

1	13	Miscellaneous requested addresses	Miscellaneous requested addresses (list included)	1984-1995	Text	Open	Open
2	14	Some of Bentley's Publications	Some of Bentley's Publications (*listed - items 219-232)	1993-1996	Text	Open	Open
2	15	Speaking notes for 31 of Bentley's requested addresses	Speaking notes (#1-31) of Bentley's requested addresses (*listed - items 1-31)	1971-1987	Text	Open	Open
2	16	Miscellaneous Speaking notes for and 30 of Bentley's addresses	Miscellaneous Speaking notes for and 30 of Bentley's addresses (listed items 1-30)	1970-1994	Text	Open	Open
2	17	Sustainability presentations or reports related to soil, environment, and use	Sustainability presentations or reports related to soil, environment, and use (listed)	1981-1983	Text	Open	Open
2	18	CBC Radio talks	CBC Radio talks: 49 CBC three-minute items related to agriculture (listed)	1974-1978	Text	Open	Open
2	19	Personal submissions and letters to the editors and politicians	Personal submissions and letters to the editors and politicians (about 25-30 - listed)	1974-1993	Text	Open	Open
2	20	Lecture outlines and assembled information for requested lectures to Engineering and Biology classes	Lecture outlines and assembled information for requested lectures to Engineering and Biology classes (list included)	1988-1995	Text	Open	Open
3	21	Lecture materials for Eng. 405	Lecture materials for Eng. 405 (list included)	1993-1995	Text	Open	Open
3	22	"Agricultural Land and Canada's Future"	"Agricultural Land and Canada's Future": Materials assembled for a lecture tour to the 18 branches of the Agricultural Institute of Canada	1981-1982	Text	Open	Open
3	23	"Communications Course" AgFor 204	Materials for Bentley's "Communications Course" AgFor 204, which he had developed over a 20-year period (list included)	[1973-1986]	Text	Open	Open
3	24	Intro to Soil Science 300	Intro to Soil Science course #300 (not for Agriculture students) course materials (list included)	[1970s]	Text	Open	Open
3	25	Agricultural Talks, etc. by Bentley	Agricultural Talks, etc. by Bentley: an assembly of 26 major requested addresses (list included)	1955-1968	Text	Open	Open
3	26	Bentley publications	Bentley publications: copies of some publications, consulting reports, manuscripts for addresses, notes for some requested addresses, and radio three minute spots (list included)	1946-1996	Text	Open	Open
3	27	Bentley submissions for parliamentary reforms and policies in Canada	Bentley invited (and some not invited) submissions for parliamentary reforms and policies in Canada (list included)	1984-1993	Text	Open	Open
4	28	Miscellaneous selections	Miscellaneous selections: technical, and/or political, writings by well-known scientists or writers (list included)	1968-1987	Text	Open	Open
4	29	Bentley Writings/Speakings	Bentley Writings/Speakings: publications, talk papers, typed talk notes, and some written talk notes (list included #1-29)	1946-1995	Text	Open	Open
4	30	Bentley Writings/Speakings	Bentley Writings/Speakings: publications or technical addresses, talk papers, typed talk notes, and some written talk notes (list included #30-55)	1962-1970	Text	Open	Open
4	31	Bentley Writings/Speakings	Bentley Writings/Speakings: publications, talk papers, typed talk notes, and some written talk notes (list included #56-84)	1970-1975	Text	Open	Open
4	32	Bentley Writings/Speakings	Bentley Writings/Speakings: publications, talk papers, typed talk notes, and some written talk notes (list included #85-113)	1975-1981	Text	Open	Open
4	33	Bentley Writings/Speakings	Bentley Writings/Speakings: publications, talk papers, typed talk notes, and some written talk notes (list included #114-136)	1980-1983	Text	Open	Open
5	34	Bentley Writings/Speakings	Bentley Writings/Speakings: publications, talk papers, typed talk notes, and some written talk notes (list included #137-165)	1984-1988	Text	Open	Open

5	35	Bentley Writings/Speakings	Bentley Writings/Speakings: publications, talk papers, typed talk notes, and some written talk notes (list included #166-193)	1988-1989	Text	Open	Open
5	36	Bentley Writings/Speakings	Bentley Writings/Speakings: publications, talk papers, typed talk notes, and some written talk notes (list included #194-218)	1990-1992	Text	Open	Open
5	37	Urban Geology of Edmonton	Geology of Edmonton maps. <i>Urban Geology of Edmonton</i> by C.P. Kathol and R.A. McPherson (list of maps included)	[ca. 1975]	Maps and Text	Open	Open
