Effect of hexadecanol and octadecanol on efficiency of water use and growth of corn. *Agron. J.* 54:544-545.
- Stewart, B.A., L. K. Porter, and F. E. Clark. 1963. The reliability of a micro-dumas procedure for determining total nitrogen in soil. *Soil Sci. Soc. Amer. Proc.* 27:377-380.
- Olsen, S. R., F. S. Watanabe, F. E. Clark, and W. D. Kemper. 1964. Effect of hexadecanol on evaporation of water from soil. *Soil Sci.* 97:13-18.

- Clark, F. E. 1964. A re-evaluation of microbiological concepts concerning nitrogen transformations in the soil. TVA Nitrogen Symposium, Wilson Dam, Alabama. p. 70-77.
- Clark, F. E. 1964. Book Review: "Experimental Soil Microbiology". D. Pramer and E. L. Schmidt [ed.]. Soil Sci. Soc. Amer. Proc. 28:4.
- Black, C. A., J. W. White, D. D. Evans, L. E. Eneminger, and F. E. Clark. 1965. Methods of soil analysis. Amer. Soc. Agron., Madison, Wisconsin, Agronomy 9. 1750 p.
- Clark, F. E. 1965. The agar-plate method for determining the total microbial count in soil, p. 1460 to 1466. In Methods of soil analysis. Amer. Soc. Agron., Agronomy 9.
- Clark, F. E. 1965. Aerobic spore-forming bacteria, p. 1473 to 1476. In Methods of soil analysis. Amer. Soc. Agron., Agronomy 9.
- Alexander, M. and F. E. Clark. 1965. Nitrifying bacteria, p. 1477 to 1479. In Methods of soil analysis. Amer. Soc. Agron., Agronomy 9.
- Clark, F. E. 1965. Rhizobia, p. 1487 to 1492. In Methods of soil analysis. Amer. Soc. Agron., Agronomy 9.
- Clark, F. E. 1965. Azobacter, p. 1493 to 1497. In Methods of soil analysis. Amer. Soc. Agron., Agronomy 9.
- Clark, F. E. 1965. Actinomycetes, p. 1498 to 1501. In Methods of soil analysis. Amer. Soc. Agron., Agronomy 9.
- Clark, F. E. and W. E. Beard. 1965. Protozoa, p. 1513 to 1516. In Methods of soil analysis. Amer. Soc. Agron., Agronomy 9.
- Clark, F. E. and L. W. Durrell. 1965. Algae, p. 1506 to 1512. In Methods of soil analysis. Amer. Soc. Agron., Agronomy 9.
- Baker, K. F., W. C. Snyder, R. R. Baker, J. D. Menzies, F. E. Clark, and L. I. Miller. 1965. Ecology of soilborne plant pathogens. Univ. California Press, Berkeley. 571 p.
- Clark, F. E. 1965. The concept of competition in microbial ecology, p. 370 to 381. In Ecology of soilborne plant pathogens. Univ. California Press, Berkeley.
- Clark, F. E. 1965. Book Review: "Plant-Microbes Relationships". J. Macura and V. Vancura [ed.]. Soil Sci. Soc. Amer. Proc. 29:5.
- Bartholomew, W. V. and F. E. Clark. 1965. Soil Nitron. Amer. Soc. Agron., Madison, Wisconsin, Agronomy 10. 615 p.
- Broadbent, F. E. and F. E. Clark. 1965. Denitrification, p. 344 to 359. In Soil nitrogen. Amer. Soc. Agron., Agronomy 10.
- Clark, F. E. 1965. Soil nitrogen transformations--expectations and explorations. Agronomy Abstr. p. 83.

- Clark, F. E. 1965. Bacteria in soil, p. 15 to 49. *In* N. A. Burges and F. Raw [ed.] Soil biology. Academic Press, London and New York.
- Clark, F. E. 1966. What does our concept of competition add up to? 11th Conf. on Control of Soil Fungi Proc. p. 1-18.
- Clark, F. E. 1967. Growth of bacteria in soil, p. 441 to 457. *In* T. R. G. Gray and D. Parkinson [ed.] Ecology of soil bacteria. Liverpool Univ. Press, England.
- Clark, F. E. and W. D. Kemper. 1967. Microbial activity in relation to soil water and soil aeration, p. 472 to 480. *In* Irrigation. Amer. Soc. Agron., Madison, Wisconsin, Agronomy 11.
- Stewart, B. A., F. G. Viets, Jr., G. L. Hutchinson, W. D. Kemper, F. E. Clark, M. L. Fairbourn, and F. Strauch. 1967. Distribution of nitrates and other water pollutants under fields and corrals in the middle South Platte Valley of Colorado. ARS 41-134. 206 p.
- Clark, F. E. 1968. Book Review: "Petroleum Microbiology". J. B. Davis [ed.]. Elsevier, Amsterdam., 604 p. Geoderma 2:83-84.
- Clark, F. E. 1969. Ecological associations among soil microorganisms, p. 125 to 161. *In* Soil biology: reviews of research. Unesco, Paris.
- Clark, F. E. 1969. Associations ecologiques entre microorganismes du sol. Recherches sur les ressources naturelles. 9:125-164.
- Clark, F. E. 1968. Book Review: "Jacob G. Lipman-Scientist, Administrator, and Humanitarian". Selman A. Waksman [ed.]. Soil Sci. Soc. Amer. Proc. 32:4.
- Clark, F. E. 1969. The microflora of grassland soils and some microbial influences on ecosystem functions, p. 361 to 376. *In* R. L. Dix and R. G. Beidleman [ed.] The grassland ecosystem. Colorado State Univ., Range Sci. Dep. Sci. Ser. No. 2. 437 p.
- Tan, K. H. and F. E. Clark. 1969. Polysaccharide constituents in fulvic and humic acids extracted from soil. Geoderma 2:245-255.
- Clark, F. E. and K. H. Tan. 1969. Identification of a polysaccharide ester linkage in humic acid. Soil Biochem. & Biol. 1:75-81.
- Clark, F. E. and E. A. Paul. 1970. The microflora of grassland. Advances in Agron. 22:375-435.
- Clark, F. E. 1970. Methods of study in soil ecology. Book Review, J. Phillipson [ed.] Soil Sci. Soc. Amer., Proc. 35:4.
- Clark, F. E. 1971. The microbial component of the ecosystem. Microbiol. Spec. Meeting, Proc., Las Cruces, New Mexico. (In press)
- Clark, F. E. 1971. Soil microorganisms in grassland. McGraw-Hill Yearbook of Sci. and Technol. for 1972.

Name: C. Vernon Cole

Born: 1922

Academic Training:

Degree	Year	Institution	Major
B.S.	1947	University of Massachusetts	Chemistry
M.S.	1948	University of Massachusetts	Agronomy
Ph.D.	1950	University of Wisconsin	Soils

Special Training:

Post-Doctorate Research Training at U. S. Plant Soil and Nutrition Lab., and Cornell University, Ithaca, N. Y. 1957-1958.

Professional Experience:

Date	Position	Institution
1950-	Research Soil Scientist	Agricultural Research Service

Professional and Honorary Societies:

Agronomy Society of America
Soil Science Society
American Society of Plant Physiology
Fellow AAAS
Sigma Xi

Major Interests:

The effect of solid phase phosphorus compounds, calcium activity and PH on the concentration and activity of phosphorus in the soil solution, mineral nutrition of plants - factors regulating the rates of uptake and translocation of nutrients.

Publications, Technical Reports:

- Swenson, R. M., C. V. Cole, and D. H. Sieling. 1949. Fixation of phosphate by iron and aluminum and replacement by organic and inorganic ions. Soil Sci. 67:3-22.
- Cole, C. V. and M. L. Jackson. 1950. Colloidal dihydroxy dihydrogen phosphates of aluminum and iron with crystalline character established by electron and X-ray diffraction. Phys. Colloid Chem. 54:128-142.
- Cole, C. V. and M. L. Jackson. 1950. Solubility equilibrium constant of dihydroxy aluminum dihydrogen phosphate relating to a mechanism of phosphate fixation in soils. Soil Sci. Soc. Amer., Proc. 15:84-89.
- Cole, C. V., S. R. Olsen, and C. O. Scott. 1953. The nature of phosphate sorption by calcium carbonate. Soil Sci. Soc. Amer., Proc. 17:352-356.

- Olsen, S. R., C. V. Cole, F. S. Watanabe, and L. A. Dean. 1954. Estimation of available phosphorus in soils by extraction with sodium bicarbonate. USDA Circ. 939.
- Cole, C. V. 1957. Hydrogen and calcium relationships in calcareous soils. Soil Sci. 83:141-150.
- Cole, C. V. and S. R. Olsen. 1959. Phosphorus solubility in calcareous soils. I. Dicalcium phosphate activities in equilibrium solutions. Soil Sci. Soc. Amer., Proc., 23:116-118.
- Cole, C. V. and S. R. Olsen. 1959. Phosphorus solubility in calcareous soils. II. Effects of exchangeable phosphorus and soil texture on phosphorus solubility. Soil Sci. Soc. Amer., Proc., 23:119-121.
- Olsen, S. R., F. S. Watanabe, and C. V. Cole. 1960. Phosphates in calcareous soils. Congr. Int. Soil Sci. Soc., Trans. 7:397-403.
- Olsen, S. R., F. S. Watanabe, and C. V. Cole. 1960. Soil properties affecting the solubility of calcium phosphates. Soil Sci. 90:44-50.
- Olsen, S. R., F. S. Watanabe, and C. V. Cole. 1960. Effect of sodium bicarbonate on the solubility of phosphorus in calcareous soils. Soil Sci. 89:288-291.
- Cole, C. V. and C. S. Andrew. 1962. Kinetic analysis of phosphorus uptake by corn (*Zea Mays*) and soybean (*Glycine Max*). Agron. Abstr. p. 80.
- Cole, C. V., D. L. Grune, L. K. Porter, and S. R. Olsen. 1963. The effects of nitrogen on short term phosphorus absorption and translocation in corn (*Zea Mays*). Soil Sci. Soc. Amer., Proc., 27:671-674.
- Cole, C. V. and C. W. Ross. 1966. Extraction, separation and quantitative estimation of soluble nucleotides and sugar phosphorus in plant tissues. Anal. Biochem. 17:526-539.
- Bell, M. C. and C. V. Cole. 1967. Vulnerability of food crop and livestock production to fallout radiation. UT-AEC Agr. Res. Spec. Pub.
- Ross, C. and C. V. Cole. 1968. Metabolism of cytidine and uridine in bean leaves. Plant Physiol. 43:1227-1231.
- Cole, C. V. and F. Watanabe. 1969. Sulfate uptake and reduction in corn as affected by nitrogen status. Agron. Abstr. p. 34.
- Wood, D. R., J. J. Waide and C. V. Cole. 1969. Breeding for improved methionine content of bean seed protein. Agron. Abstr. p. 22.
- Bledsoe, Carolyn, C. V. Cole and C. Ross. 1969. Oligomycin inhibition of phosphate uptake and ATP labeling in excised maize roots. Plant Physiol. 44:1040-1044.
- Green, J. L., C. V. Cole and W. D. Holley. 1971. Ionic balance and growth of carnations. Soil Sci. 3:138-145.

- Watanabe, F. S., S. R. Olsen and C. V. Cole. 1971. Ionic balance and growth of five plant species in four soils. *Agron. J.* 63:23-28.
- Cole, C. V., C. Ross and S. R. Olsen. 1971. Phosphate accumulation and esterification by excised maize root sections. *Colorado Agr. Exp. Sta. Sci. J.* Series 1287.
- Onajobi, F. D. and C. V. Cole. 1971. Oligomycin effects on sulfate uptake by excised corn roots. (Ms. in review)

Name: David C. Coleman

Born: 1938

Academic Training:

Degree	Year	Institution	Major
B.A.	1960	Reed College	
M.A.	1962	University of Oregon	
Ph.D.	1964	University of Oregon	

Professional Experience:

Date	Position	Institution
1960-62	Research Assistant	University of Oregon
1962-64	Teaching Fellow	University of Oregon
1964-65	Research Demonstrator	University College of Swansea, United Kingdom
1965-67	Research Associate	Savannah River Ecology Lab
1967-	Assistant Professor, Zoology	University of Georgia

Professional and Honorary Societies:

American Association for the Advancement of Science
American Society of Zoologists
British Ecological Society
Ecological Society of America
International Society of Soil Science
Society of Sigma Xi

Current Professional Activities:

Soil respiration studies at Pawnee Site
Energetics or litter-soil on old fields, AEC Savannah River Ecology Lab

Publications, Technical Reports:

Coleman, D. C., E. P. Odum and R. G. Wiegert. 1967. Energetics in soil ecology.
IBP/UNESCO. Paris Meeting.

Coleman, D. C. 1971. Ecological energetics and trophic relationships of
litter-soil systems. Amer. Soc. Microbiol.

Name: Don D. Collins

Born: 1935

Academic Training:

Degree	Year	Institution	Major
B.S.	1961	Montana State	Range
Ph.D.	1965	Montana State	Genetics

Special Training:

NSF Biology Institute Summer 1965

Professional Experience:

Date	Position	Institution
1965-1969	Assistant Professor	Montana State
1969-	Associate Professor	Montana State

Professional and Honorary Societies:

Phi Kappa Phi	Botanical Society
Phi Sigma	AIBS
Sigma Xi	Society of Range Management
Ecological Society	

Major Interests:

Ecological Research-Terrestrial Productivity
Ecosystem Analysis

Current Professional Activities:

Teaching: Ecology, Intro. Biology, Plant Physiology

Research: National Park Service, NSF, IBP

Publications, Technical Reports:

- Collins, D. D. 1963. The occurrence of nematodes in a population of *Agropyron smithii* in Montana. Plant Dis. Rep. 50:1.
- Collins, D. D. 1965. Ecology, cytology and biosystematics of the genus *Agropyron* native to Montana. Ph.D. Thesis, Montana State Univ.
- Collins, D. D. 1965. The cytology of the diplod and tetraploid strains of *Agropyron spicatum* native to Montana. Rep. 18th Western Grass Breeders Conf.
- Collins, D. D. 1965. Natural hybrids of *Agropyron latiglume* and *Agropyron scribneri*. Torrey Bot. Club Bull. 93.
- Collins, D. D. 1969. Macroclimate of the grassland ecosystem, p. 29 to 40. In R. L. Dix and R. Beidleman [ed.] Grassland ecosystem: a preliminary synthesis. Colorado State Univ., Range Sci. Dep. Sci. Ser. No. 2. 437 p.
- Collins, D. D. 1969. Ecological effects of weather modification. Progress Rep. and Continuation Proposal. N.S.F.

Name: C. Wayne Cook

Born: 1914

Academic Training:

Degree	Year	Institution	Major
B.S.	1940	Kansas State University	Botany
M.S.	1942	Utah State University	Range Science
Ph.D.	1950	Texas A&M University	Range Science

Professional Experience:

Date	Position	Institution
1942-1944	Assistant Professor of Range Science	College of Southern Utah
1946-1968	Professor of Range Science	Utah State University
1968-	Professor of Range Science	Colorado State University

Professional and Honorary Societies:

American Society of Range Management
American Society of Animal Science
Soil Conservation Society of America
American Institute of Biological Sciences
American Association for the Advancement of Science

Major Interests:

Range management, range nutrition, range livestock production.

Current Professional Activities:

Teaching: Department Head, Range Science, Colorado State University

Publications, technical reports:

- Cook, C. W. 1950. What species of grass for range seeding. Farm Home Sci. 11:72.
- Cook, C. W. 1956. Soil as a factor influencing plant distribution on salt-deserts of Utah. Ecol. Monogr. 26:155.
- Cook, C. W. 1958. Sagebrush eradication and broadcast seeding. Utah Exp. Sta. Bull. 404.
- Cook, C. W. 1960. The use of multiple-regression in measuring cause and effect relationships. Ecology 41:556-560.
- Cook, C. W. 1961. Seeding response and soil characteristics on adjacent sagebrush and desert molly soils. Range Manage. 14:134.
- Cook, C. W. 1961. Nutrient intake and livestock responses on seeded foothill ranges. Anim. Sci. 20:36-41.

- Cook, C. W. 1962. The association of plant vigor with physical stature and chemical content of desert plants. *Ecology* 43:543.
- Cook, C. W. 1962. Range research, basic problems and techniques. N.R.C. Pub. 890.
- Cook, C. W. 1963. Use of esophageal-fistula cannulae for collecting forage samples from both sheep and cattle grazing in common. *Anim. Sci.* 22:579-581.
- Cook, C. W. 1963. Competition between big sagebrush and seeded grasses on foothill ranges in Utah. *Range Manage.* 16:245.
- Cook, C. W. 1964. Collecting forage samples representative of ingested material of grazing animals for nutritional studies. *Anim. Sci.* 23:265-270.
- Cook, C. W. 1965. Plant and livestock responses to fertilized rangelands. *Utah Agr. Exp. Sta. Bull.* 455.
- Cook, C. W. 1965. Rabbitbrush competition and control on Utah rangelands. *Utah Agr. Exp. Sta. Bull.* 454.
- Cook, C. W. 1965. Grass seedling response to halogeton competition. *Range Manage.* 18:317.
- Cook, C. W. 1966. Factors affecting utilization of mountain slopes by cattle. *Range Manage.* 19:200-204.
- Cook, C. W. 1966. Development and use of foothill ranges in Utah. *Utah Agr. Exp. Sta. Bull.* 461.
- Cook, C. W. 1967. Nutritive value of seasonal ranges. *Utah Agr. Exp. Sta. Bull.* 472.
- Cook, C. W. 1967. Effects of seasons, spacing, and intensity of seeding range grasses. *Utah Agr. Exp. Sta. Bull.* 467.
- Cook, C. W. 1968. Handbook for stabilization of road right-of-ways through seeding. In press.
- Cook, C. W. 1968. Feeding systems for sheep under range conditions. Sheep Nutrition and Feeding Symposium, American Sheep Producers' Council. Iowa State University, Ames, Iowa.
- Cook, C. W. 1968. Effect of supplementation on intake and digestibility of range forage. *Utah Agr. Exp. Sta. Bull.* 475. 1968.
- Cook, C. W. 1969. Does your range meet livestock nutrition needs? *Colorado Rancher Farmer.* 23:18,24.
- Cook, C. W. 1969. Research, management, and administration of the range ecosystem. Arid Lands Symposium, Paper No. 16. Australia Academy of Science, Canberra City, Australia.
- Cook, C. W. 1969. Methods and techniques for seeding roadway cuts and fills on the interstate highway system in Utah. In press.

- Coyne, Pat and C. W. Cook. 1970. Carbohydrate reserve content of mountain range plants following defoliation and growth. J. Range Manage. 23:15-19.
- Cook, C. W. 1970. Biological efficiency of the range ecosystem. Western Section Amer. Soc. Anim. Sci., Proc. 27:309-314.
- Cook, C. W. 1970. Ecosystem approach in teaching. J. Range Manage. 23:387-391.
- Cook, C. W. 1971. Challenges in higher education in range science. J. Soil and Water Conserv. (In press)
- Cook, C. W. 1971. Energy budget of the range and range livestock. Colorado Agr. Exp. Sta. Bull. (In press)
- Cook, C. W. 1971. The effects of season and intensity of defoliation upon desert range plants. Utah Agr. Exp. Sta. Bull. (In press)

Name: Kenneth R. Cook

Born: 1931

Academic Training:

Degree	Year	Institution
B.S.	1957	University of Oklahoma
M.S.	1959	Michigan State University
Sc.D.	1962	University of New Mexico

Professional Experience:

Date	Position	Institution
1957-1959	Instructor, Electrical Engineering	Michigan State University
1962-1965	Assistant Professor, Electrical Engineering	Oklahoma State University
1965-1966	Associate Professor, Electrical Engineering	Oklahoma State University
1968-1970	Associate Professor, Electrical Engineering	Colorado State University
1970-	Professor & Head Electrical Engineering	University of Arkansas

Professional and Honorary Societies:

Institute of Electrical and Electronics Engineers
 American Society of Electrical Engineers
 Tau Beta Pi
 Sigma Tau
 Eta Kappa Nu
 Sigma Xi

Major Interests:

High speed transportation communications; Environmental effects on aerospace sensor systems.

Publications, Technical Reports:

Cook, K. R. 1962. Experimental and theoretical investigation of the feasibility of wave propagation in the earth's crust. Tech. Rep. EE-83, Eng. Exp. Sta., Univ. New Mexico.

Cook, K. R. 1962. Quasi-static response of a magnetic dipole near the air-earth interface. Presented at U.R.S.I. Meeting, Austin, Texas.

Cook, K. R. 1962. Electromagnetic radiation in magneto-ionic media for VLF and VHF spectra. Tech. Rep. EE-76, Eng. Exp. Sta., Univ. New Mexico.

Cook, K. R. 1963. On the use of potential functions for magneto-ionic media. Presented at the Southwestern IEEE Conf., Dallas, Texas.

Cook, K. R. 1964. Radiation characteristics of a magnetic line source in homogeneous electron plasmas. IEEE Transactions on Microwave Theory and Techniques, MTT-12, No. 6, p. 471.

- 25 -
- Cook, K. R. and G. L. Johnson. 1965. Current distribution for a cylindrical dipole in a homogeneous anisotropic ionosphere. IEEE Transactions on Antennas and Propagation, AP-13, No. 3, p. 471.
- Cook, K. R. 1965. The Laser-- a solution seeking problems. J. Gen. Educ., Vol. 17, No. 2, p. 109.
- Cook, K. R. 1965. Current distribution for a cylindrical dipole in an homogeneous anisotropic ionosphere. IEEE Transactions on Antennas and Propagation, AP-13, No. 6, p. 972.
- Cook, K. R. 1965. Current distributions and impedance of a cylindrical antenna in a compressible plasma. U.R.S.I. Meeting, Washington, D. C.
- Cook, K. R. 1965. Current distributions for cylindrical antennas in the ionosphere. U.R.S.I. Meeting, Washington, D. C.
- Cook, K. R. 1966. Current distributions for a cylindrical dipole in an homogeneous anisotropic ionosphere. Progress Rep., Nonr. 2595(04), School of Electrical Eng., Oklahoma State University.
- Cook, K. R. and B. C. Edgar. 1966. Current distribution and impedance of a cylindrical antenna in an isotropic compressible plasma. Radio Sci., Vol. 1, No. 1, p. 13.
- Cook, K. R. and G. L. Johnson. 1967. On the problem of the infinite antenna in an anisotropic plasma. Radio Sci. Vol. 2, No. 5, p. 495.
- Cook, K. R. 1968. Comments on propagation constant for the current distribution and radiation resistance of a linear antenna in a weakly ionized plasma. Int. J. Electronics, Vol. 24, No. 3, p. 297.
- Cook, K. R. 1968. Use of surface waves in communicating with high speed vehicles. ESSA Res. Lab.
- Cook, K. R. 1968. Mode coupling between surface wave transmission lines. IEEE Group on Antennas and Propagation, Denver-Boulder Sect.
- Cook, K. R. and J. E. Partch. 1969. Surface wave communications for high-speed ground transportation. IEEE Int. Conf. on Communications, Boulder, Colorado.
- Cook, K. R. and R. B. Buchanan. 1969. Radiation characteristics of a slotted ground plane into a two-fluid compressible plasma. Proceedings of the Conference on Environmental Effects on Antenna Performance.
- Cook, K. R. and T. M. Chu. 1969. Mode coupling between surface wave transmission lines. IEEE Transactions on Microwave Theory and Techniques, MTT-17, No. 5, p. 265.
- Gallawa, R. L., K. R. Cook, et. al. 1969. The G-line and its use in communicating with high speed vehicles. IEEE Transactions on Communication Technology, COM-17, No. 5, p. 518.

Name: Alexander Thom Cringan

Born: 1926

Academic Training:

Degree	Year	Institution	Major
B.Sc.F.	1948	University of Toronto	Zoology
M.A.	1956	University of Toronto	Zoology
Ph.D.	1965	University of Michigan	Conservation

Professional Experience:

Date	Position	Institution
1950-55	Biologist	Ontario Department Lands and Forests
1955-58	Visiting Lecturer	University of Guelph
1959-60	Acting Assistant Professor	University of Guelph
1960-66	Assistant Professor	University of Guelph
1966-68	Associate Professor	University of Guelph
1968-69	Visiting Professor	Colorado State University
1969-70	Associate Professor	University of Guelph
1970-	Professor	Colorado State University

Professional and Honorary Societies:

Wildlife Society
Canadian Society of Wildlife and Fishery Biologists
Ontario Waterfowl Research Foundation

Publications, Technical Reports:

Cringan, A. T. 1953. Recent records of the magpie in northwestern Ontario. Can. Field-Natur. 67:43-44.

Passmore, R. C., R. L. Peterson and A. T. Cringan. 1955. A study of mandibular tooth-wear as an index to age of moose, p. 223-238, Appendix A. In Randolph L. Peterson. North American Moose. Univ. Toronto Press.

Cringan, A. T. 1955. Studies of moose antler development in relation to age, p. 239-246, Appendix B. In Randolph L. Peterson. North American Moose. Univ. Toronto Press.

Cringan, A. T. 1956. Value of moose hunting to northwestern Ontario. Northern Sportsman 11:8-9.

Edwards, R. Y., A. T. Cringan, C. D. Fowle, R. C. Passmore, A. J. Reeve and D. J. Robinson. 1956. Forestry and wildlife management - dual endeavours on forest land. Forest. Chron. 32:433-443.

- Cringan, A. T. 1956. Some aspects of the biology of caribou and study of the woodland caribou range of the Slate Islands, Lake Superior, Ontario. MA Thesis, Univ. Toronto.
- Cringan, A. T. 1957. Notes on the biology of the red-necked grebe in western Ontario. Can. Field-Natur. 71:72-73.
- de Vos, A. and A. T. Cringan. 1957. Fur management in Ontario. Can. Geogr. J. 55:62-69.
- Cringan, A. T. 1957. History, food habits and range requirements of the woodland caribou of continental North America. North Amer. Wildlife Conf., Trans. 22:485-501.
- Cringan, A. T. 1957. Possible effects of forest fires on big game in the Sioux Lookout Forest Protection District. Ontario Fish and Wildlife Manage. Rep. 36:1-10.
- Cringan, A. T. 1958. Influence of forest fires and fire protection on wildlife. Forest. Chron. 34:25-30.
- de Vos, A. T., A. T. Cringan, J. K. Reynolds and H. G. Lumsden. 1959. Biological investigations of traplines in northern Ontario, 1951-56. Ontario Dep. Lands and Forests, Tech. Bull. Wildlife Ser. No. 8. 62 p.
- Bue, I. G., T. Evans and A. T. Cringan. 1960. Should we have an International Waterfowl Commission? 27th Annu. Meeting Midwest Fish and Game Comm., Proc. 47-60.
- Cringan, A. T. 1960. Some changes in the status of the mallard in Southern Ontario. Midwest Wildlife Conf., Proc. 9 p.
- Cringan, A. T., J. H. Palmer and R. E. Mason. 1962. Some effects of a headwater impoundment upon waterfowl. 27th North Amer. Wildlife Conf., Trans. 80-90
- Cringan, A. T. 1962. The Ontario Waterfowl Research Foundation: its aims and programs. Northeast Fish and Wildlife Conf., Proc.
- Cringan, A. T. 1963. U. S. Bureau of Sport Fisheries and Wildlife initiates new series of reports. First Annu. Rep. Ontario Waterfowl Res. Found. p. 10-11.
- Cringan, A. T. 1963. Banding by personnel of the Ontario Waterfowl Research Foundation. First Annu. Rep. Ontario Waterfowl Res. Found. p. 11-12.
- Cringan, A. T. and J. D. Roseborough. 1963. Species of waterfowl bagged in Southern Ontario in 1961. First Annu. Rep. Ontario Waterfowl Res. Found. p. 12-14.

- Lapp, W. S., F. N. Jerome and A. T. Cringan. 1963. Tolerance between host and donor tissue in birds. *Science* 141:818-820.
- de Vos, A. and A. T. Cringan. 1964. Manual of the life histories of North American Wildlife. Guelph Campus Co-op.
- Cringan, A. T. 1964. The Ontario Waterfowl Research Foundation. 15th Annu. Rep. the Wildfowl Trust, for 1962-63:139-140.
- Cringan, A. T. 1965. Some factors in selecting units for managing wildlife in Ontario. Ph.D. Thesis, Univ. Michigan.
- Cringan, A. T. 1966. Some factors in selecting units for managing wildlife in Ontario. Diss. Abstr. 27(2).
- Mansell, W. D. and A. T. Cringan. 1968. A further instance of fetal atrophy in white-tailed deer. *Can. J. Zool.* 46:33-34.
- Cringan, A. T. 1968. The Ontario Waterfowl Research Foundation. Ontario Fish and Wildlife Rev. 7:9-10.
- Ronald, K., A. T. Cringan and M. I. Dyer. 1968. Blackbird and starling research program, 1964-68. O.D.A.F. Agdex No. 685. 2 p.
- Cringan, A. T. 1969. History, food habits and range requirements of the woodland caribou of continental North America. In Cox [ed.] Readings in Conservation Ecology. Appleton-Century-Crofts.
- Cringan, A. T. 1970. Reproductive biology of ruffed grouse in southern Ontario, 1964-69. *J. Wildlife Manage.* 34:756-761.

Name: D. A. Crossley, Jr.

Born: 1927

Academic Training:

Degree	Year	Institution	Major
None	1948	Texas A&I College	Biology
B.A., M.S.	1951	Texas Tech	Entomology
Ph.D.	1956	University of Kansas	

Professional Experience:

Date	Position	Institution
1956-1967	Ecology	Oak Ridge Nat. Lab., Tennessee
1967-	Prof. Entomology	University of Georgia

Publication, Technical Report:

- Crossley, D. A. 1950. A new species of nasal mite, *Neonyssus* (*Neonyssus*) *columbae*, from the pigeon. Entomol. Soc. Washington Proc. 52:309-312.
- Crossley, D. A. 1952. Two new nasal mites from Columbiform birds. J. Parasitol. 38:385-390.
- Crossley, D. A. and R. B. Loomis. 1953. A new species of chigger from eastern Kansas. J. Kansas Ext. Soc. 26:32-34.
- Crossley, D. A. and L. J. Lipovsky. 1954. Two new chiggers from the central states. Entomol. Soc. Washington Proc. 56:240-246.
- Crossley, D. A. 1955. A new species of chigger from Colorado. J. Parasitol. 41:289-295.
- Crossley, D. A. and R. B. Loomis. 1955. A new *Neoschongastia* (Acarina: Trombiculidae) from western Kansas and eastern Colorado. Entomol. News 64:113-118.
- Crossley, D. A. and R. B. Loomis. 1955. A new genus of chigger mites. J. Kansas Entomol. Soc. 28:136-143.
- Crossley, D. A. and S. I. Auerbach. 1957. Effects of gamma radiation on Collembola population growth. Science 126:614.
- Crossley, D. A. and S. I. Auerbach. 1958. Strontium-90 and Cesium-137 uptake by vegetation under natural conditions. 2nd Un. Geneva Conf. Paper 401.
- Crossley, D. A. and M. E. Pryor. 1960. The uptake and elimination of Cesium-137 by a grasshopper--*Romalea microptera*. Health Phys. 4:16-20.
- Crossley, D. A. and K. K. Bohnsack. 1960. Long-term ecological study in the Oak Ridge area. III. The oribatid mite fauna in pine litter. Ecology 41:785-790.

- Crossley, D. A. and S. I. Auerbach. 1960. A sampling device for soil microarthropods. *Acarologia* 3:279-287.
- Crossley, D. A. 1960. Comparative external morphology and taxonomy of nymphs of the *Trombiculidae* (Acarina). *Univ. Kansas Sci. Bull.* 40:135-321.
- Crossley, D. A. and W. T. Atyeo. 1961. The genus *Raphignathus dugesi* (Acarina, Raphignathidae) in the United States with notes on the old world species. *Acarologia* 3:14-20.
- Crossley, D. A. and H. G. Howden. 1961. Insect-vegetation relationships in a radioactive waste area. *Ecology* 42:302-317.
- Crossley, D. A. and J. H. Schnell. 1961. Comparative elimination of radiostrontium and radiocesium by grasshoppers. *Entomol. Soc. Amer. Ann.* 54:459-561.
- Crossley, D. A. and H. F. Howden. 1961. Insect species on vegetation of White Oak Lake bed, Oak Ridge, Tennessee. *Ornl*-3094.
- Crossley, D. A. and W. T. Atyeo. 1961. Labidostommidae from Australia (Acarina, Prostigmata) with the description of a new species. *Roy. Soc., South Australia, Trans.* 84:83-86.
- Crossley, D. A. and W. T. Atyeo. 1961. The Labidostommidae of New Zealand (Acarina). *Dominion Mus. Rec.* 4:29-48.
- Crossley, D. A. and R. W. Stranctmann. 1962. A new species of soil-inhabiting mite, *Hypoaspis marksii* (Acarina, Laelaptidae). *J. Kansas Entomol. Soc.* 34:180-184.
- Crossley, D. A. and M. P. Hoglund. 1962. A litter-bag method for the study of microarthropods inhabiting leaf litter. *Ecology* 43:571-573.
- Crossley, D. A. 1963. Heterotrophic productivity in the grazing food chain of terrestrial vegetation. Vol. 4. 16th Int. Conf. Zoology, Washington D. C., Proc. (August).
- Crossley, D. A. 1963. Movement and accumulation of radiostrontium and radiocesium in insect, p. 103 to 105. In V. Schultz and A. W. Klement, Jr. [Ed.] *Radioecology*. Reinhold, New York and AIBS, Washington.
- Crossley, D. A. 1963. Tracer studies in the breakdown of forest litter, p. 411 to 416. In V. Schultz and A. W. Klement, Jr. [ed.] *Radioecology*. Reinhold, New York and AIBS, Washington.
- Crossley, D. A. 1963. Consumption of vegetation by insects, p. 427 to 430. In V. Schultz and A. W. Klement, Jr. [ed.] *Radioecology*. Reinhold, New York and AIBS, Washington.
- Crossley, D. A. and R. B. Loomis. 1963. New species and new records of chiggers. (Acarina, Trombiculidae) from Texas. *Acarologia* 5:371-383.
- Crossley, D. A. 1963. Use of radioactive tracers in the study of insect-plant relationships, p. 43 to 54. In *Radiation and radioisotopes applied to insects of agricultural importance*. Int. Atomic Energy Agency, Vienna.

- Crossley, D. A. 1964. Biological elimination of radionuclides. Nucl. Safety 5:265-268.
- Crossley, D. A. and M. Witkamp. 1964. Forest soil mites and mineral cycling. 1st Int. Cong. Acarology Proc. p. 137-146.
- Crossley, D. A. and E. W. Baker. 1964. A new species of mite, *Fusoherecia lawrencei*, from an artificial tree-hole. Natal. Mus. Ann. 16:3-8.
- Crossley, D. A., G. L. Plummer, and D. A. Gardiner. 1965. Growth response of two sedges inhabiting a radioactive waste disposal area. Ecology 46: 346-348.
- Crossley, D. A. and D. E. Reichle. 1965. Radiocesium dispersion in a cryptozoan food web. Health Phys. 11:1375-1384.
- Crossley, D. A. 1966. Radiocesium measurement of food consumption by a leaf beetle species, *Chrysomela knabi* Brown. Ecology 47:1-8.
- Crossley, D. A. and J. A. Payne. 1966. Animal species associated with pig carrion. ORNL TM-1432.
- Crossley, D. A. and M. Witkamp. 1966. The role of arthropods and microflora in breakdown of White Oak litter. Pedobiologia 6:293-300.
- Crossley, D. A. and M. Witkamp. 1967. Effects of a pesticide on biota and breakdown of forest litter. VIII Int. Cong. Soil Sci., Vol. III, 1964, Proc. 887-892.
- Crossley, D. A. and D. E. Reichle. 1967. Investigations on heterotrophic productivity in forest insect communities, p. 563 to 587. In K. Petrusiewicz [ed.] Secondary productivity of terrestrial ecosystems. Panstwowe Wydawnictwo Naukowe (Warsaw - Krakow).
- Crossley, D. A. 1968. Radiotungsten retention by two insect species. Health Physics 14:162-164.
- Crossley, D. A. and E. F. Menhinick. 1968. A comparison of radiation profiles of *Acheta domesticus* and *Tenebrio molitor*. Entomol. Soc. Amer. Ann. 61: 1359-1365.
- Crossley, D. A. 1968. Book Review: Methods in insect ecology. Ecology.
- Crossley, D. A. 1968. Book Review: Radioisotopes and ionizing radiation in entomology. Vol. III. Health Physics.
- Crossley, D. A. and P. E. Hunter. 1968. *Adamystis sarae*, a new species of soil mite from cornfield litter in South Carolina (Acarina: Anystidae). J. Georgia Entomol. Soc. 3:181-183.
- Crossley, D. A., D. E. Reichle, and M. H. Shanks. 1969. Calcium, potassium, and sodium content of forest floor arthropods. Entomol. Soc. Amer. Ann. 62:57-62.
- Crossley, D. A. and D. E. Reichle. 1969. Trophic level concentration of Cesium-137, sodium, and potassium in forest arthropods, p. 678 to 686. In D. J. Nelson and F. C. Evans [ed.] Symposium on radioecology. U. S. Atomic Energy Comm., Washington, D. C.

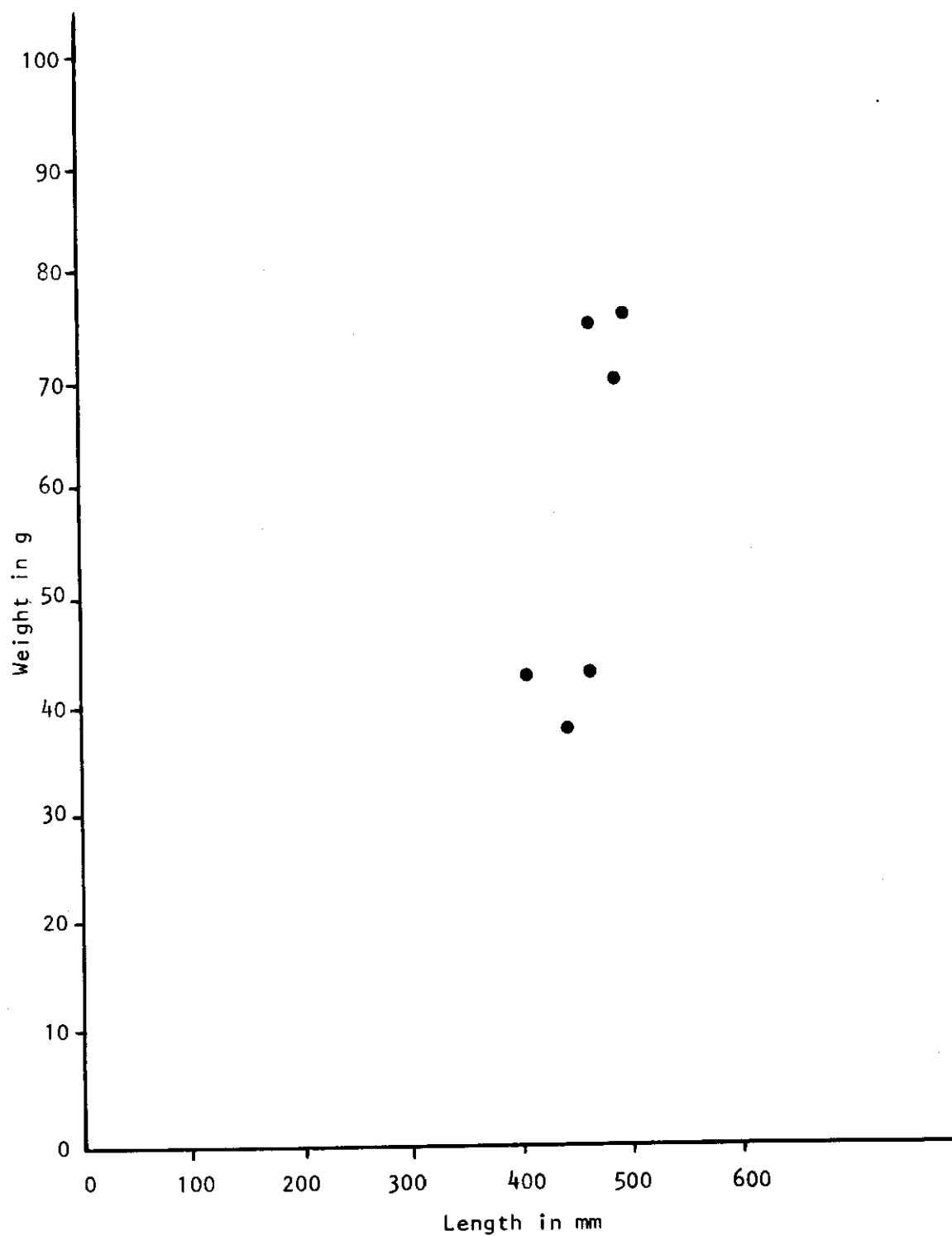


Fig. 8. Growth curve of weight vs. length of six specimens of the western hog-nosed snake (*Heterodon nasicus*).

- Crossley, D. A. 1969. Comparative movement of ^{106}Ru , ^{60}Co and ^{137}Cs in arthropod food chains, p. 687 to 695. In D. J. Nelson and F. C. Evans [ed.] Symposium on radioecology. U. S. Atomic Energy Comm., Washington, D. C.
- Crossley, D. A. and D. E. Reichle. 1969. Analysis of transient behavior of radioisotopes in insect food chains. *BioScience* 19:341-343.
- Crossley, D. A. and R. I. Van Hook, Jr. 1969. Assimilation and biological turnover of Cesium-134, Iodine-131, and Chromium-51 in brown crickets, *Acheta domestica* (L.) *Health Physics* 16:463-467.
- Crossley, D. A. and E. F. Menhinick. 1969. Radiation sensitivity of twelve species of arthropods. *Entomol. Soc. Amer. Ann.* 62:711-717.
- Crossley, D. A., C. A. Edwards, and D. E. Reichle. Experimental manipulation of soil invertebrate populations for trophic studies. (In press).
- Crossley, D. A., C. A. Edwards, and D. E. Reichle. The role of soil invertebrates in turnover of organic matter and nutrients. (In press)
- Crossley, D. A. Energy assimilation by the cricket *Acheta domestica* (L.) measured with radioactive Chromium-51. (In press).

Name: Robin Louis Cuany

Born: 1926

Academic Training:

Degree	Year	Institution	Major
B.A.	1947	Cambridge University	Botany
M.A.	1951	Cambridge University	Agriculture, Botany
Ph.D.	1958	Iowa State University	Agronomy and Genetics

Professional Experience:

Date	Position	Institution
1947-48	Studentship of Empire Cotton Growing Crop	Cambridge
1948-53	Cytogeneticist	ECGC and Sudan Government
1954-56	Graduate Research Assistant	Iowa State University
1956-59	Research Associate, Biology	Brookhaven National Laboratory
1959-62	Geneticist, Center for Graduate Study and Research	Inter-American Institute of Agricultural Sciences, OAS, Turrialba, Costa Rica
1962-68	Assistant Professor of Botany	University of Iowa
1968-	Assistant Professor of Agronomy	Colorado State University

Professional and Honorary Societies:

American Genetic Association
 American Society of Agronomy (CSSA)
 Association of Tropical Biology
 Genetics Society of America
 Nature Conservancy
 Radiation Research Society
 Sigma Xi
 Phi Kappa Phi
 Gamma Sigma Delta

Publications, Technical Reports:

- Cuany, R. L. 1952. Impressions of American cotton research. Empire Cotton Growing Rev. 29:171-181.
- Cuany, R. L. 1958. Inheritance of chlorophyll deficiencies and other genetic markers in *Dactylis glomerata* L. Iowa State Univ. Libr., Diss. Abstr. 19:414. Libr. Congr. Misc. 58-2992.
- Cuany, R. L., A. H. Sparrow and Virginia Pond. 1958. Genetic response of *Antirrhinum majus* to acute and chronic plant irradiation. Zeit. Vererbungslehre 89:7-13.

- Cuany, R. L., A. H. Sparrow and Alexandra Jahn. 1958. Spontaneous and radiation-induced somatic mutation rates in *Antirrhinum*, *Petunia*, *Tradescantia* and *Lilium*. Tenth Int. Congr. Genet., Montreal, Proc. 2:62-63. (Abstr.)
- Sparrow, A. H. and R. L. Cuany. 1959. Radiation-induced somatic mutations in plants. Oklahoma Conf. Radioisotopes in Agr. 153-156.
- Cuany, R. L. 1959. The nature of somatic mutations induced by radiation in flowering plants. Second Inter-Amer. Symp. on the Peaceful Application of Nuclear Energy, Buenos Aires, Argentina, Proc.
- Cuany, R. L. and R. R. Kalton. 1960. Genetic behaviour of chlorophyll deficiency markers for testing outcrossing in *Dactylis*. Eighth Int. Grassland Congr., Reading, England, Proc. p. 57-59.
- Cuany, R. L. and J. Mata Pacheco. 1960. Maturation and dormancy of seeds of tropical grasses (*Hyparrhenia*, *Melinis*, and *Panicum*). Agron. Abstr. 1960:68.
- Sparrow, A. H., R. L. Cuany, J. P. Miksche, and L. A. Schairer. 1961. Some factors affecting the responses of plants to acute and chronic radiation exposures. Radiat. Bot. 1:10-34. Also in IAEA/FAO Symp. on the Effects of Ionizing Radiat. on Seeds and their Significance for Crop Improvement, Karlsruhe.
- Cuany, R. L. and C. A. Moran V. 1962. Somatic mutation response of the *dicotyledonous* shoot at different growth stages. Second Int. Congr. Radiat. Res., Harrogate, England. 200 (Abstr.)
- Agreda, O. and R. L. Cuany. 1962. Photoperiodic effects and flowering date in Jaragua (*Hyparrhenia rufa*). Turrialba 12:146-149. (Also Agron. Abstr. 1967:23).
- Cuany, R. L. and L. E. Guardia. 1962. Radiosensitivity and somatic mutations in tropical plants. Turrialba 12:149-150.
- Abbo, G., H. Zellweger and R. L. Cuany. 1966. Satellite association in familial mosaicism. Helv. Paed. Aeta. 21:293-299.
- Zellweger, H., G. Abbo and R. L. Cuany. 1966. Satellite association and translocation mongolism. J. Med. Gen. 3:186-189.
- Cuany, R. L. 1967. Variability for growth type and flowering characters in 'Jaragua', *Hyparrhenia rufa* (Nees.). Stapf. Agr. Abstr. 1967:8.
- Cuany, R. L., W. B. Kelly, J. F. Swink and S. L. Shafer. 1969. Performance tests of corn hybrids grown in various regions of Colorado in 1968. Colorado State Univ. Gen. Ser. 877.
- Cuany, R. L. and D. W. Crumpacker. 1969. Corn breeding and cultural studies. PR 69-14, Colo. State Univ. Exp. Sta.

- Cuany, R. L. and D. W. Crumpacker. 1969. Corn hybrid performance tests. PR 69-18, Colo. State Univ. Exp. Sta.
- Hoff, J., S. L. Shafer and R. L. Cuany. 1969. Corn performance tests (Fruita unit). PR 69-36, Colo. State Univ. Exp. Sta.
- Cuany, R. L., J. F. Swink and S. L. Shafer. 1970. Performance tests of corn hybrids grown in various regions of Colorado in 1969. Colorado State Univ. Gen. Ser. 904.
- Cuany, R. L. 1970. Relation between phenology, heat unit accumulation, and maturity of corn in Colorado. Agron. Abstr. 1970:8.
- Cuany, R. L., J. F. Swink, S. L. Shafer and E. J. Langin. 1971. Performance tests of corn hybrids grown in various regions of Colorado in 1970. Colorado State Univ. Gen. Ser. 913.

Name: Kenneth G. Doxtader

Born: 1938

Academic Training:

Degree	Year	Institution	Major
B.S.	1961	Univ. of Calif. (Berkeley)	Soils & Plant Nutr.
M.S.	1963	Cornell University	Soil Microbiology
Ph.D.	1965	Cornell University	Soil Microbiology

Professional Experience:

Date	Position	Institution
1961-1965	Research Assistant	Cornell University
1965-	Asst. Professor	Colorado State Univ.

Major Interests:

Ecology of soil microorganisms, biochemistry and microbiology of carbon, nitrogen and mineral transformations in natural environments, the fate of synthetic organic compounds in soil-water systems.

Professional and Honorary Societies:

American Society of Agronomy
Soil Science Society of America
American Society for Microbiology
Sigma Xi

Publications:

Author or coauthor of 8 publications. Pertinent or recent publications are listed below:

- Doxtader, K. G. and M. Alexander. 1966. Role of 3-nitropropanoic acid in nitrate formation by *Aspergillus flavus*. J. Bacteriol. 91:1186-1191.
- Doxtader, K. G. and M. Alexander. 1966. Nitrification by heterotrophic soil microorganisms. Soil Sci. Soc. Amer., Proc. 30:351-355.
- Doxtader, K. G. and M. Alexander. 1966. Nitrification by growing and replacement cultures of *Aspergillus*. Can. J. Microbiol. 12:807-815.
- Alexander, M., T. Yoshida and K. G. Doxtader. 1966. Substrates and products of heterotrophic and autotrophic nitrification. Intern. Congr. Microbiol. 9. (Abstr).
- Doxtader, K. G. and A. D. Rovia. Nitrification by *Aspergillus flavus* in sterilized soil. Austral. J. Soil Sci. In press.

Doxtader, K. G. and T. S. Hora. Inhibition of soil microorganisms by herbicides. (Manuscript in preparation).

