

Range Education in East Africa

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Highlight

Range management instruction in East Africa is centered in the 3-year diploma course at Egerton College, Kenya. Since 1966, range diplomates have received AID Scholarships to study toward B.S. and M.S. degrees in the U.S.A. The return flow of range graduates began to replace expatriate range specialists in 1969.

The newly independent nations bordering Lake Victoria—Kenya, Tanzania and Uganda—are referred to here as East Africa.

The awareness of range management as a science and a dire necessity prevails at all levels of government in East Africa, but especially in Kenya. This awareness can be traced to a few dedicated expatriate career officers in the Minis-

tries of Agriculture and the East African Agriculture and Forestry Research Organization. At the risk of omitting others equally deserving we will mention E. J. Russell, J. M. Rattray, Leslie Brown, D. C. Edwards, P. J. Greenway, A. V. Bogdan, John Peberdy, David Pratt, R. H. Brown, Richard Edmundson and Hugh York. The Americans Harold Heady, Leland Fallon, James Moomaw, Jay Bentley and Victor Bunderson were in Kenya laying ecological groundwork and recommending management techniques before any formal education was begun in Range Management.

Range Management education, as such, was formally begun at Egerton College in Kenya in October, 1965. The following year a United Nations Development Program team was organized at Nairobi under the leadership of Victor Bunderson to do range surveys, extension education and research.

John T. Cassady of this team took the initiative in organizing the East African section of the American Society of Range Management.

With assistance from David Bishop and Roy Lewis of the United Nations Development Pro-

gram team, the Farmer's Training Institute was reactivated at Narok. Samson Lekakeny, B.S. 1966 in range management, Colorado State University, was appointed in 1968 to organize a training program in range and stock management for his tribe, the Purko Masai.

These extension officers are writing short course syllabi and producing 16 mm cinefilms on livestock improvement, range and ranch management, disease control and bush control. David Bishop and Roy Lewis are outfitting 4 mobile vans with A-V teaching equipment, using the pastoral tribal language.

These vans are operated out at the manyattas (tribal settlements) by Range Certificate holders from the Animal Health and Industry Training Institute (AHITI).

The range curriculum at the AHITI extends through 3 terms and includes biology, physics, chemistry and forage crops in the first term. Terms 2 and 3 cover ecology, animal husbandry, range management, economics and ranch organization. There are 2 weeks of field-trip and 12 of practicals. When employed these men will be paid \$45 to \$80 per month, about half as much as Egerton diplomates. Refugees from several countries are learning at AHITI.²

²These details furnished by Samuel Chumo and George Ayiga, ex-Egerton 1966, both of whom taught Range Management at AHITI.

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In Uganda the non-degree agricultural colleges at Arapai and Bukulasa and the Veterinary Training Institute, Entebbe, and in Tanzania, Tengeru Agricultural Training Institute near Arusha have been turning out diplomates with incidental instruction in range management. The same is true of the agricultural college of University of East Africa, Makerere, Kampala. Actually, senior students in agriculture at Makerere have done some very comprehensive range studies.

The College of African Wildlife Management, Mweka, near Moshi, Tanzania, makes an important contribution to range education. We take the liberty of quoting from Leslie Robinette's reply to an inquiry. Robinette has taught range ecology there about 5 years.

"We give only one course in range management but it consists of approximately 3 hours of lectures weekly for 28 weeks covering such topics as plant physiology and ecology in relation to grazing, vegetation measurement techniques, enough statistics to appreciate what is involved in sampling, condition and trend, etc. Emphasis has been on range management as it relates to big game but competition between game and livestock is touched upon. On safari we applied many of the vegetative techniques, observed and discussed range condition and trend but again with much of the emphasis on game ranges. About 12 weeks are spent annually on safari and about one fourth of this time has been spent on range problems."

May we now return to examine Egerton College. It is a quasi-governmental boarding school established in 1939 for the sons and daughters of British farmers in the White Highlands. One of the most modern buildings is J. F. Kennedy Dining Hall. The last white student departed in 1965. The College is near Nakuru, seat of the Rift Valley Province. Although only 30 miles from the equator, the climate is pleasant, 50–80 F.,

owing to the elevation, 7,400 feet. The mean annual precipitation of 36 inches is separated by two very dry seasons into the long rains and short rains.

During 1965, a 2-year curriculum was devised with all the range courses coming the second year (Robertson and Jensen, 1966). Seventeen volunteers were received who had completed their first year in either crops or animal husbandry. Egerton students at that time numbered about 200, most of whom had Division II passes in the Cambridge secondary certificate. Division I passers usually accept employment, enter a university, or do higher certificate, i.e. specialized fifth and sixth years in secondary school. Examinations, pass levels and university admission standards are as described by Craig (1969). Most Egerton students are on bursaries (scholarships) from their governments, the remainder from institutions such as banks, the Agha Khan Fund and the Kenya Farmer's Association. Nearly all the African students are from peasant families. The Asian students are from mercantile pursuits. They comprise 10–15% of the student body. About half of the range students come from outside of Kenya, mostly from Tanzania and Uganda.

Two range courses are taught for non-range diploma streams. General agriculture, animal husbandry, farm management and agricultural education majors are required to hear 20 lectures on "Range management in East Africa." Engineers have 10 lectures and 20 hours of practicals in "Range developments." Enrollment in these classes was 106 in 1969.

The 2-year range diploma program was in vogue only one year. While executing it, the 3-year curriculum was framed. All curriculum planning was in consultation with the Division of Range Management, Kenya Ministry of Agriculture.