5	38	"Low Dose Risk Assessment"	"Low Dose Risk Assessment" written and published by W.E. Harris, Department of Chemistry, University of Alberta	1995	Text	Open	Open
5	39	"Western Canadian Agriculture: The Land and People Resource Base"	"Western Canadian Agriculture: The Land and People Resource Base" by C.F. Bentley (paper commissioned by the Canada West Foundation)	November, 1979	Text - spiral bound	Open	Open
5	40	"Potential usage of Algoma Ammonical Wastewater as a Source of Nitrogen for Fertilizer"	"Potential usage of Algoma Ammonical Wastewater as a Source of Nitrogen for Fertilizer" (draft report) by C.F. Bentley prepared for the Algoma Byproducts Corporation	January, 1989	Text - spiral bound	Open	Open
5	41	"Agronomic and Environmental Management of Edmonton Compost on Highvale and Whitehead Mine Soils"	"Agronomic and Environmental Management of Edmonton Compost on Highvale and Whitehead Mine Soils" (Part 1) by Bentley et al, prepared for TransAlta Utilities Corporation	August, 1995	Text	Open	Open
5	42	Bonn Conference	Pre-conference background soils paper "Enhancing Agricultural Production: Potentials, Constraints, and Alternative Uses for Soils: Applications of Soil Science" by Bentley et al	August, 1979	Text	Open	Open
5	43	Bonn Conference	Post-conference "Soils Panel Report"	December, 1979	Text - spiral bound	Open	Open
6	44	"West Africa Agricultural Research Review (WAARR) Sahel Sector"	West Africa Research Summary for French West Africa by Bentley and Ouellette (consultants to West Africa Projects Department) for the World Bank	November, 1985	Text	Open	Open
6	45	"West Africa Agricultural Research Review (WAARR) Sahel Sector"	World bank Report: West Africa Research Review (Sahel sector) by Bentley and Ouellette for the World Bank, plus reports of others for numerous other West Africa Countries	1985	Text	Open	Open
6	46	"Soil Degradation in Canada: A Review and Assessment of the Situation in Alberta"	"Soil Degradation in Canada: A Review and Assessment of the Situation in Alberta" by C.F. Bentley prepared for the Science Council of Canada	October, 1984	Text - spiral bound	Open	Open
6	47	"Agriculture/Environment Interactions in Western Canada"	"Agriculture/Environment Interactions in Western Canada" by Leskiw, Wamsley, & Bentley prepared for Environment and Statistics Canada	March, 1983	Text - spiral bound	Open	Open
6	48	"Sustainable Use and Improvement Possibilities for Alberta lands of Limited Agricultural Capabilities"	"Sustainable Use and Improvement Possibilities for Alberta lands of Limited Agricultural Capabilities" by Bentley prepared for Resource Planning Branch of Alberta Agriculture	March, 1989	Text - spiral bound	Open	Open
6	49	Miscellaneous collection of material related to Canadian poverty and its related problems	Miscellaneous collection of material related to Canadian poverty and its related problems - Bentley correspondence, reference material, and notes	1934-1990	Books and loose text	Open	Open
6	50	"Biochemical Bases of Host Plant Resistance to Insects"	National Symposium on "Biochemical Bases of Host Plant Resistance to Insects" proceedings of the National Academy of Agricultural Sciences at the Indian Agricultural Research Institute, New Delhi	1996	Hardcover book	Open	Open
6	51	National Academy of Agricultural Sciences	National Academy of Agricultural Sciences year book, India	1994 & 1997	Soft cover books	Open	Open
6	52	Khonkaen Institute of Technology (KIT)	Bentley/Rohner proposal to establish an Agriculture College in Thailand at KIT	1962	Text - spiral bound	Open	Open
7	53	Bentley lead Canadian Agricultural Task Force in India	Report of the Canadian Agricultural Task Force in India to the External Aid Office Government of Canada, Ottawa	March, 1968	Text - spiral bound	Open	Open
7	54	Bentley lead Canadian Agricultural Task Force in India	Bentley lead Canadian Agricultural Task Force in India: Summary of the Task Force in India above	March, 1968	Text - spiral bound	Open	Open

7	55	CIDA	Bentley represented Canada at a meeting of agricultural representatives of assistance agencies in Italy. Included are copies of the materials received at the meeting [Re: Global Agri. Ass.]	1970	Text	Open	Open
7	56	"Photographs and Descriptions of Some Canadian Soils"	"Photographs and Descriptions of Some Canadian Soils" based on the display of Canadian Soils at the Congress of the International Society of Soil Science	1978	Hardcover book	Open	Open