Doxtader, K. G. and T. S. Hora. Inhibition of soil bacteria by diuron. (Manuscript in preparation).

Doxtader, K. G. The microbial degradation of aromatic compounds in soil-water systems. (Manuscript in preparation).

Name: Herbert G. Fisser

Born: 1926

Academic Training:

Degree	Year	Institution	Major
B.S.	1958	Montana State University	General Agriculture
M.S.	1961	Montana State University	Range Management
Ph.D.	1962	University of Wyoming	Range Management

Special Training:

Summer Institute in Radioecology, Oak Ridge, Tennessee - 1963
 Training Course in Aerial Photo Interpretation, Corvallis, Oregon - 1964
 Training Course in Radiation Health and Surveillance Procedure, Grand Junction, Colorado - 1968

Professional Experience:

Date	Position	Institution
1958	Research Assistant	Montana State University
1959-1962	Instructor	University of Wyoming
1962-1966	Assistant Professor	University of Wyoming
1966	Associate Professor	University of Wyoming
1970	Professor	University of Wyoming

Professional and Honorary Societies:

American Society of Range Management
 Ecological Society of America
 Sigma Xi

Major Interests:

Arid land ecology, rangeland production-moisture relationships, grazing management, game range improvement, harvester ant-rangeland relationships.

Current Professional Activities:

Teaching: Range Plant Identification and Ecology, Aerial Photo Interpretation, Vegetation Measurement Methods (Graduate Level)

Research: Plant Pattern Analysis, Grazing Systems Impacts, Arid Land Ecology, Game Range Improvement

Publications, Technical Reports:

Van Dyne, G. M., W. Vogel, and H. G. Fisser. 1963. Influence of plot size and shape on range herbage production estimates. Ecology 44:746-759.

- Fisser, H. G. 1964. Range survey in Wyoming's Big Horn Basin. Wyoming Agr. Exp. Sta. Bull. 424. 44 p.
- Fisser, H. G. 1965. Vegetation changes from cold desert to subalpine communities. Int. Grassland Congr. Proc. 10:425-427.
- Fisser, H. G. and G. M. Van Dyne. 1966. Influence of number and spacing of points on accuracy and precision of basal cover estimates. J. Range Manage. 19:205-211.
- Fisser, H. G. 1968. Soil moisture and temperature changes following sagebrush control. J. Range Manage. 21:283-287.
- Wight, J. R. and H. G. Fisser. 1968. *Juniperus osteosperma* in northwestern Wyoming-their distribution and ecology. Wyoming Agr. Exp. Sta. Sci. Monogr. No. 7. 31 p.

Name: Robert C. Francis

Born: 1942

Academic Training:

Degree	Year	Institution	Major
B.A.	1964	Univ. California, Santa Barbara	Mathematics
M.S.	1966	Univ. Washington	Biomathematics
Ph.D.	1970	Univ. Washington	Biomathematics

Professional Experience:

Date	Position	Institution
1969-	Asst. Prof. Statist., Fishery, and Wildl. Biol.	Colorado State Univ.

Professional and Honorary Societies:

Biometric Society

Major Interests:

Applications of statistics to ecological problems; mathematical modeling of ecological systems

Publications, Technical Reports:

Francis, R. C. 1966. Estimation of survival rates from a multiple tag-recapture experiment. M. S. Thesis, Univ. Washington, Seattle, Washington.

Name: Norman R. French

Born: 1927

Academic Training:

Degree	Year	Institution	Major
B.A.	1949	University of Illinois	Zoology
M.A.	1951	University of Colorado	Biology
Ph.D.	1954	University of Utah	Biology

Special Training:

Calculus, Nuclear Physics, University of Idaho, 1955-1959
Computer Programming, University of California, 1965-1969

Professional Experience:

Date	Position	Institution
1949-1951	Asst. to Dir.	Univ. Colorado Museum
1951-1952	Curator, Zool.	Univ. Nebraska State Museum
1951-1952	Instructor	Univ. Nebraska
1954-1955	Instructor	Univ. Utah
1955-1959	Chief, Ecol.	AEC Nat. Reactor Testing Sta., Idaho Falls, Id.
1958	Asst. Prof.	Michigan State Univ.
1959-1969	Res. Ecol.	Univ. California Lab. Nucl. Med. & Radiat. Biol.
1969-	Prof. Biol.	Colorado State Univ.

Professional and Honorary Societies:

Sigma Xi
Laboratory of Ornithology, Cornell Univ.
Ecological Society of America
AAAS
Cooper Ornithological Society
American Ornithologists' Union

Major Interests:

Ecosystem analysis
Computer modeling and simulation
Population dynamics

Current Professional Activities:

Research: IBP-Grassland Biome Comprehensive Network Coordinator

Publications, Technical Reports:

French, N. R. 1951. Duck Hawks nesting in Colorado. Condor 53:54.
French, N. R. 1954. Notes on breeding activities and on gular sacs in the Pine Grosbeak. Condor 56:83-85.

- French, N. R. 1955. Foraging behavior and predation by the Clark Nutcracker. *Condor* 57:61-62.
- French, N. R. and L. Van Middlesworth. 1958. Biological monitoring of recent air-borne fission products. 11 Int. Conf. on Peaceful Uses of Atomic Energy Proc. 18:516-518.
- French, N. R. 1959. Distribution and migration of the Black Rosy Finch. *Condor* 61:18-29.
- French, N. R. 1959. Life history of the Black Rosy Finch. *Auk* 76:159-180.
- French, N. R. and R. W. Hodges. 1959. Torpidity in cave-roosting hummingbirds. *Condor* 61:223.
- French, N. R. 1959. Iodine metabolism wild jack rabbits, p. 113 to 121. *In* Oklahoma conference-radioisotopes in agriculture. U. S. Atomic Energy Comm. Rep. TID 7578.
- French, N. R. 1960. Strontium-90 in Ecuador. *Science* 131:1889-1890.
- French, N. R. 1960. Occurrence of radioactive strontium in Ecuador. *Ciencia y Naturaleza* (Quito) 3:58-61.
- French, N. R. 1963. Fallout and natural populations. 1 Int. Conf. on Wildlife Dis. Proc. 152-156.
- French, N. R. 1963. The occurrence, effect and utilization of specific isotopes in the environment: review and discussion of barium, p. 557 to 569. *In* V. Schultz and A. W. Klement, Jr. [ed.] *Radioecology*. Reinhold Publ. Corp., New York.
- French, N. R. and K. H. Larson. 1963. Environmental pathways of a radioactive iodine from nuclear test in arid regions, p. 77 to 81. *In* V. Schultz and A. W. Klement, Jr. [ed.] *Radioecology*. Reinhold Publ. Corp., New York.
- French, N. R. and H. Bissell. 1963. Strontium-90 in California deer. *Ecol. Soc. Amer. Bull.* 44:46. (Abstr.)
- French, N. R. 1963. The source of ingested radioactivity in desert rodents. *Ecol. Soc. Amer. Bull.* 44:74.
- French, N. R. 1963. Analysis of reproduction in the black-tailed jack rabbit. XVI Int. Congr. of Zool. Proc. 1:258.
- French, N. R. 1964. Description of a study of ecological effects on a desert area from chronic exposure to low level ionizing radiation. U. S. Atomic Energy Comm. Rep., UCLA 12-532. 27 p.
- French, N. R. 1964. A radiation facility for ecological studies at the AEC Nevada Test Site. *Ecol. Soc. Amer. Bull.* 45:79-80.
- French, N. R. 1964. Analysis of dispersal in desert rodents. *Ecol. Soc. Amer. Bull.* 45:115.

- French, N. R., R. McBride, and J. Datmer. 1965. Fertility and population density in the black-tailed jack rabbit. *J. Wildl. Manage.* 28:14-26.
- French, N. R. 1965. Radiation and animal populations. *Health Physics* 11: 1157-1568.
- French, N. R., P. Hayden, and T. Tagami. 1965. The source of ingested radioactivity in desert rodents. *Health Physics* 11:637-645.
- French, N. R. and J. B. French. 1965. Rosy Finches of the High Rockies, p. 422 to 432. In O. S. Pettingill, Jr. [ed.] *The bird watcher's America*. McGraw Hill.
- French, N. R., B. G. Maza, and A. P. Aschwanden. 1965. Duration of life in confined populations of desert rodents. *Ecol. Soc. Amer. Bull* 46:40-41.
- French, N. R. 1965. Mortality and fertility in a desert population of pocket mice. *Ecol. Soc. Amer. Bull.* 46:122.
- French, N. R., B. G. Maza, and A. P. Aschwanden. 1966. Periodicity of desert rodent activity. *Science* 154:1194-1195.
- French, N. R. 1966. A FORTRAN IV program for evaluation of thyroidal assimilation of radioiodine. U. S. Atomic Energy Comm. Rep., UCLA 12-592. 15 p.
- French, N. R. 1966. Irradiated desert rodent populations, p. 22. In G. A. Sacher [ed.] *Radiation effects on natural populations*. Argonne Nat. Lab.
- French, N. R., B. G. Maza, and A. P. Aschwanden. 1966. Life spans of heteromyid rodents in the Mojave Desert. *Ecol. Soc. Amer. Bull.* 47:172.
- French, N. R., B. G. Maza, and A. P. Aschwanden. 1967. Life spans of *Dipodomys* and *Perognathus* in the Mojave Desert. *J. Mammal.* 48:537-548.
- Lucas, A. C. and N. R. French. 1967. A miniature thermoluminescent dosimeter and its application to radioecology, p. 402-411. In F. H. Attix [ed.] *Luminescence Dosimetry*. AEC Sympos. Ser. 8.
- French, N. R. 1967. Comparison of radioisotope assimilation by granivorous and herbivorous mammals, p. 665-673. In B. Aberg and F. P. Hungate [ed.] *Radioecological concentration processes*. Pergamon Press.
- French, N. R. and H. D. Bissell. 1968. Strontium-90 in California mule deer. *Health Physics* 14:489-494.
- French, N. R., T. Y. Tagami, and P. Hayden. 1968. Dispersal in a population of desert rodents. *J. Mammal.* 49:272-280.
- French, N. R. 1968. *Leucosticte atrata* Ridgway, Black Rosy Finch, p. 365-372. In Oliver L. Austin, Jr. [ed.] *Life histories of North American cardinals, grosbeaks, buntings, towhees, finches, sparrows, and allies*. Smithsonian Inst. Bull. 237.

- French, N. R. and H. W. Kaaz. 1968. The intrinsic rate of natural increase of irradiated *Peromyscus* in the laboratory. *Ecology* 49:1172-1179.
- French, N. R., B. G. Maza, and H. W. Kaaz. 1969. Mortality rates in irradiated rodent populations, 46 to 52. In D. J. Nelson and F. C. Evans [ed.] Symposium on radioecology. U. S. Atomic Energy Comm. Pub. CONF. 670503.
- French, N. R. 1969. Radiation sensitivity and rodent species. *Nature* 222: 1003-1004.
- French, N. R. 1969. Simulation of dispersal in desert rodents. In G. P. Patil, E. C. Pielou, and W. E. Waters [ed.] *Statistical Ecology*. Pennsylvania State Univ. Press. (In press).
- French, N. R. 1969. Chronic low-level gamma irradiation of a desert ecosystem for five years. In A. Grauby [ed.] *Proceedings of the Radioecology Symposium*, Cadarade, France. (In press).
- French, N. R. 1970. Effects of chronic radiation exposure on populations of desert rodents. Seminar at Lawrence Radiation Laboratory, Livermore, California.
- French, N. R. 1971. Small mammal studies in the US-IBP Grassland Biome. *Ann. Zool. Fennici* 8:48-53.

Name: James H. Gibson

Born: 1930

Academic Training:

Degree	Year	Institution	Major
B.S.	1952	West Virginia University	Chemistry
Ph.D.	1957	Cornell University	Analytical Chemistry

Professional Experience:

Date	Position	Institution
1957-60	Analytical Chemist	Eastman Kodak Company
1960-61	Postdoctoral	Cornell University
1961-63	Chief, Chemical Division	Dugway Proving Ground, AEC
1963-69	Associate Professor, Chemistry	Colorado State University
1969-71	Manager, Office Divisional Activities	American Chemical Society
1971-	Director of Administration and Services	Grassland Biome, IBP
	Associate Professor of Chemistry	Colorado State University

Major Interests:

Analytical chemistry - methods development, and administration (technical)

Professional and Honorary Societies:

American Chemical Society
 American Association for the Advancement of Science
 Phi Beta Kappa
 Society for Applied Spectroscopy

Publications, Technical Reports:

Gibson, J. H., W. E. Grossman and W. D. Cook. 1963. Excitation processes in flame spectroscopy. Anal. Chem. 35:266.

Gibson, J. H., W. E. Grossman and W. D. Cook. 1962. The use of continuous sources in atomic absorption spectroscopy. Anal. Chem. (Feigl Anniv. Symp., Proc.), Elsevier.

Wilkinson, O. E. and J. H. Gibson. 1966. A new technique for coating and packing glass bead columns for gas chromatography. Anal. Chem. 38:1972.

Gibson, J. H. and J. H. Runnels. 1966. Low wattage microwave excited plasmas as a spectral source for metals analysis. Midwest Regional ACS Meeting, Lawrence, Kansas. Paper No. 125.

- Gibson, J. H. and J. H. Runnels. 1966. Characteristics of low wattage excited plasmas for metals analysis. Soc. Appl. Spectroscopy, Rocky Mountain Conf., Denver, Colorado.
- Runnels, J. H. and J. H. Gibson. 1967. Characteristics of low wattage microwave induced argon plasmas in metals excitation. Anal. Chem. 39:1398.
- Taylor, H. E., R. K. Skogerboe and J. H. Gibson. 1970. Determination of trace impurities in argon by microwave induced excitation. Anal. Chem. 42:876.
- Taylor, H. E., R. K. Skogerboe and J. H. Gibson. 1970. Trace sulfur determination by atomic emission and atomic absorption techniques. Anal. Chem. 42:1569.

Name: Robert W. Gorden

Born: 1932

Academic Training:

Degree	Year	Institution
B.S.	1957	Manchester College
M.D.	1962	University of Georgia
Ph.D.	1967	University of Georgia

Professional Experience:

Date	Position	Institution
1968-	Assistant Professor of Biology	Texas Technological College

Major Interests:

Microbial ecology, microbiology

Professional and Honorary Societies:

American Society for Microbiology
American Association for the Advancement of Science
American Institute of Biological Sciences
Ecological Society of America

Publications:

Recent or pertinent publications are listed below:

- R. G. Eagon, R. J. Beyers, and R. W. Gorden. 1966. Microbial ecology of an aquatic microcosm. I. Bull. Ecol. Soc.
- R. G. Eagon, R. J. Beyers, and R. W. Gorden. 1967. Microbial ecology of an aquatic microcosm. II. Bact. Proc. 47.
- G. C. Buchanan, and R. W. Gorden. 1968. Heterotrophic activity during autotrophic succession on an aquatic microcosm. Bact. Proc. 33.
- R. J. Beyers, E. P. Odum, R. G. Eagon, and R. W. Gorden. 1969. Studies of a simple laboratory microecosystem: Bacterial activities in a heterotrophic succession. Submitted to: Ecology.

Name: Jack E. Gross

Born: 1930

Academic Training:

Degree	Year	Institution	Major
B.S.	1956	University of Alaska	Wildlife Mgmt.
Ph.D.	1967	Utah State University	Wildlife Mgmt.

Professional Experience:

Date	Position	Institution
1954-1957	Biological Aide	Bur. of Sport Fish. & Wildlife
1959-1961		Bur. of Sport Fish. & Wildlife
1962-1965		N. Mex. Dept. Game & Fish
1965-1967	Asst. Prof. Zoology	N. Dak. State University
1967-	Asst. Leader	Coop. Wildlife Res. Unit, C.S.U.

Major Interests:

Population ecology, particularly mechanisms of balance and short-term fluctuations in vertebrate populations; latitudinal diversity of reproductive and mortality mechanisms.

Professional and Honorary Societies:

Sigma Xi
The Wildlife Society
National Institutes of Health
American Society Biological Science

Publications:

Author or coauthor of 7 publications. Recent or pertinent publications are listed below:

- Gross, J. E. 1960. History, present, and future status of the desert bighorn sheep (*Ovis canadensis Mexicana*) in the Guadalupe Mountains of southeastern New Mexico and northwestern Texas. Fourth Annual Meeting, Desert Bighorn Council, Las Cruces, New Mexico.
- Gross, J. E. 1961. The need for quality control in the analysis of wildlife management data. West. Assoc. State Game Fish Comm., Proc.
- Gross, J. E. 1961. Coronado was second. New Mexico Wildl. 6(3):10-11.
- Gross, J. E. and Betty L. Gross. 1966. Jackrabbit humeri cleaned with clorox. J. Wildl. Manage. 30(1):212.
- Gross, J. E., F. H. Wagner and L. A. Stoddart. 1966. Population dynamics of black-tailed jackrabbits in northern Utah. Amer. Soc. Mammal.

- Gross, J. E. 1962. Range and range use by Dall sheep (*Ovis dalli dalli*) on Victoria Mountain and Mount Schwatka, Alaska. MS thesis, Univ. Alaska, College Alaska. Unpublished.
- Gross, J. E. 1967. Demographic analysis of a northern Utah black-tailed jackrabbit population. Ph.D. thesis, Utah State Univ., Logan, Utah.

Name: Merlin M. Hackbart

Born: 1941

Academic Training:

Degree	Year	Institution	Major
B.S.	1963	South Dakota State University	Agricultural Economics
Ph.D.	1968	Kansas State University	Regional Economics

Professional Experience:

Date	Position	Institution
1964	Economist, River Basin Group, SCS	U.S. Department Agriculture
1965-66	Assistant Instructor	Kansas State University
1966	Research Assistant	Kansas State University
1968-	Assistant Professor of Economics	University of Wyoming

Professional and Honorary Societies:

American Economics Association
Midwest Economics Association
Rocky Mountain Social Science Association
Western Regional Science Association

Publications, Technical Reports:

- Hackbart, M. M. 1969. Development analysis: a study of the interaction of structural analysis and educational planning in a depressed area. Paper presented at the Western Regional Sci. Ass. Meeting in Los Angeles.
- Hackbart, M. M. 1969. Understanding the model neighborhood economy. Paper presented at the Econ. Development and Manpower Problem Anal. Conf. in Berkeley.
- Hackbart, M. M. 1970. The social and economic conditions of a model city: their implications for program planning. Paper presented at the Annu. Meeting of the Rocky Mountain Soc. Sci. Ass., Colorado Springs.
- Hackbart, M. M., R. Shriner and W. Morgan. 1970. The Wyoming economy; comprehensive studies to facilitate development through planning. Div. Business and Econ. Res., Univ. Wyoming, Laramie.
- Hackbart, M. M. and M. J. Emerson. 1970. The stability of labor coefficients: a comment. Ann. Regional Sci., Vol. 4, No. 2.
- Hackbart, M. M. 1970. Selecting best-fit industries, an application to an export sector in Wyoming. Div. Business and Econ. Res., Laramie.

Name: Elmer B. Hadley

Born: 1936

Academic Training:

Degree	Year	Institution	Major
B.S.	1958	University of California (Santa Barbara)	
M.S.	1960	University of Illinois (Urbana)	
Ph.D.	1963	University of Illinois (Urbana)	

Professional Experience:

Date	Position	Institution
1958-61	Teaching Assistant	University of Illinois
1961-63	Research Assistant	University of Illinois
1963-64	Postdoctoral Fellow	Brookhaven National Laboratory, Upton, New York
1964-65	Assistant Professor	University of North Dakota
1965-67	Assistant Professor	University of Illinois
1967-70	Associate Professor	University of Illinois
1969-	Acting Head	University of Illinois
1970-	Professor	University of Illinois

Major Interests:

Physiological Ecology

Professional and Honorary Societies:

American Institute of Biological Sciences
American Association for the Advancement of Science
Botanical Society of America
California Botanical Society
Ecological Society of America
Sigma Xi

Publications, Technical Reports:

Hadley, E. B. 1961. Influence of temperature and other factors on *Ceanothus megacarpus* seed germination. *Madrono* 16:132-137.

Hadley, E. B. and B. J. Kieckhefer. 1963. Productivity of two prairie grasses in relation to fire frequency. *Ecology* 44:389-395.

Hadley, E. B. and L. C. Bliss. 1963. Photosynthesis and respiration of alpine vascular plants on Mt. Washington, New Hampshire. *Bull. Ecol. Soc. Amer.* 44:114. (Abstr.)

- Bliss, L. C. and E. B. Hadley. 1963. Photosynthesis and respiration of alpine lichens. *Bull. Ecol. Soc. Amer.* 44:114. (Abstr.)
- Hadley, E. B. and L. C. Bliss. 1964. Energy relationships of alpine plants on Mt. Washington, New Hampshire. *Ecol. Monogr.* 34:331-357.
- Bliss, L. C. and E. B. Hadley. 1964. Photosynthesis and respiration of alpine lichens. *Amer. J. Bot.* 51:870-874.
- Woodwell, G. M. and E. B. Hadley. 1964. The productivity of natural communities. II. Rates of metabolism of an oak-pine forest damaged by chronic gamma irradiation. *Bull. Ecol. Soc. Amer.* 45-74. (Abstr.)
- Hadley, E. B. and G. M. Woodwell. 1964. The productivity of natural communities. III. Effects of ionizing radiation on rates of metabolism in pine under controlled conditions. *Bull. Ecol. Soc. Amer.* 45:74. (Abstr.)
- Hadley, E. B. and G. M. Woodwell. 1965. Effects of ionizing radiation on rates of CO₂ exchange in pine seedlings. *Radiat. Res.* 24:650-656.
- Hadley, E. B. and J. D. Staudinger. 1965. North Dakota's columnar cedars. *North Dakota Outdoors* 28:2-5.
- Hadley, E. B. 1965. Photosynthesis in leaves and stems during early ontogeny of *Pinus radiata*. *Bull. Ecol. Soc. Amer.* 46. (Abstr.)
- Hadley, E. B. 1966. Photosynthesis in leaves and stems during early ontogeny of *Pinus radiata*. *North Dakota Acad. Sci., Proc.* 19:168-169.
- Hadley, E. B. 1966. Net carbon dioxide exchange of the succulents: two *Kalanchoë* species and their interspecific hybrid. *North Dakota Acad. Sci., Proc.* 19:170-178.
- Staudinger, J. D. and E. B. Hadley. 1966. A chromatographic study of the Junipers of western North Dakota. *North Dakota Acad. Sci., Proc.* 19:178-185.
- Hadley, E. B. and D. A. Levin. 1966. Ecological regulation of hybridization in a complex *Liatris* population. *Bull. Ecol. Soc. Amer.* 47:104-105. (Abstr.)
- Hadley, E. B. and D. A. Levin. 1967. Habitat differences of three *Liatris* species and their hybrid derivatives in an interbreeding population. *Amer. J. Bot.* 54:550-559.
- Hadley, E. B. and R. B. Buccos. 1967. Plant community composition and net primary production within a native research North Dakota prairie. *Amer. Midland Natur.* 77:116-127.

- Hadley, E. B. and D. A. Levin. 1969. Species contact in *Phlox*: control and response. Amer. Midland Natur. 82:490-511.
- Hadley, E. B. 1969. Physiological ecology of *Pinus ponderosa* in southwestern North Dakota. Amer. Midland Natur. 81:289-314.
- Hadley, E. B. and D. A. Levin. 1969. Physiological evidence of hybridization and reticulate evolution in *Phlox maculata*. Amer. J. Bot. 56:561-570.
- Hadley, E. B. 1970. Net productivity and burning responses of native research in eastern North Dakota prairie communities. Amer. Midland Natur. 84:121-135.
- Hadley, E. B. 1971. Physiological ecology of *Ledum groenlandicum*. Submitted to Ecology.

Name: Richard M. Hansen

Born: 1924

Academic Training:

Degree	Year	Institution	Major
B.S.	1950	University of Utah	Biology
M.S.	1951	University of Utah	Zoology
Ph.D.	1954	University of Utah	Zoology

Professional Experience:

Date	Position	Institution
1950-1951	Lab. Instructor	University of Utah
1951-1952	Research Fellow	Univ. Utah Research Foundation
1952-1954	Research Fellow	Nat. Inst. Health, USPHS
1954	Grad. Faculty-Full Member	Colorado State University
1954-1955	Assistant Professor	Colorado A & M College
1968-	Prof. Range Biology	Colorado State University

Professional and Honorary Societies:

American Society of Mammalogists	Sigma Xi
The Wildlife Society	Phi Sigma
Phi Kappa Phi	Phi Delta Kappa

Major Interests:

Mammalogy, herbivory

Current Professional Activities:

Teaching: Professor of Range Biology

Research: "Coordinator for Producer-Consumer Studies" for Grasslands Biome Project

Publications, Technical Reports:

Hansen, R. M. 1957. Development of young varying lemmings (*Dicrostonyx*).
Artic 10:105-117.

Hansen, R. M. and R. S. Miller. 1959. Observations on the plural occupancy of pocket gopher burrow systems. J. Mammal. 40:577-584.

Hansen, R. M. 1960. Age and reproductive characteristics of mountain pocket gophers in Colorado. J. Mammal. 41:323-335.

Hansen, R. M. and F. E. Remmenga. 1961. Nearest neighbor concept applied to pocket gopher populations. Ecology 42:812-814.

- Hansen, R. M. 1962. Dispersal of Richardson ground squirrel in Colorado. Amer. Midl. Natur. 68:58-66.
- Reid, V. H., R. M. Hansen, and A. L. Ward. 1966. Counting mounds and earth plugs to census pocket gophers. J. Wildl. Manage. 30:327-334.
- Bear, G. D. and R. M. Hansen. 1966. Food habits, growth and reproduction in white-tailed jackrabbits in southern Colorado. Colorado Agr. Exp. Sta. Tech. Bull. 90. 59 p.
- Hansen, R. M. and R. F. Beck. 1968. Habitat of pocket gophers in Cochetopa Creek drainage. Colorado Amer. Midl. Natur. 79:103-117.
- Hansen, R. M. and M. J. Morris. 1968. Movements of rocks by northern pocket gophers. J. Mammal. 49:391-399.
- Hansen, R. M. 1968. High energy food: aspen bark. Colorado Outdoors Mag. 17:48-49.
- Hansen, R. M. and L. D. Reed. 1969. Energy assimilation in Richardson ground squirrels. Amer. Midl. Natur. (In press).
- Hansen, R. M. and J. T. Flinders. 1969. Food habits of North American hares. Range Sci. Dep. Sci. Ser. No. 1, Colorado State Univ. 18 p.
- Free, J. C., R. M. Hansen and P. L. Sims. 1970. Estimating dry weights of food plants in feces of herbivores. J. Range Manage. 23:300-302.
- Hansen, R. M. 1970. More forage-more pests. Cattle Guard 15:25.
- Hansen, R. M. and D. N. Ueckert. 1970. Dietary similarity of some primary consumers. Ecology 51:640-648.
- Vavra, M, R. W. Rice and R. M. Hansen. 1970. Esophageal versus fecal sampling for the botanical determination of steer diets. J. Anim. Sci. 30:1036.

Name: Clayton L. Hanson

Born: 1937

Academic Training:

Degree	Year	Institution	Major
B.S.	1959	North Dakota State University	Civil Engineering
M.S.	1964	University of Idaho	Civil Engineering
	1959-1960	University of Washington	Meteorological Training

Professional Experience:

Date	Position	Institution
1960-1962	Weather Forecaster	U. S. Air Force
1963-	Agricultural Engineer	Agricultural Research Service

Major Interests:

Hydrology.

Professional and Honorary Societies:

American Society of Civil Engineers

Publications, Technical Reports:

Hanson, C. L. 1967. Stockpond water losses in western South Dakota.
South Dakota Farm Home Res. 18:23.

Rauzi, F. and C. L. Hanson. 1966. Water intake and runoff as affected
by intensity of grazing. J. Range Manage. 19:351.

Hanson, C. L. 1963. An investigation of the snow capacitor and diaphragm
deflection methods of measuring the water equivalent of a snow pack.
Eng. Exp. Sta., Univ. Idaho, Moscow. 118 p.

Name: John O. Harris

Born: 1916

Academic Training:

Degree	Year	Institution	Major
B.S.	1939	Kansas State University	Bacteriology
M.S.	1941	University of Hawaii	Bacteriology
Ph.D.	1943	Kansas State University	Bacteriology

Special Training:

Radioisotopes in Biology, Argonne National Laboratory, August 1948;
Underground Corrosion Short Course, University West Virginia, 1957.

Professional Experience:

Date	Position	Institution
1941	Instructor in bacteriology	Kansas State University
Present	Professor	Kansas State University
1958-63	Part-time consultant	Koppers Co., US Steel, Mobil Oil, Esso
July-Aug. 1969	Consultant	USAID--Andhra Pradesh India

Professional and Honorary Societies:

American Society of Microbiology	National Assoc. Corrosion Engineers
AAAS	Kansas Academy of Sciences
American Chemical Society	Sigma Xi
American Agronomy Society	Gamma Sigma Delta

Major Interests: Microbial ecology, decomposition of complex molecules,
N-fixation surfaces and microbial nutrient uptake.

Current Professional Activities:

Teaching: General Microbiology, Soil Microbiology, Microbiology, Nature.

Research: Decomposers

Publications, Technical Reports:

Harris, John O. 1944. Respiration of resting *Azotobacter* cells as affected
by the respiratory menstruum. J. Bacteriol. 48:689-96.

Harris, John O. 1946. A study of the effect of growth substrate on the
respiration of *Azotobacter*. J. Biol. Chem. 162:11-20.

Harris, John O. 1948. The respiration of *Salmonella* in the presence of
agglutinating serum. J. Bacteriol. 56:271-275.

- Harris, John O. 1949. Conductivity studies of bacterial suspensions. J. Bacteriol. 57:67-71.
- Harris, John O. 1949. Combination of certain fluorane derivative dyes with bacterial cells at different hydrogen ion concentrations. Stain Technol. 24:217-221.
- Harris, John O. 1949. Morphological development of nodules on *Sesbonia grandiflora* Poir. with reference to the origin of nodule rootlets. Amer. J. Bot. 36:651-661.
- Harris, John O. 1949. Combination of dyes with growing, resting, and killed bacterial cells. Kansas Acad. Sci., Trans. 52.
- Harris, John O. 1950. The relationship between stage of growth and pigment production by *Pseudomonas aeruginosa*. Kansas Acad. Sci., Trans. 53:494-499.
- Harris, John O. 1951. Acid-base-combining capacities of concentrated bacterial suspensions. J. Bacteriol. 61:57-62.
- Harris, John O. 1951. Phosphate turnover studies with soil bacteria. Kansas Acad. Sci., Trans. 54:560-564.
- Harris, John O. 1953. A study of the respiration of *Micrococcus lysodeikticus* in the presence of lysozyme. Kansas Acad. Sci., Trans. 56:67-73.
- Harris, John O. 1953. The isoelectric point of bacterial cells. J. Bacteriol. 65:198-202.
- Harris, John O. 1953. Electrophoretic behavior and crystal violet absorption capacity of ribonuclease treated bacterial cells. J. Bacteriol. 65:518-521.
- Harris, John O. 1953. The influence of sodium, potassium, and ammonium ions on the respiration of *Azotobacter chroococcum* as related to the composition of the growth medium, Soil Sci., Proc., 17:245-246.
- Harris, John O. 1954. The effect of lysozyme on the electrophoretic mobility of certain cocci. Exp. Cell Res. 6:307-310.
- Harris, John O. 1954. The preliminary description of a cellulose digesting micrococcus. Kansas Acad. Sci., Trans. 57:81-84.
- Harris, John O. 1954. The effect of certain vitamin K compounds upon the respiration of *Saccharomyces cerevisiae*, Arch. Biochem. and Biophys. 48:261-266.
- Harris, John O. 1954. The influence of carbon dioxide on oxygen uptake by "resting" cells of bacteria. J. Bacteriol. 67:476-479.

- Harris, John O. 1954. A study of adaptation in *Azotobacter*. Soil Sci. Soc. 18:154-156.
- Harris, John O. 1954. A study of the location of absorbed mercuric ions in *Escherichia coli*. J. Bacteriol. 68:745-748.
- Harris, John O. 1955. Proteolytic activities of certain members of the genus *Corynebacterium*. J. Infect. Dis. 97:143-145.
- Harris, John O. 1956. A comparative physiological study of certain members of the genus *Cellulomonas*. Soil Sci. Soc. 20:364-366.
- Harris, John O. 1956. Electrophoresis of motile bacteria. J. Bacteriol. 72:530-532.
- Harris, John O. 1956. Electrophoresis of bacterial variants. Appl. Microbiol. 4:161-164.
- Harris, John O. 1956. A study of the presence of hydrocarbon utilizing bacteria at the soil-asphalt interface of Kansas highways. Kansas Acad. Sci., Trans. 59:495-499.
- Harris, John O. 1957. Ion exchange in bacteriology, Chapter 12. In C. Calmon and T. R. E. Kressman [ed.] Ion exchangers in organic and biochemistry. Interscience, New York.
- Harris, John O. 1957. A study of the effect of surface active agents on the agglutination reaction. Kansas Acad. Sci., Trans. 60:43-49.
- Harris, John O. 1957. Respiration studies of a *Micrococcus* capable of oxidizing hydrocarbons. Arch. Biochem. and Biophys. 70:457-463.
- Harris, John O. 1958. Preliminary studies of the effect of microorganisms on physical properties of asphalt. Kansas Acad. Sci., Trans. 61:110-113.
- Harris, John O. 1958. The assembly and use of an automatic turbidity recording device. Appl. Microbiol. 6:266-268.
- Harris, John O. 1958. Growth response of *Aerobacter aerogenes* to ammonium ions in the presence of other cations. Soil Sci. Soc. 22:519-520.
- Harris, John O. 1959. Pipeline protective coating materials as growth substrates for soil microorganisms. Kansas Acad. Sci., Trans. 62:42-46.
- Harris, John O. 1959. The pipeline back-filled ditch as an environment for soil microorganisms. Appalachian Underground Corrosion Short Course, p. 489-501.
- Harris, John O. 1959. Microbiological studies reveal significant factors in oil and gas pipeline back-filled ditches. Kansas Agr. Exp. Sta. Tech. Bull. 102.

- Harris, John O. 1960. Bacterial activity at the bottom of back-filled pipeline ditches. *Corrosion*, 16, No. 3, 13038.
- Harris, John O. 1960. Soil microorganisms in relation to cathodically protected pipe. *Corrosion* 16, 441-448.
- Harris, John O. 1960. Microbial development in the pipeline ditch. Fifth Appalachian Underground Corrosion Short Course, 457-476.
- Harris, John O. 1961. A study of adsorption of calcium and hydrogen ions. *Kansas Acad. Sci., Trans.* 64:16-22.
- Harris, John O. 1961. Physical, chemical, electrical, and biological aspects relating to the bond or unbonding of coatings. Pacific Coast Gas Association Operating Section, Los Angeles, Proc., 52:109-115.
- Harris, John O. 1961. Bacteria and pipeline corrosion. American Gas Association, Philadelphia, Proc., 61:1-5.
- Harris, John O. 1961. Soil bacteria and corrosion. Sixth Appalachian Underground Corrosion Short Course, Proceedings, Morgantown, West Va., Eng. Exp. Sta. Tech. Bull. 61:198-209.
- Harris, John O. 1962. Bacterial activities in concentration cell formation. A.P.I. Symposium on Microbiology in Petroleum Production, Long Beach.
- Harris, John O. 1962. The role of soil microorganisms in corrosion. Univ. West Virginia, Eng. Exp. Sta. Tech. Bull. 66:273-282.
- Harris, John O. 1963. Bacterial growth, unbonding of protective coatings and cathodic protection failure. Second International Congress on Metallic Corrosion, Proceedings.
- Harris, John O. 1963. Soil microbial populations and the corrosion process. Univ. West Virginia, Eng. Exp. Sta. Tech. Bull. 69:288-299.
- Harris, John O. 1963. The microbiology of corrosion, p. 237-250. In L. L. Shreir [ed.] *Corrosion of metals and alloys*, Vol. 1. G. Newnes Ltd., London.
- Harris, John O. 1963. Microbiological studies of pipeline ditches II, 6 years research progress. *Kansas Agr. Exp. Sta. Tech. Bull.* 135:1-47.
- Harris, John O. 1964. Microbiological corrosion, p. 819-822. In C. A. Hampel [ed.] *Encyclopedia of Electrochemistry*. Reinhold, New York.
- Harris, John O. 1964. Bacteria, oxygen and soil relationships in corrosion. Univ. West Virginia, Eng. Exp. Sta. Tech. Bull. 72:497-528.
- Harris, John O. 1964. Bacterial-environmental interactions in corrosion on pipelines: an ecological analysis. *Corrosion* 20:335-340.

- Harris, John O. 1965. Electrokinetic properties of *Entamoeba invadens*. J. Protozool. 12:144-145.
- Harris, John O. 1965. Concentration of soil mycobacteria at a water-hydrocarbon interface. Biol. du Sol 4:4-7.
- Harris, John O. 1966. Asphalt oxidizing bacteria of the soil. Ind. Eng. Chem. 58:65-69.
- Harris, John O. 1966. Methods for isolating and estimating hydrocarbon utilizing bacteria in the soil. Biol. du Sol. 6:42-44.
- Harris, John O. 1967. Growth of *Entamoeba invadens* on pure cultures of certain bacteria. Kansas Acad. Sci., Trans. 70:197-200.
- Harris, John O. 1967. Non-adaptive growth responses of *Tetrahymena pyriformis* grown on single bacterial species. J. Protozool. 14:600-602.
- Harris, John O. 1968. Early respiratory responses of soil treated by heat or drying. Plant and Soil 28:38-48.
- Harris, John O. 1968. Resorcinol as a selective inhibitor for the isolation of molds. Biol. du Sol 9:19-20.

Name: Larry Harris

Born: 1942

Academic Training:

Degree	Year	Institution	Major
B.Sc.	1964	Iowa State University	Wildlife/Zoology
M.Sc.	1968	Michigan State University	Wildlife Ecology
Ph.D.	1970	Michigan State University	Ecology

Professional Experience:

Date	Position	Institution
1961-64	Part-time technician	Iowa State University and U.S. Fish and Wildlife Service
1962-63	NSF Undergrad Research Fellow	Iowa State University
1963	Waterfowl technician	Texas Game and Fish Department
1966-67	Game Management Officer	Tanzania Game Division
1967-68	Game Biologist	Tanzania Game Division
1968-70	Graduate Research Assistant	Michigan State University Museum
1969	Teaching Assistant	Michigan State University Museum
	Biometry	Michigan State University Museum
1970	Graduate Research Assistant	Michigan State University
1970-	Postdoctoral Fellow	US/IBP Colorado State University

Major Interests:

Terrestrial vertebrate ecology and the structural and functional relationships of communities and systems.

Professional and Honorary Societies:

American Association for the Advancement of Science
 Sigma Xi
 Ecological Society of America
 Wildlife Society
 American Society of Mammalogists
 East African Wildlife Society
 Association for Tropical Biology

Name: Harold F. Heady

Born: 1916

Academic Training:

Degree	Year	Institution	Major
B.S.	1938	University of Idaho	Range Management
M.S.	1940	New York State Coll. of Forestry	Ecology
	1940-1941	University of Minnesota	Ecology
Ph.D.	1949	University of Nebraska	Grassland Ecology

Special Training:

Guggenheim Fellow, 1958-1959

Senior Fulbright Research Scholar, 1958-1959 and 1966-1967

Professional Experience:

Date	Position	Institution
Summer 1937	Range Surveyor	U.S. Forest Service
1941	Range Conservationist	U. S. Soil Conservation Service
1942	Asst. Professor	New York State College of Forestry
1942-1947	Asst. Professor	Montana State College
1947-1951	Assoc. Professor	A. & M. College of Texas
1951-	Asst., Assoc., & Professor	University of California, Berkeley

Professional and Honorary Societies:

Ecological Society of America
American Society of Range Management
Sigma Xi
Xi Sigma Pi
Alpha Xi Sigma

Major Interests:

Grassland ecology and range management

Current Professional Activities:

Teaching: Ecology and range courses

Research: California Experiment Station - Ecological adjustments of plant populations to use and environment

Publications, Technical Reports:

Heady, H. F. 1940. Annotated list of the ferns and flowering plants of the Huntington Wildlife Station (Part IV). Roosevelt Wildlife Bull. 7:243-369.

Heady, H. F. 1942. Littoral vegetation of the lakes on the Huntington Forest. Roosevelt Wildlife Bull. 8:5-37.

- Heady, H. F. 1942. Annotated list of the mosses of the Huntington Forest. Roosevelt Wildlife Bull. 8:41-58.
- Heady, H. F. 1943. An annotated bibliography of recent range literature, 1942. A contribution from Dep. Anim. Ind. and Range Manage., Montana State Coll. 1:1-14. (Mimeo).
- Heady, H. F. 1943. Consider the grass. Montana Stockgrower, May 1943.
- Heady, H. F. 1944. An annotated bibliography of recent range literature, 1943. A contribution from Dep. Anim. Ind. and Range Manage., Montana State Coll. 2:1-18. (Mimeo).
- Heady, H. F. 1944. Wartime range livestock responsibilities. Montana Stockgrower, April 1944.
- Heady, H. F. 1945. An annotated bibliography of recent range literature, 1944. A contribution from Dep. Anim. Ind. and Range Manage., Montana State Coll. 3:1-25. (Mimeo).
- Heady, H. F. 1945. Range livestock management in Montana. A contribution from Dep. Anim. Ind. and Range Manage., Montana State Coll. p. 1-27. (Mimeo).
- Heady, H. F. 1946. Sheep production on mountain range. Farms Illus., 1946.
- Heady, H. F. 1946. Range management training at Montana State College. Montana Stockgrower, March 1946.
- Heady, H. F. 1946. An annotated bibliography of recent range literature, 1945. A contribution from Dep. Anim. Ind. and Range Manage., Montana State Coll. 4:1-21. (Mimeo).
- Heady, H. F., R. T. Clark, and T. Lomasson. 1947. Range management and sheep production in the Bridger Mountains, Montana. Montana Agr. Exp. Sta. Bull. 444:1-30.
- Heady, H. F. 1949. Methods of determining utilization of range forage. J. Range Manage. 2:53-63.
- Heady, H. F. 1949. Book Review: "Marching with the grasses." J. Range Manage. 2:137-158.
- Heady, H. F. 1949. Studies on blubunch wheatgrass in Montana and height-weight relationships of certain range grasses. In Abstr. Doctoral Diss., Univ. of Nebraska. p.39-42.
- Heady, H. F. and R. A. Darrow. 1949. Grazing regions and important grasses in Texas. Lab. Manual for RF 401. Published by Exchange Store. p. 1-74.
- Heady, H. F. 1950. Studies on bluebunch wheatgrass in Montana and height-weight relationships of certain range grasses. Ecol. Monogr. 20:55-81.

- Heady, H. F. 1950. Book Review: "The western range livestock industry." J. Range Manage. 3:228-229.
- Heady, H. F. 1951. Our range management schools. J. Range Manage. 4:306-307.
- Heady, H. F. 1952. Book Review: "Range management--principles and practices." A. W. Sampson. J. Range Manage. 5:90-91.
- Heady, H. F. 1952. Reseeding, fertilizing, and renovating in an ungrazed mixed prairie. J. Range Manage. 5:144-149.
- Heady, H. F. 1953. New developments in range improvement technology. *In* Rep. on Meeting of Econ. of Range Resources Development Comm. p. 6-11.
- Heady, H. F. 1954. Problems in the design of range management experiments. *In* Rep. on Meeting of Econ. of Range Resources Development Comm.
- Heady, H. F. 1954. Viable seed from sheep and deer pellets. J. Range Manage. 7:259-261.
- Heady, H. F. 1954. Dr. John Ernst Weaver. J. Range Manage. 7:217.
- Heady, H. F. 1955. The experiment station: Fountain of youth for range improvement information. Western Livestock J., January 1955.
- Heady, H. F. 1955. Techniques useful in range research. J. Range Manage. 8:114-116. (Reprinted in: The Pakistan J. of Forest. 5:193-195.)
- Heady, H. F. 1955. Planimetric map of Hopland Field Station. Univ. of California, January 1955. (Black line print).
- Heady, H. F. 1955. Vegetational type map of Hopland Field Station. Univ. of California, January 1955. (Black line print).
- Heady, H. F. 1956. Evaluation and measurement of the California annual type. J. Range Manage 9:25-27.
- Heady, H. F. 1956. Changes in a California annual plant community induced by manipulation of natural mulch. Ecology 37:798-812.
- Heady, H. F. 1957. The measurements and value of plant height in the study of herbaceous vegetation. Ecology 38:313-320.
- Heady, H. F. 1957. Effect of cages on yield and composition in the California annual type. J. Range Manage. 10:175-177.
- Heady, H. F. 1957. Problems in the design of range management experiments. *In* C. B. Baker and C. V. Plath [ed.] Economic research in the use and development of range resources; a methodological anthology. Giannini Foundation. p. 99-106.

- Heady, H. F. 1958. Vegetational changes in the California annual type. Ecology 39:402-416.
- Heady, H. F. and L. Rader. 1958. Modifications of the point frame. J. Range Manage. 11:95-96.
- Heady, H. F., R. P. Gibbens, and R. W. Powell. 1959. A comparison of the charting, line intercept, and line point methods of sampling shrub types of vegetation. J. Range Manage. 12:180-188.
- Heady, H. F. and D. T. Torell. 1959. Forage preferences exhibited by sheep with esophageal fistulas. J. Range Manage. 12:28-34.
- Heady, H. F. and T. Bedell. 1959. Rate of twig elongation of chamise, *Adenostoma fasciculatum* H. & A. J. Range Manage. 12:116-121.
- Heady, H. F. 1960. Range management in the semi-arid tropic of East Africa according to principles developed in temperate climates. VIII Int. Grassland Congr., Proc., 9A/4:223-226.
- Heady, H. F. 1960. Moderate grazing protects future forage production. Calif. Agr. 14:15. (Research brief).
- Heady, H. F. 1960. An interview on British East Africa. 15 minute tape recording for Voice of America, U.S. Information Ser. October 7, 1960.
- Heady, H. F. 1960. Vegetational characteristics as they relate to grazing management. Annual Meeting of California Sect., Amer. Soc. Range Manage., Proc., p. 55-59.
- Heady, H. F. 1960. Range management in East Africa. Kenya Dep. of Agr. and East African Agr. and Forest Res. Organ. cooperating with the U.S. Educ. Comm. in the United Kingdom. Government Printer, Nairobi. 125 p.
- Heady, H. F. 1961. Where do we stand internationally? J. Range Manage. 14:1-3.
- Heady, H. F. 1961. Ecological research findings on the annual grass type at the Hopland Field Station. California For. and Forest Products 24. 4 p.
- Heady, H. F. 1961. Continuous vs. specialized grazing systems: A review and application to the California annual type. J. Range Manage. 14:182-193.
- Heady, H. F. 1961. Range curricula. J. Range Manage. 14.
- Heady, H. F. and R. D. Ratliff. Seasonal changes in herbage weight in an annual grass community. J. Range Manage. 15:146-149.
- Heady, H. F. 1962. Book Review: "Research techniques in use at the Grassland Research Institute, Hurley, Commonwealth Bureau Pasture and Field Crops." J. Range Manage. 15:166-167.

- Heady, H. F. et al. 1962. Methods of studying forage utilization, Chapter 5. *In* Basic problems and techniques in range research. Nat. Acad. Sci. Pub. 890.
- Heady, H. F. 1962. Vegetation change at recreation site in Yosemite Valley. XIV Ext. Forest. Field School, Proc., 8 p. (Mimeo).
- Heady, H. F. 1963. Report to the government of Saudi Arabia on grazing resources and problems. Food and Agr. Organ. of the U.N. Expanded Program of Tech. Assistance, Rome, No. 1614. 30 p.
- Heady, H. F., D. W. Cooper, J. M. Rible, and J. F. Hooper. 1963. Comparative forage values of California oatgrass and soft chess. J. Range Manage. 16:51-54.
- Heady, H. F. 1963. Changes in mineral status in an annual grassland due to mulch removal. Paper presented to AAAS Symposium on Mineral Cycling, Standford, California, June 1963.
- Heady, H. F. 1963. Comments on range management technical assistance in the Middle East with special reference to Saudi Arabia. J. Range Manage. 16:317-321.
- Heady, H. F. 1964. Palatability of herbage and animal preference. J. Range Manage. 17:76-82.
- Heady, H. F. 1964. Book Review: "Forestry education in America today and tomorrow." S. T. Dana and E. W. Johnson. J. Range Manage. 17:93-94.
- Heady, H. F. 1964. Management of grazing resources in the redwood region. Talk given in Tech. Seminar Ser. on Forest. Res.--Key to the Redwood Region's Future, sponsored by School of Forest., Univ. California, Berkeley and Univ. California Agr. Ext. Service, Humboldt and Mendocino Counties. March 9-10, 1964.
- Heady, H. F. and D. W. Cooper. 1964. Soil analysis aids grazing management in Humboldt County. California Agr. 18:4-5.
- Heady, H. F. and R. P. Gibbens. 1964. The influence of modern man on the vegetation of Yosemite Valley. California Agr. Exp. Sta. Ext. Service, Manual 36. 44 p.
- Heady, H. F. 1965. Rangeland development in East Africa. *In* Ecology and economic development in East Africa. Inst. of Int. Stud., Univ. California Berkeley, Res. Ser. 9:73-82.
- Heady, H. F. and G. M. Van Dyne. 1965. Botanical composition of sheep and cattle on a mature California annual range. Hilgardia 36:465-492.
- Heady, H. F. and G. M. Van Dyne. 1965. Dietary chemical composition of cattle and sheep grazing in common on a dry annual range. J. Range Manage. 18:78-86.

