

If values education is to become a respected part of the university curriculum, help will be needed from those professionally trained in ethics, philosophy, religion, and the social sciences. Philosophers, indeed humanists from every field, will need to focus not only on the specialized concerns of their own discipline, but should also engage in active dialogue with scientists and technicians. Universities should give a far more prominent role to "philosophy of" courses: philosophy of science, of art, of politics, of natural resource management — the list is as comprehensive as culture itself.

The model of interaction we have established in our environmental values program in the Department of Natural Resources at Cornell is one promising way of achieving optimum understanding across disciplinary lines. It is a model that, hopefully, will be considered by other professional schools across the country.

Notes

1) Dr. Evan Pugh, "What Has Science Done and May Do for Agriculture," talk presented on October 1860 to the Cumberland Agricultural Society, Carlisle, Pennsylvania; recreated and characterized by Dr. Jerome K. Pasto, Associate Dean of Resident Education, College of Agriculture, The Pennsylvania State University, for the Twenty Third National Conference of the National Association of Colleges and Teachers of Agriculture, University Park, Pennsylvania, June 13, 1977.

2) Francis Bacon, *Thoughts and Conclusions*, in *The Philosophy of Francis Bacon*, B. Farrington, ed. and trans. (Chicago: University of Chicago Press, 1966), p. 92.

3) Norman J. Faramelli, "Ecological Responsibility and Economic Justice: The Perilous Links Between Ecology and Poverty." *Andover Newton Quarterly*, vol. 11, no. 2 (November 1970), p. 84.

4) See Robert M. Pirzig, *Zen and the Art of Motorcycle Maintenance* (Bantam Books: New York, 1974).

5) Samuel Johnson, *Rasselas* (Chicago: A. C. McClurg and Company, 1889), p. 96 [Quoted in C. S. Lewis, *The Abolition of Man* (New York: Macmillan Publishing Co., Inc., 1947), p. 50].

6) Jefferson presents his plan for an agrarian society in *Notes on the State of Virginia* (1781), the only book he ever wrote. Historian Douglas Steeples writes in "Land, Law, and the Good Society" (unpublished manuscript, 1977, pp. 5-6): "The thrust of American public land law, and to an appreciable extent of property law, followed Jefferson through much of the nineteenth century. . . . In short, land law operated, with property rights more generally, as a means of achieving a larger goal — the ethical goal of constituting and supporting the good society. Law was the intentional device by which to realize a social ideal, using property rights, especially in land, as the material foundation for so doing."

7) Wayne C. Booth, *Modern Dogma and the Rhetoric of Assent* (Chicago: The University of Chicago Press, 1974), p. 104.

8) Morrill Act, Sec. 4, July 2, 1862, c. 130, 12 Stat. 503.

9) In many situations, of course, it is private investment that causes surrounding land to become more valuable for development. For instance, note the effect of Disney World on land values in and around Orlando, Florida. But insofar as the developer could not function at all apart from society's protection, willingness to buy his products or services, etc., it does not seem unjust to insist that any increase in development value of surrounding land be assumed by society. In any case, it remains clear that the owner of such surrounding land did not himself create the increase in development value and thus does not deserve to profit from it.

10) See R. W. G. Bryant, *Land: Private Property Public Control* (Montreal: Harvest House Ltd., 1972) for a wealth of background material on this subject.

11) Marion Clawson, "Why Not Sell Zoning and Rezoning? (legally, that is)," *Cry California*, vol. 2, no. 1 (Winter 1966-67), pp. 9, 39.

12) Cf. Gunnar Myrdal, *An American Dilemma* (Harper and Brothers Publishers: New York, 1944), pp. 225-226.

13) C. S. Lewis, *The Abolition of Man* (New York: Macmillan Publishing Co., Inc., 1947), pp. 79-80.

Canadian Enrollment In Agriculture And Veterinary Medicine

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Abstract

From 1973-1977 undergraduate enrollment in agricultural colleges and two-year diploma programs in Canada increased. Enrollment at the M.Sc. level also increased, but it was static at the Ph.D. level.

Student enrollment in colleges in agriculture has increased at a consistent rate of approximately 6 to 9 percent each year in the 1970's. Such increases are general across all of North America. Statistics reported in the *NACTA Journal*, December 1976 show an increase of 35 percent in student enrollment in member institutions of NASULGC during the period 1973 to 1976 inclusive. Faculties of Agriculture in Canada have experienced similar increases.

Undergraduate Enrollment

Enrollment in 4 year programs in Canada (Table 1) increased 44 percent during the period 1973 to 1977. Enrollment more than doubled at Laval University during this period. Macdonald College increased 86 percent and

the University of Saskatchewan increased 49 percent. At the Ontario Agricultural College enrollment increased 33 percent even though "restraints" on student enrollment have been in effect since 1975. The OAC is the largest of the eight faculties of agriculture with 33 percent of the Canadian students enrolled in 4 year programs. The OAC is the only faculty that is presently restricted in admitting all qualified applicants. The University of Alberta and the Nova Scotia Agricultural College are presently operating at full capacity and may be restricted in admitting all qualified students in the immediate future.