7	57	Bonn Conference	Soils Panel Report ed. by Bentley	December, 1979	Text - spiral bound	Open	Open
7	58	Bonn Conference	Bentley's speaking notes about soils at closing session	October, 1979	Text	Open	Open
7	59	Bonn Conference	The Soils Report prepared for the Conference "Agricultural Production: Research and Development Strategies for the 1980s"	October, 1979	Bound text	Open	Open
7	60	The Klinck Lecture	Bentley gave the spoken version of this lecture at all 27 branches of The Agricultural Institute of Canada (AIC)	1981-1982	Text	Open	Open
7	61	Preparatory materials for various addresses	A collection of some preparatory materials for various requested/invited addresses by Fred Bentley to a series of Alberta farm Groups	1990-1995	Text	Open	Open
7	62	IDRC PHD dissertation	Pearsonian Internationalism in Practice IDRC: A dissertation submitted to the Faculty of Arts, Division of Social Sciences for PhD candidacy by Peter Stockdale (p. 143 mentions Bentley)	1995	Text	Open	Open
7	63	"ICRISAT at 30: The Historic Journey to the Semi-And Tropics"	An ICRISAT publication regarding 30 years of achievement in agriculture executed in India and other developing countries, letter to Bentley and copy of Indian Prime Minister's visit to ICRISAT in 1992 included.	2002	Hardcover book with loose text	Open	Open
7	64	Origins and History of IBSRAM	A very brief note and correspondence about the origins of IBSRAM	1995	Text	Open	Open
7	65	"Growing Alberta Award"	"Some of the Things That Affected/Motivated My Agricultural Interests & Motivations" Fred Bentley background info by request of "Growing Alberta"	August, 2006	Text	Open	Open
7	66	Collection of materials about the 1932-33 class of the Edmonton Normal School and Agriculture U of A Grads reunions	Collection of materials about the 1932-33 class of the Edmonton Normal School, includes a 1932/33 "The Portal" Yearbook, and Agriculture U of A Grads reunions ! Please note photos from this file are in their own folder and placed in BARD photos Box 13	1932-2003	Text and photos	Open	Open
7	67	Variety of personal or professional items	Variety of personal or professional items -letters, newspaper clippings, etc. (list included)	1978-1999	Text	Open	Open
7	68	Misc. Selections, many sources	Misc. Selections, many sources (list included)	1980-1993	Text	Open	Open
8	69	Ivan Head (former U of A Law prof)	Writings and addresses by Ivan Head (including Klinck lectures) with brief bio by Bentley	1989-1991	Text	Open	Open
8	70	Bentley Odds and Ends	Miscellaneous personal material, residues from many sources and years (list included)	1970-2003	Text	Open	Open
8	71	Bentley Odds and Ends	Retentions when discarding [non-writings] files includes material about ICRISAT, CIDA, IDRC, awards, Royal Society, etc. (list included)	1967-2002	Text	Open	Open
8	72	Letters of congratulations to Bentley	Letters of congratulations to Bentley	1967-2007	Text	Open	Open
8	73	Bentley letters	Letters to editors or miscellaneous other letters (generally in date order)	2004-2006	Text	Open	Open
8	74	Material for requested talks	Letters, lectures, and gathered material for requested talks by Bentley (list included)	1990-2006	Text	Open	Open
8	75	Child Poverty	Bentley items on child poverty and related problems in development assistance	1990-2005	Text	Open	Open
8	76	Copies of a few invited addresses, lectures, etc.	Materials for invited talks, lectures, correspondence, typed and written talk notes, drafts, etc.	1976-2000	Text	Open	Open
9	77	Transparencies list and index	Transparencies list and index - includes explanation regarding Bentley's transparencies, groupings, and list of transparencies by topic	compiled 1990-1999	Text (placed with AV)	Open	Open

9	78	Transparencies for requested talks	Transparencies and lecture notes for requested talks (includes copy of list)	[1961-1999]	AV - transparencies and text	Open	Open
9	79	Data for requested talks	Data used by Bentley for several types of audiences - transparencies and related material	1982-1993	AV - transparencies and text	Open	Open
9	80	Data for requested talks	Data used by Bentley for several types of audiences - transparencies and related material for "Canada's agricultural land resources and some quality relationships"	[ca. 1971]	AV - transparencies and text	Open	Open