- Heady, H. F. and G. M. Van Dyne. 1965. Interrelations of botanical and chemical dietary components of animals grazing dry annual range. J. Anim. Sci. 24:305-312.
- Heady, H. F. 1965. Prediction of weight composition from point samples on clipped herbage. J. Range Manage 18:144-148.
- Heady, H. F. and G. M. O. Maloly. 1965. Grazing conditions in Kenya Nasailand. J. Range Manage. 18:269-272.
- Heady, H. F. 1965. The influence of mulch on herbage production in an annual grassland. 9th Int. Grassland Congr. Proc. p. 391-394.
- Heady, H. F. 1965. Range management in Area I, Saudi Arabia. Parsons-Basil Company, Riyadh, Saudi Arabia. 23 p. (Confidential).
- Heady, H. F. et al. 1965. Agricultural planning and cost report on Area I, Saudi Arabia. Parsons-Basil Company, Riyadh, Saudi Arabia. 75 p. (Confidential)
- Heady, H. F. 1966. Influence of grazing on botanical composition of *Themeda triandra* grassland, East Africa. J. Ecol. 54:705-727.
- Heady, H. F. 1967. Practices in range forage production. Univ. Queensland Press. 81 p.
- Heady, H. F. 1967. Editorial -- The trail boss. J. Range Manage. 20:283.
- Heady, H. F. and J. McBride. 1968. Invasion of grassland by *Baccharis pilularis* DC. J. Range Manage. 21:106-108.
- Heady, H. F. 1969. Exclosures. In A practical guide to the study of productivity of large herbivores. Blackwell Sci. Pub., Oxford & Edinburgh. p. 250-252.
- Biswell, H. H., H. F. Heady, and M. E. Krueger. 1968. Arthur William Sampson, 1884-1967. In Memoriam, Univ. California.
- Heady, H. F. 1968. Grassland response to changing animal species. J. Soil and Water Conserv. 23:173-176.
- Heady, H. F. and W. M. Longhurst. 1968. Summary report of a symposium on east African range problems. The Rockefeller Found. 119 p.
- Heady, H. F. 1968. Range management in east Africa. In Summary report of a symposium on east African range problems. The Rockefeller Found. p. 78-79.
- Heady, H. F. 1969. Challenge of preserving desert life. Magazine section of The Times of London, March 3, 1969.
- Heady, H. F. and H. J. Vaux. 1969. Must history repeat? J. Range Manage. 22:209-210.

Heady, H. F. and T. N. Shiflet. 1970. Specialized grazing systems: their place in range management.

Heady, H. F. 1970. Grazing systems: terms and definitions. J. Range Manage. 23:59-61.

Heady, H. F. and D. A. Ducan. 1970. Grazing systems in the California annual type. In Abstracts of papers. XXII Annu. Meeting Amer. Soc. Range Manage. 23-24.

Name: Warren E. Hodstrom

Born: 1940

Academic Training:

Degree	Year	Institution	Major
B.S.	1961	University of Maine	Agricultural Engineering
M.S.	1969	Cornell University	Agricultural Engineering
Ph.D. Candidate		Colorado State University	Agricultural Engineering

Professional Experience:

Date	Position	Institution
1961	Field Engineer	Soil Conservation Service U.S. Dep. Agriculture
1962		U.S. Army
1964	Graduate Research Assistant	
1969	Instructor	University of Wyoming

Major Interests:

Irrigation, drainage, groundwater hydrology.

Professional and Honorary Societies:

American Society of Agricultural Engineers
Soil Science Society of America
American Geophysical Union

Publications, Technical Reports:

None

Name: Carlton H. Herbel

Born: 1927

Academic Training:

Degree	Year	Institution	Major
B.S.	1949	Texas A & I University	General Agriculture
M.S.	1954	Kansas State University	Range Management
Ph.D.	1956	Kansas State University	Range Management

Special Training:

March 1962, ARS Supervisory Development Program
September 1962, ARS Workshop on Sampling Methods
January 1969, Physiological aspects of crop yield
May 1969, Grass biology and utilization
June 1969, Modeling the Jornada ecosystem

Professional Experience:

Date	Position	Institution
1949-1950	Assistant Agronomist	Southwest Foundation for Research & Education
1953-1956	Graduate Research Assistant	Kansas State University
1956	Agronomist	Southwest Foundation for Research & Education
1956-	Range Scientist	ARS, USDA

Professional and Honorary Societies:

Gamma Sigma Delta	Ecological Society of America (sustaining)
Sigma Xi	American Forage and Grassland Council
American Society of Agronomy	American Society of Range Management
Crop Science Society of America	AAAS
Soil Science Society of America	National Wildlife Federation

Major Interests: Plant-soil-weather-animal relations, data synthesis, seeding arid rangelands, control of mesquite, creosotebush, and tarbush, range ecology, and grazing management.

Current Professional Activities:

Full-time research on the Jornada Experimental Range

Teaching: Adviser for graduate students

Research: Primary productivity of desert grassland and other studies as indicated under major interests.

Publications, Technical Reports:

- Herbel, Carlton H. 1950. Some typical practices of range improvements in Texas. Southwest Res. Inst. mimeo. 17 p.
- Herbel, Carlton H. 1955. Range conservation and season-long grazing. J. Range Manage. 8:204-205.
- Anderson, Kling L. and Carlton H. Herbel. 1955. Six years of differential grazing in the Flint Hills of Kansas. Abstr. in Agron. Abstr. p. 63. (Volunteer paper presented by Anderson at Davis).
- Herbel, Carlton H. 1956. Forage investigations at the San Antonio nursery. Southwest Foundation for Research and Education mimeo. 55 p.
- Herbel, Carlton H. 1956. Supplemental winter pastures for South Texas. Southwest Foundation for Research and Education, Report 15. 11 p.
- Herbel, Carlton H. 1958. The research program at the Jornada Experimental Range. Research Advisory Council, Rocky Mountain Forest and Range Experiment Station mimeo. (Invitational paper presented at Albuquerque).
- Herbel, Carlton H. 1958. Procedures for field evaluation of drought tolerance. Proceedings Western Grass Breeders 12th Work Planning Conf. (Presented volunteer paper at Tucson).
- Herbel, C. H., F. N. Ares, and J. O. Bridges. 1958. Hand-grubbing mesquite in the semidesert grassland. J. Range Manage. 11:267-270.
- Herbel, Carlton H. 1959. Soil factors affecting range forage. Proceedings 4th Annual Cattle Breeders School, New Mexico State University. (Presented invitational paper at Las Cruces).
- Herbel, Carlton H. and Kling L. Anderson. 1959. Response of true prairie vegetation on major Flint Hills range sites to grazing treatment. Ecol. Monogr. 29:171-186.
- Knipe, Duane and Carlton H. Herbel. 1960. The effects of limited moisture on germination and initial growth of six grass species. J. Range Manage. 13:297-302.
- Herbel, Carlton H. 1961. A four-pronged mesquite control program. Range Weed Research, Proc., p. 56-57.
- Herbel, Carlton H. 1961. The mesquite control program on the Jornada Experimental Range. New Mexico Brush Tour, Proc., p. 20-29.
- Herbel, Carlton H. and Fred N. Ares. 1961. A "two-gun" ground sprayer. Weeds 9:656-657.
- Herbel, Carlton H. 1963. Fertilizing tobosa on flood plains in the semidesert grassland. J. Range Manage. 16:133-138.

- Herbel, Carlton H. 1963. Past and present research on the Jornada Experimental Range and future needs. Jornada Range mimeo. 19 p.
- Herbel, Carlton H. 1964. Jornada Experimental Range research. The Cattleman 51(2):103.
- Herbel, Carlton H. 1964. Brush control. The Cattleman 51 (2):160.
- Herbel, Carlton H. 1965. Research on improvement of brush infested grazing land on the Jornada Experimental Range. Jornada Range mimeo. 8 p.
- Herbel, Carlton H. 1965. Reseeding in the arid southwestern United States. Australian Arid-Zone Res. Conf., p. E-23 - E-24.
- Herbel, Carlton H. and Arnold B. Nelson. 1965. Performance of Hereford and Santa Gertrudis cattle on an arid range in southwestern United States. Australian Arid-Zone Res. Conf., p. F-19 - F-20.
- Buffington, Lee C. and Carlton H. Herbel. 1965. Vegetational changes on a semidesert grassland range from 1858 to 1963. Ecol. Monogr. 35:139-164.
- Herbel, Carlton H. 1966. Australian Arid Zone Research Conference. J. Range Manage. 19:161-162.
- Herbel, Carlton H. 1966. Brush control in New Mexico. Jornada Range mimeo. 12 p.
- Herbel, Carlton H. 1966. Mesquite (*Prosopis Juliflora* (Sw.) DC.). In Chemical control of range weeds. Interagency Report, USDA and USDI. U.S. Government Printing Office, Washington, D.C. p. 26.
- Herbel, Carlton H. 1966. Creosotebush (*Larrea tridentata* (DC.) Coville). In Chemical control of range weeds. Interagency Report, USDA and USDI. U.S. Government Printing Office, Washington, D.C. p. 21.
- Herbel, Carlton H. 1966. Tarbush (*Flourensia cernua* DC.). In Chemical control of range weeds. Interagency Report, USDA and USDI. U.S. Government Printing Office, Washington, D.C. p. 38.
- Herbel, Carlton H. and Arnold B. Nelson. 1966. Activities of Hereford and Santa Gertrudis cattle on a southern New Mexico range. J. Range Manage. 19:173-176.
- Herbel, Carlton H. and Arnold B. Nelson. 1966. Species preference of Hereford and Santa Gertrudis cattle on a southern New Mexico range. J. Range Manage. 19:177-181.
- Knipe, Duane and Carlton H. Herbel. 1966. Germination and growth of some semidesert grassland species treated with aqueous extract from creosotebush. Ecology 47:775-781.

- Nelson, Arnold B. and Carlton H. Herbel. 1966. Performance of Hereford and Santa Gertrudis cattle on a southern New Mexico range. Proceedings 27th Annual Feeders' Day, New Mexico State Univ., p. 42-46.
- Nelson, Arnold B. and Carlton H. Herbel. 1966. Activities and species preferences of Hereford and Santa Gertrudis range cows. Amer. Soc. Anim. Sci., Western Sect., Proc., 17:403-408. (Nelson presented this volunteer paper). An abstract of this paper appeared in J. Anim. Sci. 25:598.
- Herbel, Carlton H. 1967. Creating a more favorable microenvironment for seeding southwestern ranges. Agron. Abst., p. 36.
- Herbel, Carlton H. 1967. Brush control research on the Jornada Experimental Range. Range Weed Research, Proc., p. 65-70. (I presented this invitational information on a tour of the Jornada).
- Herbel, Carlton H., Fred N. Ares, and Arnold B. Nelson. 1967. Grazing distribution patterns of Hereford and Santa Gertrudis cattle on a southern New Mexico range. J. Range Manage. 20:296-298.
- Nelson, Arnold B. and Carlton H. Herbel. 1967. Blood composition of range beef cows. Amer. Soc. Anim. Sci., Western Sect., Proc., 18:177-182.
- Nelson, Arnold B. and Carlton H. Herbel. 1967. Blood composition of range beef cows. J. Anim. Sci. 26:926. (Abstract of paper, volunteer, presented by Nelson at Western Section meeting).
- Sosebee, Ronald E. and Carlton H. Herbel. 1967. Temperature and moisture effects on seedling emergence and initial growth of range plants. Agron. Abst., p. 40.
- Herbel, Carlton H. 1968. Drought effects on a southern New Mexico range and the nature of recovery. Amer. Soc. Range Manage., Abst., p. 56-57.
- Herbel, Carlton H. 1968. Contributions to chapter 16, "Brush and weed control on ranges and pastures." In Principles of plant and animal pest control, Vol. 2. Weed Control, Nat. Acad. Sci. Pub. 1597.
- Kiesling, Herman E., Arnold B. Nelson, and Carlton H. Herbel. 1968. Tobosa grass utilization. Proceedings 29th Annual Feeders' Day, New Mexico State Univ., p. 13-14.
- Kiesling, H. E., A. B. Nelson, and C. H. Herbel. 1968. Effect of the esophageal fistula on chemical composition of feeds. J. Anim. Sci. 27:1183. (Abstract of volunteer paper presented by Nelson at national meeting).
- New Mexico Inter-Agency Range Committee. 1968. Improving pinyon-juniper ranges in New Mexico. Report No. 2. 23 p. (Herbel attended tour and helped prepare report).

- New Mexico Inter-Agency Range Committee. 1968. Cholla cactus control in New Mexico. Report No. 3. 18 p. (Herbel attended tour and helped prepare report).
- Herbel, Carlton H. and Ronald E. Sosebee. 1969. Moisture and temperature effects on emergence and initial growth of two range grasses. Agron. J. 61:628-631.
- Herbel, Carlton H. and Arnold B. Nelson. 1969. Grazing management on semidesert ranges in southern New Mexico. Abstract, Arid Lands in a Changing World, n.p.
- Herbel, Carlton H. and Arnold B. Nelson. 1969. Grazing management on semidesert ranges in southern New Mexico. Jornada Experimental Range Report No. 1. 13 p.
- Gould, Walter L. and Carlton H. Herbel. 1969. Chemical control of mesquite as influenced by rate of 2,4,5-T, carrier type, and volume and type of aircraft. Weed Sci. Soc. Amer. Abst. No. 63.
- Gould, Walter L. and Carlton H. Herbel. 1969. Evaluation of herbicide treatments for the control of creosotebush (*Larrea tridentata*). Western Soc. Weed Sci., Research Progress Report, p. 26-27.
- Gould, Walter L. and Carlton H. Herbel. 1969. Herbicide evaluation studies for the control of tarbush (*Flourensia cernua*). Western Soc. Weed Sci., Research Progress Report, p. 27.
- Gould, Walter L. and Carlton H. Herbel. 1969. Evaluation of aerial treatments for the control of creosotebush (*Larrea tridentata*). Western Soc. Weed Sci., Research Progress Report, p. 27-28.
- Kiesling, H. E., H. A. Barry, A. B. Nelson, and C. H. Herbel. 1969. Recovery of chromic oxide administered in paper to grazing steers. J. Anim. Sci. 29(2):361-364.
- Kiesling, H. E., A. B. Nelson, and C. H. Herbel. 1969. Chemical composition of tobosa grass collected by hand-plucking and esophageal-fistulated steers. J. Range Manage. 22:155-159.
- Nelson, A. B., C. H. Herbel, and H. M. Jackson. 1969. Chemical composition of the diet of cows grazing on arid range. Amer. Soc. Anim. Sci., Western Sect., Proc., 20:355-360. (Nelson presented this volunteer paper). An abstract of this paper appeared in J. Anim. Sci. 28:868.
- Nelson, A. B., L. A. Holland, and C. H. Herbel. 1969. Performance of Hereford and Santa Gertrudis cattle on an arid New Mexico range. Abstract, Arid Lands in a Changing World, n.p.
- Nelson, A. B., L. A. Holland, and C. H. Herbel. 1969. Performance of Hereford and Santa Gertrudis cattle on an arid New Mexico range. Jornada Experimental Range Report No. 2. 15 p.

- Herbel, C. H. 1969. Jornada Experimental Range. Arid Zone Newsletter (Australia), p. 185-187.
- Sosebee, R. E. and C. H. Herbel. 1969. Effects of high temperatures on emergence and initial growth of range plants. Agron. J. 61:621-624.
- Nelson, A. B., C. H. Herbel and H. M. Jackson. 1970. Chemical composition of forage species grazed by cattle on the Jornada Experimental Range. New Mexico Agr. Exp. Sta. Bull. 561. 33 p.
- Herbel, C. H. 1970. Environmental modification for seedling establishment. Proceedings, Symposium on Grass Biology and Utilization. (Invitational paper presented at Riverside).
- Herbel, C. H. and W. L. Gould. 1970. Control of mesquite, creosotebush, and tarbush on arid rangelands of the southwestern United States. Int. Grassland Congr., Proc. XI:38-41.
- Herbel, C. H. 1970. Seeding western rangelands. Agron. Abstr., p. 78.
- Herbel, C. H., P. L. Dittberner, and T. S. Bickle. 1970. A quantitative ecology of the Jornada Experimental Range, p. 1-133-177. In R. G. Wright and G. M. Van Dyne [eds.] Simulation and analysis of dynamics of a semi-desert ecosystem. Range Sci. Dep. Sci. Ser. No. 6, Colorado State Univ., Fort Collins.

Name: Robert S. Hoffmann

Born: 1929

Academic Training:

Degree	Year	Institution
B.S.	1950	Utah State University
M.S.	1954	University of California, Berkeley
Ph.D.	1955	University of California, Berkeley

Professional Experience:

Date	Position	Institution
1955-1957	Instructor, Dep. Zoology	University of Montana
1957-1961	Asst. Prof., Dep. Zoology	University of Montana
1961-1965	Assoc. Prof. Dep. Zoology	University of Montana
1965-1968	Prof., Dep. Zoology	University of Montana
1956-1968	Curator, Zoological Museum	University of Montana
1960 Summer	Visiting Asst. Prof.	Univ. British Columbia
1968-	Prof. Systematics and Ecology (Chairman 1969-) and Curator of Mammals, Museum of Natur. History	University of Kansas

Professional and Honorary Societies:

Ecological Society of America	AAAS
Montana Academy of Sciences	American Institute of Biological Sciences
INQUA	American Ornithologist's Union
INECOL	American Society of Mammalogists (Director)
Society of Systematic Zoology	AMQUA
Sigma Xi	Australian Mammal Society
Wildlife Society	Cooper Ornithological Society

Major Interests:

Ecology of small mammal populations, ecology of alpine ecosystems, and systematics and zoogeography of Holarctic mammals.

Current Professional Activities:

Teaching: Population Biology and various graduate-level courses

Publications, Technical Reports:

Hoffmann, R. S. 1958. The role of reproduction and mortality in population fluctuations of voles (*Microtus*). Ecol. Monogr. 28:79-109.

Hoffman, R. S. and D. L. Pattie. 1968. A guide to Montana mammals. Univ. Montana Printing Service. 133 p.

- Hoffmann, R. S. and C. F. Nadler, Jr. 1968. Chromosomes and systematics of some North American species of the genus *Marmota* (Rodentia:Sciuridae). *Experimentia* 28:740-742.
- Hoffmann, R. S. and J. R. Koplin. 1968. Habitat overlap and competitive exclusion in voles (*Microtus*). *Amer. Midland Natur.* 80:494-507.
- Hoffmann, R. S., P. L. Wright, and F. E. Newby. 1969. The distribution of some mammals in Montana. I. Mammals other than bats. *J. Mammal.* 50:579-604.
- Hoffmann, R. S., D. L. Pattie, and F. Bell. 1969. The distribution of some mammals in Montana. II. Bats. *J. Mammal.* 50:737-741.

Name: Ellis W. Huddleston

Born: 1935

Academic Training:

Degree	Year	Institution	Major
B.S.	1956	Texas Technological College	Agronomy
M.S.	1958	Cornell University	Entomology
Ph.D.	1960	Cornell University	Entomology

Professional Experience:

Date	Position	Institution
1956-1960	Research Assistant	Cornell University
1960-1965	Asst. Prof. of Entomology	Texas Tech. College
1965-1966	Assoc. Prof. of Entomology	Texas Tech. College
1966-1967	Assoc. Prof. of Ent. (Visiting)	University of Hawaii
1967-	Assoc. Prof. of Entomology	Tex. Tech University

Major Interests:

Biological control of insects and noxious species; ecology of playa lakes.

Honors:

Spencer A. Wells Award for faculty member who has made the most valuable contribution to Texas Technological College during 1967-1968.

Professional and Honorary Societies:

Sigma Xi
Entomological Society of America
Hawaiian Entomological Society
Agricultural Sciences Advisory Committee
Organization for Tropical Studies

Publications:

Author or coauthor of 21 publications. Recent or pertinent publications are listed below:

- Huddleston, E. W., D. Ashdown, C. R. Ward, and D. Morris. 1962. Multipurpose Modification of Playa Sinks. "Section on Biology" Project Number 29. Division of Water Supply and Pollution Control, U.S.P.H.S., First Annual Report. 1-123.
- Huddleston, E. W., D. Ashdown, C. E. Forehand, C. R. Ward, and D. Morris. 1964. Multipurpose Modification of Playa Sinks, "Section on Biology," Project Number 29, Division of Water Supply and Pollution Control, U.S.P.H.S., Third Annual Report. 1-114.
- Huddleston, E. W., D. Ashdown, C. E. Forehand, R. Schaefer, and D. Herzog. 1965. Effects of the 1964 High Plains Boll Weevil Control Program on Population Trends, of Non-Target Insects. Effects on the Environment of the 1964 Boll Weevil Diapause Control Program in the Texas High Plains, Plant Pest Control Division, U.S.D.A. 1-43.

- Huddleston, E. W., C. R. Ward, R. E. Howard and L. G. Richardson. 1969. Some contributions to the study of grasslands insect populations. US IBP Grassland Biome Tech. Rep. No. 48. 9 p.
- Huddleston, E. W. 1970. Comprehensive Network Site description, Pantex. US IBP Grassland Biome Tech. Rep. No. 45. 12 p.
- Fournier, W. J., H. N. Howell, Jr., E. W. Huddleston, C. R. Ward and C. W. O'Brien. 1971. Effect of first killing frost on rangeland insect populations. Entomol. Soc. Amer. - Southwestern Branch Meeting, El Paso, Texas.
- Howell, H. N., Jr., W. J. Fournier, E. W. Huddleston, C. R. Ward and C. W. O'Brien. 1971. Insect populations on a southern mixed prairie. Entomol. Soc. Amer - Southwestern Branch Meeting, El Paso, Texas.
- Huddleston, E. W., H. N. Howell, Jr., W. J. Fournier, C. W. O'Brien and C. R. Ward. 1970. Population trends of grassland insects on a mixed prairie. Entomol. Soc. Amer. - National Meeting, Miami, Florida.

Name: Gary K. Hulett

Born: 1936

Academic Training:

Degree	Year	Institution	Major
B.S.	1958	Fort Hays Kansas State College	Botany
M.S.	1959	Kansas State College	Botany
Ph.D.	1962	University of Saskatchewan	Plant Ecology

Professional Experience:

Date	Position	Institution
1956-1959	Research Assistant	Kansas State College
1959-1962	Research Assistant	Saskatchewan Research Council
1962-1963	Assistant Professor of Biology	University of North Dakota
1963-1965	Assistant Professor of Botany	Fort Hays Kansas State College
1965-	Associate Professor of Botany	Fort Hays Kansas State College

Professional and Honorary Societies:

American Society of Range Management
Ecological Society of America
Association of Southwestern Naturalists
American Institute of Biological Science

Major Interests:

Ecosystem ecology (grasslands), primary productivity, organic matter transfer rates, root production.

Publications, Technical Reports:

Author or coauthor of 7 publications. Recent or pertinent publications are listed below:

Redman, R. E. and G. Hulett. 1964. Factors affecting the distribution of certain species of compositae on an eastern North Dakota prairie. North Dakota Acad. Sci. Proc. 18:10-21.

Hulett, G. K., R. T. Coupland and R. L. Dix. 1966. The vegetation of dune sand areas within the grassland region of Saskatchewan. Can. J. Bot. 44:1307-1331.

Goodman, C. L., G. W. Tomanek and G. K. Hulett. 1967. A survey of phreatophytes at Cedar Bluffs Reservoir. Kans. Acad. Sci. Trans. 70:451-463.

Young, S. Emory and G. K. Hulett. 1968. Emergence and growth of six Mixed Prairie grasses under the influence of *Yucca glauca* extract. Kans. Acad. Sci. Trans. 71:136-144.

Hulett, G. K. and G. W. Tomanek. 1969. Remnant prairies on the shallow limy range site in north central Kansas. J. Range Manage. 22:19-23.

Hulett, G. K., G. L. Van Amburg and G. W. Tomanek. 1969. The effect of soil depth on cover and production of a shallow limy range site in Western Kansas. J. Range Manage.

Hulett, G. K., C. D. Sloan and G. W. Tomanek. 1969. The vegetation of remnant grasslands in the loessial region of northwestern Kansas and southwestern Nebraska. Southwestern Natur.

Name: H. L. Hutcheson, Jr.

Born: 1937

Academic Training:

Degree	Year	Institution	Major
B.S.	1960	Oklahoma State University	Natural Science
M.S.	1962	Oklahoma State University	Plant Ecology
Ph.D.	1965	University of Oklahoma	Plant Ecology

Professional Experience:

Date	Position	Institution
1960-1962	Teaching Assistant	Oklahoma State Univ.
1962-1965	Teaching Assistant	Univ. Oklahoma
1965	NSF Postdoctoral Grant	Univ. Oklahoma Biol. Sta. (Summer)
1965-1969	Assistant Professor of Botany	South Dakota State Univ.
1966	Visiting Assistant Professor	Univ. Oklahoma (Summer)
	Summer Ecology Institute	
1969-	Assoc. Prof. of Botany-Biology	South Dakota State Univ.

Professional and Honorary Societies:

Ecological Society of America	South Dakota Academy of Science
AIBS	Oklahoma Academy of Science
American Society of Range Management	American Association of Univ. Professors
Sigma Xi	South Dakota Biology Teachers Association
Southwestern Association of Naturalists	Organization of Inland Biological Field Sta.

Major Interests:

Plant ecology and geo-botany

Publications, Technical Reports:

Dwyer, Don D. and H. L. Hutcheson. 1965. Growth rate of four range grasses in north-central Oklahoma. Oklahoma Agr. Exp. Sta. Bull. B-638. 15 p.

Hutcheson, H. L. 1965. Vegetation in relation to slope exposure and geology in the Arbuckle Mountains. In Report of research conducted under NSF Postdoctoral Grant EB3462. 56 p.

Hutcheson, H. L. and R. J. Baalman. 1965. Buffalo, fire and grass in the Wichita Mountains. In Report of research conducted under NSF Postdoctoral Grant EB3462. 12 p.

Name: Donald N. Hyder

Born: 1921

Academic Training:

Degree	Year	Institution
B.S.	1947	University of Idaho
M.S.	1949	Utah State University
Ph.D.	1961	Oregon State University

Professional Experience:

Date	Position	Institution
1941	Forest Guard	U. S. Forest Serv., Idaho
1942	Field Assistant	Grazing Service, Idaho
1943-1944	Aviation Cadet	U. S. A. Air Force
1944-1946	Pilot	U. S. A. Air Force
1947-1949	Teaching Assistant	Utah State Agri. College
1949-1956	Research Range Conserv.	BLM, Oregon
1956-1961	Research Agronomist	ARS, Oregon
1956-1960	Assistant Professor	Oregon State University
1960-1961	Associate Professor	Oregon State University
1961-	Range Scientist	ARS, Colorado State Univ.
	Teaching: Grad. Faculty	

Professional and Honorary Societies:

Sigma Xi	Crop Science Society of America
Phi Kappa Phi	American Society of Agronomy
Xi Sigma Pi	Weed Society of America
Gamma Sigma Delta	American Society of Range Management

Publications, Technical Reports:

Hyder, D. N. and W. A. Sawyer. 1951. Rotation-deferred grazing as compared to season long grazing on sagebrush-bunchgrass ranges in Oregon. J. Range Manage. 4:30-34.

Hyder, D. N. 1952. Rotation-deferred grazing at Squaw Butte. Oregon Cattleman 1:18-21.

Hyder, D. N. 1953. Grazing capacity as related to range condition. J. Forest. 51:206.

Hyder, D. N. 1953. Controlling big sagebrush with growth regulators. J. Range Manage. 6:109-116.

Hyder, D. N. 1954. Forage utilization. J. Forest. 52:603-604.

Hyder, D. N. 1954. Spray to control big sagebrush. Oregon Agr. Exp. Sta. Bull. 538. 12 p.

- Hyder, D. N. and F. A. Sneva. 1954. A method for rating the success of range seeding. *J. Range Manage.* 7:89-90.
- Hyder, D. N. and F. A. Sneva. 1955. Effect of form and rate of active ingredient, spraying season, solution volume, and type of solvent on mortality of big sagebrush, *Artemisia tridentata*. *Oregon Agr. Exp. Sta. Tech. Bull.* 35. 16 p.
- Hyder, D. N., F. A. Sneva, and W. A. Sawyer. 1955. Soil firming may improve range seeding operations. *J. Range Manage.* 8:159-163.
- Hyder, D. N. and F. A. Sneva. 1956. Seed- and plant-soil relations as affected by seedbed firmness on a sandy loam range land soil. *Soil Sci. Soc. Amer. Proc.* 20:416-419.
- Hyder, D. N. and F. A. Sneva. 1956. Herbage response to sagebrush spraying. *J. Range Manage.* 9:34-38.
- Hyder, D. N., F. A. Sneva, and L. D. Calvin. 1956. Chemical control of sagebrush larkspur. *J. Range Manage.* 9:184-186.
- Hyder, D. N., F. A. Sneva, D. O. Chilcote, and W. R. Furtick. 1957. Chemical control of rabbitbrush with emphasis upon simultaneous control of big sagebrush. *Weeds* 6:289-297.
- Cooper, C. S., D. N. Hyder, R. G. Peterson, and F. A. Sneva. 1957. The constituent differential method of estimating species composition in mixed hay. *Agron. J.* 49:190-193.
- Sneva, F. A., D. N. Hyder, and C. S. Cooper. 1958. The influence of ammonium nitrate on the growth and yield of crested wheatgrass on the Oregon high desert. *Agron. J.* 50:40-44.
- Cooper, C. S. and D. N. Hyder. 1958. Adaptability and yield of eleven grasses grown on the Oregon high desert. *J. Range Manage.* 11:235-237.
- Hyder, D. N., F. A. Sneva, and W. A. Sawyer. 1958. Sagebrush or grass. *Oregon Agr. Exp. Sta. Circ.* 590. 11 p.
- Hyder, D. N., W. R. Furtick, and F. A. Sneva. 1958. Differences among butyl, ethyl, and isopropyl ester formulations of 2,4-D, 2,4,5-T, and MCPA in the control of big sagebrush. *Weeds* 6:194-197.
- Booster, D. E. and D. N. Hyder. 1958. The Oregon grass seeder. Paper presented at the annual meeting of the Interagency Range Reseeding Equipment Committee, Phoenix, Arizona, January 1958. mimeo.
- Hyder, D. N. and F. A. Sneva. 1959. Carbohydrate reserves in crested wheatgrass. A summary of significant findings prepared especially for the Soil Conservation Service, U. S. Dep. Agr. mimeo.
- Hyder, D. N. and F. A. Sneva. 1959. Growth and carbohydrate trends in crested wheatgrass. *J. Range Manage.* 12:271-275.
- Hyder, D. N., W. R. Furtick, and F. A. Sneva. 1959. 2,4-D effectiveness on big sagebrush and green rabbitbrush as influenced by nutrient and gibberellin additives. 1959 Research Progress Report, Western Weed Control Conference.

- Hyder, D. N. 1960. An observation on height of flight for spraying big sagebrush. 1960 Research Progress Report, Western Weed Control Conference.
- Sneva, F. A. and D. N. Hyder. 1960. Adjusting range production to a median year. Presented 13th Annu. Meeting, Amer. Soc. Range Manage., Feb.
- Hyder, D. N. and F. A. Sneva. 1960. Bitterlich's plotless method for sampling basal ground cover of bunchgrasses. J. Range Manage. 13:6-9.
- Sneva, F. A. and D. N. Hyder. 1960. Adjusting range production to a median year. Amer. Meteorol. Soc. Abstr. Bull. 41:261.
- Hyder, D. N., D. E. Booster, F. A. Sneva, W. A. Sawyer, and J. B. Rodgers. 1961. Wheel-track planting on sagebrush-bunchgrass range. J. Range Manage. 14:220-224.
- Hyder, D. N. and F. A. Sneva. 1961. Fertilization of sagebrush-bunchgrass range--a progress report. Oregon Agr. Exp. Sta. Misc. Paper 115.
- Hyder, D. N. 1961. Growth characteristics of crested wheatgrass, *Agropyron desertorum* (Fisch.) Schult., in the big sagebrush-bluebunch wheatgrass province of southeastern Oregon. Ph.D. Thesis, Oregon State Univ. 158 p.
- Hyder, D. N. and F. A. Sneva. 1962. Chemical control of foothill deathcamas. J. Range Manage. 15:25-27.
- Sneva, F. A. and D. N. Hyder. 1962. Estimating herbage production on semiarid ranges in the intermountain region. J. Range Manage. 15:88-93.
- Hyder, D. N., F. A. Sneva, and V. H. Freed. 1962. Susceptibility of big sagebrush and green rabbitbrush to 2,4-D as related to certain environmental, phenological, and physiological conditions. Weeds 10:288-295.
- Hyder, D. N. and F. A. Sneva. 1962. Selective control of big sagebrush associated with bitterbrush. J. Range Manage. 15:211-215.
- Hyder, D. N. and F. A. Sneva. 1962. Forecasting range production in eastern Oregon. Oregon Agr. Exp. Sta. Bull. 588. 11 p.
- Hyder, D. N. and F. A. Sneva. 1963. Forage characteristics of big bluegrass, crested wheatgrass, and beardless wheatgrass. Presented at the Annu. Meeting of the Amer. Soc. Range Manage., Rapid City, South Dakota, Jan. 1963.
- Sneva, F. A. and D. N. Hyder. 1963. Spring response of crested wheatgrass fertilization as affected by stand density and age. Paper presented at the Annu. Meeting of the Amer. Soc. Range Manage., Rapid City, South Dakota, Jan. 1963.
- Hyder, D. N. and F. A. Sneva. 1963. Morphological and physiological factors affecting the grazing management of crested wheatgrass. Crop Sci. 3:267-271.
- Sneva, F. A. and D. N. Hyder. 1963. Raising dryland rye hay. Oregon Agri. Exp. Sta. Bull. 592. 8 p.
- Hyder, D. N. and F. A. Sneva. 1963. Studies of six grasses seeded on sagebrush-bunchgrass range. Yield, palatability, carbohydrate accumulation, and developmental morphology. Oregon Agr. Exp. Sta. Tech. Bull. 71. 20 p.
- Hyder, D. N., C. E. Conrad, P. T. Tueller, L. D. Calvin, C. E. Poulton, and F. A. Sneva. 1963. Frequency sampling of sagebrush-bunchgrass vegetation. Ecology 44:740-746.

- Sneva, F. A., C. B. Rumburg, and D. N. Hyder. 1964. A summary of alfalfa investigations conducted on the Squaw Butte Experiment Station. Oregon Agr. Exp. Sta. Spec. Rep. 176. 19 p.
- Hyder, D. N. and R. E. Bement. 1964. Six weeks fescue as a deterrent to blue grama utilization. J. Range Manage. 17:261-264.
- Hedrick, D. W., D. N. Hyder, and F. A. Sneva. 1964. Overstory-understory grass seedings on sagebrush-bunchgrass range. Oregon Agr. Exp. Sta. Tech. Bull. 80. 31 p.
- Sneva, F. A. and D. N. Hyder. 1965. Yield, yield-trend, and response to nitrogen of introduced grasses on the Oregon high desert. Oregon Agr. Exp. Sta. Spec. Rep. 195.
- Hyder, D. N., R. E. Bement, E. E. Remmenga, and C. Terwilliger, Jr. 1965. Frequency sampling of blue grama range. J. Range Manage. 18:90-93.
- Hyder, D. N., R. E. Bement, E. E. Remmenga, and C. Terwilliger, Jr. 1966. Vegetation-soils and vegetation-grazing relations from frequency data. J. Range Manage. 19:11-17.
- Hyder, D. N., R. E. Bement, J. J. Norris, and M. J. Morris. 1966. Evaluating herbage species by grazing cattle. Part 1. Food intake. X International Grassland Cong. Proc. Sec. 4:970-974.
- Hyder, D. N., R. E. Bement, J. J. Norris, and R. R. Wheeler. 1966. Evaluating herbage species by grazing cattle. Part 2. Food quality. X International Grassland Cong. Proc. Sec. 4:974-977.
- Hedrick, D. W., D. N. Hyder, F. A. Sneva, and C. E. Poulton. 1966. Ecological response of sagebrush-grass range in central Oregon to mechanical and chemical removal of *Artemisia*. Ecology 47:432-439.
- Sneva, F. A. and D. N. Hyder. 1966. Control of big sagebrush associated with bitterbrush in ponderosa pine. J. Forest. 64:677-680.
- Hyder, D. N. 1967. Pounds of forage per pound of beef. Range Manage. Conf., Texas Tech. Coll., Lubbock, Texas, Proc. October 13.
- Hyder, E. N., R. E. Bement, and J. J. Norris. 1968. Sampling requirements of the water-intake method of estimating forage intake by grazing cattle. J. Range Manage. 21:392-397.
- Hyder, D. N. and A. C. Everson. 1968. Chemical fallow of abandoned croplands on the short-grass plains. Weed Sci. 16:531-533.
- Marlatt, W. E. and D. N. Hyder. 1968. Modification of soil surface micro-relief to reduce wind erosion on the high plains. Amer. Meteorological Soc. Abstr. Bull. 49:298.
- Hyder, D. N. 1968. Water intake by cattle as a measure of forage intake and quality. Invitational paper presented at the U. S. Forest Service Workshop on Range and Wildlife Habitat Evaluation, May 1968, Tempe, Arizona. USDA Misc. Pub. 1147.

- Hyder, D. N. and R. E. Bement. 1969. A micro-ridge roller for seedbed modification. *J. Range Manage.* 22:54-56.
- Hyder, D. N. 1969. Microridge roller holds erosive, sandy soils for seeding. *Crops and Soils* 21:20.
- Everson, A. C., D. N. Hyder, H. R. Gardner, and R. E. Bement. 1969. Chemical versus mechanical fallow of abandoned croplands. *Weed Sci.* 17:548-551.
- Hyder, D. N. 1969. Effects of N on grass morphology. Invitational paper presented at a workshop on the nitrogen cycle in semiarid grasslands, Bismarck, North Dakota, March 25-26.
- Hyder, D. N. 1969. The impact of domestic animals on the function and structure of grassland ecosystems, p. 243-260. *In* R. L. Dix and R. G. Beidleman [ed.] *The grassland ecosystem: a preliminary synthesis.* Range Sci. Dep. Sci. Ser. No. 2, Colorado State Univ. 437 p.
- Hyder, D. N. 1969. Defoliation in relation to vegetative growth. Invitational paper presented at a symposium on grass biology and utilization, Riverside, California, May 20-22. (In press).
- Wallace, J. D., K. L. Knox and D. N. Hyder. 1970. Energy and nitrogen value of sandhill range forage selected by cattle. *J. Anim. Sci.* 31:398-403.
- Hyder, D. N. 1970. The leaf replacement potential of grasses. 23rd Annu. Meeting, Amer. Soc. Range Manage., Denver, Colorado, p. 64. Abstr.
- Sims, P. L., D. N. Hyder, L. J. Ayuko and R. K. Lang'at. 1970. Developmental morphology of four warm-season grasses. 23rd Annu. Meeting, Amer. Soc. Range Manage., Denver, Colorado, p. 57. Abstr.
- Marlatt, W. E. and D. N. Hyder. 1970. Soil ridging for reduction of wind erosion from grass seedbeds. *J. Range Manage.* 23:169-173.
- Hyder, D. N. and R. E. Bement. 1970. Soil physical conditions after plowing and packing of ridges. *J. Range Manage.* 23:289-292.
- Knox, K. L., A. Chappell, J. A. Gibbs, D. N. Hyder and R. E. Bement. 1970. Sampling methods for water kinetics. *J. Dairy Sci.* 53:1279-1282.
- Hyder, D. N. 1970. Grazing management on range infested with Geyer larkspur. 5th Annu. Colorado Weed Control Conf., Proc., p. 36.
- Hyder, D. N. 1970. Morphology and development in range grasses. Distinguished Lecture, Texas A&M Univ., College Station.
- Hyder, D. N. 1971. Grass seedling morphology affects seeding success. Proc. Annu. Meeting, Amer. Soc. Range Manage., Reno Nevada, p. 25.
- Sims, P. L., L. J. Ayuko and D. N. Hyder. 1971. The developmental morphology of switchgrass and sideoats grama. *J. Range Manage.* 24:

Hyder, D. N., A. C. Everson and R. E. Bement. 1971. Seedling morphology and seeding failures with blue grama. J. Range Manage. 24:287-292.

Hyder, D. N. 1971. Morphogenesis and management of perennial grasses in the United States. U.S.-Australia Seminar-workshop on "Plant morphogenesis and range resources management." (In press)

Hyder, D. N. 1971. Species susceptibilities to 2,4-D on mixed-grass prairie. Weed Sci. 19: (In press)

Name: George S. Innis

Born: 1937

Academic Training:

Degree	Year	Institution	Major
B.A.	1958	University of Texas	Mathematics
M.A.	1961	University of Texas	Mathematics
Ph.D.	1962	University of Texas	Mathematics

Professional Experience:

Date	Position	Institution
1962-63	Postdoctoral	Harvard University
1963-64	Assistant Professor	Rice University
1964-67	Special Research Associate Director, Scientific Computer Center	University of Texas
1964-67	Assistant Professor	University of Texas
1967 (3 mos)	Staff Member	Los Alamos Scientific Lab
5/68-9/68	Co-Director of Computer Services	Texas Tech College
9/68-4/70	Director of Computer Services	Texas Tech University
9/67-1/71	Associate Professor	Texas Tech University
1971-	Director of Systems Analysis Associate Professor of Math	Colorado State University

Major Interests:

Applications of mathematical (quantitative) techniques to biological and physical problems.

Professional and Honorary Societies:

Mathematical Association of America
American Mathematical Society
Society for Industrial and Applied Mathematics
Sigma Xi
Association for Computing Machinery

Publications, Technical Reports:

Horton, C. W. and G. S. Innis. 1960. The determination of farfield radiation patterns from nearfield measurements. U.S. Navy J. Underwater Acoustics 10:150-157.

Horton, C. W. and G. S. Innis. 1960. Nearfield and farfield measurements with source level determination for a nine element array of TR-11 transducers. DRL-A-172. 20 p.

- Horton, C. W. and G. S. Innis. 1960. On the determination of the radiation pattern of an emitter from nearfield data. DRL-A-177. 8 p.
- Horton, C. W. and G. S. Innis. 1961. The computation of farfield radiation patterns from measurements made near the source. DRL-A-189. 4 p.
- Innis, G. S. 1961. Solution forms for the scalar Helmholtz equation. DRL-A. 39 p.
- Horton, C. W. and G. S. Innis. 1961. The computation of farfield radiation patterns from measurements made near the source. J. Acoustical Soc. Amer. 33:877-880.
- Innis, G. S. 1964. Some reproducing kernels for the unit disk. Pacific J. Math. 14:177-186.
- Innis, G. S. 1966. The uniformization of hyperbolic Riemann surface. Amer. Math. Soc., Proc. 17:567-572.
- Innis, G. S., D. G. Olson, S. P. Pitt and C. S. Stradling. 1966. Automatic classification using active surface ship sonars: A synopsis. DRL-A-256. 57 p.
- Innis, G. S. and W. A. Matuska. 1966. Generation of a stationary Gaussian random process with a specified power spectral density function. DRL-A-258. 68 p.
- Innis, G. S. 1966. A processing technique for symmetric signals. DRL-A-269. 22 p.
- Innis, G. S. 1967. Shannon's theorem. DRL-A-284. 80 p.
- Innis, G. S. 1969. On the existence of binary sequences with prescribed properties. SIAM Rev. p. 621.

Name: Syed M. Jalal

Born: 1938

Academic Training:

Degree	Year	Institution	Major
B.Sc.	1959	University of Bihar, India	
M.S.	1962	University of Wisconsin	
Ph.D.	1965	University of Wisconsin	

Professional Experience:

Date	Position	Institution
1961-64	Research Assistant	University of Wisconsin
1964-68	Assistant Professor	University of North Dakota
1969-	Associate Professor	University of North Dakota

Major Interests:

Cytogenetics and Genecology

Professional and Honorary Societies:

American Institute of Biological Sciences
Genetic Society of Canada
Crop Science Society of America
North Dakota Academy of Science
Sigma Xi, National Honor Society

Publications, Technical Reports:

- Nielsen, E. L., P. N. Drolsom and S. M. Jalal. 1962. Analysis of F_2 progeny from *Bromus* hybrids. Crop Sci. 2:459-462.
- Jalal, S. M. and E. L. Nielsen. 1965. Interrelationships among reproductive stages of *Bromus inermis* Leyss. Crop Sci. 5:401-403.
- Nielsen, E. L., P. N. Drolsom and S. M. Jalal. 1965. Evaluation of back-cross and self-pollination progenies from interspecific hybridization of *Bromus*. Crop Sci. 5:339-342.
- Jalal, S. M. 1966. Anomalous cytological behavior during microsporogenesis of the self sterile plants of *Bromus inermis* Leyss. North Dakota Acad. Sci., Proc. 19:188-198.
- Jalal, S. M., T. R. James and R. W. Seabloom. 1967. Karyotype of white tailed jack rabbit. North Dakota Acad. Sci., Proc. 21:92-98.
- Jalal, S. M., T. R. James and R. W. Seabloom. 1967. Karyotype of white tailed jack rabbit. Mammal. Chromatogr. Newsletter 9:194-196. (Abstr.)

- Jalal, S. M. and E. L. Nielsen. 1967. Entra-clonal instability in smooth brome grass (*Bromus inermis* Leyss). *Euphytica* 16:385-390.
- Jalal, S. M. and E. L. Nielsen. 1970. Cytology of self sterile plants of smooth brome grass with an emphasis on anomalous aberrations. In preparation.
- Jalal, S. M. 1970. Influence of micronuclei frequency to the fertility levels of the prairie *Andropogons*. In preparation.
- Dewald, G. W. and S. M. Jalal. 1970. Karyotypes of two subspecies of North American muskrat. *Mammal. Chromatogr. Newsletter* 1:37.
- Frechette, A. G. and S. M. Jalal. Karyological analysis of two subspecies of North American red back vole. In press.
- Johnson, G. A. and S. M. Jalal. 1971. Mutagenic action of DDT on animals. (To be presented at the 63rd Annual Meeting of North Dakota Acad. Sci., Fargo.)
- Terry, D. L. and S. M. Jalal. 1971. Influence of chromosomal aberrations on the fertility levels of naturalized populations of brome grass (*Bromus inermis* Leyss). (To be presented at the 63rd Annual Meeting of North Dakota Acad. Sci., Fargo.)
- Wali, M. K. and S. M. Jalal. 1971. Analysis of a saline tall grass prairie ecosystem. II. Vegetation-soil relationship along a transect. (To be presented at the 63rd Annual Meeting of North Dakota Acad. Sci., Fargo.)

Name: Donald A. Jameson

Born: 1929

Academic Training:

Degree	Year	Institution	Major
B.S.	1950	Colorado State University	Range Management & Forestry
M.S.	1952	Montana State University	Range Management & Animal Industry
Ph.D.	1958	Texas A & M University	Range Management, Plant Physiology, and Soils

Special Training:

Air Force Residence Schools. 1952-58. Courses in communications and electronics Research and Development Seminar, National Security Seminar.

Air Force Correspondence Courses. 1952-58. Including Automatic Data Processing, Electronics Fundamentals, Air Weather, Communications, Fire Control Systems.

IBM Schools. 1963-67. FORTRAN & Assembly Language.

Courses for credit at Northern Arizona U. 1963-67. Including Micro and Macro Economic Theory, Special problems in Chemistry, Calculus, Matrix Algebra and Differential Equations.

Consultant and lecturer to Northern Arizona University on computer programming and mathematical modeling of biological data. 1967-68.

Certificate. 1968. Mathematical and computer analysis of biological systems models. Washington Engineering Services Co., Inc.

Certificate. 1969. Operations Research and Analysis course. University of California, Los Angeles.

Professional Experience:

Date	Position	Institution
1950-1952	Research Assistant	Montana Agr. Exp. Sta.
1952-1954	Air Force Communication Officer	
1956-1963	Range Scientist	Rocky Mountain Forest & Range Exp. Sta., Forest Service, Flagstaff, Arizona
1963-1968	Plant Physiol. & Project Leader	" " "
1968-Present	Associate Professor, Range Science	Colorado State University

Professional and Honorary Societies:

Ecological Society of America
 American Society of Range Management
 Sigma Xi

Major Interests:

Grassland and brushland ecology; soil-plant relationships, modeling and evaluation of ecological problems; quantitative management of natural resource-economic-community complexes.

Current Professional Activities:

Teaching: Ecosystem function, Range Economics, Quantitative Ecosystem Planning, Short Course development for selected U. S. Forest Service Personnel

Research: IBP - Intensive Site Director, Grassland Biome; Contract Research with U. S. Forest Service; Colorado Experiment Station - Optimization of Land Management Practices

Publications, technical reports:

Payne, G. F., D. A. Jameson and A. M. McKinney. 1951. Nutritional values of certain Montana range forage plants. Western Sec. Amer. Soc. Anim. Prod., Proc., 2:141-143.

Jameson, D. A. 1952. Nutritive value of browse on Montana winter ranges. J. Range Manage. 5:305-310.

Jameson, D. A. and G. W. Thomas. 1956. Time of day as a consideration in grass clipping experiments. J. Range Manage. 9:98-99.

Jameson, D. A. and D. L. Huss. 1959. The effect of clipping leaves and stems on numbers of tillers, herbage weights, root weights, and food reserves of little bluestem. J. Range Manage. 12:122-126.

Cotner, M. L. and D. A. Jameson. 1959. Costs of juniper control: bulldozing vs. burning individual trees. Sta. Paper 43, Rocky Mountain Forest and Range Exp. Sta. 14 p.