Before elaborating upon the 3-year curriculum, we would like to

try to communicate some feeling for the 2-year diploma holders who were posted as range officers, resettlement officers, UNDP assistants, etc. Some were sent into situations as pioneers without sufficient supervision. The following excerpts are from a letter from a 2-year diplomate, 3 months ex-Egerton, posted to a pastoral district.

"It is not safe to move about. At the moment there is a curfew 6:30 PM to 6:00 AM. I live 3 miles from town. We are 3 officers only and it is extremely lonely up here. We are open to danger at anytime and all means of communication with the rest is pretty poor. In these N. E. districts the people are being settled in villages. The ground is completely denuded except the evergreen *Euphorbia* fed on by camels. All the cattle are emaciating at a very high rate. Security cannot allow these cattle to be grazed outside for they may act as a source of food for the Shifta.

The Turkana, hopeless and hungry people are mainly immigrants and nobody accepts them. The number at the moment amounts to over 3,000 people. It is my duty to settle them, where, I do not know."

The Shifta (Somali raiders) problem was settled by negotiation in 1968 and long-delayed progress in range development is now possible in the wholly pastoral Northeastern Province, east of Lake Rudolph and north of the Tana River.

This letter of October 1966 contained much more about the tribal hostility, conflicting religious beliefs, floundering ranching cooperatives, and malaria.

The government of Kenya found by experience that young range officers from cultivator tribes were not well accepted by their pastoral constituents, because of language differences and lack of background in animal husbandry. Accordingly the selection board set pastoral background as one criterion whereas applicants for other di-

Table 1. Summary of subjects studied by range management students, Egerton College, Njoro, Kenya, 1969.

Subject	Contact hours	
	Lecture	Practical
Agricultural engineering Hand tools, engines, machinery maintenance, surveying, hydrology, water development, engineering drawing	94	188
Animal science Farm work, breeds, nutrition & feeding, veterinary management, livestock records, cattle-sheep-goat husbandry	185	100
Botany General (agr. plants), physiology, taxonomy, ecology	80	40
Chemistry Inorganic, biochemistry (basic organic plus physiological), soil & fertilizer, soil genesis, physics & classification	78	96
Crops E.A. agriculture, general crop husbandry, forage crops	70	45
Discussion Students may raise any subjects for discussions	6	0
Economics General, prices & marketing, production, national development, credit, records & accounting, budget analysis, labor & office management, range economics	210	0
Electives	0	0
English	32	0
Extension Sociology, teaching methods, extension, history & policies	60	0
Game management	84	136
Government procedures	20	0
Mathematics Arithmetic, basic algebra, graphics	32	0
Range management Principles, forage values, inventories, improvements, management planning, literature, fire management, water supply, safari, seminar	266	310
Soils	40	60
Zoology	112	72

ploma streams were just selected on the basis of academic record and personality. The pastoral background criterion for range students is credited with bringing about the lowest grade point average of all diploma streams, but the best athletic records. Range has more than its share of sports captains.

The range curriculum was expanded and further adapted to East African needs during 1967-1969. In the 3-year curriculum there are 9 terms. Each term is 10 weeks of instruction and one of examinations, except term IX which is shortened to 5 weeks to allow for final exams. Compared with a cur-

rent United States range curriculum, Egerton is more rigid (Table 1).

Range majors meet an hour per week for 6 weeks during the first term to get acquainted and find out what range management is about. Each student takes the floor to explain where he came from, why he is there and to stand questioning. The 1967 intake of 26 students represented 20 tribes. Secondary and college level boarding schools in East Africa are excellent melting pots. Much of the old tribal hostility is overcome, an important factor in political stability in East Africa.

Range management is not scheduled in the second and fourth terms. Range instruction resumes in the third term with an introductory course of 20 contact hours, half as lectures. The second and fourth terms are devoted to english, mathematics, engineering, biology, chemistry, forestry and animal husbandry. Range is taught in each of the last 5 terms.

A 2-week range safari and 3 weeks game management instruction at the College of African Wildlife Management occupies the interval preceding the ninth term. Much of the wildlife experience is obtained on safari in game parks. Tentage, cots, and utensils were donated to Egerton in 1966 by U.S. Agency for International Development. Use of this equipment has made it possible for the Government of Kenya to give vacation employment on range projects—a very important part of range education.

At the end of the ninth term, the students face 5 days of written and oral examinations. The five examinations are:

1. Range management I, vegetation, physiology, ecology, and grazing systems.
2. Range management II, improvements, surveys and sampling, and information sources.
3. Animal health and husbandry.

4. Crop husbandry and agricultural engineering.
5. Economics, extension, and farm management.

Outside examiners are invited in to question each student and submit their reports to the Principal. In borderline cases, they re-evaluate examination papers. In the event of a final grade just below passing, the student is usually permitted by the Academic Council to repeat the examinations after a month or more of study.

At the time the range management curriculum was established, the ninth term examinations were the primary criterion for granting the diploma. Presently, the ex-

aminations count 25% while the grade point average (a recent innovation) counts 75% toward the final evaluation.

Standards have been upheld and scholastic competition has been keen. About 80% of the intake have received diplomas. Of the 14 range diplomates, 3 have earned B.S. degrees and 2 M.S. degrees at the University of Arizona. David Mbuvi received his M.S. and is now a lecturer at Egerton. George Ayiga came over in September, after 3 years in research and teaching in Kenya. Three from the class of 1968 are studying range management, agricultural economics, and game management in the U.S.A. At least one from the 1969 class is

presently studying in the U.S. All of these people were awarded "AID" Scholarships strictly on merit. Neither political nor consanguineal criteria were applied in making these selections.

Given the blessing of continued political stability, range education can be expected to flourish. Their need is greater than ours and their problems more formidable.

Literature Cited

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