Increases in student enrollment in two year diploma programs are less dramatic; enrollment increased 31 percent in the 1973-77 period. The largest diploma program is at the Ontario Agricultural College with 27 percent of the total enrollment in Canada. The admission of students to the Diploma program at OAC is even more restrained than it is in the 4 year program. Increases in 2 year enrollment of 40 to 45 percent have been experienced at Macdonald College, Manitoba, and Saskatchewan during the period under review.

Other institutions offer diploma programs in addition to the faculties of agriculture at Canadian universi-

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Table 1 Undergraduate Enrollment Canadian Faculties of Agriculture and Veterinary Medicine

	AGRICULTURE			
	September 1973		September 1977	
	2 Year Diploma	4 Year Degree	2 Year Diploma	4 Year Degree
Nova Scotia				
Agricultural College	207	168	257	183
Laval University ¹	---	451	---	977
Macdonald College	58	376	84	698
Ontario Agricultural College	285	1556	336	2074
University of Manitoba	202	475	286	587
University of Saskatchewan	212	311	297	462
University of Alberta ²	---	700	---	885
University of British Columbia	---	306	---	378
Total	964	4343	1260	6244

1. Laval enrollment includes students in Home Economics.
2. Alberta enrollment includes students in Forestry.
3. Data obtained from the National Statement by the Faculties of Agriculture and Veterinary Medicine at Canadian universities.

VETERINARY MEDICINE

	September 1973	September 1977
University of Montreal	230	281
Ontario Veterinary College	402	471
University of Saskatchewan	242	256
Total	874	1008

Table 2 Graduate Enrollment Canadian Faculties of Agriculture and Veterinary Medicine¹

	AGRICULTURE					
	September 1973			September 1977		
	M.Sc.	Ph.D.	Diploma	M.Sc.	Ph.D.	Diploma
Laval University	85	17	--	94	11	--
Macdonald College	80	58	--	141	64	--
Ontario Agricultural College	202	69	--	239	65	--
University of Manitoba	126	77	--	165	70	--
University of Saskatchewan	66	25	2	88	34	3
University of Alberta	100	49	--	143	51	8
University of British Columbia	79	37	--	92	41	--
Total	738	332	2	962	336	11
VETERINARY MEDICINE						
University of Montreal	13	--	4	16	--	6
Ontario Veterinary College	32	18	16	42	22	19
University of Saskatchewan	9	10	15	30	18	2
Total	54	28	31	88	40	27

1. Data obtained from the National Statement by the Faculties of Agriculture and Veterinary Medicine at Canadian universities.

ties. In the Province of Ontario the Ministry of Agriculture and Food operates four Colleges of Agricultural Technology with 754 students in two year programs in addition to the 336 students at the O.A.C. Similar situations exist in the Provinces of Quebec and Alberta; unfortunately enrollment data is not available.

Student enrollment in veterinary medicine has increased modestly (15 percent) from 874 students in 1973 to 1008 students in 1977. No further increases are expected in the immediate future as all three faculties are operating at maximum capacity and no increase in physical facilities is being planned at the present time. Graduate student enrollment in veterinary medicine is also expected to continue at the present level.

Graduate Enrollment

Enrollment increases at the graduate level are much lower. Although graduate student enrollment at the M.Sc. level has increased 30 percent there has been no change at the Ph.D. level. The number of Ph.D. students available for employment in agricultural research is significantly below demand (Jenkinson, 1977). The demand for Ph.D. graduates in Canada is presently 50 percent greater than the supply of Canadian trained Ph.D. graduates.

The increasing number of retirements and the projected vacancies in agricultural research in the next 10 years numbers 670 or 42 percent of the 1600 research scientists presently employed in agriculture in Canada. These projections (conservatively) assume that there will be no new positions in agricultural research created above the present compliment and the increase of 30 percent at the M.Sc. level is encouraging; hopefully a significant proportion will continue in Ph.D. programs following the completion of their M.Sc. program.

Summary

During the 1973-77 period enrollment in undergraduate programs has increased 31 percent in two year diploma programs and 44 percent in 4 year degree programs at faculties of agriculture in Canada. The increase of 30 percent at the M.Sc. level is encouraging. At the Ph.D. level student enrollment is static. There is some concern in Canada that there will be a deficiency in the number of Ph.D. graduates that will be required to fill the demand for agricultural researchers in the next 10 years.

Many faculties are now experiencing increasing strain on faculty and/or physical resources. There has been little, if any, increase in faculty resources to cope with the increasing student enrollment.

References

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