Jameson, D. A. 1961. Heat and desiccation resistance of tissue of important trees and grasses of the pinyon-juniper type. Bot. Gaz. 122:174-179.

Jameson, D. A. 1961. Growth inhibitors in native plants of northern Arizona. Rocky Mountain Forest and Range Exp. Sta. Res. Note 61. 2 p.

Jameson, D. A. 1962. Plant growth regulation (book review). J. Range Manage. 15:112.

Jameson, D. A. 1962. Effects of burning on a gallets-black grama range invaded by juniper. Ecology 43:760-763.

Jameson, D. A., J. A. Williams and E. W. Wilton. 1962. Vegetation and soils of Fishtail Mesa, Arizona. Ecology 43:403-410.

Jameson, D. A. 1963. Evaluation of the responses of individual plants to grazing. In Range Res. Methods. A symposium. U. S. Dep. Agric. Forest Service Misc. Pub. 940:109-116.

Jameson, D. A. 1963. Physiology of defoliation. Paper presented to joint meeting of American Society of Agronomy and American Society of Range Management. See: Agron. Abstr. 17-21:105.

- Jameson, D. A. 1963. Responses of individual plants to harvesting. *Botan. Rev.* 29:532-594.
- Jameson, D. A. 1964. Effects of defoliation on forage plant physiology. *Amer. Soc. Agron. Spec. Pub.* 5. p. 67-80.
- Jameson, D. A. and T. N. Johnsen, Jr. 1964. Ecology and control of alligator juniper. *Weeds* 12:140-142.
- Arnold, J. F., D. A. Jameson and E. H. Reid. 1964. The pinyon-juniper type of Arizona: effects of grazing, fire, and tree control. *U. S. Dep. Agric. Prod. Res. Rep.* 84. 28 p.
- Jameson, D. A. 1965. Arrangement and growth of pinyon and one-seed juniper trees. *Plateau* 37:121-127.
- Jameson, D. A. and E. H. Reid. 1965. The pinyon-juniper type of Arizona. *J. Range Manage.* 18:152-153.
- Jameson, D. A. 1965. Phenology of grasses of the northern Arizona pinyon-juniper type. *U. S. Forest Service Res. Note* RM-47. 8 p.
- Jameson, D. A. 1965. Nutrient minerals in grassland herbage (book review). *J. Range Manage.* 19:378.
- Jameson, D. A. 1966. Competition in a blue grama-broom snakeweed-actinea community and responses to selective herbicides. *J. Range Manage.* 19:121-124.
- Jameson, D. A. 1966. Pinyon-juniper litter reduces growth of blue grama. *J. Range Manage.* 19:214-217.
- Jameson, D. A. 1966. Diurnal and seasonal fluctuations in moisture content of pinyon and juniper. *U. S. Forest Service Res. Note* RM-67. 7 p.
- Jameson, D. A. 1966. Juniper control by individual tree burning. *U. S. Forest Service Res. Note* RM-71. 4 p.
- Jameson, D. A. 1967. The relationship of tree overstory and herbaceous understory vegetation. *J. Range Manage.* 20:247-249.
- Pearson, H. and D. A. Jameson. 1967. Relationship between timber and cattle production on ponderosa pine range--The Wild Bill range. *Rocky Mountain Forest and Range Exp. Sta. Pub.* 10 p.
- Jameson, D. A. 1968. Species interactions of growth inhibitors in native plants of northern Arizona. *U. S. Forest Service Res. Note* RM-113. 2 p.
- Jameson, D. A. 1968. Degradation and accumulation of inhibitory substances from *Juniperus osteosperma* (Torr.) Little. *Proc. IBP Symposium on plant-plant chemical interactions.* Santa Barbara, Calif. March 1968. Mimeo.

- Lavin, I., D. A. Jameson, and F. B. Gomm. 1968. Juniper extract and deficient aeration effects on germination of six range species. J. Range Manage. 21:262-263.
- Clary, W. P., P. F. Ffolliott, and D. A. Jameson. 1968. Relationship of different forest floor layers to herbage production. U. S. Forest Serv. Res. Note RM-123. 3 p.
- Jameson, D. A. and J. D. Dodd. 1969. Herbage production varies with soil in the pinyon-juniper type of Arizona. U. S. Forest Serv. Res. Note RM-131.
- Jameson, D. A. 1969. Rainfall patterns on vegetation zones in northern Arizona. Plateau 41:105-111.
- Bledsoe, L. J. and D. A. Jameson. 1969. Model structure for a grassland ecosystem, p. 410 to 435. In R. L. Dix and R. G. Beidleman [ed.] The grassland ecosystem: a preliminary synthesis. Colorado State Univ., Range Sci. Dep. Sci. Ser. No. 2. 437 p.
- Vorhies, G. and D. A. Jameson. 1969. Fiber length in southwestern young-growth ponderosa pine. Forest Prod. J. 19:52-55.
- Jameson, D. A. 1970. Mathematical modelling of a grassland ecosystem. Paper presented to Amer. Soc. of Range Manage., Denver.
- Jameson, D. A. 1970. Stochastic stability and secondary succession. In R. G. Wright and G. M. Van Dyne. Simulation and analysis of dynamics of a semi-desert grassland: An interdisciplinary workshop program toward evaluating the potential ecological impact of weather modification. 255 p. Range Sci. Dep. Sci. Ser. No. 6, Colorado State Univ., Fort Collins.
- Jameson, D. A. 1970. Land management policy and development of ecological concepts. J. Range Manage. 23:316-321.
- Jameson, D. A. 1970. Degradation and accumulation of inhibitory substances from *Juniperus osteosperma* (Torr.) Little. Plant and Soil 33:213-224.
- Jameson, D. A. 1970. Juniper root competition reduces basal area of blue grama. J. Range Manage. 23:217-218.
- Jameson, D. A., R. G. Gierisch, S. Wallace, and R. Robinson. 1970. Range condition evaluation by discriminant analysis. Range Sci. Dep. Sci. Ser. No. 8, Colorado State Univ., Fort Collins.
- Jameson, D. A. 1970. The value of broom snakeweed as a range condition indicator. J. Range Manage. 23(4):302-304.
- Heidt, J. and D. A. Jameson. 1970. Determination of timber conversion alternatives through computer programming. U.S. Forest Service Res. Paper. (In press).

Jameson, D. A. [ed.]. 1970. Modelling and systems analysis in range science. Range Sci. Dep. Sci. Ser. No. 5, Colorado State Univ., Fort Collins. 134 p.

Jameson, D. A. Basic concepts in mathematical modelling of grassland ecosystems, p. 1-15. *In* Modelling and systems analysis in range science. Range Sci. Dep. Sci. Ser. No. 5, Colorado State Univ., Fort Collins. 134 p.

Jameson, D. A. and L. J. Bledsoe. 1970. Models and selection of experiments, p. 111-131. *In* Modelling and systems analysis in range science. Range Sci. Dep. Sci. Ser. No. 5, Colorado State Univ., Fort Collins. 134 p.

Jameson, D. A. 1971. Optimum stand selection for juniper control on southwestern woodland ranges. *J. Range Manage.* 24(2):94-99.

Name: Arthur George Johanningsmeier

Born: 1930

Academic Training:

Degree	Year	Institution	Major
B.S.	1956	Purdue University	Biology and Chemistry
M.S.	1962	Purdue University	Biology
Ph.D.	1966	Boston University	Biology

Professional Experience:

Date	Position	Institution
Summer 1956	Naturalist	Shades State Park, Indiana
1958-1960	Instructor, Gen. Botany	Purdue University
1960-1962	Instructor, Gen. Zoology	Purdue University
1964-	Assistant Professor of Biology	Boston University

Professional and Honorary Societies:

Sigma Xi
American Society of Mammalogists
American Institute of Biological Science
American Association for the Advancement of Science
Ecological Society of America

Major Interests:

Development of techniques for the estimation of energy and materials utilization in the small mammal component of terrestrial food chains; biochemical, telemetric, and isotopic work with *Microtus pennsylvanicus* and *Sylvilagus floridanus* nutritional studies.

Current Professional Activities:

Teaching: Botany, zoology, and biology.

Research: Ecology of small mammals.

Publications, Technical Reports:

Johanningsmeier, A. G. 1962. Use of I-131 to measure movements of small animals. Science 138:147-148.

Johanningsmeier, A. G. 1962. Ecological studies on *Microtus pennsylvanicus*. M. S. Thesis. Purdue Univ. 147 p.

Johanningsmeier, A. G. 1966. Studies on energy and materials utilization in *Microtus pennsylvanicus* under field and laboratory conditions. Ph. D. Thesis. Boston Univ. 248 p.

Johanningsmeier, A. G. 1968. Book review: Recent Mammals of the World: a Synopsis of Families. S. Anderson and J. Knox Jones. *In Amer. Sci.* Spring 1968.

Johanningsmeier, A. G. 1970. Studies on energy and materials utilization in *Peromyscus pennsylvanicus* under field and laboratory conditions. In preparation.

Name: J. Knox Jones, Jr.

Born: 1929

Academic Training:

Degree	Year	Institution	Major
B.A.	1951	University of Nebraska	Zoology
M.A.	1953	University of Kansas	Zoology
Ph.D.	1962	University of Kansas	Zoology

Professional Experience:

Date	Position	Institution
1962-1965	Asst. Prof. Zool. Asst. Curator of Mammals, Mus. Natur. Hist.	Univ. Kansas
1965-1968	Assoc. Prof. Zool. Assoc. Curator of Mammals, Mus. Natur. Hist.	Univ. Kansas
1965-1967	Asst. Dir. Mus. Natur. Hist.	Univ. Kansas
1968-	Prof. Systematics and Ecol. Curator of Mammals, Mus. Natur. Hist. Assoc. Dir. Mus. Natur. Hist.	Univ. Kansas

Professional and Honorary Societies:

American Society of Mammalogists (Vice-president and Managing Editor)
Society for the Study of Evolution (formerly Managing Editor)
Society of Systematic Zoology (Council)
AAAS
Biological Society of Washington
Herpetologists League
Kansas Academy of Science
Southwestern Association of Naturalists
Sigma Xi

Major Interests:

Systematics, biogeography, and natural history of North American mammals, particularly on the Great Plains and in Middle America.

Current Professional Activities:

Teaching: Mammalogy and various graduate-level courses

Publications. Technical Reports:

Jones, J. K., Jr. and B. Mursaloglu. 1961. Geographic variation in the harvest mouse, *Reithrodontomys nevalotis*, on the Great Plains and in adjacent regions. Univ. Kansas Mus. Natur. Hist. Pub. 14:9-27.

- Jones, J. K., Jr. 1964. Distribution and taxonomy of mammals of Nebraska. Univ. Kansas Mus. Natur. Hist. Pub. 16:1-356.
- Jones, J. K., Jr., E. D. Fleharty, and P. B. Dunnigan. 1967. The distributional status of bats in Kansas. Univ. Kansas Mus. Natur. Hist. Misc. Pub. 46:1-33.
- Jones, J. K., Jr. and S. Anderson (Eds.). 1967. Recent mammals of the World--a synopsis of families. Ronald Press, New York. 453 p.
- Jones, J. K., Jr. and H. H. Genoways. 1967. Annotated checklist of bats from South Dakota. Kansas Acad. Sci. Trans. 70:184-196.
- Jones, J. K., Jr. (Ed.). 1969. Contributions in mammalogy: a volume honoring Professor E. Raymond Hall. Univ. Kansas Mus. Natur. Hist. Misc. Pub. 51:1-428.
- Jones, J. K., Jr. and R. S. Hoffman. 1969. Influence of late-glacial and post-glacial events on the distribution of recent mammals of the northern Great Plains. *In* W. Dort and J. K. Jones, Jr. [eds.] Pleistocene and recent environments of the central Great Plains. Univ. Kansas Press, Lawrence, Kansas. (In press).

Name: John A. Kadlec

Born: 1931

Academic Training:

Degree	Year	Institution	Major
B.S.F.	1952	University of Michigan	Wildlife Management
M.S.	1956	University of Michigan	Wildlife Management
Ph.D.	1960	University of Michigan	Wildlife Management

Professional Experience:

Date	Position	Institution
Summer 1952	Teaching Assistant, Forest Biol.	University of Michigan
1954-55	Instructor, Electronic Equipment	U. S. Army
1955	Teaching Assistant, Wildlife Techniques	University of Michigan
1958-63	Research Biologist	Michigan Department Conservation
1963-67	Research Biologist	U.S. Bureau Sport Fisheries and Wildlife
1964-66	Assisted in giving a course in Animal Populations and Communities	Harvard University
1968-70	Research Associate	University of Michigan
1968-	Associate Professor	University of Michigan
1968-	Program Coordinator, Analysis of Ecosystems Program, US IBP	University of Michigan

Professional and Honorary Societies:

American Institute of Biological Sciences
 American Association for the Advancement of Science
 The Wildlife Society
 Ecological Society of America
 Michigan Associate of Conservation Ecologists
 Phi Kappa Phi
 Phi Sigma
 Sigma Xi
 Xi Sigma Pi

Publications, Technical Reports:

Kadlec, J. A. 1958. An analysis of a woolgrass (*Scirpus cyperinus*) community in Wisconsin. Ecology 39:327-332.

Kadlec, J. A. 1961. A further comment on the ecology of woolgrass (*Scirpus cyperinus*). Ecology 42:591-592.

- Kadlec, J. A. and M. L. Petoskey. 1961. Habitat management techniques for northern Michigan flooding projects. Michigan Dep. Conserv., Game Div. Information Circ. No. 124.
- Kadlec, J. A. 1962. The effect of a drawdown on a waterfowl impoundment. Ecology 43:267-281.
- Kadlec, J. A. 1963. Plants in the sand. Michigan Conserv. 31:33-37.
- Kadlec, J. A. 1966. Waterfowl breeding on a small Michigan impoundment. Michigan Dep. Conserv. Res. Development Rep. No. 77.
- Kadlec, J. A. 1968. Bird reactions and scaring devices. Nat. Pest Control Ass. Tech. Release No. 7-68.
- Kadlec, J. A. and W. H. Drury. 1968. Aerial estimation of the size of gull breeding colonies. J. Wildlife Manage. 32(2):287-293.
- Kadlec, J. A. and W. H. Drury. 1968. Structure of the New England Herring Gull population. Ecology 49:644-676.
- Kadlec, J. A. and W. H. Drury. 1969. Loss of bands from adult Herring Gulls. Bird-Banding 40:216-221.
- Kadlec, J. A., W. H. Drury and D. K. Onion. 1969. Growth and mortality of Herring Gull chicks. 1969. Bird-Banding 40:222-233.
- Kadlec, J. A. and D. K. Weaver. 1970. A method for trapping breeding adult gulls. Bird-Banding 41:28-31.

Name: Paul B. Kannowski

Born: 1927

Academic Training:

Degree	Year	Institution	Major
B.S.	1949	University of North Dakota	
M.S.	1952	University of North Dakota	
Ph.D.	1957	University of Michigan	

Professional Experience:

Date	Position	Institution
1956-57	Instructor in Biology	Bowling Green State University
1957-60	Assistant Professor	University of North Dakota
1960-69	Associate Professor	University of North Dakota
1963-70	Chairman, Department Biology	University of North Dakota
1965-	Director, Institute for Ecological Studies	University of North Dakota
1966-67	Research Associate, Biology	Harvard University
2-6, 1967 and 5, 1968	Visiting Scientist	Smithsonian Tropical Research Institute
1969-70	Natural Resources Consultant	U.S. Congressman Mark Andrews
1969-	Professor	University of North Dakota

Major Interests:

Ecology and behavior of insects

Professional and Honorary Societies:

American Association for the Advancement of Science
 American Institute of Biological Sciences
 Animal Behavior Society
 Ecological Society of America
 Entomological Society of America
 International Union for the Study of Social Insects
 National Association of Biology Teachers
 North Dakota Academy of Science
 Phi Kappa Phi
 Phi Sigma
 Society for the Study of Evolution
 Society of Systematic Zoology
 Society of the Sigma Xi

Publications, Technical Reports:

Kannowski, P. B. 1954. Notes on the ant *Novomessor manni* Wheeler and Creighton. Occasional Papers of the Mus. Zool., Univ. Michigan, No. 556. 6 p.

- Kannowski, P. B. 1956. The ants of Ramsey County, North Dakota. Amer. Midland Natur. 56:168-185.
- Kannowski, P. B. and P. M. Kannowski. 1957. The mating activities of the ant *Myrmica americana* Weber. Ohio J. Sci. 57:371-374.
- Kannowski, P. B. 1957. Notes on the ant *Leptothorax provancheri* Emery. Psyche 64:1-5.
- Kannowski, P. B. 1958. Factors affecting the ecological distribution of the ants in three bogs in southeastern Michigan. Diss. Abstr. 18:1544.
- Kannowski, P. B. 1958. Swarming of the ant *Stenamma brevicorne* (Mayr). Entomol. News 69:231-233.
- Kannowski, P. B. 1959. The use of radioactive phosphorus in the study of colony distribution of the ant *Lasius minutus* Emery. Ecology 40:162-165.
- Kannowski, P. B. 1959. The flight activities and colony-founding behavior of bog ants in southeastern Michigan. Insectes Sociaux 6:115-162.
- Kannowski, P. B. 1959. The flight activities of *Dolichoderus* (Hypoclinea) *taschenbergi* (Hymenoptera: Formicidae). Ann. Entomol. Soc. Amer. 52: 755-760.
- Kannowski, P. B. and M. C. Anderson. 1960. The influence of temperature on the flight activities of the ant *Formica montana*. North Dakota Acad. Sci., Proc. 14:71. (Abstr.)
- Kannowski, P. B. 1962. The flight activities of formicine ants. North Dakota Acad. Sci., Proc. 16:34-35. (Abstr.)
- Kannowski, P. B. 1963. The flight activities of formicine ants. Symp. Genetica et Biol. Italica 12:74-102.
- Kannowski, P. B. 1963. Patrolling behavior of male ants. 16th Int. Congr. Zool. (Washington), Proc. 2:6. (Abstr.)
- Kannowski, P. B. 1963. Radioisotopes and the distribution of prairie ant colonies. North Dakota Acad. Sci., Proc. 17:65.
- Kannowski, P. B. 1965. The biology research program for high school students. Univ. North Dakota Coll. Educ. Board 50:91-94.
- Kannowski, P. B. 1967. Colony populations of two species of *Dolichoderus* (Hymenoptera: Formicidae). Ann. Entomol. Soc. Amer. 60:1246-1252.
- Kannowski, P. B. 1967. Carpenter ants. Univ. Minnesota Inst. Agr., Pest Control Operator's Conf., Proc. p. 7-9.

- Kannowski, P. B., M. S. Blum, F. Padovani and H. F. Herman. 1968. Chemical releasers of social behavior. XI. Terpenes in the mandibular glands of *Lasius umbratus* (Hymenoptera: Formicidae). Ann. Entomol. Soc. Amer. 61:1354-1359.
- Kannowski, P. B. 1968. The Newton of biology. North Dakota Quart. 31:5-16.
- Kannowski, P. B. and R. L. Johnson. 1969. Male patrolling behavior and sex attraction in ants of the genus *Formica*. Anim. Behav. 17:425-429.
- Kannowski, P. B. 1969. North Dakota Naturalist-at-large. The Prairie Natur. 1:18.
- Kannowski, P. B. 1969. A voice for conservation. The Prairie Natur. 1:34.
- Kannowski, P. B. 1969. Daily and seasonal periodicities in the nuptial flights of neotropical ants. I. Dorylinae. 6th Congr. Int. Union for the Study of Soc. Insects (Bern), Proc. p. 77-83.
- Kannowski, P. B. 1969. Nuptial flights of the ant, *Lasius pallitarsis*. Can. Field-Natur. 83:283-285.
- Kannowski, P. B. 1969. Restoring beauty to the human environment. The Prairie Natur. 1:50.
- Kannowski, P. B. 1970. Speaking of ecologists. The Prairie Natur. 2:2.
- Kannowski, P. B. 1970. Colony populations of five species of *Mymica* (Hymenoptera: Formicidae). North Central Branch, Entomol. Soc. Amer. Proc. 25. (In press)
- Kannowski, P. B. 1970. The mechanism initiating the nuptial flights of a tropical ant. 13th Int. Congr. Entomol., Proc. (Moscow) (In press)
- Kannowski, P. B. and M. K. Wali. 1971. Analysis of a saline tall grass prairie ecosystem. III. A study of soil-plant-ant interactions. To be presented at the 63rd Annual Meeting of North Dakota Acad. Sci.

Name: Gene A. Kemper

Born: 1933

Academic Training:

Degree	Year	Institution	Major
Ph.B.	1956	University of North Dakota	Physics and Math
M.S.	1959	University of North Dakota	Physics and Math
Ph.D.	1965	Iowa State University	Physics and Math

Professional Experience:

Date	Position	Institution
1960-61	Research Engineer	The Boeing Company
1961-65	Instructor in Mathematics	Iowa State University
1965-66	Extension Assistant Professor	University of Washington
1965-66	Group Leader, Numerical Analysis Group	The Boeing Company
1965-66	Visiting Staff Member	The Boeing Scientific Research Laboratories
1966-69	Assistant Professor of Mathematics	University of North Dakota
1969 (Summer)	Mathematician, Division of Mathematics and Computer Science	U.S. Atomic Energy Commission Laboratories, Iowa State University
1969-	Associate Professor of Mathematics and Senior Consultant to Computer Center	University of North Dakota
1970, '71 (Summer)	Co-Director, Institute for Computer Supplemented Instruction (NSF)	University of North Dakota

Major Interests:

Mathematical modelling and numerical techniques

Professional and Honorary Societies:

American Association for Advancement of Science
 American Mathematical Association
 Society for Industrial and Applied Mathematics
 Sigma Xi
 Phi Mu Epsilon
 Phi Kappa Phi

Publications, Technical Reports:

Kemper, G. A. 1968. Almost periodic functional differential equations.
 SIAM J. Appl. Math. 16:155-161.

Kemper, G. A. 1968. Numerical integration by continued functions.
SHARE, Proc. 31.

Kemper, G. A. Linear multistep methods for a class of functional
differential equations. Submitted to Numerische Mathematica.

Kemper, G. A. A spline approximate solution to a Volterra integral
equation of the second kind. Submitted to J. ACM.

Name: Donald A. Klein

Born: 1935

Academic Training:

Degree	Year	Institution	Major
B.S.	1957	University of Vermont	Microbiology
M.S.	1961	University of Vermont	Food and Aquatic Microbiology
	1961-62	Eberhard Karls Universitat Germany	Special Student
Ph.D.	1966	Pennsylvania State University	Microbiology

Professional Experience:

Date	Position	Institution
1958-61	Instructor	University of Vermont
1962	Research Analyst	J.I. Thompson Co., Pennsylvania
1962-66	Group Leader, Soil Ecology Lab	Pennsylvania State University
1967-70	Assistant Professor, Microbiology	Oregon State University
1970-	Assistant Professor, Microbiology	Colorado State University

Major Interests:

Environmental microbiology, ecosystem function in aquatic and grassland environments; *Arthrobacter* physiology and morphogenesis; modelling of ecosystem and biochemical processes.

Publications, Technical Reports:

- Casida, L. E. Jr., D. A. Klein and T. Santoro. 1964. Soil dehydrogenase activity. *Soil Sci.* 98:371-376.
- Atherton, H. V., D. A. Klein and R. N. Mullen. 1964. Rural water supplies and milk quality. *Agr. Eng.* 45:196-197.
- Klein, D. A. and L. E. Casida, Jr. 1967. Occurrence and enumeration of *Bdellovibrio bacteriovorus* in soil capable of parasitizing *Escherichia coli* and indigenous soil bacteria. *Can. J. Microbiol.* 13:1235-1241.
- Klein, D. A. and L. E. Casida, Jr. 1967. *Escherichia coli* die-out from normal soil as related to nutrient availability and the indigenous microflora. *Can. J. Microbiol.* 13:1401-1470.
- Klein, D. A. 1968. Growth of an aquatic-derived bacterium in the presence of long-chained alkanes. *Appl. Microbiol.* 16:421-422.
- Klein, D. A., J. A. Davis, and L. E. Casida, Jr. 1968. Oxidation of n-alkanes to ketones by an *Arthrobacter* species. *Antonie van Leeuwenhoek* 34:495-500.

- Klein, D. A. and F. A. Henning. 1969. Role of alcoholic intermediates in formation of isomeric ketones from n-hexadecane by a soil *Arthrobacter* species. *Appl. Microbiol.* 17:676-681.
- Klein, D. A., R. C. Rockhill, J. P. Eldridge and J. E. Park. 1970. Photofermentation of recalcitrant molecules: fungal and bacterial responses to lignin sulfonate substrates. *TAPPI* 53:1469-1472.
- Klein, D. A. 1970. Photomodification processing of biologically recalcitrant pollutants: control and instrumentation requirements. *IEEE, Trans. GE-8*:139-144.
- Wehr, N. B. and D. A. Klein. 1971. Herbicide effects on *Bdellovibrio bacteriovorus*. *Soil Biol. Biochem.* (In press)
- Klein, D. A., T. C. Loh and R. L. Goulding. 1971. A rapid procedure for measuring dehydrogenase activity in soils low in organic matter. *Soil Boil. Biochem.* (In press)

Name: William M. Klein

Academic Training:

Degree	Year	Institution
B.S.	1955	Colorado State University
M.S.	1957	Colorado State University
Ph.D.	1964	Claremont Graduate School and University Center

Special Training:

1961-1965, U.S. Air Force School of Aerospace Medicine, Brooks Air Force Base, Texas.

Professional Experience:

Date	Position	Institution
1965-1969	Assistant in Herbarium	Colorado State University
1969-	Head of Herbarium Department	Colorado State University

Professional and Honorary Societies:

AAAS
AAPT
American Association Plant Taxonomy
AIBS
Botanical Society of America

Current Professional Activities:

Research: Co-principal investigator on research contract, "Effects of Shock on Plant Species and Plant Communities" sponsored by U.S. Geological Survey.

Publications, Technical Reports:

- Klein, W. M. 1958. Cotyledon variations in *Juniperus occidentalis* Hook. Aliso (April: 129).
- Gregory, D. P., and W. M. Klein. 1960. Investigations of meiotic chromosomes of six genera in the Onagraceae. Aliso 4:505-521.
- Klein, W. M. 1962. New taxa and recombinations in *Oenothera* (Anogra). Aliso 5:179-180.
- Klein, W. M. 1966. The origin of *Oenothera californica* Watson. (Abstr.) Amer. J. Botany 53:632.

Name: Daniel Paul Knievel

Born: 1943

Academic Training:

Degree	Year	Institution	Major
B.S.	1965	University of Nebraska	Honors (Agronomy)
M.S.	1967	University of Wisconsin	Agronomy
Ph.D.	1968	University of Wisconsin	Agronomy

Professional Experience:

Date	Position	Institution
1968-	Crop Physiologist	University of Wyoming

Professional and Honorary Societies:

Alpha Zeta	Crop Science Society of America
Sigma Xi	American Society of Plant Physiologists
American Society of Agronomy	American Chemical Society.

Major Interests:

Crop improvement through elucidation and application of physiological principles to crop management and plant breeding.

Current Professional Activities:

Teaching: Crops
Crop Physiology

Research: Carbohydrate translocation.
Effect of temperature during seed maturation on lipid content of alfalfa and tall fescue seed.
Managerial and physiological effects related to barley production.

Publications, Technical Reports:

- Knievel, D. P. 1968. The effect of warm and cool temperatures on the development and growth of Timothy *Phleum pratense* L., Orchardgrass *Dactylis glomerata* L., and Tall fescue *Festuca arundinacea* L. Ph.D. Thesis, Univ. Wisconsin. 188 p.
- Knievel, D. P. 1968. Crop growth analysis-concepts and application. Crop Care in Wyoming. 5 p.
- Knievel, D. P. and D. Smith. 1970. Yields and chemical composition of Timothy *Phleum pratense* L. plants derived from summer and winter tillers. Submitted to Crop Sci.

Name: Dennis H. Knight

Born: 1937

Academic Training:

Degree	Year	Institution	Major
B.A.	1959	Augustana Coll., South Dakota	Biology
M.S.	1961	University of Wisconsin	Botant-Ecology
Ph.D.	1964	University of Wisconsin	Botant-Ecology

Professional Experience:

Date	Position	Institution
1959	Research Assistant	Quetico-Superior Wilderness Res. Center
1959-1963	Research Assistant	University of Wisconsin
1961	Research Assistant	Panama (Summer)
1963-1964	Teaching Assistant	University of Wisconsin
1964-1966	Instructor	Univ. Loja, Ecuador Peace Corps
1966-	Assistant Professor	University of Wyoming

Professional and Honorary Societies:

Ecological Society of America	AAAS
International Society for Tropical Ecology	AIBS
American Society of Range Management	Sigma Xi
Association for Tropical Biology	

Major Interests:

Ecology of the Western Great Plains and Rocky Mountains, Succession in tropical forest vegetation, the analysis of begetation on the basis of plant structure and function.

Current Professional Activities:

Teaching: General Biology, Ecology

Research: Influence of veg. structure on ecosystem function in grasslands and coniferous forests; tropical forest ecology

Publications, Technical Reports:

Knight, D. H. 1963. A distance method for constructing forest profile diagrams and obtaining structural data. Trop. Ecol. 4:89-94.

Knight, D. H., O. Sexton, H. Heatwole. 1964. Correlation of micro-distribution of some Panamanian reptiles and amphibians with structural organization of the habitat. Caribbean J. Sci. 4:261-295.

Knight, D. H. 1965. A gradient analysis of Wisconsin prairie vegetation on the basis of plant structure and function. Ecology 46:744-747.

- Knight, D. H. 1966. Some necessary functions in the stable tropical community. [In Spanish] *Turrialba* 16:384-386.
- Knight, D. H., V. Loaiza, and F. Vivar. An ecological guide for a trip from the high Andes to the lowland rainforest in Ecuador. [In Spanish] *Annales de la Facultad de Agronomie y Veterinaria de la Universidad de Loja* 1:13-17.
- Knight, D. H. and O. L. Loucks. 1969. A quantitative analysis of Wisconsin forest vegetation on the basis of plant function and gross morphology. *Ecology* 50:219-234.
- Knight, D. H. 1969. Some influences of vegetation structure on energy flux, water flux, and nutrient flux in grassland ecosystems, p. 197-220. *In* R. L. Dix and R. G. Beidleman [eds.] *The grassland ecosystem: a preliminary synthesis*. Range Sci. Dep. Sci. Ser. No. 2, Colorado State Univ., Fort Collins.
- Knight, D. H. 1970. Some measurements of vegetation structure on the Pawnee Grassland - 1970. IBP Grassland Biome Tech. Rep. No. 72. 43 p.
- Knight, D. H. 1971. Leaf area dynamics on a short grass prairie. Paper presented at the Colorado-Wyoming Acad. Sci. Annu. Meeting.
- Knight, D. H. 1971. A motorized point frame for the measurement of leaf area index in short grass prairie. (Ms. in preparation)

Name: Robert Lavigne

Born: 1930

Academic Training:

Degree	Year	Institution	Major
B.A.	1952	American International College	Biology
M.S.	1958	University of Massachusetts	Entomology
Ph.D.	1961	University of Massachusetts	Entomology

Special Training:

Institute of Animal Behavior

Professional Experience:

Date	Position	Institution
	Teaching Fellowship	University of Massachusetts
1956-1959	Instructor	University of Massachusetts
1959-1965	Assistant Professor	University of Wyoming
1965-	Associate Professor	University of Wyoming

Professional and Honorary Societies:

Entomological Society of America
Pan-Pacific Entomological Society
Animal Behavior Society
Society of Systematic Zoology
Kansas Entomological Society

Major Interests:

Behavior and taxonomy of robber flies (*Diptera asilidae*); bionomics and behavior of ants; food web studies including effect of parasites and predators on insect populations.

Current Professional Activities:

Study of insect fauna found in digestive systems of lizards and tree frogs.

Teaching: Insect Behavior, Taxonomy of Insects, Theory of Classification.

Research: Effect of insect parasites and predators on grassfeeding insects.

Publications, Technical Reports:

Lavigne, R. J. 1959. Highlight ant control at 19th Annual Eastern PCO Conference, January 21-23. Pest Control 27:43-44, 46, 66.

Lavigne, R. J. 1959. Biology of the meadow spittlebug, *Philaenus leucopephalus* L. In Massachusetts. J. Econ. Entomol. 52:904-907.

- Roberts, E. C. and R. J. Lavigne. 1959. Fungus gnat found to inhibit development of turfgrass. United States Golf Ass. J. 12:25-26.
- Smith, C. T., F. Shaw, R. J. Lavigne, J. Archibald, H. Fenner, and D. Stern. 1960. Residuas of malathion on alfalfa and in milk and meat. J. Econ. Entomol. 53:495-496.
- Fisser, H. F. and R. J. Lavigne. 1961. A leaf feeding beetle found on three-tip sagebrush. J. Range Manage. 14:278-279.
- Lavigne, R. J. 1961. Occurrence of *Forcipomyia ciliata* Winn. in North America with notes on its biology (Diptera:Ceratopogonidae). Pan-Pacific Entomol. 37:108-110.
- Lavigne, R. J. 1962. Immature stages of the stalk-eyed fly, *Sphyracephala brevicornis* Say (Diptera:Diopsidae), with observations on its biology. Brooklyn Entomol. Soc. Bull. 57:5-14.
- Lavigne, R. J. 1963. Notes on the behavior of *Stenopogon coyote* Bromley with a description of the eggs. Pan-Pacific Entomol. 39:103-107.
- Lavigne, R. J. 1963. Description of the eggs of *Leptogaster salvia* Martin (Diptera:Asilidae). Pan-Pacific Entomol. 39:176.
- Lavigne, R. J. 1963. Biological control. Crop Care in Wyoming, September. 4 p.
- Lavigne, R. J. 1964. Notes on the distribution and ethology of *Efferia bicaudata* (Diptera:Asilidae), with a description of the eggs. Ann. Entomol. Soc. Amer. 57:341-344.
- Lavigne, R. J. and R. E. Pfadt. 1964. The role of rangeland grasshoppers as scavengers. J. Kansas Entomol. Soc. 37:1-4.
- Pfadt, R. E. and R. J. Lavigne. 1964. Alfalfa weevil control by stubble treatment. J. Econ. Entomol. 57:996-997.
- Lavigne, R. J. 1965. New host plant for *Tephritis araneosa*. Pan-Pacific Entomol. 41:100.
- Lavigne, R. J. 1965. Abnormal antennae in *Batyle ignicollis* (Coleoptera: Carambycidae). J. Kansas Entomol. Soc. 38:358.
- Lavigne, R. J. and R. E. Pfadt. 1965. Insects collected on Wyoming rangeland in connection with grasshopper egg sampling. J. Kansas Entomol. Soc. 38:61-66.
- Pfadt, R. E. and R. J. Lavigne. 1965. Further tests with power dusting to control the sheep ked. J. Econ. Entomol. 58:37-38.
- Lavigne, R. J. and L. Stevens. 1965. Systemics for the control of the clear-winged cottonwood leaf aphid in southeast Wyoming. J. Econ. Entomol. 58:818-821.
- Lavigne, R. J. 1966. *Parabolocratus viridis* (Homoptera:Cicadellidae) and ants associated with it. J. Kansas Entomol. Soc. 39:65-67.

- Lavigne, R. J. 1966. Individual mound treatments for control of the western harvester ant, *Pogonomyrmex occidentalis* (Cresson), in Wyoming. J. Econ. Entomol. 59:525-532.
- Lavigne, R. J. and R. G. Fisser. 1960. Controlling western harvester ants. Mountain States Regional Pub. 3. 4 p.
- Lavigne, R. J. and R. E. Pfadt. 1966. Parasites and predators of Wyoming rangeland grasshoppers. Wyoming Agr. Exp. Sta. Sci. Monograph 3. 31 p.
- Lavigne, R. J. 1967. Notes on two species of *Asilus* (Diptera:Asilidae) associated with rodent burrows with a redescription of *Asilus gilvipes* Hine. J. Kansas Entomol. Soc. 41:334-339.
- Lavigne, R. J., M. Bloom, and W. Neys. 1968. Adult behavior of *Tabanus reinwardtii* and *Chrysops fulvaster* (Diptera:Tabanidae) in southeastern Wyoming. Wyoming Agr. Exp. Sta. Sci. Monograph 12. 37 p.
- Lavigne, R. J. 1969. Bionomics and nest structure of *Pogonomyrmex occidentalis* (Hymenoptera:Formicidae). Ann. Entomol. Soc. Amer. 62:1166-1175.
- Lavigne, R. J. 1969. A new species of *Lasiopogon* (Diptera:Asilidae) from Wyoming. J. Kansas Entomol. Soc. 42:363-365.
- Holland, F. R. and R. J. Lavigne. 1969. Comparative behavior of eleven species of Wyoming robber flies (Diptera:Asilidae). Wyoming Agr. Exp. Sta. Sci. Monograph 18. 60 p.
- Lavigne, R. J. 1969. Ethology of North American robber flies. I. Courtship and predatory behavior of *Cyrtopogon auratus* and *C. glarealis* (Diptera:Asilidae). J. Kansas Entomol. Soc. (In press).
- Lavigne, R. J. 1969. Ethology of North American robber flies. II. Courtship and predation behavior of *Heteropogon maculinervis* (Diptera:Asilidae). J. Kansas Entomol. Soc. (In press).
- Lavigne, R. J. 1969. Insects in the behavior laboratory. Amer. Biol. Teacher. (In press).
- Lavigne, R. J. 1969. The Asilidae of Wyoming. Wyoming Agr. Exp. Sta. Sci. Monograph. (In press).
- Barr, W. and R. J. Lavigne. 1969. Annotated list of the Asilidae of Idaho. Idaho Agr. Exp. Sta. (In press).

Name: James K. Lewis

Born: 1924

Academic Training:

Degree	Year	Institution	Major
	1943	Abilene Christian College	
B.S.	1948	Colorado State University	Animal Husbandry
M.S.	1950	Montana State College	Animal Husbandry
Ph.D.	1970	Texas A and M University	Range Management

Professional Experience:

Date	Position	Institution
1948-1950	Research Assistant	Montana State Coll.
1950-1956	Assistant Professor, Animal Husbandry	South Dakota State Coll.
1956-1957	Teaching Assistant	Texas A and M. Univ.
1958-	Associate Professor, Animal Science	South Dakota State Univ.

Professional and Honorary Societies:

American Society of Range Management	British Ecological Society
American Society of Animal Science	AAAS
Ecological Society of America	Phi Kappa Phi
The Wildlife Society	Gamma Sigma Delta
British Grassland Society	Sigma Xi

Major Interests:

Effect of intensity of grazing on range ecosystems; range measurements;
range animal nutrition.

Publication, Technical Reports:

- Lewis, J. K., F. R. Gartner, and J. Nesvold. 1964. The effect of winter supplementation and intensity of grazing on steer gains on native range. Proc. Western Section, Am. Soc. Animal Sci. 15:49.
- Lewis, J. K., F. R. Gartner, and W. R. Trevillyan. 1965. Effect of self-fed lambing ration on lamb production. South Dakota Agr. Exp. Sta. Circ. 171:24.
- Lewis, J. K., F. R. Gartner, L. B. Embry, and J. Nesvold. 1965. The effect of level of winter supplementation and intensity of summer grazing on steer gains on native range. South Dakota Agr. Exp. Sta. Circ. 171:29.
- Lewis, J. K., J. Nesvold, and B. Beer. 1966. The effect of level of winter supplementation and intensity of summer grazing on steer gains on native range. South Dakota Agr. Exp. Sta. A.S. Series 66-9.
- White, E. M. and J. K. Lewis. 1967. Recent gully formation in the prairie areas of the Northern Great Plains. Plains Anthropol. 12:318.
- Lewis, J. K. 1969. Range management viewed in an ecosystem framework, p. 97 to 173. In G. M. Van Dyne [ed.] The ecosystem concept in natural resources management. Academic Press, New York. 383 p.

Name: John Edward Lloyd

Born: 1940

Academic Training:

Degree	Year	Institution	Major
B.S.	1962	Pennsylvania State University	Zoology and Entomolgy
Ph.D.	1967	Cornell University	Entomology

Professional Experience:

Dates	Position	Institution
1962-1967	Research Assistant	Cornell University
1967-1968	Assistant Professor, Entomology Ext.	Pennsylvania St. Univ.
1968-	Assistant Professor, Entomolgy	University of Wyoming

Professional and Honorary Societies:

Entomological Society of America
Phi Kappa Phi
Phi Sigma
Sigma Xi

Major Interests:

Entomology, Applied Entomology, Animal Ecology, Medical Entomolgy, Insect Toxicology, Animal Husbandry

Current Professional Activities:

Teaching: Insect Toxicology
Insects Affecting Livestock

Research: Hypoderma lineatum in horses in Wyoming.
The effect of biting flies on weight gains of beef cattle in Wyoming.
Resinous adjuvants to increase the residual toxicity of malathion.

Publication, Technical Reports:

Lloyd, J. E. and J. G. Matthyse. 1966. Polymer--insecticide systems for use as livestock feed additives. J. Econ. Entomol. 59:363-367.

Lloyd, J. E. 1967. Polymer insecticide systems for use as livestock feed additive larvicides. Ph.D. Thesis, Cornell Univ. 150 p.

Matthyse, J. G., J. E. Lloyd, J. F. Butler, and K. Tillapaugh. 1968. Cattle grub control by dust bag application of coumaphos in summer. J. Econ. Entomol. 61:311-312.

Lloyd, J. E. 1970. Polyvinyl chloride-insecticide pellets fed to cattle to control face fly larvae in manure. J. Econ. Entomol. 63:1271-1281.

Pfadt, R. E., J. E. Lloyd, M. Ali and G. Sharafi. 1970. Manner of pickup of ULV malathion by grasshoppers from aerially sprayed rangeland. J. Econ. Entomol. 63:1210-1214.

Lloyd, J. E. 1971. Cattle grub control in Wyoming with a late summer dust bag application of Prolate. J. Econ. Entomol. (In press)

Name: Jerry V. Mayeux

Born: 1937

Academic Training:

Degree	Year	Institution	Major
B.S.	1960	Louisiana State Univ.	Bacteriology
M.S.	1961	Louisiana State Univ.	Bacteriology
Ph.D.	1965	Oregon State Univ.	Microbiology

Professional Experience:

Date	Position	Institution
1960-1961	Research Assistant	Louisiana State
1961-1964	Res. & Teaching Asst.	Oregon State Univ.
1965	Asst. Chief, Microbiol.	U. S. Army, Letterman, Gen'l Hospital
1965-1966	Research Associate	NASA, Ames Res. Center, Exobiology Div.
1966-1970	Asst. Prof., Microbiol.	Colorado State Univ.
1970-		Martin-Marietta Corporation

Professional and Honorary Societies:

American Society for Microbiology
AAAS
Sigma Xi
Phi Sigma

Major Interests:

Physiology and ecology of aquatic and terrestrial bacteria.

Current Professional Activities:

Teaching: Microbiology of Water and Sewage; Bacteria in Aquatic Environments.

Research: Bacterial Ecology of Pawnee Grassland Soils; Effects of Heavy Metal Ion Pollution on Aquatic Bacteria

Publications, Technical Reports:

- Mayeux, J. V. and A. R. Comer. 1962. The effect of 2,3,6-trichlorophenylacetic and 2,2-dichloropropionic acids on nitrate oxidation. Appl. Microbiol. 10:206-210.
- Mayeux, J. V., R. P. Bhatt, and C. M. Gilmour. 1963. The comparative role of molecular oxygen and nitrate-oxygen in the dissimilation of glucose. Bacteriology Proc. 63:116. (Abstr.)
- Gilmour, C. M., R. P. Bhatt, and J. V. Mayeux. 1964. Comparative role of nitrate and molecular oxygen in the dissimilation of glucose. Nature 203:55-58.

- Gilmore, C. M., R. P. Bhatt, and J. V. Mayeux. 1964. Participation of molecular and nitrate oxygen in the terminal pathway(s) of glucose catabolism. Intern. Bot. Congr. 10:369-370.
- Mayeux, J. V. and E. J. Johnson. 1967. Mechanism of purine nucleotide inhibition of autotrophic CO₂ fixation in *Thiobacillus neapolitanus*. Bacteriology Proc. 67:121. (Abstr.)
- Littlejohn, J. H., S. M. Morrison and J. V. Mayeux. 1969. CO₂ fixation in conjunction with Fe and Mn precipitation by Sphaerotilus discophorus. Bacteriol. Proc. 69, 24-25.

Name: John G. McColl

Born: 1941

Academic Training:

Degree	Year	Institution	Major
B.S.	1963	Australian Forestry School	Forestry
M.S.	1966	Australian National University	Botany
Ph.D.	1969	University of Washington	Forest Soils

Professional Experience:

Date	Position	Institution
1959	Summer employee	Papua and New Guinea Forest Service.
1959-60	Part-time	New South Wales Forestry Comm.
1963	Demonstrator in Botany	University of Sydney
1966, 67, 68 (summers)	Assistant Coordinator	Peace Crops Training Program
1966	Teaching Assistant	University of Washington
1965, 66-69	Research Assistant	University of Washington
1968, 69 (summers)	Field Dendrologist	Tropical Studies, Costa Rica
1970	Research Assistant	Yale University
1970	Postdoctorate	Yale University
1970-	Assistant Professor	University of Minnesota

Professional and Honorary Societies:

Ecological Society of America
 Ecological Society of Australia
 Institute of Foresters of Australia
 Society of American Foresters
 Soil Science Society of America
 American Society of Agronomy
 Northwest Science Society
 Sigma Xi
 Xi Sigma Pi
 American Quaternary Association

Publications, Technical Reports:

- McColl, J. G. 1965. An ecological study of the distributions of *Eucalyptus gummiifera* and *E. maculata*. M.S. Thesis. Australian Nat. Univ., Canberra.
 McColl, J. G. 1966. Accession and decomposition of litter in spotted gum forests. Australian Forest. 30:191-198.
 McColl, J. G. 1967. Relationships between some nutritional factors and the distribution of *Eucalyptus gummiifera* and *E. maculata*. Ecology 48:766-771.

- McColl, J. G. 1968. A mechanism of cation transport in a forest soil. Northwest Sci. 42:134-140.
- McColl, J. G. 1969. Ion transport in a forest soil: models and mechanisms. Ph.D. Thesis. Univ. Washington, Seattle.
- McColl, J. G. 1969. Soil-plant relationships in a *Eucalyptus* forest on the south coast of New South Wales. Ecology 50:354-362.
- McColl, J. G. 1970. Regression models relating soil nutrients and growth of *Eucalyptus gummifera* and *E. maculata* seedlings. Ecology 51:157-159.
- McColl, J. G. 1970. Properties of some natural waters in a tropical wet forest in Costa Rica. Bioscience 20:1096-1100.
- McColl, J. G. 1971. Forest floor characteristics within a small plot in Douglas fir in western Washington. Soil Sci. Soc. Amer. (In review)
- McColl, J. G. 1971. Phenological studies in *Eucalyptus maculata*. Australian Forest. (In review)
- McColl, J. G. 1971. Dynamics of ion transport during moisture flow from a Douglas fir forest floor. Forest Sci. (In review)

Name: Burruss McDaniel

Born: 1927

Academic Training:

Degree	Year	Institution	Major
B.A.	1953	University of Alaska	Biological Sciences
M.S.	1961	Texas A & M University	Entomology
Ph.D.	1965	Texas A & M University	Entomology

Professional Experience:

Date	Position	Institution
1957-1959	Entomologist & Dir. Research	Insect Control & Res. Inc., Baltimore, Maryland
1959-1961	Graduate Assist., Entomol. Dep.	Texas A & M University
1961-1966	Department of Biology	Texas A & M University
1961-1966	Research Associate	Rob & Bessie Welder Wildl. Found., Stinton, Texas (Summers)
1966-	Associate Prof. Entomology	South Dakota State Univ.

Professional and Honorary Societies:

Kansas Entomological Society
Society for the Study of Evolution
AIBS
Entomological Society of America
Entomological Society of Washinton, D. C.
American Ornithologists Union
South Dakota Academy of Science
Texas Academy of Science
Southwestern Association of Naturalists (Member of Board of Governors)
American Men of Science
Sigma Xi
Gamma Sigma Delta

Major Interests:

Taxonomy of mites and insects

Publications, Technical Reports:

- McDaniel, B. and F. U. Balsbaugh, Jr. 1968. Bovine manure as an overwintering medium for Coleoptera in South Dakota. Ann. Entomol. Soc. Amer. 61:765-768.
- McDaniel, B. 1968, 1969. The armored scale insects of Texas (Homoptera: Coccidea: Diaspididae). The Southwestern Natur. 13:201-241; 14:89-113; 14:270-291. Parts IV through VII in press.
- Guad, J. And B. McDaniel. 1969. New genus for *Chauliactia tricapitoetosa* McDaniel. Acarologia 11:384-391.

Name: Lee D. Miller

Born: 1938

Academic Training:

Degree	Year	Institution	Major
B.S.E.	1961	University of Michigan	Math Engineering
B.S.E.	1962	University of Michigan	Civil Engineering
M.S.E.	1963	University of Michigan	Geodetic Engineering
Ph.D.	1968	University of Michigan	Forestry

Special Training:

Date	Position	Institution
1960-1961	Administrative Assistant	University of Michigan
1962-1963	Computer Programmer	University of Michigan
1961-1963	Teaching Fellow	University of Michigan
1963-1968	Research Assistant	University of Michigan
1968-1970	Physical Scientist	U.S. Geological Survey
1968-Present	Assistant Professor	Colorado State University

Professional and Honorary Societies:

Sigma Xi	Michigan Acad. Sci., Arts and Letters
American Society of Civil Engineering	Ecological Society of America
American Congress of Surveying & Map.	Society of American Foresters
American Society of Photogrammetry	American Geophysical Union
AAAS	AIBS

Major Interests:

The application of the techniques of remote sensing of environment to collect data of interest to the natural resource manager and scientist; Bioclimatology, Micrometeorology, Systems Engineering, Instrumentation Engineering.

Current Professional Activities:

Chairman of a Standing Committee of the Colorado Natural Resource Center on Remote Sensing of Natural Resources.

Teaching: Remote sensing of natural resources

Research:

1. Impact of remote sensing on urban watershed analysis (OWRR).
2. Application of airborne and ground remote sensing systems to the measurement of the grasslands biome (IBP).
3. Aerial thermal mapping of geothermal phenomena.

Publications, Technical Reports:

- Miller, L. D. 1963. Scintillation and the surveyor. J. Surv. & Map., Amer. Soc. Civil Eng., Proc., 89(SU-1):13-25.
- Miller, L. D. 1965. Diurnal and seasonal variations in the radiation of objects and backgrounds, 4.5-5.5 μ spectral region. Univ. Michigan, Inst. Sci. & Tech., Rep. #6400-32-T. 42 p. CONFIDENTIAL.
- Miller, L. D. 1965. Investigation of a method for remote detection and analysis of life on a planet. Univ. Michigan, Inst. Sci. & Tech., Rep. #6590-4-F. 33 p.
- Miller, L. D. 1966. Location of anomalously hot earth with infrared imagery in Yellowstone National Park. Proceedings Fourth Symposium on Remote Sensing of Environment, Univ. Michigan, Infrared Physics Lab., Inst. Sci. & Tech., p. 751-769.
- Miller, L. D. 1966. Report to the Sixth Yellowstone Field Research Expedition. Final Report - Sixth Yellowstone Field Research Expedition, Pub. #37. Atmospheric Sciences Research Center, State Univ. New York, Albany, p. 92-98.
- Miller, L. D. 1966. Determination of mass and distribution of mass from thermal infrared imagery. Univ. Michigan, Inst. Sci. & Tech. Rep. #6400-48-S. 31 p.
- Miller, L. D. 1967. Report to the Seventh Yellowstone Field Research Expedition. Final Report - Seventh Yellowstone Field Research Expedition, Pub. #45. Atmospheric Sciences Research Center, State Univ. New York, Albany, p. 112-120.
- Miller, L. D. 1968. Winter observations on steaming ground in Yellowstone National Park, 1968. Eighth Yellowstone Field Research Expedition, Pub. #68. Atmospheric Sciences Research Center, State Univ. New York, Albany, p. 133-148.
- Miller, L. D. 1968. Steaming and warm ground in Yellowstone National Park: Its location, geophysics, vegetation, and mapping with aerial multi-spectral imagery. Ph.D. Thesis, Forestry Department, Univ. Michigan. 153 p.
- Miller, L. D. 1969. Measurement of resource environments with airborne thermal mappers--where do we stand? Proceedings Purdue Centennial Year Symposium on Information Processing. Electrical Engineering Dep., Purdue Univ., Lafayette, Indiana. 17 p.
- Miller, L. D. and C. C. Cooper. 1969. Analysis of environmental and vegetative gradients in Yellowstone National Park from remote multi-spectral sensing, p. 108-131. In P. Johnson [ed.] Remote sensing in ecology. Univ. Georgia Press, Athens.
- White, D. E. and L. D. Miller. 1969. Geothermal infrared anomalies of low intensity, Yellowstone National Park. Report on Mission Results, NASA Aircraft Project--Earth Resources Program, Manned Spacecraft Center. 4 p.

Name: W. H. Moir

Born: 1936

Academic Training:

Degree	Year	Institution	Major
B.S.	1957	Purdue University	Mathematics, Physics
M.S.	1963	New Mexico State University	Biology
Ph.D.	1965	Washington State University	Botany, Soils

Professional Experience:

Date	Position	Institution
1965-1966	Assistant Professor Biology	University of Colorado
1967-1968	Research Fellow Forestry	Australian National University
1968-	Assistant Professor Biology	Colorado State University

Professional and Honorary Societies:

Sigma Xi	
Ecological Society of America	International Soil Science Society
Soil Science Society of America	American Society of Agronomy
Crop Science Society of America	AAAS

Publications, Technical Reports:

- Moir, W. H. 1961. Logic of a digital computer. White Sands Missile Range FSL-EML Memo 154. 29 p.
- Moir, W. H. 1966. Influence of ponderosa pine on herbaceous vegetation. Ecology 47:1045-1048.
- Moir, W. H. 1966. Genesis of western brown forest soil as related to vegetation dynamics in a ponderosa pine ecosystem at Spokane, Washington. AAAS, S.W. & Rocky Mt. Div., 42nd Meeting, Las Cruces, New Mexico. (Abstr.).
- Franklin, J. F., C. Wilburg, and W. H. Moir. 1966. Invasion of subalpine meadows by trees, Mount Rainier National Park. Office Report, USFS Forestry Sciences Laboratory, Corvallis, Oregon. 12 p.
- Moir, W. H. 1967. The subalpine tall grass, *Festuca thurberi*, community of Sierra Blanca, New Mexico. Southwest Natur. 12:321-328.
- Dick-Peddie, W. A. and W. H. Moir. 1968. Sierra Blanca corkbark fir research natural area. Establishment proposal submitted to USFS Rocky Mt. Forest and Range Exp. Sta., Fort Collins, Colorado. 9 p.
- Moir, W. H. 1968. Prairie rebirth. Science 162:1312.

- Moir, W. H. 1969. Compartmentalization and carbon flow pathways in lodgepole pine forests. AAAS, S. W. & Rocky Mt. Div., 45th Meeting, Colorado Springs, Colorado. (Abstr.).
- Moir, W. H. 1969. Energy fixation and the role of primary producers in energy flux of grassland ecosystems, p. 125-147. In R. L. Dix and R. G. Beidleman [ed.] The grassland ecosystem: a preliminary synthesis. Range Sci. Series No. 2, Colorado State University, Fort Collins. 437. p.
- Moir, W. H. and H. Grier. 1969. Weight and nitrogen, phosphorus, potassium, and calcium content of forest floor humus of lodgepole pine stands in Colorado. Soil Sci. Soc. Amer., Proc. 33:137-140.
- Moir, W. H. 1969. The lodgepole pine zone in Colorado. Amer. Midland Natur. 81:87-98.
- Moir, W. H. 1969. Steppe communities in the foothills of the Colorado Front Range and their relative productivities. Amer. Midland Natur. 81:331-340.
- Moir, W. H. and E. P. Bachelard. 1969. Distribution of fine roots in three *Pinus radiata* plantations near Canberra, Australia. Ecology 50: in press.
- Moir, W. H. and H. M. Smith. 1970. Occurrence of the American salamander, *Aneides hardii*, in tundra habitat. J. Arctic and Alpine Res.
- Dick-Peddie, W. A. and W. H. Moir. 1970. Vegetation of the Organ Mountains, New Mexico. Range Sci. Series No. 4, Colorado State University, Fort Collins. 24 p.

Name: Robert E. Moore

Born: 1931

Academic Training:

Degree	Year	Institution
B.A.	1952	North Texas State University
M.S.	1959	Oregon State University
Ph.D.	1962	University of Texas

Professional Experience:

Date	Position	Institution
1960	Instructor, Biology	North Texas State University
1960-1962	NSF Graduate Fellowship	
1962-1966	Assistant Professor	Montana State University
1966-	Associate Professor, Zoology and Entomology	Montana State University

Professional and Honorary Societies:

Ecological Society of America
American Society of Mammalogists
American Society of Naturalists
Sigma Xi

Publications, Technical Reports:

- Moore, R. E. 1965. Olfactory discrimination as an isolating mechanism between *Peromyscus maniculatus* and *Peromyscus polionotus*. Amer. Midland Natur. 73:85-100.
- Moore, R. E. 1965. Ethological isolation between *Peromyscus maniculatus* and *Peromyscus polionotus*. Amer. Midland Natur. 74:341-349.
- Mueller, C. E. and R. E. Moore. 1969. Growth of the sagebrush lizard, *Sceloporus graciosus*, in Yellowstone National Park. Herpetologica 25:35-38.

Name: Melvin S. Morris

Born: 1907

Academic Training:

Degree	Year	Institution	Major
B.S.	1930	Colorado State University	Forestry
M.S.	1932	Colorado State University	Botany
	1940,41	University of Chicago	Advanced work in Botany

Professional Experience:

Date	Position	Institution
Summers 1926, 1927, 1928, 1929	Field work: Cadastral surveys, Fire Control, Range Surveys	-
Summer 1937	Range Examiner	Resettlement Administration
Summer 1945	Forest Ecologist	N. Rocky Mt. For. & Range Exp. Sta.
1949-1958	Member of Faculty on Public and Private Administration	
1950-1956	Assistant Unit Leader	Montana Coop. Wildl. Res. Unit
1950-1956	Collaborator, Research	US Fish & Wildl. Service
1949-Present	Collaborator, Personnel Manage.	USFS
1949-1950	Special Lecturer	New York Coll. Forestry
1950-	Professor of Forestry	University of Montana

Professional and Honorary Societies:

Phi Kappa Phi	Ecological Society
Alpha Zeta	Montana Academy of Sciences
Phi Sigma	Northwest Scientific Association
AIBS	Soil and Water Conservation Society
American Society of Range Management	Xi Sigma Pi
AAAS Fellow, 1963	Honor Alumnus, Coll. Forestry, CSU
American Society of Agronomy	

Publications, Technical Reports:

Morris, M. S. 1931. Increasing forage on sagebrush land. Colo. Agr. Coll. Exp. Bull. 308-A.

Hanson, H. C., L. D. Love, and M. S. Morris. 1931. Effects of different systems of grazing. Colo. Agr. Exp. Sta. Bull. 377.

Morris, M. S. 1932. Can we improve our range? Colo. Agr. Coll. Exp. Bull. 313-A.

Morris, M. S. 1932. A recording atmometer. Ecology 13:100-101.

- Morris, M. S. 1934. Deferred and rotation system of grazing. Amer. Cattle Producer 16:5.
- Morris, M. S. 1935. Crested wheatgrass for dryland pastures. Colo. Agr. Sta. Press Bull. 84.
- Morris, M. S. 1937. Map of the natural vegetation of Colorado. Central Rocky Mountain Forage and Range Exp. Sta. Mimeo.
- Morris, M. S. 1941. The status of blue grama grass in Montana. Montana Acad. Sci., Proc., 11.
- Morris, M. S. (Ed.). 1945. Land use and control of privately owned cutover lands in western Montana. Soc. Amer. Forest., Proceedings of the Northern Rocky Mountain Section.
- Morris, M. S. 1945. The classification of Montana grasslands on an ecological basis. Montana Acad. Sci., Proc., V.
- Morris, M. S. 1946. A comparison of returns from timber and forage on cutover forest lands in western Montana. Montana Forestry Kaimin.
- Morris, M. S. 1947. The problem of food supply in big game management. Montana Forestry Kaimin.
- Morris, M. S. . The grazing use of forest lands in the northern Rocky Mountain region. Soc. Amer. Forest., Proc.
- Morris, M. S. 1952. A study of the food consumption of elk. Western Ass. Game Comm., Proc. *with* Hungerford.
- Morris, M. S. and Roger DeLand. 1953. Study of the grazing value of intermediate wheatgrass pastures in the Bitterroot Valley of Montana. Montana Forest and Conserv. Bull.
- Morris, M. S., Dwight Stockstad, and Earl Lory. 1953. The chemical characteristics of natural game licks. North American Wildlife Conference, Trans. 18.
- Morris, M. S. 1956. Elk and livestock competition. J. Range Manage. 9.
- Morris, M. S. and J. Meuchel. 1956. The problem of St. Johnswort, a noxious plant, in western Montana. Montana Forest and Conserv. Exp. Sta. Bull. 4.
- Morris, M. S. and J. E. Schwartz. 1957. Mule deer and elk food habits on the National Bison Range. J. Wildlife Manage. 21.
- Morris, M. S. 1960. The principles of range management. Montana Forest Conserv. Exp. Sta. Bull. 13.
- Morris, M. S., J. E. Schmauta, and P. Stickney. 1962. Winter field key to the native shrubs of Montana. Montana Conserv. Exp. Sta. Bull. 23.

McCluskey, M. S. and Charles Pase. 1968. Ecology of big sagebrush in Montana. Sta. Bull. (In press).

Name: Julius G. Nagy

Born: 1925

Academic Training:

Degree	Year	Institution	Major
B.S.	1960	Wayne State University	Microbiology
M.S.	1963	Colorado State University	Nutrition
Ph.D.	1966	Colorado State University	Nutrition

Special Training:

1963 Rumen microbiology techniques with Dr. Marvin P. Bryant, U.S.D.A., Beltsville, Maryland

1964 Gas-chromatography course, University of Colorado, Boulder.

Professional Experience:

Date	Position	Institution
Present	Assistant Professor	Colorado State University

Professional and Honorary Societies:

Sigma Xi	Wildlife Soc.
Pi Kappa Pi (Executive Committee)	AAAS
Nutrition Institute	American Soc. Microbiology

Major Interests:

Nutrition of wild and domestic ruminants.
Metabolic reactions in rumen.

Current Professional Activities:

Teaching: Wildlife Nutrition

Research: Deer starvation studies.
Effects of pesticides on rumen function of deer.
Energy and nutrient transfer through the pronghorn antelope.
Selectivity of juniper species by deer.

Publication, Technical Reports:

Nagy, J. G., G. Vidacs, and G. M. Ward. 1962. *In vitro* studies on alfalfa hay substrate using deer, cows, sheep, and cattle as rumen fluid donor. (Abstr.) J. Dairy Sci. 45:69.

- Nagy, J. G., G. Vidacs, and G. M. Ward. 1962. Effect of different pre-incubation temperatures of rumen fluid gas production and VFA production in artificial rumen techniques. (Abstr.) J. Dairy Sci. 45:1422.
- Nagy, J. G., G. Vidacs, and G. M. Ward. 1963. Effects of essential oils of sagebrush on bacteria. (Abstr.) Proc. Rocky Mt. Soc. of Microb.
- Nagy, J. G. 1963. Effects of essential oils of sagebrush (*Artemisia tridentata*) on deer rumen microorganisms. M.S. Thesis, Colorado State Univ. 52 p.
- Nagy, J. G., G. Vidacs, and G. M. Ward. 1963. Effects of sagebrush and its essential oils on bovine appetite and metabolism of rumen microflora. (Abstr.) J. Anim. Sci. 22:841.
- Nagy, J. G., G. Vidacs, and G. M. Ward. 1964. Separation of the essential oils of *Artemisia* spp. by gas-chromatography and the effects of the oils on bacteria. (Abstr.) Proc. 35th Ann. Meeting Colorado-Wyoming Acad. of Sci.
- Nagy, J. G., H. W. Steinhoff, and G. M. Ward. 1964. Effects of essential oils of sagebrush on deer rumen microbial function. J. Wildl. Manage. 28:785-790.
- Nagy, J. G. 1965. Sagebrush. Colorado State Univ. Res. Highl. 15:4-5.
- Nagy, J. G. 1966. Volatile oils and antibiosis of *Artemisia* spp. Ph.D. Diss., Colorado State Univ. 73 p.
- Ward, G. M. and J. G. Nagy. 1966. Bacterial inhibition by the essential oils of sagebrush N.S.F. Final Rept. 54 p.
- Nagy, J. G., G. Vidacs and G. M. Ward. 1967. Previous diet of deer, cattle, and sheep and their ability to digest alfalfa hay. J. Wildl. Manage. 31: 443-447.
- Nagy, J. G. 1967. Artificial feeding of big game, p. 75 to 77. In D. L. Gilbert [ed.] Proc. 3rd Ann. Short Course in Game and Fish Management.
- Tengerdy, R. P., J. G. Nagy, and B. Martin. 1967. Quantitative measurements of bacterial growth by the reduction of tetrazolium salts. Appl. Microbiol. 15:954-996.
- Nagy, J. G. and R. P. Tengerdy. 1967. Antibacterial action of essential oils of *Artemisia* as an ecological factor. I. Antibacterial action of the volatile oils of *Artemisia tridentata* and *Artemisia nova* on aerobic bacteria. Appl. Microbiol. 15:819-821.
- Nagy, J. G., and G. P. Tengerdy. 1968. Antibacterial action of essential oils of *Artemisia* as an ecological factor. II. Antibacterial action of the volatile oils of *Artemisia tridentata* (Big sagebrush) on bacteria from the rumen of mule deer. Appl. Microbiol. 16:441-444.
- Olson, J. C., D. A. Cramer, and J. G. Nagy. 1968. Gastro-intestinal pH values of sheep by breed. Proc. Western Sect. Amer. Soc. of Anim. Sci. 19:43-46.

- Muller, H. D., T. A. Barber, and J. G. Nagy. 1968. Diet composition and cecal development in young chickens. Ann. Meeting Poultry Sci. Ass. p. 57-59.
- Nagy, J. G. and J. G. Gilbert. 1968. Fecal pH values of mule deer and grazing domestic sheep. J. Wildl. Manage. 32:961-962.
- Nagy, J. G. 1968. Nutrition of big game, 112 p. In D. R. Smith [ed.] Proc. 4th Ann. Short Course in Game and Fish Manage.
- Murphy, B. D., S. I. Savage, J. G. Nagy, E. W. Kienholtz, and D. L. Gilbert. 1968-1969. Chemical characteristics of mature antlers in Rocky Mountain mule deer. Proc. Colorado-Wyoming Acad. Sci. (Abstr.) 203.
- Barber, T. A. and J. G. Nagy. 1969. Sage grouse cecal function. Proc. Colorado-Wyoming Acad. Sci. 6:52. (Abstr.) 186.
- Knox, K. L., J. G. Nagy, and R. P. Brown. 1969. Water turnover in mule deer. J. Wildl. Manage. 33:389-393.
- Nagy, J. G. 1969. Biological relations of rumen flora and fauna. Misc. Publ. USDA For. Serv. (In press)
- Nagy, J. G. and G. L. William. 1969. Rumino-reticular VFA content of pronghorn antelope. J. Wildl. Manage. 33:437-439.
- Nagy, J. G., K. L. Knox, and T. Hakonson. 1969. The effects of food quality on food intake of mule deer. Proc. 34th North Amer. Wildl. and Natur. Res. Conf. (Paper accepted for presentation and publication.)
- Olson, J. C. and J. G. Nagy. 1969. Gastrointestinal pH values of mule deer. Proc. Colorado-Wyoming Acad. Sci. 6:56. (Abstr.) 202.
- Wesley, D. E., K. L. Knox, and J. G. Nagy. 1969. Water kinetics in pronghorn antelope. Proc. Colorado-Wyoming Acad. Sci. 6:56.
- Nagy, J. G., T. A. Barber, and A. E. McChesney. 1969. *Clostridium perfringens* enterotoxemia in hand-reared antelope. J. Wildl. Manage. (In press).
- Barber, T. A., J. G. Nagy, and T. A. May. 1969. Nutrition and dietary preference of penned sage grouse. Proc. 6th Biennial Western States Sage Grouse Workshop. (In press).
- Wesley, D. E., K. L. Knox and J. G. Nagy. 1970. Energy flux and water kinetics in young pronghorn antelope. J. Wildlife Manage. 34:908-912.
- Barber, T. A., C. C. Schwartz, J. G. Nagy and C. L. Streeter. 1970. Influence of pesticides on deer rumen bacteria. J. Anim. Sci. 31:235. Abstr.
- Schwartz, C. C., T. A. Barber, J. G. Nagy and C. L. Streeter. 1970. Pesticide effect on in vitro total digestibility. J. Anim. Sci. 31:253. Abstr.

Name: Larry G. Nell

Born: 1935

Academic Training:

Degree	Year	Institution	Major
B.S.	1960	Colorado State University	Biological Science

Special Training:

Air Force training courses in:

- Supply operations (1961)
- Inventory management (1962)
- Communications and maintenance familiarization (1962)
- Computer operations (1964)
- Administrative management (1964)
- Supply staff operations (1969)

Professional Experience:

Date	Position
1961-1969	Air Force Supply Operations Officer

Current Professional Activities:

Administrative Assistant: Grassland Biome

Publications, Technical Reports;

None

Name: Charles William O'Brien

Born: 1933

Academic Training:

Degree	Year	Institution	Major
B.A.	1956	Univ. Connecticut	Entomology
M.S.	1958	Univ. Arizona	Entomology
Ph.D.	1967	Univ. California	Entomology

Professional Experience:

Date	Position	Institution
1956-1958	Teaching Fellow	Univ. Arizona
1959-1960	Field Entomologist	Bernice P. Bishop Museum, Honolulu
1962-1966	Teaching Assistant	Univ. California
1967-1969	Professor	Univ. Catolica, Santiago, Chile
1969-1970	Assistant Entomologist	Ohio State Dept. Health
1970-		Texas Tech University

Professional and Honorary Societies:

Royal Entomological Society of London
Entomological Society of America
Entomological Society of Canada
Pacific Coast Entomological Society
Sociedad Chilena de Entomologia
Society for the Study of Coleoptera
Society of Systematic Zoology

Major Interests:

Entomology, morphology

Publications, Technical Reports:

- Gressitt, J. L., R. E. Leech, and C. W. O'Brien. 1960. Trapping of air-borne insects in the Antarctic Area. *Pacific Insects* 2:245-250.
- O'Brien, C. W. 1961. *Phyrdenus muriceus* (Germar) attacking tomatoes in Arizona. *Pan-Pacific Entomol.* 37:185-186.
- Ashlock, P. D. and C. W. O'Brien. 1964. *Catharosia lustrans*, a tachinid parasite of some drymine Lygaeidae. *Pan-Pacific Entomol.* 40:98-100.
- O'Brien, C. W. 1965. A review: An introduction to the study of insects. By Borror and De Long. *Pan-Pacific Entomol.* 41:140.
- Breimeier, L. and C. W. O'Brien. 1966. Observations on territoriality and a new nesting substrate of *Xylocopa californica arizonensis* Cresson (Hymenoptera:Apoidea). *Pan-Pacific Entomol.* 42:27-29.

- O'Brien, C. W. 1969. A new species of *Gerstaeckeria* in Peru, first record for South America. (Coleoptera:Curculionidae). *Coleopterists' Bull.* (3).
- O'Brien, C. W. 1970. *Pselactus spadix* (Herbst), a European Cossonine weevil new to the western United States. (Coleoptera:Curculionidae). *Pan-Pacific Entomol.* In press.
- O'Brien, C. W. 1970. Taxonomic revision of the genus *Gerstaeckeria* (Coleoptera:Curculionidae) in America north of Mexico. *Ann. Entomol. Soc. Amer.* In press.
- O'Brien, C. W. 1970. Taxonomic revision of the genus *Dorytomus* (Coleoptera:Curculionidae) in America north of Mexico. *Univ. California Pub. Entomol.* In press.
- O'Brien, C. W. 1970. A review: Curculionidae Subfamily Apioninae of North and Central America. David G. Kissinger. *Pan-Pacific Entomol.* In press.

Name: Robert T. O'Brien

Born: 1925

Academic Training:

Degree	Year	Institution
B.S.	1950	University of North Dakota
M.S.	1952	University of North Dakota
Ph.D.	1956	Washington State University

Professional Experience:

Date	Position	Institution
1950-1952	Assistant in Bacteriology	Univ. of North Dakota
1952-1956	Assistant in Bacteriology and Instr. in Horticulture	Washington State Univ.
1956-1964	Biological Scientist	General Elec. Co., Richland, Washington
1964-1966	Consulting Microbiologist	Electronics Lab., Gen. Elec. Co., Ithaca & Syracuse, N.Y.
1966-	Professor of Biology	New Mexico State Univ.

Publications, Technical Reports:

- O'Brien, R. T. 1955. Antibiotics in food preservation. Food Technol. 9:461.
- O'Brien, R. T. 1955. Effect of subtilin on heat activated and severely heated spores of a putrifactive anaerobic bacterium. J. Bacteriol. 20:487.
- O'Brien, R. T. 1956. Antibiotics in food preservation. II. Studies on the influence of subtilin and nisin on the thermal resistance of food spoilage bacteria. Food Technol. 10:352.
- O'Brien, R. T. 1957. The nutritional requirements of germination and out-growth of spores of thermophilic bacteria. J. Bacteriol. 23:522.
- O'Brien, R. T. 1957. Purification and properties of a proteolytic enzyme from *B. stearothermophilus*. Arch. Biochem. Biophys. 70:432.
- O'Brien, R. T. 1958. Preparation of autoradiograms for electron microscopy. Nature 183:1461.
- O'Brien, R. T. 1959. Subtilin and nisin as additives that lower the heat-process requirements of canned foods. Food Technol. 13:462.
- O'Brien, R. T. 1961. Radiation sensitivity studies on related fermenting and respiring yeasts. Radiat. Bot. 1:61.
- O'Brien, R. T. 1963. Relationship between deuterium inhibition of growth and glucose catabolism in *S. cerevisiae*. Soc. Exp. Biol. Med., Proc. 112:196.

- O'Brien, R. T. 1964. Effect of D_2O on uptake in yeast. Soc. Exp. Biol. Med., Proc. 117.
- O'Brien, R. T. 1967. Identification of microorganisms by gas chromatographic analysis of metabolic products. Food Technol. 21:78.
- O'Brien, R. T. 1968. Detection of *E. coli* by gas chromatography. J. Bacteriol. 95:1205.
- O'Brien, R. T. 1969. Metabolic patterns of bacteria as shown by gas chromatography. Dev. Ind. Microbiol. In press.

Name: Thomas P. O'Farrell

Born: 1936

Academic Training:

Degree	Date	Institute	Major
B.S.	1958	St. Mary's College, Minnesota	Biology
M.S.	1960	University of Alaska	Wildlife Management
Ph.D.	1965	University of Tennessee	Zoology

Professional Experience:

Date	Position	Institution
1955, 1956		
1957, 1958	Research Assistant	St. Mary's College
7-11, 1959	Fishery Aide	U.S. Fish and Wildlife Service
1959-60	Research Assistant	University of Alaska
1960-61	Wildlife Biologist	Alaska Department Fish and Game
1962-63	Teaching Assistant	University of Tennessee
1962, 1963 (summers)	Research Assistant	Oak Ridge National Laboratory
1963-65	Fellow	Oak Ridge Institute of Nuclear Studies
1965-67	Postdoctoral Fellow	U.S. Atomic Energy Commission
1967-68	Research Scientist	Battelle Memorial Institute
1968-	Manager, Terrestrial Ecology Section, Ecosystems Department	Battelle Memorial Institute

Professional and Honorary Societies:

American Association for the Advancement of Science
 American Society of Mammalogists
 Sigma Xi
 Ecological Society of America

Publications, Technical Reports:

- O'Farrell, T.P. 1960. Determining the home range of the snowshoe hare in interior Alaska, p. 380-383. *In* Annu. Rep. to Progress, Federal Aid in Wildlife Restoration Project W-6-R-1, Alaska Wildlife Invest., Vol. I.
- O'Farrell, T.P. 1961. Characteristics of the hunter harvest--moose management investigations, p. 65-114. *In* Annu. Rep. to Progress, Federal Aid in Wildlife Restoration Project W-6-R-1, Alaska Wildlife Invest., Vol. II.
- O'Farrell, T.P. and A.M. Sheets. 1962. Birds observed wintering on Middleton Island, Alaska. *Condor* 64:440-441.
- O'Farrell, T.P. and S. V. Kaye. 1963. Use of radioactive tags to evaluate movements of wild mammals, p. 88. *In* S. I. Auerbach et al. Health Physics Div. Annu. Progress Rep. ORNL-3492.

- Cosgrove, G.E., T.P. O'Farrell, S.V. Kaye and P.B. Dunaway. 1964. Infection of laboratory-reared and wild cotton rats with cat tapeworm larvae. J. Tennessee Acad. Sci. 39:140-141.
- O'Farrell, T.P. 1964. Incorporation of 5-¹³¹Iodo-2'-deoxyuridine into the DNA of indigenous mammals, p. 83-84. In S. I. Auerbach et al. Health Physics Div. Annu. Progress Rep. ORNL-3697.
- Cosgrove, G.E. and T.P. O'Farrell. 1965. Papillomas and other lesions in the stomachs of pine mice. J. Mammal. 46:510-513.
- O'Farrell, T.P. 1965. Incorporation of 5-¹³¹Iodo-2'-deoxyuridine into indigenous rodents, p. 62-64. In A. I. Auerbach et al. Health Physics Div. Annu. Progress Rep. ORNL-3849.
- O'Farrell, T.P. 1965. Home range and ecology of snowshoe hares in interior Alaska. J. Mammal. 46:406-418.
- O'Farrell, T.P. 1965. The rabbits of Middleton Island, Alaska. J. Mammal. 46:525-527.
- O'Farrell, T.P., S.I. Auerbach and P.B. Dunaway. 1966. Incorporation of a thymidine analog by indigenous rodents. ORNL Rep. No. 3907. 176 p.
- O'Farrell, T.P. and P.B. Dunaway. 1966. Incorporation of a thymidine analog into indigenous rodents, p. 47-48. In S. I. Auerbach et al. Health Physics Div. Annu. Progress Rep. ORNL-4007.
- O'Farrell, T.P. and P.B. Dunaway. 1967. Incorporation and tissue distribution of a thymidine analog in *Sigmodon hispidus*. Comp. Biochem. and Physiol. 22:435-450.
- O'Farrell, T.P. 1967. Effects of radiation on native mammals, p. 132-135. In R. C. Thompson and E. G. Swezea [ed.] Pacific Northwest Lab. Annu. Rep. for 1966 in the Biol. Sci.
- Cosgrove, G.E., P.B. Dunaway, T.P. O'Farrell, J.A. Payne and H.E. Childs, Jr. 1967. Pathology survey in small mammals. Bull. Wildlife Dis. Assoc. 3:117. (Abstr.)
- O'Farrell, T.P. 1968. Radiation effects in free-ranging pocket mice, p. 8.10-8.12. In R. C. Thompson and E. G. Swezea [ed.] Pacific Northwest Lab. Annu. Rep. for 1967 in the Biol. Sci.
- O'Farrell, T.P. 1968. Effects of acute radiation in native rodents, p. 8.7-8.10. In R. C. Thompson and E. G. Swezea [ed.] Pacific Northwest Lab. Annu. Rep. for 1967 in the Biol. Sci.
- O'Farrell, T.P. 1969. Effects of acute ionizing radiation on selected Pacific Northwest rodents, p. 157-165. In D. J. Nelson and F. C. Evans [ed.] Second National Symposium on Radioecology, CFSTI, Nat. Bur. Standards, Springfield, Virginia. (CONF-670503)

- O'Farrell, T.P. and P.B. Dunaway. 1969. Effects of ionizing radiation radiation on incorporation of the thymidine analog 5-¹³¹Iodo-2'-deoxyuridine by cotton rats, *Sigmodon hispidus*. Radiation Res. 38:109-124.
- O'Farrell, T.P. and P.B. Dunaway. 1970. Cell proliferation as a function of metabolism in three species of native rodents. Comp. Biochem. Physiol. 36:811-815.
- O'Farrell, T.P., J.D. Hedlund, R.O. Gilbert and R.J. Olson. 1970. Populations of pocket mice, *Perognathus parvus*, on the ALE Reserve, p. 2.8. In B. E. Vaughan et al. Pacific Northwest Lab. Annu. Rep. for 1969 in the Ecological Sci. Rep. No. (BNWL-1306) Part II.
- Kritzman, E.B, T.P. O'Farrell and J. D. Hedlund. 1970. Distribution and abundance of small mammals on Rattlesnake Mountain (ALE Reserve), p. 2.9-2.11. In B. E. Vaughan et al. Pacific Northwest Lab. Annu. Rep. for 1969 in the Ecological Sci. Rep. No. (BNWL-1306) Part II.
- O'Farrell, T.P. and J.D. Hedlund. 1970. Reproductive behavior of the Northern grasshopper mouse, *Onychomys leucogaster fuscogriseus*, p. 2.11. In B. E. Vaughan et al. Pacific Northwest Lab. Annu. Rep. for 1969 in the Ecological Sci. Rep. No. (BNWL-1306) Part II.
- O'Farrell, T.P. and J.D. Hedlund. 1970. Disease survey of the native mammals of project ALE, p. 2.11-2.13. In B. E. Vaughan et al. Pacific Northwest Lab. Annu. Rep. for 1969 in the Ecological Sci. Rep. No. (BNWL-130) Part II.
- O'Farrell, T.P. and J.D. Hedlund. 1970. Effects of acute radiation in native rodents, p. 2.13. In B. E. Vaughan et al. Pacific Northwest Lab. Annu. Rep. for 1969 in the Ecological Sci. Rep. No. (BNWL-1306) Part II.
- O'Farrell, T.P. and R.O. Gilbert. 1970. Radiation effect in free ranging pocket mice, p. 2.13-2.15. In B. E. Vaughan et al. Pacific Northwest Lab. Annu. Rep. for 1969 in the Ecological Sci. Rep. No. (BNWL-1306) Part II.
- O'Farrell, T.P., J.D. Hedlund, J.V. Dilley and K.E. McDonald. 1970. Relationship between radiation responses and cyanide toxicity in native mammals, p. 2.15-2.17. In B. E. Vaughan et al. Pacific Northwest Lab. Annu. Rep. for 1969 in the Ecological Sci. Rep. No. (BNWL-1306) Part II.
- Winsor, T.F. and T.P. O'Farrell. 1970. The retention of ¹³⁷Cs by Great Basin pocket mice, p. 2.17-2.18. In B. E. Vaughan et al. Pacific Northwest Lab. Annu. Rep. for 1969 in the Ecological Sci. Rep. No. (BNWL-1306) Part II.
- Winsor, T.F. and T.P. O'Farrell. 1970. Retention of ¹³⁷Cs in eight species of native rodents, p. 2.18-2.19. In B. E. Vaughan et al. Pacific Northwest Lab. Annu. Rep. for 1969 in the Ecological Sci. Rep. No. (BNWL-1306) Part II.
- O'Farrell, T.P., J.G. Brewen, J.K. Soldat, L.L. Eberhardt and N.A. Wogman. 1970. Chromosomal aberrations in Alaskan Eskimos, p. 2.21-2.22. In B. E. Vaughan et al. Pacific Northwest Lab. Annu. Rep. for 1969 in the Ecological Sci. Rep. No. (BNWL-1306) Part II.

O'Farrell, T.P. 1971. Effects of acute radiation in captive and free-ranging pocket mice, *Perognathus parvus*. In D. J. Nelson [ed.] Third National Symposium on Radioecology. (In press)

Name: Robert L. Packard

Born: 1928

Academic Training:

Degree	Year	Institution	Major
B.S.	1951	University of Nebraska	Zoology and Botany
M.A.	1955	University of Kansas	Zoology
Ph.D.	1960	University of Kansas	Zoology

Special Training:

Marine Biological Laboratories, Duke University, Summer 1956; U. S. National Museum, Division of Mammals, Smithsonian Institution, Summer Intern 1957.

Professional Experience:

Date	Position	Institution
Summer 1959	Instructor	University of Kansas
1959-1962	Assistant Professor	Stephen F. Austin State University
1962-1965	Assistant Professor	Texas Tech University
1965-1967	Associate Professor	Texas Tech University
1967-	Professor	Texas Tech University

Professional and Honorary Societies:

American Society of Mammalogists	Sigma Xi
Southwestern Association of Naturalists	AAAS
Society for the Study of Evolution	Beta Beta Beta
Society of Systematic Zoology	Phi Sigma
Texas Academy of Sciences	

Major Interests:

Taxonomy, ecology, and life history of North American mammals with particular reference to those in the grasslands.

Current Professional Activities:

Editor of The Southwestern Naturalist
Member of the Board of Directors - The American Society of Mammalogists
Institutional Representative to the Organization for Tropical Studies

Teaching: Natural History of Vertebrates
Mammalogy
Zoogeography
General Zoology
Special Seminars

Research: Taxonomy of mammals of the southern High Plains
Ecological studies of mammals on the desert-grassland ecotone

Publication, Technical Reports:

- Packard, R. L. 1950. Notes on the nesting of the black crowned night heron at the Valentine National Wildlife Refuge. The Nebraska Bird Rev. 18:63-64.
- Packard, R. L. 1951. Lead Poisoning of waterfowl in Lancaster County, Nebraska. Nebraska Acad. Sci. Proc. p. 31.
- Packard, R. L. 1954. Notes on the defensive behavior of gray and fox squirrels while moving their young. Kansas Acad. Sci. Trans. 57:471-472.
- Packard, R. L. 1955. Great horned owl attacking squirrel nests. The Wilson Bull. 66:272.
- Stains, H. J. and R. L. Packard. 1955. The coyote on a natural area in northeastern Kansas. Kansas Acad. Sci. Trans. 58:211-221.
- Packard, R. L. and H. J. Stains. 1955. Occurrence of the mink west of the hundredth meridian in Kansas. Kansas Acad. Sci. Trans. 58:222-224.
- Packard, R. L. 1955. Release, dispersal, and reproduction of fallow deer in Nebraska. J. Mammal. 36:471-473.
- Packard, R. L. 1955. Pileated woodpecker and American woodcock in southeastern Kansas. Kansas Ornith. Soc. Bull. 3:15.
- Packard, R. L. 1956. The tree squirrels of Kansas: Ecology and economic importance. Univ. Kansas Mus. Nat. Hist. Misc. Pub. 11:1-67.
- Jones, J. K. Jr. and R. L. Packard. 1956. *Feresa intermedia* (Gray) pre-occupied. Biol. Soc. Wash. Proc. 69:167-168.
- Packard, R. L., E. R. Hall, S. A. Anderson, and J. K. Jones, Jr. 1957. Vernacular names for North American mammals north of Mexico. Univ. Kansas Mus. Nat. Hist. Misc. Pub. 14:1-16.
- Packard, R. L. 1957. Broad-winged hawk in Coahuila. The Wilson Bull. 69:370.
- Jones, J. K. Jr. and R. L. Packard. 1958. *Myotis keeni septentrionalis* in South Dakota. J. Mammal. 39:150.
- Packard, R. L. 1958. Carnivorous behavior in the Mexican ground squirrel. J. Mammal. 39:154.
- Packard, R. L. 1958. The taxonomic status of *Peromyscus alleys* Osgood. Biol. Soc. Washington Proc. 71:17-20.
- Packard, R. L. 1958. New subspecies of the rodent *Baiomys* from Central America. Univ. Kansas Pub. Mus. Nat. Hist. 9:399-404.
- Packard, R. L. 1959. First record of the pygmy mouse in New Mexico. J. Mammal. 40:146.
- Packard, R. L. 1960. Speciation and evolution of the pygmy mice, genus *Baiomys*. Univ. Kansas Grad. School Mus. Nat. Hist. Pub. p. 1-4.

- Packard, R. L. 1960. Speciation and evolution of the pigmy mice genus *Reithrodontomys*. Univ. Kansas Mus. Nat. Hist. Pub. 23:579-670.
- Webb, R. G. and R. L. Packard. 1961. Notes of some amphibians and reptiles from eastern Texas. Southwestern Natur. 6:105-107.
- Packard, R. L. 1961. Additional records of mammals from eastern Texas. Southwestern Natur. 6:193-195.
- Packard, R. L. 1963. Distribution of the black-tailed jackrabbit in eastern Texas. Texas J. Sci. 15:107-110.
- Packard, R. L., G. Stephenson, and P. Goodrum. 1963. Small rodents as consumers of pine seed in eastern Texas uplands. J. Forest. 61:523-526.
- Packard, R. L. and H. Garner. 1964. Arboreal nests of the golden mouse in eastern Texas. J. Mammal. 45:369-374.
- Packard, R. L. and H. Garner. 1964. Records of some mammals from the Texas High Plains. Texas J. Sci. 16:387-390.
- Packard, R. L. 1965. Range extension of the hooded skunk in Texas and Mexico. J. Mammal. 46:102.
- Packard, R. L. and T. Alvarez. 1965. Description of a new species of fossil *Reithrodontomys* from the Pleistocene of Central Mexico. Acta Zool. Mexicana 7:1-4.
- Packard, R. L. 1965. Geographic variation and evolution of high plains fox squirrel populations. Yearbook of the Amer. Phil. Soc. Annu. Rep. 288-290.
- Packard, R. L. 1966. *Myotis austroriparius* in Texas. J. Mammal. 47:128.
- Packard, R. L. 1966. Notes on mammals from Washington Parish, Louisiana. J. Mammal. 47:323-325.
- Packard, R. L. 1967. Octodontoid, Bathyergoid, and Ctenodactyloid Rodents, p. 273 to 290. In S. A. Anderson and J. K. Jones, Jr. [ed.] Recent mammals of the world. Ronald Press Co., New York.
- Harvey, M. K. and R. L. Packard. 1967. Cotton rats fail to damage southern pine seedlings. J. Forest. 65:495-497.
- Packard, R. L. and F. W. Judd. 1967. Two noteworthy records of bats from Chihuahua. Southwestern Natur. 12:332.
- Schmidly, D. J. and R. L. Packard. 1967. Swimming ability in pocket mice. Southwestern Natur. 12:480-482.
- Packard, R. L. 1968. An ecological study of the fulvous harvest mouse, *Reithrodontomys fulvescens* in eastern Texas. Amer. Midland Natur. 79:68-88.
- Packard, R. L. and F. Judd. 1968. Comments on some mammals from western Texas. J. Mammal. 49:535-538.

Packard, R. L. 1969. Taxonomic review of the golden mouse, *Ochrotomys nuttalli*, p. 373 to 406. In J. K. Jones, Jr. [ed.] Contributions in mammalogy. Univ. Kansas Mus. Natur. Hist. Misc. Pub. 51.

Packard, R. L. 1969. Distributional notes on some foxes from western Texas. Southwestern Natur. 14. (In press).

Packard, R. L. 1969. Guinea pig, gundi, and hutia. Encycl. Amer. (In press).

Name: Robert M. Pengra

Born: 1926

Academic Training:

Degree	Year	Institution	Major
B.S.	1951	South Dakota State University	Bacteriology
M.S.	1953	South Dakota State University	Bacteriology
Ph.D.	1959	University of Wisconsin	Bacteriology

Professional Experience:

Date	Position	Institution
1951-1953	Research Assistant	South Dakota State Univ.
1954-1957	Research Assistant	Univ. Wisconsin
1957-1962	Assistant Prof., Bacteriology	South Dakota State Univ.
1962-1967	Associate Prof., Bacteriology	South Dakota State Univ.
1966-1967	Research Associate	Cornell Univ. (Sabbatical Leave)
1967-1968	Prof., Bacteriology	South Dakota State Univ.
1968-	Prof. and Head, Bacteriology	South Dakota State Univ.

Major Interests:

Mechanism of biological nitrogen fixation in soil organisms.
Ecological significance of biological nitrogen fixation in soil.
Nitrogen fixation by nonleguminous, symbiotic, plant-microbe systems.
Native leguminous plants of grasslands and their associated rhizobia.

Professional and Honorary Societies:

American Society for Microbiology	Canadian Society of Microbiologists
AAAS	South Dakota Academy of Science
Gamma Sigma Delta	Sigma Xi
AIBS	

Publications, Technical Reports:

- Pengra, R. M., M. A. Cole, and M. Alexander. 1968. Cell walls and lysis of *M. paraspori* Hyphae. J. Bacteriol. 97:1056-1061.
- Todd, R. L., R. M. Pengra, and P. R. Hiddaugh. 1967. Acetylene and nitrogen fixation by *K. pneumoniae*. Proc. Can. Soc. Microbiol. p.2. (Abstr.)
- Patil, B. B., R. M. Pengra, and D. C. Yoch. 1967. Effects of nitrogen supplements on nitrogen fixation by *Aerobacter aerogenes*. Biochem et Biophysica Acta 136:1-5.
- Yoch, D. C. and R. M. Pengra. 1966. Effect of amino acids of the nitrogenase system of *Alcaligenes eutrophus*. J. Bacteriol. 92:618-622.
- Pengra, R. M. 1964. A survey of some culture of the genus *Aerobacter* for nitrogen fixation. Bacteriol. Proc. 448. (Abstr.)

Name: Robert E. Pfadt

Born: 1915

Academic Training:

Degree	Year	Institution	Major
B.A.	1938	University of Wyoming	
M.A.	1940	University of Wyoming	
Ph.D.	1948	University of Minnesota	

Professional Experience:

Date	Position	Institution
1938	Research Assistant	Wyoming Game and Fish Commission
1939	Research Assistant	U.S. Department of Agriculture
1940-43	Research Assistant	University of Wyoming
1943-48	Assistant Professor	University of Wyoming
1948-54	Associate Professor	University of Wyoming
1954-68	Professor	University of Wyoming
1966-67	Plant Protection Advisor	Wyoming Team, Kabul Afghanistan
1967-68	Chief of Party	Wyoming Team, Kabul Afghanistan
1968-	Department Head and Professor	University of Wyoming

Major Interests:

Insect ecology; teaching of insect ecology and insect population dynamics.

Professional and Honorary Societies:

American Association for the Advancement of Science
Sigma Xi
Phi Kappa Phi
Entomological Society of America
Entomological Society of Canada
Royal Entomological of London
Kansas Entomological Society

Publications, Technical Reports:

- Pfadt, R. E. 1947. Effects of temperature and humidity on larval and pupal stages of the common cattle grub. J. Econ. Entomol. 40:293-300.
- Pfadt, R. E. 1949. Range grasshoppers as an economic factor in the production of livestock. Wyoming Range Manage. 7:1-7.
- Pfadt, R. E. 1949. Food-plants, distribution, and abundance of the big-headed grasshopper, *Aulocara elliotti* (Thos.). J. Kansas Entomol. Soc. 22:69-74.

- Pfadt, R. E. 1949. Food plants as factors in the ecology of the lesser migratory grasshopper, *Melanoplus mexicanus* (Sauss.). Wyoming Agr. Exp. Sta. Bull. 290. 51 p.
- Pfadt, R. E. 1964. The role of rangeland grasshoppers as scavengers. J. Kansas Entomol. Soc. 37:1-4.
- Pfadt, R. E. 1965. Insects collected on Wyoming rangeland in connection with grasshopper-egg sampling. J. Kansas Entomol. Soc. 38:61-66.
- Pfadt, R. E. 1965. Key to Wyoming grasshoppers, Acrididae and Tetrigidae. Mimeo Circ. 210. 25 p.
- Pfadt, R. E. 1966. Parasites and predators of Wyoming rangeland grasshoppers. Wyoming Agr. Exp. Sta. Sci. Monogr. 3. 31 p.
- Pfadt, R. E. 1969. A new species of *Eremocharis* (Orthoptera: Pamphagidae) from Afghanistan. Can. Entomol. 101:545-548.
- Pfadt, R. E. 1970. A new grasshopper genus and species from Afghanistan (Pamphagidae: Orthoptera). Roy. Entomol. Soc. London, Proc. B 39:21-26.
- Pfadt, R. E. 1970. Manner of pickup of ULV malathion by grasshoppers from aurally sprayed rangeland. J. Econ. Entomol. 63:1210-1214.
- Pfadt, R. E. 1970. A new species of *Egnatioides* (Orthoptera: Acrididae) from Afghanistan. Can. Entomol. 102:1542-1545.

Name: Rex D. Pieper

Born: 1934

Academic Training:

Degree	Year	Institution	Major
B.S.	1956	University of Idaho	Wildlife Management
M.S.	1958	Utah State University	Range Management
Ph.D.	1963	University of California, Berkeley	Plant Ecology

Professional Experience:

Date	Position	Institution
1957-1958	Research Assistant	Utah State Univ.
1959-1963	Research Assistant	Univ. California
1963-	Assistant Professor, Range Science	New Mexico State Univ.

Professional and Honorary Societies:

American Society of Range Management
Ecological Society of America
Sigma Xi
AAAS
American Society of Animal Science
AIBS

Major Interests:

Productivity and nutrient cycles in terrestrial ecosystems; role of grazing animals in range ecosystems; vegetative manipulations

Publications, Technical Reports:

- Pieper, R. D., C. W. Cook, and L. E. Harris. 1959. Effect of intensity of grazing upon nutritive content of the diet. J. Animal Sci. 18:1031-1037.
- Pieper, R. C. and H. H. Bixwell. 1961. Relationship between trees and cattle in ponderosa pine. California Agr. 15:12.
- Gibbens, R. P. and R. D. Pieper. 1962. The response of browse plants to fertilization. California Fish & Game 48:268-281.
- Pieper, R. D. 1963. Production and chemical composition of Arctic tundra vegetation and their relation to the Lemming cycle. Ph.D. Thesis, Univ. California, Diss. Abstr. 24:3943.
- Groce, V. L. and R. D. Pieper. 1967. Cover, herbage production and botanical composition on foothill range sites in southcentral New Mexico. New Mexico State Univ. Agr. Exp. Sta. Res. Rep. 128.
- Dwyer, D. D. and R. D. Pieper. 1967. Fire effects on blue grama-pinyon-juniper rangeland in New Mexico. J. Range Manage. 20:353-362.

- Pieper, R. D. 1967. Comparison of vegetation on three grazed and ungrazed site in southcentral New Mexico. J. Range Manage. 20th Annu. Meeting. (Abstr.)
- Pieper, R. D. and D. D. Dwyer. 1968. Response of blue grama vegetation to cholla cactus control. J. Range Manage. 21st Annu. Meeting. (Abstr.)
- Pieper, R. D. 1968. Comparison of vegetation on grazed and ungrazed pinyon-juniper grassland sites in southcentral New Mexico. J. Range Manage. 21:51-53.
- Hatch, C. F., A. B. Nelson, and R. D. Pieper. 1968. Correlations among chemical constituents and nylon bag dry matter disappearance of range grasses. Western Sect. Amer. Soc. Anim. Sci. Proc. 19:289-294.
- Hatch, C. F., A. B. Nelson, R. D. Pieper and R. P. Kromann. 1968. Chemical composition of grasses at the Fort Stanton Experimental Range in South-central New Mexico. New Mexico State Univ. Agr. Exp. Sta. Res. Rep. 148. 11 p.
- Pieper, R. D. 1969. The role of consumers in a grassland ecosystem, p. 316-330. In R. L. Dix and R. G. Beidleman [eds.] The grassland ecosystem: a preliminary synthesis. Range Sci. Dep. Sci. Ser. No 2, Colorado State Univ., Fort Collins.
- Pieper, R. D. 1970. Species utilization and botanical composition of cattle diets on pinyon-juniper grassland. New Mexico State Univ. Agr. Exp. Sta. Bull. 566. 16 p.
- Pieper, R. D. 1971. Blue grama vegetation responds inconsistently to cholla cactus control. J. Range Manage. 24:52-54.
- Pieper, R. D. and J. G. Fraser. 1971. Growth patterns of cholla cactus in New Mexico. J. Range Manage. 24th Annu. Meeting, Reno, Nevada. Abstr.
- Thetford, F. O. and R. D. Pieper. 1971. Botanical and chemical composition of cattle and sheep diets on pinyon-juniper grassland range. J. Range Manage. 24th Annu. Meeting, Reno, Nevada. Abstr.

Name: Larry O. Pochop

Born: 1940

Academic Training:

Degree	Year	Institution	Major
B.S.	1962	South Dakota State Univ.	Agricultural Engineering
M.S.	1964	University of Missouri	Agricultural Engineering
Ph.D.	1967	University of Missouri	Agricultural Engineering

Professional Experience:

Date	Position	Institution
1962-1963	Research Assistant, Agricultural Engr.	University Missouri
1963-1967	Instructor, Agricultural Engineering	University Missouri
1967-	Assistant Professor, Agricultural Engr.	University Wyoming

Professional and Honorary Societies:

American Society of Agricultural Engineers
Registered Professional Engineer - Wyoming
Phi Kappa Phi Honor Society
Gamma Sigma Delta Honor Society
Alpha Epsilon Honor Society

Major Interests:

Micrometeorology
Plant and animal environment.

Current Professional Activities:

Teaching: Area of livestock environment.
Research: Description of climatic patterns and variation by analysis of weather records.

Publications, Technical Reports:

Pochop, L. O. and M. D. Shanklin. 1966. Sky cover photogram: a new technique. Weatherwise 19:198-203.

Pochop, L. O. and M. D. Shanklin. 1966. Total hemispheric radiation correlated with sky cover photograms. Paper presented at the Fourth International Biometeorological Congress, New Brunswick, New Jersey, September 1966. Abstract published in Bull. Amer. Meteorol. Soc. 47:470.

Pochop, L. O. 1967. Sky cover influence on total hemispheric radiation. Ph. D. Dissertation, Univ. Missouri.

Pochop, L. O. and M. D. Shanklin. 1967. Sky cover measured by scanning photograms. (Accepted for publication by the American Society of Agricultural Engineers, St. Joseph, Missouri.)

- Pochop, L. O. and M. D. Shanklin. 1968. Sky cover influence on total hemispheric radiation during daylight hours. *J. Appl. Meteorol.* 7:484-489.
- Pochop, L. O. 1969. Dynamics of the atmosphere in the grassland ecosystem, p. 89-100. In R. L. Dix and R. G. Beidleman [ed.] *The grassland ecosystem: a preliminary synthesis*. Colorado St. Univ. Range Sci. Dep. Sci. Ser. No. 2. 437 p.

Name: Lynn K. Porter

Born: 1929

Academic Training:

Degree	Year	Institution
B.S.	1953	Utah State University
M.S.	1954	Utah State University
Ph.D.	1957	North Carolina State College

Professional Experience:

Date	Position	Institution
1957	Res. Soil Sci., Agr. Res. Serv., Member Grad. Fac.	Agricultural Research Service Colorado State University

Major Interests:

Chemistry of soil nitrogen and soil organic matter, plant metabolism and synthesis.

Professional and Honorary Societies:

American Society of Agronomy
Western Soil Science Society
American Society of Plant Physiologists
Sigma Xi

Publications:

Author or coauthor of 25 publications. Pertinent or recent publications are listed below:

- Stewart, B. A. and L. K. Porter, 1964. Effect of sulfur on cellulose decomposition and nitrogen immobilization in soils. Amer. Soc. of Agron. (Abstr.).
- Porter, L. K. 1965. Enzymes--methods of soil analysis. Part II. Chemical and microbiological properties. Amer. Soc. Agron. Monogr. No. 9:1536-1947.
- Stewart, B. A., L. K. Porter and F. G. Viets, Jr. 1965. Effect of sulfur content of straws on rates of decomposition and plant growth. Amer. Soc. Agron. (Abstr.).
- Porter, L. K. 1966. The thermal release of ammonium nitrogen from ammonium chloride-treated and nontreated soils. Soil Sci. Soc. Amer., Proc. 30:369-370.
- Stewart, B. A., L. K. Porter and F. G. Viets, Jr. 1966. Sulfur requirements for decomposition of cellulose and glucose in soil. Soil Sci. Soc. Amer., Proc. 30:453-456.

- Stewart, B. A., L. K. Porter and F. G. Viets, Jr. 1966. Effect of sulfur content of straws on rate of decomposition and plant growth. Soil Sci. Soc. Amer., Proc. 30:355-358.
- Porter, L. K. 1967. Factors affecting the solubility, extraction and possible fractionation of soil and leonardite organic colloids in organic solvents. J. Agr. Food Chem 15:807-811.

Name: Ralph J. Raitt

Born: 1929

Academic Training:

Degree	Year	Institution	Major
B.A.	1950	Stanford Univ.	Biology
Ph.S.	1959	Univ. of Calif. - Berkeley	Zoology

Professional Experience:

Date	Position	Institution
1958-present	Instructor to Professor of Biology	New Mexico State Univ.

Professional and Honorary Societies:

American Ornithologists' Union	Animal Behavior Society
Cooper Ornithological Society	Ecological Society of America
Wilson Ornithological Society	Sigma Xi
Society for the Study of Evolution	Southwestern Association of Naturalists
Society of Systematic Zoology	American Institute of Biological Sciences

Major Interests:

Density and diversity in desert bird communities; ecology, behavior and taxonomy of neotropical thrushes; ecology, behavior and phenological adaptation of New World quails.

Current Professional Activities:

Editor, The Condor, Journal of the Cooper Ornithological Society.

Teaching: General Ecology, Advanced Animal Ecology, Vertebrate Natural History, Ornithology.

Research: Molts of *Philortyx fasciatus*, ecology and behavior of sympatric species of *Turdus* in Venezuela.

Publications, technical reports:

Raitt, R. J. 1959. Rocky Mountain race of the Williamson sapsucker wintering in California. Condor 62:142.

Raitt, R. J. 1960. Breeding behavior in a population of California quail. Condor 62:284-292.

Raitt, R. J. 1961. Plumage development and molts of California quail. Condor 63:294-303.

Raitt, R. J. 1964. Dynamics of a population of California quail. Wildlife Manage. 28:127-141.

- Raitt, R. J. 1966. Annual cycle of reproduction and molt in Gambel quail of the Rio Grande Valley, southern New Mexico. Condor 68:541-561.
- Raitt, R. J. 1967. Relationships between black-eared and plain-eared forms of bushtits (*Psaltiriparus*). Auk 84:503-528.
- Raitt, R. H. 1968. Sex and age ratios in Gambel quail of the Rio Grande Valley, southern New Mexico. Southwest. Natur. 13:27-34.
- Raitt, R. H. 1968. Densities and species composition of breeding birds of a creosotebush community in southern New Mexico. Condor 70:193-205.
- Raitt, R. H. 1968. Annual cycle of adrenal and thyroid glands in Gambel quail of southern New Mexico. Condor 70:366-372.
- Raitt, R. H. 1970. Relationships between two sibling species of montane thrushes (*Catharus*) in Mexico. Auk 87. In press.

Name: James L. Rasmussen

Born: 1936

Academic Training:

Degree	Year	Institution	Major
B.A.	1958	St. Olaf College	Mathematics
B.S.	1959	Univ. Utah	Meteorology
M.S.	1963	Colorado State Univ.	Atmospheric Science
Ph.D.	1968	Colorado State Univ.	Atmospheric Science

Professional Experience:

Date	Position	Institution
1958-1961	Weather Officer	U. S. Air Force
1961-1963	Graduate Research Assistant	Colorado State Univ.
1963-1968	Instructor	Colorado State Univ.
1968-	Assistant Professor	Colorado State Univ.

Professional and Honorary Societies:

Sigma Xi
American Meteorological Society
American Geophysical Union

Major Interests:

Climatology, Dynamics of Weather Systems, Atmospheric Water Resources

Current Professional Activities:

Teaching: Graduate Courses in Atmospheric Science

Research: Water Resources Research (Dep. Interior), Weather Modification Research (Bur. Reclam.), Climatology (IBP)

Publications, Technical Reports:

Rasmussen, J. L. 1969. Water balance of an extra tropical cyclone. Archive for Meteorology, Geophys. and Bioclimatol. 18:3-4. p. 275-289.

Rasmussen, J. L. 1968. Atmospheric water balance of the upper Colorado River Basin. Atmospheric Science Paper 121, Dep. Atmos. Sci., Colorado State Univ. 112 p.

Rasmussen, J. L. 1968. Some aspects of evaporation from the upper Colorado River Basin during winter. Paper presented at Amer. Meteorological Soc. Meeting, Salt Lake City, Utah. Bull. Amer. Meteorological Soc. 49:58.

Rasmussen, J. L., R. W. Furman and H. Riehl. 1969. Moisture analysis of an extra tropical cyclone. Archives for Meteorology, Geophysics and Bioclimatology, A, 18:275-298.

- Bertolin, G. and J. L. Rasmussen. 1969. Preliminary report on the study of the precipitation on the Pawnee National Grasslands. U.S. Int. Biol. Prog. Tech. Rep. No. 17. 44 p.
- Rasmussen, J. L. 1970. Atmospheric water balance and hydrology of the upper Colorado River Basin. Water Resources Res., 6:62-76.
- Rasmussen, J. L. 1970. Use of atmospheric water balance techniques to infer the rates of condensation in a cyclone and in an orographic cloud system. Proc. Conf. on Cloud Physics, Amer. Meteorological Soc. Colorado State Univ., Fort Collins. p. 189-190.
- Rasmussen, J. L. 1970. The atmospheric water balance and the hydrology of large river basins. Water Resources Bull. 6:631-639.

Name: John O. Reuss

Born: 1927

Academic Training:

Degree	Year	Institution	Major
B.S.	1949	Montana State College	Soils
M.S.	1958	Montana State College	Soils
Ph.D.	1963	Utah State University	Soils Chemistry

Professional Experience:

Date	Position	Institution
1949-1956	Farm and Ranch Operator	
1956-1957	Research Assistant	Huntley, Montana
1957-1960	Instructor	Montana State College
1960-1961	Research Fellowship	Utah State University
1961-1965	Ext. Soils Specialist and Asst. Agronomist	Colorado State University
1965-1967	Soil Fertility Spec.	Colorado State University
1967-	Asst. Prof. of Agronomy	Nigeria Contract Colorado State University

Major Interests:

Soil nitrogen transformations, soil fertility, and chemistry

Professional and Honorary Societies:

American Society of Agronomy
Soil Science Society of America
Western Soil Science Society
Sigma Xi

Publications:

Author or coauthor of 10 publications. Pertinent or recent publications are listed below:

- Reuss, J. O. 1961. Reclamation of fine textured salty soils on the Huntley Reclamation Project. Montana Agr. Exp. Sta. Circ. No. 38.
- Reuss, J. O. and R. E. Campbell. 1961. Restoring productivity to leveled land. Soil Sci. Soc. Amer., Proc. 25:302-304.
- Reuss, J. O. and R. E. Campbell. 1961. Improve your salty soils. Montana Extension Folder No. 72.
- Reuss, J. O. and R. L. Smith. 1962. Nitrite decomposition in soils. Div. 83. Cornell University, Ithaca, New York.
- Reuss, J. O. and W. L. Lindsay. 1963. Do Colorado crops need zinc and iron? Colorado Ext. Pamphlet 63.
- Lindsay, W. L., S. D. Romsdal and J. O. Reuss, 1964. The problem of supplying available iron to grain sorghum on calcareous soils. Div. 88

- Reuss, J. O. and W. L. Lindsay. 1965. Trace elements can boost yields and profits. *Colorado Rancher and Farmer*, Vol 19, No. 6.
- Reuss, J. O. and R. L. Smith. 1965. Chemical reactions of nitrites in acid soils. *Soil Sci. Soc. Amer.*, Proc. 29:267-270.
- Reuss, J. O. and P. S. C. Rao. 1969. Effect of residual nitrogen on sugar beets. *Colorado State Univ.*, Exp. Sta. PR 69-9.
- Reuss, J. O. and G. W. Hergert. 1969. 1968 sprinkler fertilization studies. *Colorado State Univ. Exp. Sta.* PR 69-10.
- Langin, E. J., R. E. Danielson and J. O. Reuss. 1969. The effect of nitrogen fertilizer, number of irrigations, and plant population on corn and grain sorghum production. *Colorado State Univ. Exp. Sta.* PR 69-64.
- Reuss, J. O. and E. J. Langin. 1969. Determination of optimum combinations of plant nutrients. *Colorado State Univ. Exp. Sta.* PR 69-65.
- Reuss, J. O. 1970. Nitrate-nitrogen in the soil is helpful in measuring fertilizer needs. *Colorado Rancher and Farmer* 24:14-15.
- Reuss, J. O. 1970. Proper regulation of nitrogen necessary to get good beets. *Through The Leaves* 58:4-5.
- Reuss, J. O. and J. M. Geist. 1970. Prediction of the nitrogen requirements of field crops. Part I. Theoretical models of nitrogen release. *Agron. J.* 62:381-384.
- Geist, J. M., J. O. Reuss and D. D. Johnson. 1970. Prediction of the nitrogen requirements of field crops. Part II. Application of theoretical models to malting barley. *Agron. J.* 62:385-389.
- Reuss, J. O. 1970. Nitrogen regulation in sugar beets. *Sugar J.* 33:25-26.
- Soltanpour, P. N., J. O. Reuss, J. G. Walker, R. D. Heil, W. L. Lindsay, J. C. Hansen, and A. J. Relyea. 1970. Zinc experiments on potatoes in the San Luis Valley. *Amer. Potato J.* 47:435-443.
- Copley, P. W. and J. O. Reuss. 1971. In vivo acetylene reduction assay for symbiotic N fixation. To be presented at Amer. Soc. Agron. August 1971.

Name: Richard W. Rice

Born: 1931

Academic Training:

Degree	Year	Institution	Major
B.S.	1953	University of Nebraska	Animal Husbandry
M.S.	1958	University of Nebraska	Animal Husbandry
Ph.D.	1960	Michigan State University	Animal Nutrition

Professional Experience:

Date	Position	Institution
1956-1957	Graduate Research Assistant	University of Nebraska
1957-1960	Graduate Research Assistant	Michigan State University
1960-1966	Assistant Professor	University of Wyoming
1966-	Associate Professor	University of Wyoming

Professional and Honorary Societies:

Sigma Xi
Gamma Sigma Delta
American Society of Animal Science
American Dairy Science Association
American Society of Range Management

Major Interests: Diet selection and intake of grazing animals;
Forage evaluation, supplementation and utilization;
Ruminant nutrition and physiology

Current Professional Activities:

Research: Intake and utilization of the diet of steers grazing shortgrass range (IBP funded); Intake, performance and utilization of range grazed continuously or by rotation by sheep; Factors influencing forage intake and utilization.

Publications, Technical Reports:

- Matsushima, J., R. W. Rice, T. W. Dowe, and C. H. Adams. 1957. Protein-energy ratios for fattening cattle. J. Anim. Sci. 16:1053 (Abstr.).
- Rice, R. W., R. L. Salsbury, J. A. Hoefer, and R. W. Luecke. 1962. Relation of certain end products of rumen fermentation to forage feeding value. J. Anim. Sci. 21:418-425.
- Rice, R. W. 1963. Dairy bull calf feeding. Feedstuffs 35(49):27.
- Greichus, Y. A., T. R. Varnell, G. J. Miller, and R. W. Rice. 1963. Effect of fiber on rumen VFA and body composition in sheep. West. Sect., Amer. Soc. Anim. Sci., Proc., 14:25-31.

- Rice, R. W. and G. E. Nelms. 1964. Effect of injectable iron on blood constituents and weaning weight of range calves. West. Sect., Amer. Soc. Anim. Sci., Proc., 15:52.
- Paules, L. H., W. P. Miskimins, and R. W. Rice. 1964. Use of dried beet pulp for fattening swine. Wyoming Mimeo. Circ. 205.
- Rice, R. W. 1965. Hay and grain processing and digestibility and rate of passage. J. Anim. Sci. 24:901 (Abstr.).
- Rice, R. W. and L. H. Paules. 1965. Comparison of a fifty per cent hay and a no-hay ration with or without supplemental vitamin A for beef production from young dairy calves. J. Dairy Sci. 48:1668-1671.
- Blackstone, J. B., R. W. Rice, and W. M. Johnson. 1965. A study of the esophageal fistula technique. West. Sect., Amer. Soc. Anim. Sci., Proc., 16:65-61.
- Kercher, C. J., R. W. Rice, C. P. Stroble, and J. J. Belus. 1965. Effect of winter gain on performance and body composition of cattle. J. Anim. Sci. 24:891.
- Varnell, T. R., G. J. Miller, R. W. Rice, and Y. A. Greichus. 1965. Influence of diet on the fatty acid composition of sheep tissues. J. Anim. Sci. 24:590 (Abstr.).
- Greichus, Yvonne, R. W. Rice, and G. Miller. 1966. Effect of physical form of the ration on ruminal volatile fatty acids and body fat composition of sheep. South Dakota Acad. Sci., Proc., 41:178-184.
- Miller, G., R. W. Rice, T. R. Varnell, and J. Matz. 1966. Effect of diet and bile on the fatty acid composition of intestinal contents. West. Sect., Amer. Soc. Anim. Sci., Proc., 19:199-204.
- Rice, R. W. and W. M. Johnson. 1967. Intake and digestion estimates of grazed forage. West. Sect., Amer. Soc. Anim. Sci., Proc., 18:267-272.
- Rice, R. W., J. Matz, and P. Menke. 1967. Passage of food in the alimentary tract of sheep. West. Sect., Amer. Soc. Anim. Sci., Proc., 18:261-266.
- Rice, R. W., G. E. Nelms, and C. O. Schoonover. 1967. Effect of injectable iron on blood hematocrit and hemoglobin and weaning weight of beef calves. J. Anim. Sci. 26:613-617.
- Jefferies, N. W. and R. W. Rice. 1967. A comparison of techniques for range digestibility studies. J. Anim. Sci. 26:935 (Abstr.).
- Miller, G. J., T. R. Varnell, and R. W. Rice. 1967. Fatty acid composition of certain ovine tissues as affected by maintenance level rations of roughage and concentrate. J. Anim. Sci. 26:41-45.

- Cundy, D. R. and R. W. Rice. 1968. Salivary contamination by esophageal collection with steers. West. Sect., Amer. Soc. Anim. Sci., Proc., 19: 49-54.
- Strasia, C. A., R. W. Rice, and D. R. Smith. 1968. Diet and gain of free vs. herded sheep on alpine range. J. Anim. Sci. 27:1186.
- Falkenburg, J. A., H. D. Radloff, and R. W. Rice. 1968. Relationship between milk production of holstein dams and performance of steer progeny. J. Dairy Sci. 51:958 (Abstr.).
- Rice, R. W. 1969. Stomach content analyses: A comparison of the rumen vs. esophageal techniques. U. S. Forest Service Misc. Pub. No. 1147, p. 127-132.
- Rice, R. W., M. P. Botkin, and C. J. Kercher. 1969. Hay and grain processing on the rate of passage of stained hay, grain and chromic oxide. J. Dairy Sci. 52:909 (Abstr.).
- Jefferies, N. W. and R. W. Rice. 1969. Nutritive value of clipped and grazed range forage samples. J. Range Manage. 22:192-195.
- Gibbs, F. O. and R. W. Rice. 1969. Rate of passage of alfalfa hay and low and high moisture alfalfa silage measured with strontium or dyed forage. J. Anim. Sci. 28:858. Also West. Sect., Amer. Soc. Anim. Sci., Proc., 20:343-348.
- Jefferies, N. W. and R. W. Rice. 1969. Forage intake studies on short grass rangelands. West. Sect., Amer. Soc. Anim. Sci., Proc., 20:343-348.
- Rice, R. W., D. R. Cundy and P. R. Weyerts. 1969. A comparison of the esophageal fistula with rumen samples for the determination of the botanical and chemical composition of the diet of herbivores. U. S. IBP Grassland Biome, Tech. Rep. No. 11.
- Rice, R. W. and M. Vavra. 1969. Botanical species of plants eaten and intake of steers grazing light, medium, and heavy use shortgrass range. U. S. IBP Grassland Biome, Tech. Rep. No. 12.
- Rice, R. W. 1970. Diet sampling of grazing herbivores. Colorado-Wyoming Acad. Sci.
- Vavra, M., R. W. Rice and R. M. Hansen. 1970. Esophageal versus fecal sampling for the botanical determination of steer diets. J. Anim. Sci. 30:1036.
- Rice, R. W. and C. H. Streeter. 1971. Consumer function in the grasslands, 1971. U. S. Forest Service Short Course, Colorado State Univ., Fort Collins.
- Vavra, M., R. W. Rice, R. M. Hansen. 1971. Botanical species of plants consumed and intake of steers grazing light, medium, and heavy shortgrass pastures. Presented at 24th Annu. Meeting Soc. Range Manage., Reno, Nevada.

Name: William H. Rickard, Jr.

Born: 1926

Academic Training:

Degree	Year	Institution	Major
B.A.	1950	Univ. Colorado	Botany
M.S.	1953	Univ. Colorado	Botany
Ph.D.	1957	Washington State Univ.	Botany

Professional Experience:

Date	Position	Institution
1950-1953	Field Assistant	Univ. Colorado Inst. Arctic & Alpine Res.
1953-1957	Research Assistant	Washington State Univ.
1957-1960	Assistant Professor of Botany	New Mexico Highlands Univ.
1957-1960	Proj. Leader, Bot. Field Res.	Nevada Test Site
1960-	Res., Terrestrial Ecol. Div.	Battelle Northwest

Professional and Honorary Societies:

Professional Honorary Society
Ecological Society of America
American Society of Range Management
AAAS
Northwest Scientific Association
Pacific Northwest Bird and Mammal Society

Major Interests:

Soil-plant relationships of desert steppe plants, productivity of abandoned agricultural fields and the ecological role of ground-dwelling beetles in desert steppe ecosystems

Publications, Technical Reports:

- Rickard, W. H. 1960. The distribution of small mammals in relation to the climax vegetation mosaic in eastern Washington and northern Idaho. Ecology 41:99-106.
- Rickard, W. H. 1961. Notes on bird nests found in a desert shrub community following nuclear detonations. Condor 63:265-266.
- Rickard, W. H. 1962. Comparison of annual harvest yields in an arctic and a semi-desert plant community. Ecology 43:770-771.
- Rickard, W. H. and L. M. Shields. 1963. An early stage in the plant recolonization of a nuclear target area. Radiat. Bot. 3:41-44.

- Rickard, W. H. 1963. Cesium-137 in dried milk products in relation to phytoclimatic zones. *Nature* 197:197-198.
- Rickard, W. H. 1963. Vegetational analyses in a creosote bush community and their radioecologic implications. In V. Schultz and A. W. Klement, Jr. [ed.] *Radioecology*. Reinhold Publ. Corp., N. Y. p. 39-44.
- Rickard, W. H. and J. R. Murdock. 1963. Soil moisture and temperature survey of a desert vegetation mosaic. *Ecology* 44:820-824.
- Rickard, W. H. 1964. Demise of sagebrush through soil changes. *BioScience* 14:43-44.
- Rickard, W. H. 1964. Bird surveys in cottonwood-willow communities in winter. *Murrelet* 45:22-25.
- Rickard, W. H. 1964. The relation of spring precipitation and ⁹⁰Sr in the Montana and Idaho wheat crop. *Nature*.
- Rickard, W. H. 1965. The influence of greasewood on soil moisture penetration and soil chemistry. *Northwest Sci.* 39:36-42.
- Rickard, W. H. and J. C. Beatley. 1965. Canopy-coverage of the desert shrub vegetation mosaic of the Nevada test site. *Ecology* 46:523-529.
- Rickard, W. H. 1965. Sodium and potassium accumulation by greasewood and hopsage leaves. *Bot. Gazette* 126:116-119.
- Rickard, W. H. and J. F. Cline. 1965. Mineral transfer in a greasewood community and ion uptake by grasses. *Health Phys.* 11:1371-1374.
- Rickard, W. H. 1965. Field observations on fallout accumulation by plants in natural habitats. *J. Range Manage.* 18:112-114.
- Rickard, W. H., J. J. Davis, W. C. Hanson, and D. G. Watson. 1965. Gamma-emitting radionuclides in Alaskan tundra vegetation 1959, 1960, 1961. *Ecology* 46:352-356.
- Rickard, W. H. 1965. Cesium-137 in *Bromus tectorum* in relation to precipitation regimes and harvest yield. *J. Range Manage.* 18:343.
- Rickard, W. H. and L. E. Haverfield. 1965. A pitfall survey of darkling beetles in desert steppe vegetation. *Ecology* 46:6.
- Rickard, W. H. 1966. Cesium-137 in litter and understory vegetation. *Northwest Sci.* 40:25-30.
- Rickard, W. H. and R. E. Nakatani. 1966. The length of deer mice in relation to natural vegetation belts in southeastern Washington and northern Idaho. *Murrelet* 47:49-50.
- Rickard, W. H. 1967. Onset of winter dormancy in lizards and beetles. *Northwest Sci.* 41:92-95.
- Rickard, W. H. 1967. Seasonal soil moisture patterns in adjacent greasewood and sagebrush stands. *Ecology* 48:1034-1038.

- Rickard, W. H. 1968. Field observations on the altitudinal distribution of the side-blotched lizard. Northwest Sci. 42:161-164.
- Rickard, W. H. and R. F. Keough. 1968. Soil-plant relationships of two steppe desert shrubs. Plant and Soil 29:205-212.
- Hakanson, T. E. and W. H. Rickard. 1968. Radionuclide deposition and elimination in a darkling beetle. Northwest Sci. 43:23-28.
- Hinds, W. T. and W. H. Rickard. 1968. Soil temperatures near a desert steppe shrub. Northwest Sci. 42:5-13.
- Rickard, W. H. 1969. Fallout accumulation in Cascade Mountain vegetation-1966. In D. J. Nelson and F. C. Evans [ed.] Symposium on radioecology. Clearing-house for Fed., Sci., and Tech. Inf., Springfield, Virginia.

Name: Paul G. Risser

Born: 1939

Academic Training:

Degree	Year	Institution	Major
B.A.	1961	Grinnell College	Biology
M.S.	1965	University of Wisconsin	Botany
Ph.D.	1967	University of Wisconsin	Botany-Soil

Special Training:

1961-1963 Research Assistant, Jackson Laboratory, Bar Harbor, Maine
Plant Physiology

Professional Experience:

Date	Position	Institution
1967-	Assistant Professor of Botany	University of Oklahoma

Professional and Honorary Societies:

American Society of Range Management	Ecological Society
AIBS	British Ecological Society
AAAS	Botanical Society
Sigma Xi	

Major Interests:

Physiological Ecology-shade tolerance and adaptation to environment.
Production Ecology-biomass and gas exchange.
Community Ecology-diversity, structure and pattern of grassland and forest communities.

Current Professional Activities:

Consultant American Zinc Company

Teaching: Plant Ecology, Botany

Research: Herbage Dynamics on a tall grass prairie.

Publication, Technical Reports:

Risser, P. G. 1964. Somatic mitosis in cells of *Picea glauca* cultivated *in vitro*. Science 143:591-592.

Risser, P. G. and P. R. White. 1964. Some basic parameters in the cultivation of spruce tissues. Physiol. Plant. 17:600-619.

- Risser, P. G. and P. R. White. 1964. Nutritional requirements of spruce tumor cells *in vitro*. *Physiol. Plant.* 17:620-635.
- Risser, P. G. 1965. Breaking dormancy of some spring ephemerals. *Bull. Ecol. Soc. Amer.* 46:106.
- Risser, P. G. and G. Cotton. 1967. Influence of temperature on the dormancy of some spring ephemerals. *Ecology* 48:500-503.
- Risser, P. G. 1967. Physiological ecology of some spring ephemerals. Ph.D. Thesis, Univ. Wisconsin, Madison.
- Risser, P. G. 1968. An evaluation of the grassland quarter method. *Ecology* 49:1006-1009.
- Risser, P. G. 1968. Carbohydrate cycles in the bulbs of some spring ephemerals. *Bull. Torr. Bot. Club* 95:359-369.
- Risser, P. G. 1969. Competitive relationships among herbaceous plants and their influence on the ecosystem function in grasslands, p. 153 to 172. In R. L. Dix and R. G. Beidleman [ed.] *The grassland ecosystem: a preliminary synthesis*. Colorado State Univ., Range Sci. Dep. Sci. Ser. No. 2. 437 p.
- Risser, P. G. 1969. Effects of scopoletin on growth, CO₂ exchange rates, and concentration of scopoletin, scopalin, and chlorogenic acids in tobacco, sunflower, and pigweed. *Torr. Bot. Club*, (in press) with F. Einhellig and E. Rice.
- Risser, P. G. 1971. Herbage dynamics in the tall-grass prairie. *Southwestern Natur.* (Submitted)
- Risser, P. G. 1971. Carbon dioxide exchange characteristics of grassland species. (Submitted to *Bull. Torr. Bot. Club*).

Name: Ronald A. Ryder

Born: 1928

Academic Training:

Degree	Year	Institution	Major
B.S.	1949	Colorado State University	Game Management
M.S.	1951	Colorado State University	Game Management
Ph.D.	1958	Utah State University	Wildlife Management

Special Training:

Office of Naval Research, Computer Short Course, Texas A & M - August 1968
Office of Naval Research, Oceanography, Oregon State University - July 1969

Professional Experience:

Date	Position	Institution
1949-1951	Research Assistant	Colo. Coop. Wildl. Res. Unit
1951-1954	Deck Officer	U. S. Navy
1955-1957	Research Assistant	Utah State University
1957-1958	Instructor in Biology	Wartburg College, Iowa
1958-1963	Assistant Professor of Wildlife	Colorado State University
1963-1968	Associate Professor of Wildlife	Colorado State University
1968-	Prof. & Chmn., Wildl. Biol. Maj.	Colorado State University

Professional and Honorary Societies:

Sigma Xi	Cooper Ornithological Society
The Wildlife Society	Fort Collins Bird Club
American Ornithologists' Union	Colorado Field Ornithologists
Society of American Mammalogists	Colorado-Wyoming Academy of Sciences
Western Bird-Banding Association	National Audubon Society
Wilson Ornithological Society	Intl. Oceanographic Foundation
Xi Sigma Pi	Phi Kappa Phi
Beta Beta Beta	

Major Interests:

Ornithology; avian ecology particularly population dynamics, movements and migration.
Waterfowl and upland game bird ecology and management.

Current Professional Activities:

President, Colorado Field Ornithologists
President, Western Bird Banding Association
Local Arrangement Chairman, Joint Cooper-Wilson Ornith. Meeting

Teaching: Wildlife Management Techniques; Waterfowl Management; Spec. Studies in Wildlife Biology

Research: Waterfowl-Water Temperature Relationships; Avian Populations of the Pawnee Site (IBP); Migrations of Snowy Egret

Publications, Technical Report:

- Ryder, R. A. 1950. Great blue heron killed by a carp. Condor 52:40-41.
- Ryder, R. A. 1950. New breeding records for Colorado. Condor 52:133-141.
- Ryder, R. A. 1951. Waterfowl production in the San Luis Valley, Colorado. M. S. Thesis, Colorado A & M Coll., Fort Collins, Colorado. 166 p.
- Ryder, R. A. 1951. The San Luis Valley - a Colorado waterfowl factory. Colorado Conserv., March:22-25.
- Ryder, R. A. and J. R. Grieb. 1952. Waterfowl records for north-central Colorado. Condor 54:65-67.
- Ryder, R. A. 1952. Bird notes from southern Colorado. Condor 54:317-318.
- Ryder, R. A. 1955. Long gone goslings. Colorado Conserv. 4:12-14.
- Ryder, R. A. 1955. A preliminary analysis of waterfowl recoveries in Colorado with notes on trapping and banding. Colorado Game & Fish Dept. Final Proj. Rep., Proj. W-37-R. 72 p.
- Ryder, R. A. 1955. Eight-year hunter check, South Platte management area. Colorado Game & Fish Dept. Final Proj. Rep., Proj. W-37-R. 23 p.
- Ryder, R. A. 1956. Summer banding on Utah marshes. News from the Bird Banders 31:45.
- Ryder, R. A. 1957. Coot-waterfowl relations on some northern Utah marshes. Utah Acad. Arts, Letters & Sci. Proc. 34:65-68.
- Ryder, R. A. 1957. Avian-pinniped feeding relationships. Condor 59:68-69.
- Ryder, R. A. 1958. Coot-waterfowl relations in northern Utah. Ph.D. Diss., Utah State Univ., Logan. 219 p.
- Ryder, R. A. 1959. Interspecific intolerance of the American coot in Utah. Auk 76:424-442.
- Ryder, R. A. 1960. Recoveries of waterfowl banded by the Colorado Cooperative Wildlife Research Unit. Colorado Coop. Wildl. Res. Unit Qtr. Rep. 14:35-36.
- Ryder, R. A. 1960. The grouse of Colorado. Colorado Outdoors 9:1-7.
- Ryder, R. A. 1960. Coot and duck productivity in northern Utah. North America Wildl. & Cons. Conf. Trans. 26:134-147.
- Ryder, R. A. and L. A. Roper. 1961. Recent waterfowl records for Colorado. Condor 63:418.
- Ryder, R. A. 1962. Bird banding - hummingbirds to pelicans. Colorado Coop. Wildl. Res. Unit Qtr. Rep. 16:1-2.

- Ryder, R. A. 1962. Recoveries of waterfowl banded by the Colorado Cooperative Wildlife Research Unit. Colorado Coop. Wildl. Res. Unit Qtr. Rep. 16:17-18.
- Ryder, R. A. 1962. Banding activities in Colorado. Western Bird Bander 37:50.
- Ryder, R. A. and J. R. Grieb. 1963. White pelicans breeding in Colorado. Wilson Bull. 75:92.
- Ryder, R. A. 1963. Mottled duck and knot in Colorado. Condor 65:333.
- Ryder, R. A. 1963. Some results from Colorado banding. Western Bird Bander 38:39-40.
- Ryder, R. A. 1963. Migration and population dynamics of American coots in western North America. Proc. XIII Intern. Ornith. Congress:441-453.
- Ryder, R. A. 1963. Movements and migrations of some Colorado gulls. J. Colorado-Wyoming Acad. Sci. 5:50-51.
- Ryder, R. A. 1964. White pelicans. Colorado Outdoors 12:24-29.
- Ryder, R. A. 1964. California gull nesting in Colorado. Condor 66:440-441.
- Ryder, R. A. 1964. Migration and mortality of mallards banded in northern Colorado. J. Colorado-Wyoming Acad. Sci. 5:48. (Abstr.)
- Ryder, R. A. 1964. A partial bibliography of references on the sage grouse (*Centrocercus urophasianus*). Colorado State Univ., Fort Collins, Colorado. 28 p. mimeo.
- Ryder, R. A. and L. Jensen. 1965. Breeding behavior of the white-tailed ptarmigan near Aspen, Colorado. J. Colorado-Wyoming Acad. Sci. 5:52-53. (Abstr.)
- Ryder, R. A. 1965. Review of *Waterfowl tomorrow*. J. Soil & Water Conserv. 20:113.
- Ryder, R. A. 1966. Some movements of ring-billed gulls color-marked in Colorado. The Blue Jay 24:73-75.
- Ryder, R. A. 1966. Review of *Black Brant: Sea Goose of the Pacific Coast*. J. Wildl. Manage. 30:444.
- Ryder, R. A. 1967. Distribution, migration and mortality of the white-faced ibis (*Plegadis chihi*) in North America. Bird Banding 38:257-277.
- Ryder, R. A. 1967. Distribution, migration and mortality of the white-faced ibis (*Plegadis chihi*) in North America. J. Colorado-Wyoming Acad. Sci. 5:78.
- Ryder, R. A. 1967. Migration and movements of gulls color-marked in Colorado. Colorado Field Ornith. 2:16-20.
- Littlefield, C. D. and R. A. Ryder. 1968. Breeding biology of the greater sandhill crane on Malheur National Wildlife Refuge, Oregon. North American Wildli. & Natur. Res. Conf. 33:444-454.

- Ryder, R. A. 1968. Color-marked gulls reported in Colorado. *Colorado Field Ornith.* 4:16.
- Ryder, R. A., A. J. Pakulak, and C. D. Littlefield. 1969. Black brant observed in Larimer County, Colorado. *Colorado Field Ornith.* 5:5-7.
- Ryder, R. A. and D. A. Cobb. 1969. Birds of the Pawnee National Grasslands in northern Colorado. *J. Colorado-Wyoming Acad. Sci.* 6:5.
- Ryder, R. A. and C. D. Marti. 1969. Food habits of four grassland inhabiting owls. *J. Colorado-Wyoming Acad. Sci.* 6:50.
- Marion, W. R. and R. A. Ryder. 1970. Diurnal raptors of the Pawnee National Grassland in northern Colorado. 50th Anniv. Meeting Southwestern and Rocky Mountain Div. Amer. Ass. Advance. Sci., Las Vegas, New Mexico. p. 38-39. Abstr.
- Ryder, R. A. and J. B. Giezentanner. 1970. Productivity of birds on the Pawnee National Grassland in northern Colorado. 50th Anniv. Meeting Southwestern and Rocky Mountain Div. Amer. Ass. Advance. Sci., Las Vegas, New Mexico. p. 38. Abstr.
- Ryder, R. A. 1970. Colorado breeding bird surveys, 1968 and 1969. *J. Colorado-Wyoming Acad. Sci.* 7:22. Abstr.
- Ryder, R. A. 1970. Banding of grasslands birds under the International Biological Program in Colorado and Saskatchewan. Annu. Meeting Western Bird Banding Ass., San Diego, California. Abstr.
- Ryder, R. A. 1970. Seasonal fluctuations of bird populations on some Colorado grasslands. Joint Meeting Cooper and Wilson Ornithological Soc., Proc. p. 27. Abstr.
- Ryder, R. A. 1970. Avian populations at the Pawnee Site, p. 89-91. In R. T. Coupland and G. M. Van Dyne [ed.] *Grassland ecosystems: reviews of research.* Colorado State Univ., Range Sci. Dep. Sci. No. 7.
- Ryder, R. A. 1971. Censuses of avian populations at the Pawnee Site, Colorado, under the International Biological Program. *Bird Study.* (In press)

Name: L. B. Sherrod

Academic Training:

Degree	Year	Institution	Major
B.S.	1958	South Dakota State University	Animal husbandry
M.S.	1960	University of Arkansas	Animal nutrition
Ph.D.	1964		Animal nutrition

Professional Experience:

Date	Position	Institution
1964-1970	Researcher, Anim. Sci. Dep.	University of Hawaii
1970-		Texas Tech University

Professional and Honorary Societies:

American Society of Animal Science
Phi Kappa Phi
Gamma Sigma Delta
Sigma Xi
AAAS
AIBS
Hawaii Academy of Sciences

Major Interests:

Factors influencing nutritive value of sub-tropical forages; Digestibility-nutrient retention studies; Evaluation of supplemental feeding and pasture fertilization for improving animal performance in sub-tropical areas.

Current Professional Activities:

Research: Range livestock nutrition; Studies on the nutritive value of various Hawaiian agricultural and industrial products and by-products in livestock rations.

Publications, Technical Reports:

- Sherrod, L. B. and A. D. Tillman. 1962. Effects of varying the processing temperatures upon the nutritive values for sheep of solvent-extracted soybean and cottonseed meals. J. Anim. Sci. 21:901.
- Sherrod, L. B. and A. D. Tillman. 1964. Further studies on the effects of different processing temperatures on the utilization of solvent-extracted cottonseed protein by sheep. J. Anim. Sci. 23:510.
- Furr, R. D. and L. B. Sherrod. 1965. Effects of supplemental feeding, stilbestrol, and vitamin A upon the performance of weanling steers on pasture, feedlot and carcass traits. Western Sect. Amer. Soc. Anim. Sci., Proc., 16:LXVI.

- Sherrod, L. B., R. D. Furr, N. E. Nichols, and C. W. Garcia. 1965. Supplemental vitamin A for beef cattle. Hawaii Agr. Exp. Sta. Circ. 64.
- Sherrod, L. B., R. D. Furr, N. E. Nichols and C. W. Garcia. 1966. The effects of various supplemental feeding levels, stilbestrol implantation, and cobalt supplementation upon the performance of weanling steers on pasture, subsequent feedlot performance and carcass characteristics. Hawaii Agr. Ext. Misc. Pub. MP-31.
- Danke, R. J., L. B. Sherrod, E. C. Nelson and A. D. Tillman. 1966. Effects of autoclaving and steaming of cottonseed meal for different lengths of time on nitrogen solubility and retention in sheep. J. Anim. Sci. 25:181.
- Clifford, A. J., L. B. Sherrod and A. D. Tillman. 1966. Effect of amylase, chlortetracycline and diethylstilbestrol alone or combined upon growth of lambs fed purified diets. J. Anim. Sci. 25:263. (Abstr.).
- Sherrod, L. B., R. D. Furr, N. E. Nichols and C. W. Garcia. 1966. Short-term supplemental feeding of steers on pasture immediately prior to feedlot. Hawaii Agr. Ext. Misc. Pub. MP-32.
- Sherrod, L. B. and S. M. Ishizaki. 1966. Effects of substituting various levels of feed-grade macadamia nuts for grain upon the nutritive value of concentrate rations for sheep. J. Anim. Sci. 25:439.
- Sherrod, L. B. and R. D. Furr. 1966. Supplemental feeding levels, stilbestrol, and cobalt for improving performance of weanling steers on pasture, later feedlot and carcass traits. Western Sect. Amer. Soc. Anim. Sci., Proc., 17:313.
- Sherrod, L. B. and S. M. Ishizaki. 1966. Effects of stage and season of regrowth upon the nutritive value of kikuyu and pangola grass. Western Sect. Amer. Soc. Anim. Sci., Proc., 17:379.
- Sherrod, L. B. and S. M. Ishizaki. 1966. The use of feed-grade macadamia nuts in ruminant rations. Hawaii Farm Sci. 15. (In press.)
- Furr, R. D., L. B. Sherrod and G. Aoki. 1966. A comparison of the performance of bulls and steers on pasture. Hawaii Farm Sci. 15. (In press.)
- Sherrod, L. B. and S. M. Ishizaki. 1967. Further studies on levels of feed-grade macadamia nuts in concentrate rations for sheep. J. Anim. Sci. 26. (In press.)
- Sherrod, L. B. and S. M. Ishizaki. 1967. Effects of stage of regrowth and location upon the nutritive value of kikuyu and pangola grass. Western Sect. Amer. Soc. Anim. Sci., Proc., 18. (In press.)
- Sherrod, L. B., Y. N. Tamimi and S. M. Ishizaki. 1967. Effects of stage of maturity upon yield, composition and nutritive value of whole plant corn and forage sorghum. Hawaii Agr. Exp. Sta. Tech. Bull. No. 72.

- Sherrod, L. B. and S. M. Ishizaki. 1967. Effects of supplemental protein levels upon the utilization of kikuyu and pangola grass nutrients. Western Sect. Amer. Soc. Anim. Sci., Proc., 18. (In press.)
- Nichols, N. E. and L. B. Sherrod. 1967. Some factors influencing consumption of mineral supplement by grazing beef steers. Hawaii Agr. Ext. Misc. Pub. MP-41.
- Tamimi, Y. N., L. B. Sherrod, S. M. Ishizaki and T. Izuno. 1967. The effect of levels of nitrogen, phosphorus and potassium on beef production of kikuyu pasture. Hawaii Agr. Exp. Sta. Tech. Prog. Rep. (In preparation.)

Name: Sam Shushan

Born:

Academic Training:

Degree	Year	Institution	Major
B.S.	1943	City College of New York	
M.S.	1947	Rutgers University	
Ph.D.	1949	Rutgers University	

Professional Experience:

Date	Position	Institution
1949-53	Instructor	University of Colorado
1953-59	Assistant Professor	University of Colorado
1959-	Associate Professor	University of Colorado

Professional and Honorary Societies:

American Bryological and Lichenological Society
American Association for the Advancement of Science
American Institute of Biological Sciences
Botanical Society of America
British Lichenological Society
Colorado-Wyoming Academy of Science
Phi Sigma
Sigma Xi
International Lichenological Society
Mycological Society of America
Phycological Society of America

Publications, Technical Reports:

- Shushan, S. and W. A. Weber. 1955. The lichen flora of Colorado: *Cetraria*, *Cornicularia*, *Dactylina*, and *Thamnolia*. Univ. Colorado Studies, Ser. Biol. 3:115-134.
- Shushan, S. 1959. Developmental anatomy of an orchid, *Cattleya* x *Trimos*, p. 45-72. In *The Orchids*, Chapter 3. Ronald Press.
- Shushan, S. and R. A. Anderson. 1969. Catalog of the lichens of Colorado. *The Bryologist* 72:451-483.

Name: Phillip L. Sims

Born: 1940

Academic Training:

Degree	Year	Institution	Major
B.S.	1962	Oklahoma State University	Agronomy (Range Management)
M.S.	1964	Oklahoma State University	Agronomy (Range Management)
Ph.D.	1967	Utah State University	Range Science

Professional Experience:

Date	Position	Institution
1961 (Summer)	Student Trainee (Plant Ecology)	ARS
1962-1964	Graduate Research Assistant	Oklahoma State University
1964-1967	Graduate Research Assistant	Utah State University
1967-	Assistant Professor	Colorado State University

Professional and Honorary Societies:

Sigma Xi	American Society of Range Management
Phi Sigma	American Society of Animal Science
Xi Sigma Pi	American Soil Conservation Society
Alpha Zeta	British Ecological Society

Major Interests: Range animal nutrition and responses,
Forage evaluation and grazing influences,
Dynamics of herbage production,
Palatability of forage plants.

Current Professional Activities: Colorado Agricultural Research Station and
IBP Grassland Biome research

Publications, Technical Reports:

- Dwyer, D. D., P. L. Sims, and L. S. Pope. 1964. Preference of steers for certain native and introduced forage plants. J. Range Manage. 17:83-85.
- Sims, P. L. and D. D. Dwyer. 1965. Pattern of retrogression of native vegetation in north-central Oklahoma. J. Range Manage. 18:20-25.
- Sims, P. L. and J. E. Butcher. 1966. Water source effect on rumen temperature of sheep. J. Anim. Sci. 25:590.
- Sims, P. L. 1967. The effect of stand density on characteristics of wheatgrasses. Ph.D. Thesis, Utah State Univ., Logan, Utah. 66 p.
- Sims, P. L. and C. W. Cook. 1967. Digestibility as influenced by density of forage stand. J. Anim. Sci. 26:939.
- Cook, C. W., L. A. Stoddart, and P. L. Sims. 1967. Effects of season, spacing and intensity of seeding on the development of foothill range grass stands. Utah Agr. Exp. Sta. Bull. 467. 73 p.

Free, J. C., R. M. Hansen and P. L. Sims. 1970. Estimating dry weights of food plants in feces of herbivores. J. Range Manage. 23:300-302.

Sims, P. L. and C. W. Cook. 1970. Herbage digestibility as influenced by community density. J. Anim. Sci. 31:1228-1231.

Sims, P. L., G. Loyal and D. F. Hervey. 1971. Seasonal trends in herbage and nutrient production of important sandhill grasses. J. Range Manage. 24:55-59.

Free, J. C., P. L. Sims and R. M. Hansen. 1971. Methods of estimating dry weight composition in diets of steers. J. Anim. Sci. 31. (In press)

Sims, P. L., L. J. Ayuko and D. N. Hyder. 1971. The developmental morphology of sideoats grama and switchgrass. J. Range Manage. 24. (Accepted for publication)

Name: Freeman M. Smith

Born: 1939

Academic Training:

Degree	Year	Institution	Major
B.S.	1961	Univ. Arizona	Botany
M.S.	1969	Univ. Arizona	Watershed Management
Ph.D. Candidate		Colorado State Univ.	Systems Ecol./Watershed Hydro.

Special Training:

Mathematical Methods in Hydrol. - Dec. 1968

Professional Experience:

Date	Position	Institution
1961-1962	Teaching Assistant	Univ. Arizona
1962-1963	Range Conservationist	USDA - ARS - SWC
1963-1965	Botanist	USDA - ARS - SWC
1965-1968	Research Botanist	USDA - ARS - SWC
1968-	Research Instructor	Colorado State Univ.

Professional and Honorary Societies:

Sigma Xi
American Society of Range Management
Ecological Society of America
AAAS
American Geophysics Union
Western Snow Conference

Major Interests:

Modelling strategy for developing hydrologic simulation models sensitive to ecosystem influences; Spatial sampling designs: stochastic methods in hydrology.

Current Professional Activities:

Teaching: Matrix Algebra (Short Course)

Publications, Technical Reports:

Hamon, W. R., C. W. Johnson, G. R. Stephenson, and F. M. Smith. 1965.
Development of coordinated hydrologic networks for a semi-arid watershed. Int. Ass. Sci. Hydrol., Symp., Design, of Hydrol. Networks, Extr. Pub. 68: 663-674.

Cooper, C. L. and F. M. Smith. 1966. Color aerial photography: toy or tool? J. Forest. 64:373-378.

- Smith, F. M., C. L. Cooper and E. G. Chapman. 1967. Measuring snow depths by aerial photo-grammetry: evaluation and recommendations. Western Snow Conf. Proc. Boise, Idaho.
- Smith, F. M. 1969. The relations of sagebrush leaf area to bush size. M.S. Thesis, Univ. Arizona. 54 p.
- Smith, F. M. and W. D. Striffler. 1969. Pawnee Site microwatersheds: selection, description and instrumentation. US IBP Grassland Biome Tech. Rep. No. 5.
- Wright, R. G. and F. M. Smith. 1970. Grassland biome graduate student symposium -- a review. US IBP Grassland Biome Tech. Rep. No. 59.
- Smith, F. M. 1971. Central basin hydrologic process studies. US IBP Tech. Rep. No. 91.
- Smith, F. M. 1971. Growing season precipitation records: Central Plains Experimental Range, Nunn, Colorado. US IBP Grassland Biome Tech. Rep. No. 74.
- Rauzi, F. and F. M. Smith. 1971. Influence of soils and grazing intensity on water intake. (Submitted for publication)

Name: James D. Smolik

Born: 1942

Academic Training:

Degree	Year	Institution	Major
B.S.	1965	South Dakota State University	Plant Pathology
M.S.	1969	South Dakota State University	Plant Pathology

Professional Experience:

Date	Position	Institution
1969-	Assistant in Plant Science	South Dakota State University

Major Interests:

Nematode diseases of plants

Professional and Honorary Societies:

Gamma Sigma Delta

Publications:

Smolik, J. D. 1969. *Tylenchorhynchus nudas* and other nematodes associated with turf in South Dakota. M. S. Thesis, South Dakota State University.

Name: Eugene E. Staffeldt

Born: 1926

Academic Training:

Degree

B.S.	1949	Northern Illinois State Univ.	Botany and Zoology
M.S.	1951	Iowa State University	Plant Pathology
Ph.D.	1953	Iowa State University	Plant Pathology & Soil

Professional Experience:

Date

1950-1953	Graduate Assistant	Iowa State
1953-1955	Assistant Professor	New Mexico State Univ.
1955-1957	Consultant, New Mexico State Univ.	Contract with Univ. Sind, West Pakistan
1957-1964	Associate Professor of Biology	New Mexico State Univ.
1964-1965	Visiting Professor	American Univ. Beirut, Beirut, Lebanon
1965-	Professor of Biology	New Mexico State Univ.

Professional and Honorary Societies:

Sigma Xi
AAAS
Society of Industrial Microbiology

Major Interests:

Soil microbiology, carbon and nitrogen

Publications, Technical Reports:

- Staffeldt, E. E. 1951. *Pythium* and other fungi colonizing sterilized straw in the soil. *Phytopathology* 42:22.
- Staffeldt, E. E. 1953. Effects of four crop rotations on soil fungi and corn root necrosis. *Iowa State J. Sci.*
- Staffeldt, E. E. and E. L. Sharp. 1954. Modified Lypohil Method for preservation of *Pythium* species. *Phytopathology* 44:213-215.
- Staffeldt, E. E. and P. J. Leyendecker, Jr. 1955. *Verticillium* wilt on two vegetable hosts in southern New Mexico. *Plant Dis. Reporter* 39:589-590.
- Staffeldt, E. E. and P. A. Fryxell. 1955. A measurement of disease reaction of cotton to *Verticillium* wilt. *Plant Dis. Reporter* 39:690-692.
- Qazi, A. Q., S. A. Khan, and E. E. Staffeldt. 1957. Identification of *Rhizoctonia bataticola*. *Pakistan J. Sci.* 13:136-137.

- Burns, J., E. E. Staffeldt, and O. H. Calderon. 1967. Corrosion caused by organic acids reacting with three metals, with special emphasis on Krebs Cycle acids. Develop. Ind. Microbiol. 8:327-334.
- Calderon, O. H., E. E. Staffeldt, and M. R. Sandoval. 1967. Effects of temperature on amounts of copper salts formed when pure copper is exposed to organic acids. Develop. Ind. Microbiol. 8:335-338.
- McCowen, K. D., O. H. Calderon, and E. E. Staffeldt. 1967. Effects of acid dilutions on amount of copper salts formed when pure copper is exposed to organic acids. Develop. Ind. Microbiol. 8:339-344.
- Mueller, E., K. Schell, O. H. Calderon, and E. E. Staffeldt. 1967. Effects of corrosion products of metals on microorganism and bean products. Develop. Ind. Microbiol. 8:345-352.
- Staffeldt, E. E. and O. H. Calderon. 1967. Metal-organic acid corrosion and the effect of corrosion products on microorganisms. The Rocky Mountain Sect. Amer. Astronautical Soc. Proc.
- Staffeldt, E. E., O. H. Calderon, and R. S. Hutton. 1968. Microbial inhabitants of a tropical deciduous forest soil in the Canal Zone. Develop. Ind. Microbiol. 9:312-317.
- Hutton, R. S., E. E. Staffeldt, and O. H. Calderon. 1968. Aerial spora and surface deposition of microorganisms in a deciduous forest in the Canal Zone. Develop. Ind. Microbiol. 9:318-324.
- Calderon, O. H., R. S. Hutton, and E. E. Staffeldt. 1968. Deposition of microorganisms on missiles and related equipment exposed to tropical environments. Develop. Ind. Microbiol. 9:325-330.

Name: Charles L. Streeter

Born: 1940

Degree	Year	Institution	Major
B.S.	1962	South Dakota State University	Animal Science
M.S.	1964	University of Nebraska	Animal Science
Ph.D.	1966	University of Nebraska	Animal Science

Professional Experience:

Date	Position	Institution
1960-1962	Laboratory Technician	South Dakota State University
1962-1966	Research Assistant	University of Nebraska
1966-1968	Biochemist	Walter Reed Army Medical Center
1968-1969	Post Doctorate Research Assoc.	University of Kentucky
1969-	Assistant Professor	Colorado State University

Professional and Honorary Societies:

American Society of Animal Science	Phi Kappa Phi
American Society of Range Management	Gamma Sigma Delta
Sigma Xi	Alpha Zeta

Major Interests:

Ruminant Nutrition, Forage Utilization

Current Professional Activities:

Director Grasslands Laboratory, Grassland Biome, IBP

Teaching: Ruminant Nutrition

Research: Roughage and NPN Utilization by Ruminants

Publications, Technical Reports:

Streeter, C. L. 1964. The effect of stage of maturity, method of storage and storage time on the nutritive value of sandhills upland hay. M.S. Thesis, Univ. Nebraska, Lincoln, Nebraska.

Streeter, C. L. and D. C. Clanton. 1964. Variation in the use of chromic oxide impregnated paper and plastic particles as external indicators for cattle. West. Sec. Amer. Soc. Anim. Sci. Proc. 15:63.

Hoehne, O. E., C. L. Streeter, and D. C. Clanton. 1965. Esophageal fistula for measuring species preference. West. Sec. Amer. Soc. Anim. Sci. Proc. 16:75.

Streeter, C. L., D. F. Burzlaff, D. C. Clanton, and L. R. Rittenhouse. 1966. Effect of stage of maturity, method of storage and storage time on nutritive value of sandhills upland hay. J. Range Manage. 19:55.

- Streeter, C. L. 1966. Methods of estimating the digestibility and voluntary intake of range forage consumed by grazing cattle. Ph.D. Thesis, Univ. Nebraska, Lincoln, Nebraska.
- Streeter, C. L., D. C. Clanton, and O. E. Hoehne. 1966. Factors influencing the voluntary intake of grazing cattle. West. Sec. Amer. Soc. Anim. Sci. Proc. 17:367.
- Hoehne, O. E., D. C. Clanton, and C. L. Streeter. 1967. Chemical changes in esophageal fistulae samples caused by salivary contamination and sample preparation. J. Anim. Sci. 26:628.
- Streeter, C. L. and W. N. Fishbein. 1967. A simple chlorination-heat procedure for the detection of hydroxamic acids and amides on paper chromatograms. J. Chromatog. 32:424.
- Hoehne, O. E., D. C. Clanton, and C. L. Streeter. 1968. Chemical composition and *in vitro* digestibility of forbs consumed by cattle grazing native range. J. Range Manage. 21:5.
- Streeter, C. L., D. C. Clanton, and O. E. Hoehne. 1968. Influence of advance in season on nutritive value of forage consumed by cattle grazing western Nebraska native range. Nebraska Exp. Sta. Res. Bull. 227.
- Bush, L. P., C. L. Streeter, and R. C. Buckner. 1968. Inhibition of ruminal *in vitro* cellulose fermentation by peroline. Manuscript in preparation.
- Fishbein, W. N., J. Daly, and C. L. Streeter. 1969. Preparation and some properties of stable and carbon-14 and tritium-labeled short-chain aliphatic hydroxamic acids. Anal. Biochem. 28:13.
- Streeter, C. L., R. R. Oltjen, L. L. Slyter, and W. N. Fishbein. 1969. Urea utilization in wethers receiving the urease inhibitor, acetohydroxamic acid. J. Anim. Sci. 29:88.
- Streeter, C. L. 1969. A review of techniques used to estimate the *in vivo* digestibility of grazed forage. J. Anim. Sci. (In press).
- Fishbein, W. N. and C. L. Streeter. 1969. Physiologic disposition of short chain aliphatic hydroxamates in the mouse. I. The one-through-four carbon hydroxamates: excretion and conversion to amides. (In press).
- Fishbein, W. N. and C. L. Streeter. 1969. Acetohydroxamate-1-¹⁴C: physiologic disposition in the mouse. Manuscript in preparation.
- Obioha, F. C., D. C. Clanton, L. R. Rittenhouse, and C. L. Streeter. 1969. Sources of variation in chemical composition of forage ingested by esophageal fistulated cattle. J. Range Manage. (In press).

Name: William D. Striffler

Born: 1929

Academic Training:

Degree	Year	Institution	Major
B.S., B.S.E.	1952	Michigan State University	Forestry
M.F.	1957	University of Michigan	Watershed Management
Ph.D.	1963	University of Michigan	Forest Hydrology

Special Training:

Electronics for Scientists, NSF Institute, Corvallis, Oregon, 1969.

Professional Experience:

Date	Position	Institution
1957-1963	Res. Forester & Prof. Leader	Lake States For. Exp. Sta.
1964-1966	Hydrologist	N. E. For. Exp. Sta.
1966-1969	Assistant Professor	Colorado State Univ.
1969-	Associate Professor	Colorado State Univ.

Professional and Honorary Societies:

American Geophysical Union	American Water Resources Association
Soil Conservation Society of America	Sigma Xi
Society of American Foresters	Xi Sigma Pi

Major Interests:

Forest & Range Hydrology, Micro-climatology, Instrumentation

Current Professional Activities:

Teaching: Evapotranspiration, watershed instrumentation, watershed manage.

Research: Grassland Hydrology Project

Publications, Technical Reports:

- Striffler, W. D. 1959. Effects of forest cover on soil freezing in northern lower Michigan. Lake States Forest Exp. Sta. Paper 76. 16 p.
- Striffler, W. D. 1960. Forests help water supply. Michigan Farmer 233:52-53.
- Striffler, W. D. 1960. Streambank stabilization in Michigan - a survey. Lake States Forest Exp. Sta. Paper 84. 14 p.
- Striffler, W. D. 1961. Intensity of soil moisture sampling as affected by depth and vegetative cover. Lake States Forest Exp. Sta. Tech. Note 603. 2 p.
- Striffler, W. D. 1963. Suspended sediment concentration in a Michigan trout stream as related to watershed characteristics. Fed. Interagency Sedimentation Conf. Proc. USDA Misc. Pub. No. 970. p. 144-150.

- Striffler, W. D. 1964. Sediment, streamflow, and land use relationships in northern lower Michigan. Lake States Forest Exp. Sta. Res. Paper LS-16. 12 p.
- Striffler, W. D. 1965. The selection of experimental watersheds and methods in disturbed forest areas. Symp. Budapest, Representative and Exp. Areas, Vol. 2. IASH Pub. No. 66. p. 464-473.
- Striffler, W. D. and R. F. May. 1965. The forest restoration of strip-mined areas. Annu. SAF Meeting, Detroit, Michigan, Proc. p. 105-108.
- May, R. F. and W. D. Striffler. 1965. Watershed aspects of stabilization and restoration of strip-mined areas. Int. Symp. on Forest Hydrol., Pennsylvania State Univ., Proc. p. 663-671.
- Striffler, W. D. 1967. Restoration of open-cast coal sites in Great Britain. J. Soil and Water Conserv. 22:101-103.
- Striffler, W. D. 1969. A Review: "Principles of hydrology." R. C. Ward. J. Soil and Water Conserv. 24:28-29.
- Striffler, W. D. 1969. The grassland hydrologic cycle, p. 101-116. In R. L. Dix and R. G. Beidleman [ed.] The grassland ecosystem. Colorado State Univ., Range Sci. Dep. Sci. Ser. No. 2. 437 p.
- Striffler, W. D. 1969. Surface mining disturbance and water quality in eastern Kentucky. Paper presented at Int. Symp. on Ecol. and Revegetation of Drastically Disturbed Areas. Pennsylvania State Univ. (In press).
- Hubbard, J. E. and W. D. Striffler. 1969. Distribution of cesium - 137 in a small Alpine watershed. Presented at Western Nat. Meeting of Amer. Geophys. Union. San Francisco.
- Striffler, W. D. and F. M. Smith. 1969. Pawnee Site microwatershed: selection, description and instrumentation. US IBP Tech. Rep. No. 5. 29 p.
- Striffler, W. D. 1970. Hydrologic research in the IBP Grassland Biome Program. J. Range Manage. 23rd Annu. Meeting Amer. Soc. Range Manage., p. 23. Abstr.
- Striffler, W. D. 1970. Hydrologic cycle of grasslands, p. 174. In R. T. Coupland and G. M. Van Dyne [ed.] Grassland ecosystems: review of research. Colorado State Univ., Range Sci. Dep. Sci. Ser. No. 7.
- Striffler, W. D. and D. Edwards. 1970. A hydrologic data collection system. Paper presented at IBP Seminar, Boulder, Colorado
- Striffler, W. D. 1971. Hydrologic data, 1970, Pawnee Grasslands. US IBP Tech. Rep. No. 76. 23 p.

Name: Gordon Swartzman

Born: 1943

Academic Training:

Degree	Year	Institution	Major
B.S.	1964	Cooper Union	Electrical Engr.
M.S.	1965	University of Michigan	Electrical Engr.
Ph.D.	1969	University of Michigan	Industrial Engr.

Professional Experience:

Date	Position	Institution
1969--	Assistant Professor, Range Science	Colorado State University

Professional and Honorary Societies:

Operations Research Society of America (ORSA)
Tau Beta Pi)
Eta Kappa Nu) National Engineering Honor Society

Major Interests:

Ornithology, ethnology, travel, community and political action, and environmental quality.

Current Professional Activities:

Book Chairman for coming ORSA meeting

Research: Modelling; philosophy of modelling; special problem session: the effects of urbanization upon the environment.

Publications, Technical Reports:

Swartzman, Gordon. 1969. Scheduling in a hospital system. Paper presented at National ORSA meeting.

Swartzman, Gordon. 1969. Some results on hospital scheduling. Paper presented at National ORSA meeting.

Swartzman, Gordon and R. L. Disney. 1970. The effect of scheduling outpatients -- Health Services Research.

Swartzman, Gordon. 1970. A first pass bird model. IBP Technical Report #3.

Swartzman, Gordon, et al. 1970. Some concepts of modelling. IBP Technical Report #32 (coordinator).

Swartzman, Gordon. 1970. Eco tactics. Paper presented at the conference on environmental quality, Boulder, Colorado.

Name: Theodore O. Thatcher

Born: 1910

Academic Training:

Degree	Year	Institution	Major
B.S.	1933	Utah State University	Entomology & Botany
M.S.	1935	Utah State University	Entomology
Ph.D.	1948	University of California (Berkeley)	Entomology

Professional Experience:

Date	Position	Institution
1935-1936	Field Aide	USDA, Bur. Ent.
1937-1941	Naturalist & Act. Custodian	Lehman Caves Nat'l. Mon. USNAS Baker, Nevada
1941-1946	Officer in U. S. Army	
1946-1948	Graduate Research & Teaching Asst.	University of California
1948-	Assistant to Professor	Colorado State University

Professional and Honorary Societies:

Entomological Society of America	Coleopterists Society
Entomological Society of Canada	Sigma Xi
Entomological Society of Pakistan	Alpha Gamma Rho
Society of Systematic Zoology	

Major Interests:

Systematics (particularly of immatures) of forest insects (specialty Scolytidae); Ecology of insects; Ecology of human; Scientific Illustration

Current Professional Activities:

Teaching: Systematic Entomology, Immature Insects, Science Illustration, Forest Entomology, Insect Ecology

Research: IBP - Insect ecology of grassland biome, Ecology of forest seed destroying insects, Taxonomy of immature insects

Publications, Technical Reports:

Knowlton, G. F. and T. O. Thatcher. 1934. Utah houseflies. Utah Acad. Sci., Arts, & Letters Proc. 11:291-294.

Thatcher, T. O. 1935. Scolytidae of the Logan Canyon Area (Utah). Utah Acad. Sci., Arts, & Letters Proc. 12:261-262.

Knowlton, G. F. and T. O. Thatcher. 1936. Notes on wood-boring insects. Utah Acad. Sci., Arts, & Letters Proc. 13:277-281.

- Thatcher, T. O. 1940. A new genus of Scolytidae (Coleoptera) from Utah & Nevada. Utah Acad. Sci., Arts, & Letters Proc. 17:89-91.
- Thatcher, T. O. 1948. A new locality record of *Xenorhipis osborni* Knull, with notes on host and work. (Coleoptera:Buprestidae). Pan-Pacific Entomol. 24:32-33.
- Thatcher, T. O. 1954. A new species of *Dendroctinus* from Guatamala (Coleoptera:Scolytidae). Coleopterists Bull. 8:3-6.
- Thatcher, T. O. 1954. Manual in forest entomology. Colorado State Univ. Printing Serv. mimeo. 30 p.
- Thatcher, T. O. 1955. Principles of forest entomology. Text for forest entomology. Colorado State Univ. Printing Serv. mimeo 115 p.
- Thatcher, T. O. 1961. Forest entomology. Burgess Pub. Co.
- Thatcher, T. O. 1961. Laboratory manual in forest entomology. Burgess Pub. Co.
- Thatcher, T. O. 1965. Barkbeetle. In Encyclopedia Brittanica.
- Thatcher, T. O. 1965. A new species of ips from Utah, Montana, and British Columbia. Canadian Entomol. 97:493-496.
- Thatcher, T. O. 1971. Energy transformation relationships in thistle seed insects. (In preparation)
- Thatcher, T. O. 1971. Mobile quick-trap for sampling insect popualtions. (In preparation)
- Thatcher, T. O. 1971. Preliminary list of Pawnee Grassland insects with plant association. (In preparation)

Name: G. W. Tomanek

Born: 1921

Academic Training:

Degree	Year	Institution	Major
A.B.	1942	Fort Hays State	Botany
M.S.	1947	Fort Hays State	Botany
Ph.D.	1951	University of Nebraska	Botany

Professional Experience:

Date	Position	Institution
1947 - Present	Instructor to Division Chairman	Fort Hays Kansas State
1960 - 1961	Consultant for AID to Argentina	Department of State

Professional and Honorary Societies:

Phi Kappa Phi	AIBS
Sigma Xi	Soil Conservation Society of Amer.
American Society of Range Management	Kansas Academy of Science
Ecological Society of America	

Major Interests: Classification and functioning of grassland ecosystems;
Long-term changes in grassland production and composition

Current Professional Activities:

Division Chairman, Division of Natural Science and Mathematics

Teaching: Course in Range Management

Research: Long-term studies on composition and production of several mixed prairie communities; primary productivity in a grassland ecosystem

Publications, Technical Reports:

Tomanek, G. W. 1948. Pasture Types of Western Kansas in relation to the intensity of utilization in past years. Kansas Acad. Sci. 51:171-196.

Weaver, J. E. and G. W. Tomanek. 1951. Ecological studies in a midwestern range: the vegetation and effects of cattle on its composition and distribution. Univ. Nebraska Conserv. Bull. 31. 82 p.

Tomanek, G. W. and F. W. Albertson. 1953. Some effects of different intensities of grazing on mixed prairies near Hays, Kansas. J. Range Manage. 6:299-306.

Tomanek, G. W., F. W. Albertson, and A. Riegel. 1955. Natural revegetation on a field abandoned for thirty-three years in central Kansas. Ecology 36:407-412.

- Martin, E. P., G. W. Tomanek, and F. W. Albertson. 1955. Use of regression line to estimate basal cover of sod-farming grasses. *Kansas Acad. Sci.* 58:526-527.
- Tomanek, G. W. and F. W. Albertson. 1957. Variations in cover, composition, production and roots of vegetation on two prairies in western Kansas. *Ecol. Monogr.* 27:267-281.
- Hopkins, H. H. and G. W. Tomanek. 1957. A study of woody vegetation at Cedar Bluff Reservoir. *Kansas Acad. Sci.* 60:351-359.
- Albertson, F. W., G. W. Tomanek, and A. Riegel. 1957. Ecology of drought cycles and grazing intensity on grasslands of Central Great Plains. *Ecol. Monogr.* 27:27-44.
- Tomanek, G. W. 1958. California range land (Burcham) book review. *Ecology* 30.
- Tomanek, G. W., E. P. Martin, and F. W. Albertson. 1958. Grazing preference comparisons of six native grasses in the mixed prairie. *J. Range Manage.* 11:191-193.
- Tomanek, G. W. 1959. Effects of climate and grazing on mixed prairie. *In* Grasslands. AAAS Pub. 53.
- Tomanek, G. W. and R. L. Ziegler. 1961. Ecological studies of salt cedar. *Bur. Reclam.* 128 p.
- Hulett, G. K. and G. W. Tomanek. 1961. Effects of some environmental factors of germination of salt cedar *Tamarix pentandra* Poll. *Kansas Acad. Sci.* 64:96-101.
- Tomanek, G. W. 1963. Field and laboratory guide for ecology (Lemon) book review. *J. Range Manage.* 16:211.
- Rahimian, H. and G. W. Tomanek. 1963. Wilting coefficients and infiltration rates of soils on four common plant communities near Hays, Kansas. *Kansas Acad. Sci.* 66:496-500.
- Riegel, D. A., F. W. Albertson, G. E. Tomanek, and F. E. Kinsinger. 1963. Effects of grazing and protection on a twenty year-old seeding. *J. Range Manage.* 16:60-63.
- Tomanek, G. W. 1964. Some soil-vegetation relationships in western Kansas. *Asa Spec. Pub.* 5:158-164.
- Patel, K. R., F. W. Albertson, and G. W. Tomanek. 1964. Microclimate and vegetation responses on three big bluestem *Andropogon gerardi* Vitman habitats near Hays, Kansas. *Kans. Acad. Sci.* 67:41-49.
- Albertson, F. W. and G. W. Tomanek. 1965. Vegetation changes during a 30-year period on grassland communities near Hays, Kansas. *Ecology* 46:714-720.

- Tomanek, G. W. 1966. How the society can help individual advisors and country workers. J. Range Manage. 19:333-335.
- Tomanek, G. W. and G. K. Hulett. 1966. A survey of Phreatophytes in the Cedar Bluff Reservoir Area, Kansas. Bur. Reclam.
- Albertson, F. W., D. A. Riegel, and G. W. Tomanek. 1966. Ecological studies of blue grama grass *Bouteloua gracilis*. Fort Hays Stud. Sci. 5.
- Goodman, Clyde L., G. W. Tomanek, and G. K. Hulett. 1967. A survey of Phreatophytes at Cedar Bluff Reservoir, Kansas. Kansas Acad. Sci. 70:451-463.
- Glover, Robert K., G. W. Tomanek, and D. L. Wolters. 1968. Soil and vegetation relationships on four slopes of the Ogallala Formation in Trego County, Kansas. Kansas Acad. Sci. 71:69-84.
- Hulett, G. K., C. D. Sloan, and G. W. Tomanek. 1968. The vegetation of remnant grasslands in the Loessial Region of northwestern Kansas and southwestern Nebraska. Southwest Natur. 13:377-391.
- Gesink, R. W., G. W. Tomanek, and G. K. Hulett. 1968. A descriptive survey of the woody Phreatophytes on the Arkansas River in Kansas. Bur. Reclam.
- Hulett, G. K. and G. W. Tomanek. 1969. Forage production on a clay upland range site in western Kansas. J. Range Manage. 22:270-276.
- Hulett, G. K. and G. W. Tomanek. 1969. Remnant prairies on the shallow limy range in north central Kansas. J. Range Manage. 22:20-23.
- Hulett, G. K., G. L. Van Amburg, and G. W. Tomanek. 1969. Soil depth-vegetation relationships on a shallow limy range site in western Kansas. J. Range Manage. 22:196-199.

Name: M. J. (Joe) Trlica, Jr.

Born: 1942

Academic Training:

Degree	Year	Institution	Major
B.S.	1964	Southwest Texas State University	Biology
M.S.	1967	Texas Tech University	Range Science
Ph.D.	1971	Utah State University	Ecology

Professional Experience:

Date	Position	Institution
1963-64	Lab Instructor, Biology Department	Southwest Texas State Univ.
1965-67	Research Assistant	Texas Tech University
1967-70	Research Assistant	Utah State University
1970-	Assistant Professor	Colorado State University

Professional and Honorary Societies:

American Society of Range Management
The Wildlife Society
The Ecological Society of America
American Institute of Biological Sciences
Sigma Xi
Alpha Zeta

Publications, Technical Reports:

- Trlica, M. J., Jr. and J. L. Schuster. 1969. Effects of fire on grasses of the Texas High Plains. J. Range Manage. 22:329-333.
- Trlica, M. J., Jr. and C. W. Cook. 1971. Defoliated effects on carbohydrate reserves of desert species. J. Range Manage. (Accepted for publication)
- Trlica, M. J., Jr. and C. W. Cook. 1971. Defoliation effects on carbohydrate reserves of crested wheatgrass and Russian wildrye. J. Range Manage. (Accepted for publication)

Name: George Mason Van Dyne

Born: 1932

Academic Training:

Degree	Year	Institution	Major
Assoc.	1952	Pueblo College	Arts and Sciences
B.S.	1954	Colorado A & M	Agriculture (Animal Husbandry)
M.S.	1956	South Dakota State Univ.	Animal Husbandry (Nutrition)
Ph.D.	1963	Univ. California	Nutrition (Biometrics, Biochemistry)

Special Training:

Certificate 1964. Analog computation. Instrument Soc.-Amer., Oak Ridge Sect.
 Certificate 1964. Foundations & tools for operations research & the management sciences. Univ. Michigan Summer Eng. Conf.
 Certificate 1968. Mathematical & Computer analysis of biological system models. Washington Engineering Services Co., Inc.

Professional Experience:

Date	Position	Institution
1954-1956	Research Assistant	South Dakota Agr. Exp. Sta.
1956-1957	Instructor	CSU, Coll. Forest. & Range Manage.
1957-1961	Assistant Professor	Mont. St. Coll., Anim. & Range Sci.
1961-1964	Assistant Res. Nutritionist	U. Calif. Davis, Anim. Husbandry
1964-1966	Joint Ecologist & Assoc. Prof.	Oak Ridge Nat. Lab
		Univ. Tennessee, Botany
1966-1968	Joint Assoc. Prof. Biology	CSU, Fish & Wildl. & Range Sci.
1968-	Joint Professor Biology	CSU, Range Sci., Fish & Wildl.

Professional and Honorary Societies:

American Society of Animal Science	The Wildlife Society
Ecological Society of America	AAAS
American Society of Range Management	Sigma Xi
American Institute of Biological Science	Phi Theta Kappa
International Association for Ecology	

Major Interests: Nutrition of range plants and animals; modelling, analysis and computer applications to biological problems; soil-plant-animal relationships; and systems ecology.

Current Professional Activities:

Teaching: Systems Ecology, Ecological Simulation and Natural Resource Models.

Research: International Biological Grasslands Program--Grassland ecology.
 Ford Foundation--Modelling ecological effects of weather modification.
 McIntire-Stennis--Ecology of bitterbrush.

Publications, Technical Reports:

- Lewis, J. K., G. M. Van Dyne, L. R. Albee, and F. W. Whetzal. 1956. Intensity of grazing--its effects on livestock and forage production. South Dakota Agr. Exp. Sta. Bull. 459. 44 p.
- Van Dyne, G. M. 1957. Range measurements: condition, grazing capacity, trend, and utilization. Montana State Coll. Mimeo. 231 p.
- Van Dyne, G. M. 1957. Handling range for better beef production. Ann. Beef Production School, Proc., 3:9-15. Montana St. Coll.
- Van Dyne, G. M. 1958. Ranges and range plants. Montana St. Coll. Multilith. 300 p. (revised 1961).
- Van Dyne, G. M. 1958. Report of progress of existing projects: Range management studies. Ann. Sheep and Wool Production School, Proc., 6:111-114. Montana St. Coll.
- Van Dyne, G. M. 1958. Bibliography on evaluation of the diet of grazing animals. (67 references). Anim. Ind. and Range Manage. Dep., Montana St. Coll. 5 p.
- Van Dyne, G. M. 1958. Range investigations, p. 9-24. In Annu. Progress Rep., Western Reg. Res. Proj. W-34. Montana Agr. Exp. Sta.
- Thomas, O. O., R. R. Woodward, G. M. Van Dyne, J. R. Quesenberry, and F. S. Willson. 1958. The effect of adding phosphorus and vitamin A to supplements fed weaned calves on winter range. Anim. Ind. Leaflet No. 13. Montana St. Coll.
- Van Dyne, G. M. 1959. Bibliography of literature on chemical composition of range plants. Ditto. (226 references). Anim. Ind. and Range Manage. Dep., Montana St. Coll. 15 p.
- Van Dyne, G. M. 1959. Range nutrition investigations and range measurement investigations. Field Day Report, Red Bluff Res. Ranch, Montana Agr. Exp. Sta. 1:5-9, 21.
- Van Dyne, G. M. 1959. Range investigations, p. 8-34. In Annu. Progress Rep., Western Reg. Res. Proj. W-34. Montana Agr. Exp. Sta.
- Van Dyne, G. M. 1959. Range nutrition, p. 8-9; measuring ranges, p. 15; and Red Bluff Research Ranch, p. 18-19. In Animal industry and range research in Montana. Montana Agr. Exp. Sta. Circ. 226.
- Van Dyne, G. M. and J. L. Van Horn. 1959. The hole in the throat technique. Montana Wool Grower 33(12):52.
- Van Dyne, G. M., W. G. Vogel, and H. G. Fisser. 1959. Annotated bibliography of the literature pertaining to range nutrition in Montana. (61 references). Anim. Ind. and Range Manage. Dep., Montana St. Coll. 10 p.

- Thomas, O. O., G. M. Van Dyne, and F. W. Willson. 1959. Protein and phosphorus as supplements for cows wintered on native range. Anim. Ind. Leaflet. No. 20. Montana St. Coll.
- Thomas, O. O., R. R. Woodward, G. M. Van Dyne, J. R. Quesenberry, and F. S. Willson. 1959. The effect of adding fat to supplements fed weaned calves on winter range. Anim. Ind. Leaflet. No. 22. Montana St. Coll.
- Van Dyne, G. M. 1960. Final report of the 1957 range survey of the Red Bluff Research Ranch, Norris, Montana. Montana Agr. Exp. Sta. 34 p. + maps, on file.
- Van Dyne, G. M. 1960. Final report of the 1958 basal cover measurements on the Red Bluff Research Ranch. Montana Agr. Exp. Sta. 101 p., on file.
- Van Dyne, G. M. 1960. A method for random location of sample units in range investigations. J. Range Manage. 13(3):152-153.
- Van Dyne, G. M. 1960. Range investigations, p. 9-60. In Annu. Progress Rep., Western Reg. Res. Proj. W-34. Montana Agr. Exp. Sta.
- Van Dyne, G. M. 1960. Scoring with range fertilization in Montana. Annu. Pacific Northwest Fertilizer Conf., Proc., 11:53-54 (Abstr.).
- Van Dyne, G. M. 1960. A procedure for rapid collection, processing, and analysis of line intercept data. J. Range Manage. 13(5):247-251.
- Van Dyne, G. M., D. E. Ryerson, H. A. Kittams, and J. O. Reuss. 1960. Range fertilization studies on the Red Bluff Research Ranch. Anim. Ind., Range Manage., and Wool Lab. Rep. No. 25. Montana Agr. Exp. Sta. 24 p.
- Van Dyne, G. M. and J. L. Van Horn. 1960. Measuring the distance a sheep grazes on the range. Montana Wool Grower 34(7):10.
- Van Dyne, G. M. and H. A. Kittams. 1960. Nutrient production of plains, foothill, and mountain range plans: Foothill range-1958-percent protein, dry matter production, and protein production. Anim. Ind. and Range Manage. Dep., Montana St. Coll. 18 p.
- Van Dyne, G. M. and H. A. Kittams. 1960. Nutrient production of foothill range. Anim. Ind., Range Manage., and Wool Lab. Rep. No. 26. Montana Agr. Exp. Sta. 74 p.
- Fisser, H. G. and G. M. Van Dyne. 1960. A mechanical device for repeatable range measurements. J. Range Manage. 13(1):40-42.
- Thomas, O. O., R. R. Woodward, G. M. Van Dyne, N. Keiffer, J. R. Quesenberry, and F. S. Willson. 1960. Effect of feeding various levels and amounts of protein supplements to weaned calves individually fed on winter range. Anim. Ind. Leaflet. No. 34. Montana St. Coll.
- Thomas, O. O., G. M. Van Dyne, and F. S. Willson. 1960. Production of Hereford cows individually fed on winter range supplements varying in percent protein and phosphorus. J. Anim. Sci. 19(4):1314 (Abstr.).

- Van Dyne, G. M. 1961. Evaluation of the influence of site factors on yield composition of range herbage. Annu. Meeting Amer. Soc. Range Manage., Proc., 14:63-64 (Abstr.).
- Van Dyne, G. M. 1961. Esophageal fistulation procedure, equipment, and care of animals. Anim. Husb. Dep., Univ. California. 4 p.
- Van Dyne, G. M. 1961. Techniques investigations, p. 1-5. In Annu. Progr. Rep., Western Reg. Res. Proj. W-34. California Agr. Exp. Sta.
- Van Dyne, G. M. 1961. Range fertilization studies, Red Bluff Research Ranch: Procedures and methods of study. Montana Agr. Exp. Sta. Res. Progr. Rep. 1. 2 p.
- Van Dyne, G. M. 1961. Range fertilization studies, Red Bluff Research Ranch: Influence on forage production, 1959. Montana Agr. Exp. Sta. Res. Progr. Rep. 2. 2 p.
- Van Dyne, G. M. 1961. Range fertilization studies, red Bluff Research Ranch: Basal cover changes, 1959. Montana Agr. Exp. Sta. Res. Progr. Rep. 3. 2 p.
- Van Dyne, G. M. 1961. Range fertilization studies, Red Bluff Research Ranch: Chemical composition, nutrient uptake, and palatability difference, 1959. Montana Agr. Exp. Sta. Res. Progr. Rep. 4. 2 p.
- Van Dyne, G. M. 1962. Techniques investigations, p. 1-13. In Annu. Progr. Rep., Western Reg. Res. Proj. W-34. California Agr. Exp. Sta.
- Van Dyne, G. M. 1962. General analysis of variance program for the IBM 1620 (40K). Anim. Husb. Dep., Univ. California. 8 p.
- Van Dyne, G. M. 1962. Simple linear regression and simple correlation analysis program for the IBM 1620 (40K). Anim. Husb. Dep., Univ. California. 3 p.
- Van Dyne, G. M. 1962. Polynomial regression analysis program for IBM 1620 (40K). Anim. Husb. Dep., Univ. California. 6 p.
- Van Dyne, G. M. 1962. Micro-methods for nutritive evaluation of range forages. J. Range Manage. 15(6):303-314.
- Van Dyne, G. M. 1963. Comparative chemical and botanical composition of fistula forage samples. Annu. Meeting Amer. Soc. Range Manage., Proc., 16:45-46 (Abstr.).
- Van Dyne, G. M. 1963. Rumen fistulation procedure, equipment, and care of animals. Anim. Husb. Dep., Univ. California. 4 p.
- Van Dyne, G. M. 1963. An artificial rumen system for range nutrition studies. J. Range Manage. 16(3):146-147.

- Van Dyne, G. M. 1963. Techniques investigations, p. 1-6. In Annu. Progr. Rep., Western Reg. Res. Proj. W-34. California Agr. Exp. Sta.
- Van Dyne, G. M., W. G. Vogel, and H. G. Fisser. 1963. Influence of small plot size and shape on range herbage production estimates. Ecology 44(4):746-759.
- Van Dyne, G. M. 1964. Techniques investigations, p. 1-9. In Annu. Progr. Rep., Western Reg. Res. Proj. W-34. California Agr. Exp. Sta.
- Van Dyne, G. M. and G. P. Lofgreen. 1964. Comparative digestion of dry annual range forage by cattle and sheep. J. Anim. Sci. 23(3): 823-832.
- Van Dyne, G. M. and J. H. Meyer. 1964. Forage intake by cattle and sheep on a dry annual range. J. Anim. Sci. 23(4):1108-1115.
- Van Dyne, G. M. and J. H. Meyer. 1964. A method for measurement of forage intake of grazing livestock using microdigestion techniques. J. Range Manage. 17(4):204-208.
- Van Dyne, G. M. and G. F. Payne. 1964. Grazing responses of western range plants. Dep. Anim. and Range Sci., Montana St. Univ., Bozeman. 72 p.
- Van Dyne, G. M., O. O. Thomas, and J. L. Van Horn. 1964. Diet of cattle and sheep grazing on winter range. Western Sect. Amer. Soc. Anim. Sci., Proc., 14(61):1-6.
- Van Dyne, G. M. and D. T. Torell. 1964. Development and use of the esophageal fistula: a review. J. Range Manage. 17(1):7-19.
- Van Dyne, G. M. and W. C. Weir. 1964. Microdigestion of grazed annual forage, clipped herbages, and standard samples by cattle and sheep. J. Range Manage. 17(6):327-332.
- Van Dyne, G. M. and W. C. Weir. 1964. Variations among cattle and sheep in digestive power measured by microdigestion techniques. J. Anim. Sci. 23(4):1116-1123.
- Harker, K. W., D. T. Torell, and G. M. Van Dyne. 1964. Botanical examination of forage from esophageal fistulas in cattle. J. Anim. Sci. 23(2):465-469.
- Van Dyne, G. M. 1965. A further note on random locations for sample units. J. Range Manage. 18(3):150-151.
- Van Dyne, G. M. 1965. Probabilistic estimates of range forage intake. J. Anim. Sci. 24(2):601 (Abstr.).
- Van Dyne, G. M. 1965. Probabilistic estimates of range forage intake. Western Sect. Amer. Soc. Anim. Sci., Proc., 16(77):1-6.

- Van Dyne, G. M. 1965. Chemical composition and digestibility of range plants from annual range and from pure-stand plots. J. Range Manage. 18(6):332-337.
- Van Dyne, G. M. 1965. Application of some operations research techniques to food chain analysis problems. Health Phys. 11(12):1511-1519.
- Van Dyne, G. M. 1965. Regress: a multiple regression and correlation program with graphic output for model evaluation. Oak Ridge Nat. Lab. TM-1288. 54 p.
- Van Dyne, G. M. 1965. Data on chemical and botanical composition of dietary samples grazed by cattle and sheep. Oak Ridge Nat. Lab. TM-1376. 24 p.
- Van Dyne, G. M. and J. L. Van Horn. 1965. Distance traveled by sheep on winter range. J. Anim. Sci. 24(2):600 (Abstr.).
- Van Dyne, G. M. and J. L. Van Horn. 1965. Distance grazed by sheep on winter range. Western Sect. Amer. Soc. Anim. Sci., Proc., 16(74):1-6.
- Van Dyne, G. M. and H. F. Heady. 1965. Dietary chemical composition of cattle and sheep grazing in common on a dry annual range. J. Range Manage. 18(2):78-86.
- Van Dyne, G. M. and H. F. Heady. 1965. Interrelations of botanical and chemical dietary components of livestock on dry annual range. J. Anim. Sci. 24(2):305-312.
- Van Dyne, G. M. and H. F. Heady. 1965. Botanical composition of sheep and cattle diets on a mature annual range. Hilgardia 36(13):465-492.
- Van Dyne, G. M., G. F. Payne, and O. O. Thomas. 1965. Chemical composition of individual range plants from the U.S. Range Station, Miles City, Montana, from 1955 to 1960. Oak Ridge Nat. Lab. TM-1279. 21 p.
- Heady, H. F. and G. M. Van Dyne. 1965. Prediction of weight composition from point samples on clipped herbage. J. Range Manage. 18(3):144-148.
- Van Dyne, G. M. 1966. The optimum site problem--an application and integration of multiple linear regression and linear programming analyses. Annu. Meeting Amer. Soc. Range Manage., Proc., 19:20-21 (Abstr.).
- Van Dyne, G. M. 1966. Ecosystems, systems ecology, and systems ecologists. Oak Ridge Nat. Lab. Rep. ORNL 3957. 31 p.
- Van Dyne, G. M. 1966. Variables affecting *in vitro* rumen fermentation studies: a review. J. Anim. Sci. 25(3):915-916 (Abstr.).
- Van Dyne, G. M. 1966. Models for depicting height-growth of range plants in response to fertility treatments. Bull. Ecol. Soc. Amer. 47(3):124 (Abstr.).

- Van Dyne, G. M. 1966. Use of a vacuum-clipper for harvesting herbage. *Ecology* 47(4):624-626.
- Van Dyne, G. M. 1966. Application and integration of multiple linear regression and linear programming in renewable resources analysis. *J. Range Manage.* 19(6):356-362.
- Van Dyne, G. M. and I. Thorsteinsson. 1966. Intraseasonal changes in height growth of range plants in response to nitrogen and phosphorous. *Int. Grassl. Congr., Proc.*, 10:924-929.
- Van Dyne, G. M. and W. C. Weir. 1966. Comparison of microdigestion techniques under range and drylot conditions. *J. Agr. Sci.* 67: 381-387.
- Fisser, H. G. and G. M. Van Dyne. 1966. Influence of number and spacing of points on accuracy and precision of basal cover estimates. *J. Range Manage.* 19(4):205-211.
- Kevern, N. R., J. L. Wilhm, and G. M. Van Dyne. 1966. Use of artificial substrata to estimate the productivity of periphyton. *Limnol. & Oceanogr.* 11(4):499-502.
- Vogel, W. G. and G. M. Van Dyne. 1966. Vegetation responses to grazing management on a foothill sheep range. *J. Range Manage.* 19(2):80-85.
- Van Dyne, G. M. 1967. Nonlinear programming prediction of chemical composition of dietary constituents. *Annu. Meeting Amer. Soc. Range Manage., Proc.*, 20:62-63 (Abstr.).
- Van Dyne, G. M. 1967. A review: Systems Analysis in Ecology. K. E. F. Watt (ed.). 1966. Academic Press, Inc., New York. 276 p. *In* *J. Range Manage.* 20(5):335.
- Van Dyne, G. M. and K. R. Rebman. 1967. Maintaining a profitable ecological balance, p. PL6.1-6.9. *In* R. M. Thrall, J. A. Mortimer, K. R. Rebman, and R. F. Baum [compilers and ed.] *Some mathematical models in biology.* Univ. Michigan Rep. 40241-R-7 (5-Tol-GM01457-02).
- Van Dyne, G. M. and W. G. Vogel. 1967. Relation of *Selaginella densa* to site, grazing and climate. *Ecology* 48(3):438-444.
- Edwards, N. T. and G. M. Van Dyne. 1967. Metabolism of herbicides in ecosystems: a review. *Oak Ridge Nat. Lab. TM-2042.* 34 p.
- Van Dyne, G. M. 1968. Prediction by nonlinear programming of relative chemical composition of dietary botanical components. *J. Range Manage.* 21(1):37-46, 60.
- Van Dyne, G. M. 1968. A review: Wildflowers of the United States. H. W. Rickett. McGraw-Hill Book Co., New York. Vol. I and Vol. II; 559 and 688 p. *In* *J. Range Manage.* 21(4):271-272.

- Van Dyne, G. M. and P. T. Haug. 1968. Variables affecting *in vitro* rumen fermentation studies in forage evaluation: an annotated bibliography. Oak Ridge Nat. Lab. TM-1973. 73 p.
- Van Dyne, G. M., F. N. Glass, and P. A. Opstrup. 1968. Development and use of capacitance meters to measure standing crop of herbaceous vegetation. Oak Ridge Nat. Lab. TM-2247. 47 p.
- Van Dyne, G. M., R. G. Wright, and J. F. Dollar. 1968. Influence of site factors on vegetation productivity: a review and summarization of models, data, and references. Oak Ridge Nat. Lab. TM-1974. 238 p.
- Haug, P. T. and G. M. Van Dyne. 1968. Secondary succession in abandoned cultivated fields: an annotated bibliography. Oak Ridge Nat. Lab. TM-2104. 68 p.
- Patten, B. C. and G. M. Van Dyne. 1968. Factorial productivity experiments in a shallow estuary: energetics of individual plankton species in a mixed population. *Limnol. & Oceanogr.* 13:309-314.
- Van Dyne, G. M. 1969. Measuring quantity and quality of the diet of large herbivores, p. 54-94. Chapter 5. In F. B. Golley and H. K. Buechner [ed.] A practical guide to the study of the productivity of large herbivores. Blackwell Sci. Publ., Oxford, England.
- Van Dyne, G. M. 1969. A plea for fewer but more significant digits. *J. Range Manage.* 22:52-53.
- Van Dyne, G. M. 1969. Implementing the ecosystem concept in training in the natural resource sciences, p. 327-367. Chapter X. In G. M. Van Dyne [ed.] The ecosystem concept in natural resource management. Academic Press, New York. 383 p.
- Van Dyne, G. M. 1969. Some mathematical models of grassland ecosystems, p. 3-26. In R. L. Dix and R. G. Beidleman [ed.] The grassland ecosystem --a preliminary synthesis. Colorado State Univ., Range Sci. Dep., Sci. Ser. No. 2. 437 p.
- Van Dyne, G. M. 1969. The problem, role, and mode of synthesis in the grassland biome study, p. 1-2. In R. L. Dix and R. G. Beidleman [ed.] The grassland ecosystem--a preliminary synthesis. Colorado State Univ., Range Sci. Dep., Sci. Ser. No. 2. 437 p.
- Van Dyne, G. M. 1969. Grasslands management, research, and training viewed in a systems context. Colorado State Univ., Range Sci. Dep., Sci. Ser. No. 3. 50 p. [A 4000 word condensation will appear as: Van Dyne, G. M. 1970. A systems approach to grasslands. Proc. XI International Grassland Congress.]
- Van Dyne, G. M. (ed.). 1969. The ecosystem concept in natural resource management. Academic Press, New York. 383 p.

- Van Dyne, G. M., W. E. Frayer, and L. J. Bledsoe. 1969. Optimization techniques and problems in the natural resource sciences. *In* Studies in applied mathematics: Symposium on optimization. Soc. Ind. Appl. Math.
- Bledsoe, L. J. and G. M. Van Dyne. 1969. Evaluation of a digital computer method for analysis of compartmental models of ecological systems. Oak Ridge Nat. Lab. TM-2414. 60 p.
- Kelly, M. J., P. A. Opstrup, J. S. Olson, S. I. Auerbach, and G. M. Van Dyne. 1969. Models of seasonal primary productivity in eastern Tennessee *Festuca* and *Andropogon* ecosystems. Oak Ridge Nat. Lab. TM-4310. 296 p.
- Van Dyne, G. M. 1970. Animals in grasslands. McGraw-Hill Encyclopedia of Science and Technology.
- Wright, R. G. and G. M. Van Dyne (eds.). 1970. Simulation and analysis of dynamics of a semi-desert grassland: an interdisciplinary workshop program toward evaluating the potential ecological impact of weather modification. Colorado State Univ., Range Sci. Dep. Sci. Ser. No. 6. 345 p.
- Coupland, R. T. and G. M. Van Dyne (eds.). 1970. Grassland ecosystems: reviews of research. Colorado State Univ., Range Sci. Dep. Sci. Ser. No. 7. 208 p.
- Haug, P. T., G. M. Van Dyne and R. M. Hansen (eds.). 1969. Dietary competition among herbivores. (Papers from a joint graduate seminar between Wildlife Biology and Range Science, Fall Quarter, 1968). Colorado State University. 121 p.
- Van Dyne, G. M., W. E. Frayer and L. J. Bledsoe. 1970. Some optimization techniques and problems in the natural resource sciences, p. 95-124. *In* Society for industrial and applied mathematics. Studies in optimization I: Symposium on optimization. Philadelphia, Pa. 137 p.
- Van Dyne, G. M. 1970. Some observations on foreign grassland and related research: April - July 1970 Van Dyne trip report. US IBP Grassland Biome Tech. Rep. No. 57. 25 p.
- Van Dyne, G. M. 1970. Systems ecology. CHIASMA. 8:59-61. (Rural Sci. Undergraduates Soc., Univ. New England, Armidale, New South Wales, Australia.)
- Wright, R. G. and G. M. Van Dyne (eds.). 1970. Simulation and analysis of dynamics of a semi-desert grassland. Colorado State Univ., Range Sci. Dep. Sci. Ser. No. 6. 345 p.
- Wallace, J. D. and G. M. Van Dyne. 1970. Precision of indirect methods for estimating digestibility of forage consumed by grazing cattle. J. Range Manage. 23:424-430.
- Van Dyne, G. M. 1970. Structuring of ecosystem studies on an international basis, p. 45-50. *In* R. T. Coupland and G. M. Van Dyne (eds.) Grassland ecosystems: review of research. Range Sci. Dep. Sci. Ser. No. 7. Colorado State Univ., Fort Collins. 208 p.

- Van Dyne, G. M., F. M. Smith and L. J. Bledsoe. 1970. Techniques in measuring biomass of producers, p. 62-64. In R. T. Coupland and G. M. Van Dyne (eds.) Grassland ecosystems: review of research. Range Sci. Dep. Sci. Ser. No. 7. Colorado State University, Fort Collins. 208 p.
- Van Dyne, G. M. 1970. Introduction to modelling and synthesis, p. 176-178. In R. T. Coupland and G. M. Van Dyne (eds.) Grassland ecosystems: review of research. Range Sci. Dep. Sci. Ser. No. 7. Colorado State Univ., Fort Collins. 208 p.
- Van Dyne, G. M. 1970. Examples of trophic level and total ecosystem models, p. 191-198. In R. T. Coupland and G. M. Van Dyne (eds.) Grassland ecosystems: review of research. Range Sci. Dep. Sci. Ser. No. 7. Colorado State Univ., Fort Collins. 208 p.
- Van Dyne, G. M. 1971. A review of *Wildflowers of the United States*. Rickett, H. W. Vol. III; 2-book volume 553 p. McGraw-Hill Book Co., New York. J. Range Manage. 24:79-80.
- Harris, W. F., G. M. Van Dyne and H. R. DeSelm. 1971. Influence of plot size and shape on sampling standing crop of herbaceous vegetation in east Tennessee. Amer. Midland Natur. (Ms. submitted)
- Thorsteinsson, I., G. Olafson and G. M. Van Dyne. 1971. Range resources of Iceland. J. Range Manage. 24:86-93.
- Van Dyne, G. M. 1971. Some problems and possibilities in Australian arid zone systems research. Proc. 3rd Australian Arid Zone Res. Conf., Australian Commonwealth Sci. and Ind. Res. Organ. Ms. 32 p. (In press)
- Bledsoe, L. J. and G. M. Van Dyne. 1971. A compartment model simulation of secondary succession. Chapter VIII. In B. C. Patten (ed.) Systems analysis and simulation in ecology. Vol. I. Academic Press, New York. (In press)
- Wright, R. G. and G. M. Van Dyne. 1971. Comparative analytical studies of site factor equations. In G. P. Patil, W. E. Waters and E. C. Pileou (eds.) International symposium on statistical ecology. Proc. Pa. State Univ. Press, College Park, Pa. (In press)
- Van Dyne, G. M. 1971. Aspects of quantitative training in the natural resource sciences. In G. P. Patil, W. E. Waters and E. C. Pileou (eds.) International symposium on statistical ecology. Proc. Pa. State Univ. Press, College Park, Pa. (In press)

Name: Donald H. Van Horn

Born: 1928

Academic Training:

Degree	Year	Institution	Major
B.A.	1950	Kalamazoo College	Biology
M.S.	1952	Univ. of Illinois	Zoology
Ph.D.	1961	Univ. of Colorado	Zoology

Professional Experience:

Date	Position	Institution
1958-1961	Teach. Asst. and Instructor	Univ. of Colorado
1961-1962	Asst. Prof.	Lake Forest College
1962-1965	Asst. Prof.	Utica College
1965-1966	Visiting Prof.	Univ. of Colorado
1966-	Asst. Prof. and Assoc. Prof.	Univ. of Colorado

Professional and Honorary Societies:

Ecological Society of America
AAAS
American Society of Mammalogists
Sigma Xi
Phi Sigma

Major Interests:

Terrestrial animal ecology, especially community analysis of western biomes

Current Professional Activities:

Teaching: General Biology, Ecology

Research: Grassland Orthoptera (IBP), Faunal analysis of montane communities

Publications, Technical Reports:

- Van Horn, D. H. 1965. Variations in size and phallic morphology among populations of *Melanoplus dodgei* (Thomas) in the Colorado Front Range (Orthoptera: Acrididae). Amer. Entomol. Soc., Trans. 91:95-119.
- Van Horn, D. H. 1970. Population density and biomass for a grassland orthopteran community. Amer. Ass. Advance. Sci., Southwestern and Rocky Mountain Div., Annu. Meeting, New Mexico Highlands, Univ., Las Vegas, New Mexico.

Name: Jacobus J. P. Van Wyk

Born: 1934

Academic Training:

Degree	Year	Institution	Major
B.S.	1955	Potchefstroom University	Botany
M.S.	1958	Potchefstroom University	Botany
Ph.D.	1963	Duke University	Ecology

Professional Experience:

Date	Position	Institution
1958	Lecturer in Botany	Potchefstroom University
1970	Professor of Biology	Potchefstroom University
1970-1971	Professor of Biology (Visiting foreign professor)	Eastern Montana College, Billings, Montana

Professional and Honorary Societies:

South African Botanical Society
South African Society of Arts and Sciences

Major Interests:

Ecology and Wildlife Management

Publications, Technical Reports:

Van Wyk, J. J. P. 1959. The crowncover meter - a new ecological sampling device. South African Acad. Sci. Proc. Annu. General Meeting.

Van Wyk, J. J. P. 1969. Drought destruction in South African Sweet Bushveld. South African Med. J.

Van Wyk, J. J. P. 1970. The Potch tree meter. South African J. Bot.

Name: John W. Vennes

Review 1966

Academic Training:

Degree	Year	Institution	Major
B.S.	1951	University of North Dakota	
M.S.	1952	University of North Dakota	
Ph.D.	1957	University of Michigan	

Professional Experience:

Date	Position	Institution
1957-63	Assistant Professor	University of North Dakota
1963-66	Associate Professor	University of North Dakota
1966-	Professor	University of North Dakota

Major Interests:

Soil, water and medical microbiology

Professional and Honorary Societies:

American Society of Microbiologists
Sigma Xi

Publications, Technical Reports:

- Vennes, J. W. and P. Gerhardt. 1956. The morphological nature of surface antigens of *Bacillus megaterium*. Bacteriol. Proc. 38.
- Vennes, J. W., E. M. Britt and P. Gerhardt. 1956. Gram reaction of isolated protoplasts and surface membranes of *Bacillus megaterium*. J. Bacteriol. 72:721.
- Vennes, J. W. and P. Gerhardt. 1956. Immunologic comparison of isolated membranes of *Bacillus megaterium*. Science 124:535-536.
- Vennes, J. W. and P. Gerhardt. 1957. Further serological analysis of isolated cellular structures of *Bacillus megaterium*. Bacteriol. Proc. 105.
- Vennes, J. W., R. E. MacDonald and P. Gerhardt. 1957. Use of logarithms to the base 2 in recording serological reactions. Nature 180:1363.
- Vennes, J. W. 1958. The use of bacteriological methods for obtaining viable counts and increased growth of protozoa. Bacteriol. Proc. p. 139.
- Vennes, J. W. and P. Gerhardt. 1959. Antigenic analysis of cell structures isolated from *Bacillus megaterium*. J. Bacteriol. 77:581-592.

- Vennes, J. W. and G. L. Schuster. 1950. Synchronous division of *Tetrahymena pyriformis* in a biphasic medium. North Dakota Acad. Sci., Proc. 14:43.
- Vennes, J. W. 1961. The effect of morphine on the metabolism and growth of *Tetrahymena pyriformis*. North Dakota Acad. Sci., Proc. 15:89.
- Vennes, J. W. and E. G. Olmstead. 1961. Stabilization of potato wastes. Offic. Bull. North Dakota Water and Sewage Works Conf. 1-5.
- Vennes, J. W., J. E. Kwako, D. D. Swenson and J. K. Peterson. 1962. Fluoride content of municipal water supplies in North Dakota. J. Lancet 82:388-391.
- Vennes, J. W. and E. G. Olmstead. 1963. Experimental lagooning of potato wastes. Offic. Bull. North Dakota Water and Sewage Works Conf. 2-5.
- Vennes, J. W. and A. A. Jacobs. 1963. The effects of electrolytes and antibiotics on the growth of *Proteus vulgaris*. North Dakota Acad. Sci., Proc. 13:104.
- Vennes, J. W. and E. G. Olmstead. 1963. Industrial wastes-problems in stabilization. North Dakota Acad. Sci., Proc. 17:104.
- Vennes, J. W., O. O. Olson and W. Van Heuvelen. 1964. Aeration of potato waste. 19th Ann. Ind. Waste Conf., Purdue Univ.
- Vennes, J. W. 1964. Lagoon stabilization of potato wastes by photosynthetic purple sulfur bacteria. North Dakota Acad. Sci., Proc. 18:175.
- Vennes, J. W., O. O. Olson and W. Van Heuvelen. 1966. Microbiological treatment of protein water waste from potato starch manufacturing. Offic. Bull. North Dakota Water and Sewage Works Conf.
- Vennes, J. W. and J. M. Granum. 1966. Microbiologic indicators of pollution in the Red River of the North. North Dakota Acad. Sci., Proc. 20:93.
- Vennes, J. W., M. W. Wentz and R. A. Scott. 1966. Seasonal incidence of *Clostridium botulinum* types. North Dakota Acad. Sci., Proc. 20:94.
- Vennes, J. W. and O. O. Olson. 1967. Microbiologic indicators of the efficiency of aerated lagoons. North Dakota Acad. Sci., Proc. 21:202.
- Vennes, J. W., R. P. Rolshoven and D. J. Hoss. 1967. Stabilization of cheese manufacturing wastes. North Dakota Acad. Sci., Proc. 21:203.
- Vennes, J. W., W. Wentz and A. Scott. 1967. *Clostridium botulinum* type F; Seasonal inhibition by *Bacillus licheniformis*. Science 155:89.
- Vennes, J. W. and O. O. Olson. 1967. BOD and bacterial changes in various wastes during BOD testing. Offic. Bull. North Dakota Water and Sewage Works Conf. 34:2.

- Vennes, J. W. and H. W. Holm. 1967. Changes in purple sulfur bacteria populations in a sewage lagoon. *Bacteriol. Proc.* p. 48.
- Vennes, J. W., O. O. Olson and W. Van Heuvelen. 1968. Combined industrial and domestic waste treatment in waste stabilization lagoons. *J. WPCF* 40:214.
- Vennes, J. W. and H. W. Holm. 1968. Development of heterogeneous populations of purple sulfur bacteria in sewage lagoons. *North Dakota Acad. Sci., Proc.* 22.
- Vennes, J. W. and H. W. Holm. 1968. Development of heterogeneous populations of purple sulfur bacteria in sewage lagoons. *Bacteriol. Proc.* p. 14.
- Vennes, J. W. and R. L. Francis. 1968. Mathematics, microbes and swimming pools. *Offic. Bull. North Dakota WPCC* 36:12-13.
- Vennes, J. W. and H. W. Holm. 1969. Utilization of substrates by purple sulfur bacteria in a sewage lagoon. *Bacteriol. Proc.* p. 27.
- Vennes, J. W. and H. W. Holm. 1969. Utilization of substrates by purple sulfur bacteria in a sewage lagoon. *North Dakota Acad. Sci., Proc.* 23:11.
- Holm, H. W. and J. W. Vennes. 1970. Occurrence of purple sulfur bacteria in sewage treatment lagoon. *Appl. Microbiol.* 19:988.
- Vennes, J. W. 1970. State of the art- oxidation ponds. *Second Int. Symp. for Waste Treatment Lagoons.* In press.
- Vennes, J. W. and O. O. Olson. 1970. Microbiologic indicators of the efficiency of an aerated, continuous discharge, sewage lagoon in northern climates. *Int. Symp. on Water Pollution Control in Cold Climates.* In press.
- Fillipi, G. M. and J. W. Vennes. 1971. Biotin production and utilization in a sewage treatment lagoon. Submitted for publication.

Name: William P. Waite

Born: 1933

Academic Training:

Degree	Year	Institution	Major
B.S.E.E.	1956	University of Missouri	Electrical Engineering
M.S.E.E.	1967	University of Kansas	Electrical Engineering
Ph.D.	1970	University of Kansas	Electrical Engineering

Professional Experience:

Date	Position	Institution
1956-65	Development Engineer	Bendix Corporation
1965-70	Senior Research Engineer	University of Kansas
1970-	Assistant Professor	University of Arkansas

Major Interests:

Electromagnetic theory, electromagnetic and acoustic scattering, active micro-wave systems, geoscience applications of remote sensors.

Professional and Honorary Societies:

Institute of Electrical and Electronic Engineers
 Professional Technical Group Antennas and Propagation
 Professional Technical Group Geoscience Electronics
 Professional Technical Group Aerospace and Electronic Systems
 Sigma Xi

Publications, Technical Reports:

Rouse, J. W., Jr., W. P. Waite and R. L. Walters. 1966. Use of orbital radars for geoscience investigations. Third Space Congr., Proc. p. 77-94. Also appears as CRES Techn. Rep. No. 61-8. Univ. Kansas, Lawrence.

Moore, R. K., W. P. Waite, J. R. Lundien and H. W. Massenthin. 1968. Radar scatterometer data analysis techniques. 5th Symp. Remote Sensing of Environment, Proc. Univ. Michigan, Ann Arbor. p. 765-780.

Moore, R. K., W. P. Waite and J. W. Rouse, Jr. 1968. Panchromatic and polypanchromatic radar. IEEE, Proc. 57:590-593.

Rouse, J. W., Jr., H. C. MacDonald and W. P. Waite. 1969. Geoscience applications of radar sensors. IEEE Geoscience Electronics, GE-7, Trans.1: 2-19.

Waite, W. P. and H. C. MacDonald. 1970. Snowfield mapping with K-band radar. J. Remote Sensing 1:143-150.

MacDonald, H. C. and W. P. Waite. 1971. Optimum radar depression angles. J. Modern Geol. (In press)

MacDonald, H. C. and W. P. Waite. 1971. Soil moisture detection with imaging radars. Water Resources J. (In press)

Waite, W. P. and H. C. MacDonald. 1971. Vegetation penetration with K-band imaging radar. IEEE Geoscience Electronics. (In press)

Name: Mohan K. Wali

Born: 1937

Academic Training:

Degree	Year	Institution	Major
B.Sc.	1957	University of Jammu & Kashmir	
M.Sc.	1960	University of Allahabad	
Ph.D.	1969	University of British Columbia	

Professional Experience:

Date	Position	Institution
1960-61	Research Fellow	Botanical Survey of India
1961-63	Demonstrator in Botany	S.P. College, Srinagar, Kashmir
1963-65	Lecturer in Botany	S.P. College, Srinagar, Kashmir
1965-66	Research Fellow	University of Copenhagen
1966-69	Teaching Assistant	University of British Columbia
1967-69	Graduate Fellowship	University of British Columbia
1967-69	Summer Research Assistant	National Research Council of Canada
1969-	Assistant Professor of Biology	University of North Dakota

Professional and Honorary Societies:

British Ecological Society
 Canadian Botanical Association
 Ecological Society of America
 American Institute of Biological Sciences
 North Dakota Academy of Sciences

Publications, Technical Reports:

- Wali, M. K. 1961. Ecological studies of Kashmir Himalayas. Indian Sci. Congr. Ass. Part III, Proc. 343.
- Wali, M. K. 1964. A preliminary survey of conifer communities of Kashmir Himalayas. Trop. Ecol. 5:32-41.
- Wali, M. K. 1965. Life forms and biological spectrum of Lolab Valley, Kashmir in relation to climate. J. Bombay Natur. Hist. Soc. 63:115-122.
- Wali, M. K. 1970. Vegetation-environment relationships of the sub-boreal spruce zone ecosystems in British Columbia. Ecol. Monogr.
- Wali, M. K. 1970. A trace metal study of some boreal soils from British Columbia. J. Soil Sci.
- Wali, M. K. and S. N. Tikku. 1964. Contribution to the flora of Kashmir, Lolab Valley. Bull. Bot. Surv. India 6:141-149.

- Wali, M. K. and D. P. Zutshi. 1965. A note on the ecology of *Myricaria bracteata* Royle. Trop. Ecol. 6:15.
- Wali, M. K. and S. N. Tikku. 1965. Vivipary in *Pinus wallichiana* A. B. Jackson. Current Sci. 34:294.
- Wali, M. K., G. F. Gruendling and D. W. Blinn. 1970. Some biogeochemical aspects of Marion Lake, British Columbia. Oikos.
- Wali, M. K., L. M. Lavkulich and M. Kjøie. 1970. The role of aluminum in hydrosphere, pedosphere and biosphere. Biol. Rev.
- Wali, M. K. and P. B. Kannowski. 1971. Analysis of a saline tall grass prairie ecosystem. III. A study of soil-plant-ant interactions. (To be presented at the 63rd Annual Meeting of North Dakota Acad. Sci.)
- Wali, M. K. and S. M. Jalal. 1971. Analysis of a saline tall grass prairie ecosystem. II. Vegetation-soil relationships along a transect. (To be presented at the 63rd Annual Meeting of North Dakota Acad. Sci.)
- Kaul, V., D. P. Zutshi and M. K. Wali. 1964. Studies in the ecology of *Taraxacum officinale* Wigg. Kashmir Sci. 1.
- Kaul, V., M. K. Wali and D. P. Zutshi. 1964. Some ecological aspects of *Peganum harmala* L. Kashmir Sci. 1.
- Muthoo, M. K. and M. K. Wali. 1965. Deodar (*Cedrus deodara* Loud.) belt its occurrence and ecology. Indian Forest. 91:443-453.
- Singh, J. S. and M. K. Wali. 1962. The problem of soil erosion in some parts of Kashmir, Himalayas. Nat. Acad. Sci. India, Proc. 32:(B)118-124.
- Singh, J. S. and M. K. Wali. 1963. Ecological problems in Western Himalayas. Nat. Acad. Sci. India, Proc. 33:(B)55-57.
- Wikum, D. A. and M. K. Wali. 1971. Vegetation of the Forest River Biology Area in relation to water and nutrient gradients. (To be presented at the 63rd Annual Meeting of North Dakota Acad. Sci.)

Name: Olaf C. Wallmo

Born: 1919

Academic Training:

Degree	Year	Institution	Major
B.S.	1946	Utah State University	Forestry
M.S.	1948	University of Wisconsin	Zoology
Ph.D.	1956	Texas A & M University	Botany and Zoology

Professional Experience:

Date	Position	Institution
1955-1956	Research Biologist	Texas Agric. Experiment Station
1955-1962	Associate Professor	Texas A & M University
1962-1964	Research Biologist	Arizona Game & Fish Department
1964-	Project Leader	Rocky Mountain Forestry and Range Experiment Station

Professional and Honorary Societies:

Sigma Xi
The Wildlife Society

Publications, Technical Reports:

- Wallmo, O. C. 1954. Nesting of Mearns quail in south eastern Arizona. The Condor 56:125-128.
- Wallmo, O. C. and S. Gallizioli. 1954. Status of the coati in Arizona. J. Mammal. 35:48-54.
- Wallmo, O. C. 1955. Vegetation of the Huachuca Mountains, Arizona. Amer. Midl. Natur. 55:466-480.
- Wallmo, O. C. 1956. Determination of sex and age of scaled quail. J. Wildl. Manage. 20:154-158.
- Wallmo, O. C. 1957. A study of blues. Texas Game & Fish. Aug. 4-7.
- Wallmo, O. C. 1957. Ecology of scaled quail in west Texas. Texas Game & Fish Comm., 134 p.
- Merrill, L. B., J. G. Teer, and O. C. Wallmo. 1957. Reaction of deer populations to grazing practices. Texas Agr. Program 3:10-12.
- Wallmo, O. C. and P. B. Uzzell. 1958. Ecological and social problems in quail management in west Texas. Trans. 23rd North Amer. Wildl. Conf. 32-327.
- Sargent, F., E. H. Cooper, and O. C. Wallmo. 1958. Land for hunters; a survey of hunting leases. Texas Game & Fish 16: 22, 23, 29.

- Teer, J. G. and O. C. Wallmo. 1959. Deer management on the ranch. Sheep & Goat Raiser. September.
- Wallmo, O. C., A. W. Jackson, T. L. Hailey, and R. L. Carlisle. 1962. Influence of rain on the count of deer pellet groups. J. Wildl. Manage. 26:50-55.
- Neff, D. J., O. C. Wallmo, and D. C. Morrison. 1965. A determination of defecation rate for elk. J. Wildl. Manage. 29:406-407.
- McCulloch, C. Y., O. C. Wallmo, and P. F. Folliott. 1965. Acorn yield of Gambel oak. U. S. Dep. Agr., Forest Serv. Res. Note RM-48, 2 p., illus.
- Wallmo, O. C. 1969. Response of deer to alternate-strip clearcutting of lodgepole pine and spruce-fir timber in Colorado. U.S.D.A. Forest Serv. Res. Note RM-141, 4 p., illus.
- Gilbert, Paul F., O. C. Wallmo, and R. B. Gill. 1970. Effect of snow depth on mule deer in Middle Park, Colorado. J. Wildl. Manage. 34:15-23, illus.

Name: J. G. Watts

Born: 1910

Academic Training:

Degree	Year	Institution	Major
B.S.	1931	Clemson University	Entomology
M.S.	1933	Ohio State University	Entomology
Ph.D.	1956	Ohio State University	Entomology

Professional Experience:

Date	Position	Institution
1931-1955	Assistant Entomologist Associate Entomologist Professor of Entomology	Clemson University South Carolina Agr. Exp. Sta.
1955-	Professor of Entomology	New Mexico State University New Mexico Agr. Exp. Sta.

Professional and Honorary Societies:

Entomological Society of America
American Society of Range Management
Sigma Xi

Major Interests:

Rangeland Entomology - biology, ecology and behavior
Forage Insects - host resistance

Current Professional Activities:

Department Head

Research: Grass seed insects; Alfalfa resistance to Lygus; IBP Collaborator-
Insect biomass

Publications, Technical Reports:

- Watts, J. G. 1934. *Chirothripoides dendropogonus*. A new species of thrips of a family new to North America (Chirothripoidea:Thysanoptera). Ann. Entomol. Soc. Amer. 27:542-544.
- Watts, J. G. 1934. A new species and variety of *Plesiothrips* (Thripidae: Thysanoptera). The Florida Entomol. 17:24-27.
- Watts, J. G. 1934. A comparison of the life cycles of *Frankliniella tritici* (Fitch), *F. fusca* (Hinds), and *Thrips tabaci* Lind. (Thysanoptera:Thripidae) in South Carolina. J. Econ. Entomol. 27:1158-1159.
- Watts, J. G. 1935. Two new species of *Stephanothrips* from South Carolina and key to the known species (Urothripidae:Thysanoptera). Ann. Entomol. Soc. Amer. 28:126-130.

- Watts, J. G. 1936. A study of the biology of the flower thrips, *Frankliniella tritici* (Fitch), with special reference to cotton. South Carolina Agr. Exp. Sta. Bull. 306, 46 p.
- Watts, J. G. 1938. Species of thrips found on cotton in South Carolina. J. Econ. Entomol. 30:857-860.
- Watts, J. G. 1938. Reduction of cotton yield by thrips. J. Econ. Entomol. 30:860-863.
- Watts, J. G. 1941. A progress report on tomato fruit worm studies. J. Econ. Entomol. 34:400-405.
- Watts, J. G. 1948. Cotton insect control with organic insecticides. J. Econ. Entomol. 41:543-547.
- Watts, J. G. 1951. Soil insect control in southeast by mixtures of pesticides and fertilizers. Agr. Chem. 6, 4 p.
- Watts, J. G. 1951. Cotton insect calandra for South Carolina. South Carolina Agri. Exp. Sta. Misc. Circ. 4 00.
- Watts, J. G. 1951. Control of sand wireworm with chlorinated insecticides. J. Econ. Entomol. 44:619-620.
- Watts, J. G. 1954. Response of nut grass to soil applications of organic insecticides. J. Econ. Entomol. 47:435-438.
- Watts, J. G. and J. B. Hatcher. 1954. White grub damage to young pine plantations J. Econ. Entomol. 47:710-711.
- Watts, J. G. 1955. Effects of insecticides on phytotoxicity and off-flavor Farm Chem., May, 5 p.
- Watts, J. G. 1955. Granulate cutworm damage to watermelons. South Carolina Agri. Res. 2:7.
- Dobson, R. C. and J. G. Watts. 1956. Adult buprestid causes crop damage. J. Econ. Entomol. 49:391.
- Dobson, R. C. and J. G. Watts. 1957. Spotted alfalfa aphid occurrence on seedling alfalfa as influenced by sustemic insecticides and varieties. J. Econ. Entomol. 50:132-135.
- Watts, J. G. 1959. Tubulifera thrips damage lettuce. J. Econ. Entomol. 52:786.
- Watts, J. G. 1964. Insects associated with black grama grass (*Bouteloua eriopoda*). Ann. Entomol. Soc. Amer. 56:374-379.
- Watts, J. G. 1965. *Chirothrips falsus* on black grama grass. New Mexico Agr. Exp. Sta. Bull. 499.
- Watts, J. G., C. B. Coleman, and C. R. Glover. 1967. Colormetric detection of chalcid-infested alfalfa seed. J. Econ. Entomol. 60:59-60.

Watts, J. G. and A. C. Bellotti. 1967. Some new and little-known insects of economic importance on range grasses. J. Econ. Entomol. 60:961-963.

Watts, J. G. 1969. Occurrence and distribution of *Chirothrips* Haliday spp. in New Mexico. Ann. Entomol. Soc. Amer. (In press).

Name: Theodore W. Weaver

Born: 1940

Academic Training:

Degree	Year	Institution
B.A.	1963	Carleton College
M.A.	1965	University of Montana
Ph.D.	1969	Duke University

Professional Experience:

Date	Position	Institution
Present	Assistant Professor of Botany	Montana State University

Professional and Honorary Societies:

Sigma Xi
Phi Sigma

Publications, Technical Reports:

- Weaver, T. W. 1963. Variation in the spruce complex of the northern Rocky Mountains. M. A. Thesis, Montana State Univ., Missoula.
- Weaver, T. W. 1969. Factors causing segregation of fall-line sandhills oaks, North Caroline. Ph.D. Thesis, Duke Univ., Durham, North Carolina.
- Habeck, J. and T. W. Weaver. 1969. A chemosystematic analysis of some hybrid spruce (*Picea*) populations in Montana. Can. J. Bot. 47:1565-1570.

Name: Laurence Weinberg

Born: 1943

Academic Training:

Degree	Year	Institution	Major
B.S.	1965	Rensselaer Polytechnic Institute	Mathematics
Ph.D.	1969	University of Minnesota	Mathematics

Professional Experience:

Date	Position	Institution
1968-1969	Visiting Instructor	University of California, Los Angeles
1969-	Assistant Professor	University of Wyoming

Professional and Honorary Societies:

American Mathematical Society
Society of Industrial and Applied Mathematics
Mathematical Association of America
American Association of University Professors
Pi Mu Epsilon

Current Professional Activities:

Teaching: Calculus, linear algebra.

Research: Mathematical modeling, parameter estimation, mathematical ecology and simulation of biological systems.

Publications:

Weinberg, L., W. A. Harris, Jr. and Y. Sibuya. 1968. A reduction algorithm for linear differential systems. Funkcialaj Ekvacioj 11:59-67.

Weinberg, L., W. A. Harris, Jr. and Y. Sibuya. 1969. Holomorphic solutions of linear differential systems at singular points. Archive for Rational Mechanics and Analysis, 35:245-249.

Weinberg, L. 1969. The asymptotic distribution of eigenvalues for the boundary value problem: $y''(x) - \lambda^2 p(x)y(x) = 0$, $y \in L_2(-\infty, +\infty)$. Doctoral dissertation, Univ. Minnesota.

Weinberg, L. 1971. The asymptotic distribution of eigenvalues for the boundary value problem: $y''(x) - \lambda^2 p(x)y(x) = 0$, $y \in L_2(-\infty, +\infty)$. Accepted by SIAM J. Math. Anal.

Name: F. Ward Whicker

Born: 1937

Academic Training:

Degree	Year	Institution	Major
B.S.	1962	Colorado State Univ.	Chemistry
Ph.D.	1965	Colorado State Univ.	Radiation Biology
Post-Doctoral	1965	Univ. Hannover, Germany	Forestry Techniques

Professional Experience:

Date	Position	Institution
1962	Research Associate	Hanford Atomic Products
1969	Visiting Assoc. Professor	University of Alaska
1966-Present	Associate Professor	Colorado State University

Professional and Honorary Societies:

Sigma Xi	Phi Kappa Phi
AAAS (Fellow)	Kappa Mu Epsilon
Health Physics	Xi Sigma Pi
Ecological Society of America	Beta Beta Beta
Wildlife Society	

Major Interests:

Pollution Ecology, Radionuclide Techniques, Radiation Ecology, Hunting, Fishing, Wilderness Hiking

Current Professional Activities:

Teaching: Radioecology

Research: Radioecological Studies, AEC Funded; IBP - Soil Movement

Publications, Technical Reports:

Hanson, W. C., F. W. Whicker, and A. H. Dahl. 1963. Iodine-131 in the thyroids of North American deer caribou: comparison after nuclear tests. Science 140:801-802.

Hanson, W. C., A. H. Dahl, F. W. Whicker, W. M. Longhurst, V. Flyger, S. P. Davey, and K. R. Greer. 1963. Thyroidal radioiodine concentrations in North American deer following 1961-1963 nuclear weapons tests. Health Physics 9:1235-1239.

Whicker, F. W. 1964. Density studies of mule deer body fat. J. Mammal. 45: 252-259.

Whicker, F. W., E. E. Remmenga, and A. H. Dahl. 1965. Factors influencing the accumulation of I-131 in Colorado deer thyroids following 1961-1962 nuclear weapons tests. Health Physics 11:293-296.

- Whicker, F. W., G. C. Farris, A. H. Dahl, and E. E. Remmenga. 1965. Factors influencing the accumulation of fallout Cs-137 in Colorado mule deer. *Health Physics* 11:1407-1414.
- Whicker, F. W., G. C. Farris, and A. H. Dahl. 1967. Concentration patterns of Sr-90, Cs-137, and I-131 in a wild deer population and environment, p. 621 to 633. *In* B. Aberg and F. P. Hungate [ed.] *Radioecological concentration processes*. Pergamon Press, New York.
- Whicker, F. W., R. A. Walters, and A. H. Dahl. 1967. Fallout radionuclides in Colorado deer liver. *Nature* 214:511-513.
- Whicker, F. W., G. C. Farris, and A. H. Dahl. 1966. Radioiodine concentrations in Colorado deer and elk thyroids during 1964-65. *J. Wildl. Manage.* 30:781-785.
- Farris, G. C., F. W. Whicker, and A. H. Dahl. 1967. Effect of age on radioactive and stable strontium accumulation in mule deer bone, p. 93 to 102. *In* J. M. A. Lenihan, J. F. Loutit, and J. H. Martin [ed.] *Strontium metabolism*. Academic Press, London.
- Whicker, F. W., G. C. Farris, and A. H. Dahl. 1967. Wild deer as a source of radionuclide intake by humans and as indicators of fallout hazards, p. 1105 to 1110. *In* W. S. Snyder [ed.] *Radiation protection*. Pergamon Press, New York.
- Remmenga, E. E. and F. W. Whicker. 1967. Sampling variability in radionuclide concentrations in plants native to the Colorado front range. *Health Physics* 13:977-983.
- Whicker, F. W. and C. M. Loveless. 1968. Relationships of physiography and microclimate to fallout deposition. *Ecology* 49:363-366.
- Nelson, W. C. and F. W. Whicker. 1969. Cesium-137 concentrations in some Colorado game fish, 1965-66, p. 258 to 265. *In* D. J. Nelson and F. C. Evans [ed.] *Symposium on radioecology, CONF-670503*. U. S. Atomic Energy Comm., Div. Tech. Information Ext., Oak Ridge, Tennessee.
- Farris, G. C., F. W. Whicker, and A. H. Dahl. 1969. Strontium-90 levels in mule deer and forage plants, p. 602 to 608. *In* D. J. Nelson and F. C. Evans [ed.] *Symposium on radioecology, CONF-670503*. U. S. Atomic Energy Comm., Div. Tech. Information Ext., Oak Ridge, Tennessee.
- Hakonson, T. E. and F. W. Whicker. 1969. Uptake and elimination of Cesium-134 by mule deer, p. 616 to 622. *In* D. J. Nelson and F. C. Evans [ed.] *Symposium on radioecology, CONF-670503*. U. S. Atomic Energy Comm., Div. Tech. Information Ext., Oak Ridge, Tennessee.

Name: Warren C. Whitman

Born: 1911

Academic Training:

Degree	Year	Institution	Major
B.S.	1935	North Dakota State University	Botany
M.S.	1936	North Dakota State University	Botany (Range)
Ph.D.	1939	University of Wisconsin	Botany (Plant Physiology)

Professional Experience:

Date	Position	Institution
1938-1942	Assistant Botanist	North Dakota Agr. Exp. Station
1946-1947	Associate Ecologist	U. S. Forest Serv., Miles City
1947-1951	Associate Botanist	North Dakota State University
1951-	Professor of Botany	North Dakota State University

Professional and Honorary Societies:

Ecological Society of America	Soil Conservation Society of America
American Society of Range Management	Sigma Xi
AAAS	Phi Kappa Phi
AIBS	

Major Interests:

Range and grassland ecology
Microclimatic influences in the grassland

Current Professional Activities:

North Dakota Agricultural Experiment Station

Teaching: Range Management

Research: Exp. Station projects at Dickinson Station
IBP - Seasonal herbage dynamics of mixed grass prairie in western North Dakota

Publications, Technical Reports:

Whitman, W. C. 1941. Seasonal changes in bound water content of some prairie grasses. Bot. Gaz. 103:38-63.

Whitman, W. C., H. C. Hanson, and R. Peterson. 1943. Relation of drought and grazing to North Dakota range lands. North Dakota Agr. Exp. Sta. Bull. 320. 29 p.

Whitman, W. C. 1951. Carotene, protein and phosphorus in grasses of western North Dakota. North Dakota Agr. Exp. Sta. Bull. 370. 55 p.

Whitman, W. C. and E. S. Siggeirsson. 1954. Comparison of line interception and point contact methods in the analysis of mixed grass range vegetation. Ecology 35:431-436.

- Whitman, W. C. 1963. Crested wheatgrass and crested wheatgrass-alfalfa pastures for early season grazing. North Dakota Agr. Exp. Sta. Bull. 442. 24 p.
- Whitman, W. C. and G. Wolters. 1967. Microclimatic gradients in mixed grass prairie. In Groundlevel climatology. AAAS Pub. 86. Washinton, D. C. p. 165-185.
- Whitman, W. C. and H. C. Hanson. 1969. Grassland resources. In G. H. Smith [ed.] Conservation of natural resources. John Wiley & Sons, New York. (Revised for 4th Edition, 1970.)
- Whitman, W. C. 1969. Microclimate and its importance in grassland ecosystems, p. 40 to 64. In R. L. Dix and R. G. Beidleman [eds.] The grassland ecosystem: a preliminary synthesis. Range Sci. Dep. Sci. Series No. 2, Colorado State Univ., Fort Collins, Colorado. 437 p.
- Bjugstad, A. J. and W. C. Whitman. 1970. Significance of reduced plant vigor in relation to range condition. J. Range Manage. 23:181-184.
- Whitman, W. C. and H. C. Hanson. 1971. Grassland resources, p. 145-168. In Guy-Harold Smith [ed.] Conservation of Natural Resources (3rd ed.). John Wiley and Sons.

Name: John A. Wiens

Born: 1939

Academic Training:

Degree	Year	Institution	Major
B.S.	1961	University of Oklahoma	Zoology
M.S.	1963	University of Wisconsin	Zoology
Ph.D.	1966	University of Wisconsin	Zoology

Special Training: 1960, 1961, 1963 NSF Summer Research Fellowships

Professional Experience:

Date	Position	Institution
1959-1961	Research Assistant	University of Oklahoma
1961-1966	Teaching Assistant and Museum Curator	University of Wisconsin
1966-1969	Assistant Professor	Oregon State University
1969-	Associate Professor	Oregon State University

Professional and Honorary Societies:

AAAS	Ecological Society of America
AIBS	Phi Sigma
American Ornithologists' Union	Northwest Scientific Association
American Society of Zoologists	Sigma Xi
Cooper Ornithological Society	Wilson Ornithological Society

Major Interests: Behavioral Ecology: specifically, the effects of habitat structure on the behavior and ecology of grassland and shrubsteppe birds; the ontogeny of habitat responses in vertebrates; the dynamics of seabird populations and trophic relationships

Current Professional Activities:

Secretary, Oregon State University Chapter Sigma Xi;
Vice-Chairman, Northwest Scientific Association (Botany-Zoology Section)

Teaching: Ecology, Behavioral Ecology, Vertebrate Biology, General Biology, Ornithology, Evolutionary Ecology

Research: (1) The ecology and behavior of grassland birds with reference to coexistence and community organization; (2) Avian populations and trophic relationships in North American grasslands; (3) Avian community structure in western shrubsteppe; (4) Development of habitat selection in frogs.

Publications, Technical Reports:

- Wiens, J. A. 1963. Aspects of cowbird parasitism in southern Oklahoma. Wilson Bull. 75:130-139.
- Wiens, J. A. 1965. Nest parasitism of the dickcissel by the yellow-billed cuckoo in Marshall County, Oklahoma. Southwest Natur. 10:142.
- Wiens, J. A. 1965. Behavioral interactions of red-winged blackbirds and common grackles on a common breeding ground. Auk 82:356-374.
- Wiens, J. A. 1965. A physiognomically-based system for describing grassland habitats, with special reference to grassland birds. Bull. Ecol. Soc. Amer. 46:199 (Abstr.).
- Wiens, J. A. and J. T. Emlen. 1965. The dickcissel invasion of 1964 in southern Wisconsin. Passenger Pigeon 27:51-59.
- Wiens, J. A. 1966. Notes on the distraction display of the Virginia Rail. Wilson Bull. 78:229-231.
- Wiens, J. A. 1966. A specimen of the vermilion flycatcher from Oklahoma. Condor 68:398.
- Wiens, J. A. 1966. On group selection and Wynne-Edwards' hypothesis. Amer. Sci. 54:273-287.
- Wiens, J. A. and J. T. Emlen. 1966. Post-invasion status of the dickcissel in southern Wisconsin. Passenger Pigeon 28:63-69.
- Wiens, J. A. 1967. Ecological relationships among the breeding birds of a southern Wisconsin grassland community. Bull. Ecol. Soc. Amer. 48:61 (Abstr.).
- Wiens, J. A. 1967. An instrument for measuring light intensities in dense vegetation. Ecology 48:1006-1008.
- Wiens, J. A. 1968. "A hybrid discipline" (Review of Hirsch, "Behavior-genetic-analysis"). BioScience 18:143.
- Wiens, J. A. 1968. "African birds" (Review of Moreau, "The bird faunas of Africa and its islands"). BioScience 18:449.
- Wiens, J. A. 1968. "Predators" (Review of Errington, "Of predation and life"). BioScience 18:740-741.
- Wiens, J. A. 1968. "Evolution" (Review of Dunbar, "Ecological development in polar regions: A study in evolution"). Bioscience 18:903-904.
- Wiens, J. A. 1969. An approach to the study of ecological relationships among grassland birds. Ornithological Monogr. No. 8. 93 p.

- Wiens, J. A. 1969. "Review feature" (Review of Lack, "Ecological adaptations for breeding in birds"). *BioScience* 19:
- Wiens, J. A., S. G. Martin, W. R. Holthaus and F. A. Iwen. 1970. Metronome timing in behavioral ecology studies. *Ecology* 51:350-352.
- Moldenhauer, R. R. and J. A. Wiens. 1970. The water economy of the Sage Sparrow, *Amphispiza belli nevadensis*. *Condor* 72:265-275.
- Wiens, J. A. 1970. Effects of early experience on substrate pattern selection in *Rana aurora* tadpoles. *Copeia* 1970:543-548.
- Wiens, J. A. 1970. Behavioral ecology (review of Klopfer, Habitats and territories: a study of the use of space by animals). *BioScience* 20:1222-1223.
- Wiens, J. A. 1970. Habitat heterogeneity and the structure of avian communities in grasslands. *Bull. Ecol. Soc. Amer.* 51:29. (Abstr.)
- Wiens, J. A. 1970. Early experience and substrate pattern selection in *Rana aurora* and *R. cascadae* tadpoles. *Amer. Zool.* 10:290. (Abstr.)
- Wiens, J. A. 1970. Habitat heterogeneity and avian consumer populations in grasslands, p. 77-83. In R. T. Coupland and G. M. Van Dyne [ed.] *Grassland ecosystem: reviews or research*. Range Sci. Dep. Sci. Ser. No. 7, Colorado State Univ., Fort Collins.
- Wiens, J. A. 1970. Avian populations and patterns of habitat occupancy at the Pawnee Site, 1968-1969. *Grassland Biome*, U. S. Int. Biol. Program Tech. Rep. No. 63. 57 p.
- Wiens, J. A. 1971. "Egg-dumping" by the grasshopper sparrow in a savannah sparrow nest. *Auk* 88:185-186.
- Wiens, J. A. 1971. Ecosystem (review of Van Dyne, The ecosystem concept in natural resource management). *BioScience* 21:248.
- Wiens, J. A. 1971. Avian ecology and distribution in the Comprehensive Network, 1970. *Grassland Biome*, U. S. Int. Biol. Program Tech. Rep. No. 77. 49 p.

Name: George J. Williams III

Born: 1938

Academic Training:

Degree	Year	Institution
B.S.	1961	Texas College of Arts and Industries
M.A.	1966	George Peabody College
Ph.D.	1969	University of Texas

Professional Experience:

Date	Position	Institution
1961-1966	Public School Teacher	Refugio, Texas
1969-	Assistant Professor	University of Denver

Publications, Technical Reports:

Williams, G. J., III and C. McMillan. 1967. Respiration and respiratory enzyme activity in latitudinal ecotypes of *Liquidambar styraciflua* L. Ecol. Soc. Bull. (Abstr.)

Williams, G. J., III and C. McMillan. 1969. Phenology, physiology and biochemistry of six *Liquidambar styraciflua* L. provenances under controlled conditions. Eleventh Int. Bot. Congr. (Abstr.)

Name: Olwen Williams

Born: 1917

Academic Training:

Degree	Year	Institution	Major
B.A.	1941	Alfred University	
M.A.	1951	University of Colorado	Zoology
Ph.D.	1952	University of Colorado	Zoology

Special Training:

Post Graduate. Hopkins Marine Station (Stanford Univ.) Summer 1953.

Professional Experience:

Date	Position	Institution
1952-1955	Instructor, Biology	University of Colorado
1955-1959	Assistant Professor, Biology	University of Colorado
1959-1967	Associate Professor, Biology	University of Colorado
1965-1966	Fulbright Lecturer	Pierce University College Athens, Greece
1968-1969	Visiting Professor	University of Arizona
1967-	Professor, Biology	University of Colorado

Professional and Honorary Societies:

American Association for the Advancement of Science	Colorado-Wyoming Academy Science
American Institute of Biological Science	Cooper Ornithologists Society
American Ornithologists Union	Ecological Society of America
American Society of Mammalogists	Sigma Xi
Animal Behavior Society	

Current Professional Activities:

Research: Instructional methodology in the biological sciences, Population dynamics of mice and shrews, Behavioral ecology and bioenergetics of microtines, Ontogeny of behavior in the House sparrow as related to its success as a commensal.

Publications, Technical Reports:

Williams, O. and R. W. Pennak. 1952. An efficient, low-priced microscope lamp. Turtox News 30(7).

Williams, O. 1952. New phenacomys records from Colorado. J. Mammal. 33:399.

Williams, O. 1953. An analysis of distribution and habitat relations of small mammals in a valley of the Colorado front range. Univ. Colorado Bull. 29. No. 2 Gen. Ser.

- Williams, O. 1955. Home range of *Peromyscus maniculatus rufinus* in a Ponderosa pine community. J. Mammal. 36:42-45.
- Williams, O. 1955. The food of mice and shrews in a Colorado montane forest. Univ. Colorado Stud. Ser. Biol. No. 3:109-114.
- Williams, O. 1959. Food habits of the deer mouse. J. Mammal. 40:415-419.
- Williams, O. 1959. Water intake in the deer mouse. J. Mammal. 40:602-606.
- Williams, O. 1959. Modified gum syrup. Turtox News 37(10).
- Williams, O., G. Alexander, E. Bonde, and N. Younggren. 1959. Laboratory directions for general biology. Thomas Y. Crowell Company, New York. 270 p.
- Williams, O. 1962. A technique for studying microtine food habits. J. Mammal. 43:365-368.
- Williams, O., N. Younggren, and E. Bonde. 1963. Laboratory exercises for biological science. Lea and Febiger, Philadelphia. 189 p.
- Williams, O. and B. Finney. 1964. *Endogone* - food for mice. J. Mammal. 45:265-271.
- Williams, O. 1967. Book Review: Workbook and Laboratory Manual in General Biology, 7th Ed. William C. Beaver and George C. Noland. 1966. The C. V. Mosby Co., St. Louis. In Amer. Biol. Teacher 29:486.
- Williams, O. 1967. Book Review: Laboratory Exercises in the Principles of Biology. Thomas R. Mertens and Jeanette C. Malayer. 1966. Burgess Publishing Co., Minneapolis, Minnesota. In Amer. Biol. Teacher 29:567.

Name: R. Gerald Wright

Born: 1951

Academic Training:

Degree	Year	Institution	Major
B.S.	1965	Davis & Elkins College	Zoology
M.S.	1969	Colorado State University	Wildlife Manage.
Ph.D.	Candidate	Colorado State University	Systems Ecology

Special Training:

Ford Foundation Workshop, modeling the ecological effects of weather and modification - June 1969

Professional Experience:

Date	Position	Institution
1965-1966	Finance and Legal Div.	General-Electric Corp., N.Y.
1966-1968	Graduate Research Asst.	Colorado State University
1968-1969	Research Asst.	Colorado State University
1969-	Research Instructor	Colorado State University

Professional and Honorary Societies:

Ecological Society of America
Chi Beta Phi

Major Interests:

Response of semi-arid grasslands to precipitation, human ecology, environmental degradation particularly urbanization

Current Professional Activities:

Executive Assistant Grassland Biome, IBP

Teaching: Systems Ecology

Research: Ecological effects of weather modification. (Ford Foundation)

Publications, Technical Reports:

Van Dyne, G. M., R. G. Wright, and J. F. Dollar. 1968. Influence of site factors on vegetation productivity: a review and summarization of models, data, and references. Oak Ridge National Lab. TM-1974. 235 p.

Wright, R. G. 1969. Analysis and development of models, depicting the influence of site factors on forest tree productivity. M.S. Thesis, Colorado State Univ. 132 p.

- Wright, R. G. and G. M. Van Dyne [ed.] 1970. Simulation and analysis of dynamics of a semi-desert grassland: an interdisciplinary workshop program toward evaluating the potential ecological impact of weather modification. Range Sci. Dep. Sci. Ser. No. 6. 345 p.
- Wright, R. G. 1970. Automatic picture processing of chart quadrat maps. Paper presented at Southwestern and Rocky Mountain Div. Amer. Assoc. Advance. Sci., Las Vegas, New Mexico.
- Wright, R. G. [ed.] 1970. Scientific personnel participating in the grassland biome study. U. S. Int. Biol. Program Grassland Biome Tech. Rep. No. 24.
- Wright, R. G. and F. M. Smith [ed.] 1970. Grassland Biome graduate student symposium - a review. U. S. Int. Biol. Program Grassland Biome Tech. Rep. No. 59.
- Wright, R. G. 1970. The changing human ecology of the front range grasslands. Paper presented at Colorado Section Amer. Soc. Range Manage., Denver, Colorado.
- Wright, R. G. and G. M. Van Dyne. 1971. Comparative analytical studies of site factor equations. In G. P. Patil, W. E. Waters and E. C. Pileou [ed.] International symposium on statistical ecology. Proc. Pa. State Univ. Press, College Park, Pa. (In press)

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Professional Experience:

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1968-1969	NIH Postdoctoral Fellow	Institute of Arctic Biology
1969-	Assistant Professor, Zoology	Colorado State University

Professional and Honorary Societies:

Who's Who Among University Students
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Major Interests:

Physiological ecology; temperature regulation and activity energetics.

Publications, Technical Reports:

- Wunder, B. A. 1968. Oxygen consumption and body temperature of exercising chipmunks, *Eutamias merriami*. Amer. Zool. 8:767.
- Wunder, B. A. 1970 Temperature regulation and the effects of water restriction on Merriam's chipmunk, *Eutamias merriami*. Comp. Biochem. Physiol. In press.
- Wunder, B. A. 1970. Energetics of running activity in Merriam's chipmunk, *Eutamias merriami*. Comp. Biochem. Physiol. In press.