9	81	Transparencies for requested talks	Transparencies and lecture notes for requested talks (includes list)	[1978-1994]	AV - transparencies and text	Open	Open
9	82	"Speaking of Science"	Audiocassette series of 12 conversations among scientists and journalists on contemporary themes in science with accompanying program guide	1973	AV - audiocassettes and text	Open	Open
9	83	African Population Data	African Population Data including Bentley concerns about the food deficiency (list included)	1970-1985	AV - transparencies and text	Open	Open
9	84	ICRISAT origins and responsibilities	ICRISAT origins and responsibilities - in 5 categories, list included	1952-1993	AV - transparencies and text	Open	Open
9	85	Socio-Econ. Items for Eng. 405	Socio-Econ. Items for Eng. 405 - transparencies and supporting material (list included)	March, 1994	AV - transparencies and text	Open	Open
9	86	Slides from Travels in India	India: three trips from Hyderabad and three trips from Delhi. Includes photo notes.	1967, 1972	Text and AV - slides (12 sheets)	Open	Open
10	87	About the Helen and Fred Bentley collection of slides and photos from overseas travels	About the Helen and Fred Bentley collection of slides and photos from overseas travels 1951-2001 with preface and explanation (note: not all in order - may refer to items previously listed as they were in other boxes; however, each file has its own description included with its contents)	arranged [ca.2001]	Text	Open	Open
10	88	Slides from 10 countries	Slides from 10 countries: Pakistan, Scotland, China, Tehran, Lebanon, Nepal, IRI, Syria, Tajikistan, Balbek Lebanon explanatory notes are written on the individual slides	1952-1993	Text and AV - slides (10 sheets)	Open	Open
10	89	Tajikistan, Samarkan, Moscow and Leningrad	International Soil Science Society 10th congress USSR slides ("list of contents included)	1974	Text and AV - slides (9 sheets)	Open	Open
10	90	Soils and land resources	Soil profiles, classification, vegetation, and land resources from Alberta, Canada, S. America, Africa, and Eastern Europe (* includes list)	1952-1993	Text and AV - slides (14 sheets)	Open	Open
10	91	Soils and landscapes in Alberta and Canada	Soils and landscapes in Alberta and elsewhere in Canada ("slide catalogue and description included)	1952-1993	Text and AV - slides (8 sheets)	Open	Open
10	92a	Ceylon (Sri Lanka)	Ceylon slides (about 350) * includes listed descriptions for each slide sheet	1952-1993	Text and AV - slides (1-11 sheets)	Open	Open
10	92b	Ceylon (Sri Lanka)	Ceylon slides (about 350) * includes listed descriptions for each slide sheet	1952-1993	Text and AV - slides (12-21 sheets)	Open	Open
10	93	Indonesia	Indonesia with description outlining tour - topics, explanations, comments included in slide sheet descriptions*	1976-1981	Text and AV - slides (11 sheets)	Open	Open
10	94	West Indies and Central America	West Indies and Central America - *slides listed alphabetically with explanations and descriptions	1969	Text and AV - slides (13 sheets)	Open	Open
10	95	Italy	Italy - grouped by location and/or topic, ("slide sheets include listed descriptions of locations, topics, explanations, etc.)	1952-1993	Text and AV - slides (14 sheets)	Open	Open
11	96	Japan	Japan - arranged by topic ("slide sheets include descriptions and explanations)	1967-1988	Text and AV - slides (8 sheets)	Open	Open
11	97	Hong Kong	Hong Kong - * includes slide sheet descriptions	1962-1993	Text and AV - slides (4 sheets)	Open	Open
11	98	India	India - *includes slide sheet descriptions with locations, topics, and explanations	1953-1993	Text and AV - slides (15 sheets)	Open	Open

11	99	Some of the Helen and Fred Bentley collection of slides and overseas travels	Includes a preface and list of contents of the slides and photos of the Bentley's overseas travels from 1951-2001 (note: not all in order - may refer to items previously listed as they were in other boxes; however, each file has its own description included with its contents)	arranged May, 2005	Text	Open	Open
11	100	Miscellaneous collection of professional material	Miscellaneous collection of professional material (*includes photo sheet list and description)	1964-1993	B&W and colour photos and text	Open	Open
11	101	Soil and Crops related - mostly Alberta	Photos relating to Soils and Crops mainly from Alberta, some from rest of Canada and overseas (*includes explanation of numbering and list of sheet descriptions)	1950-1985	B&W photos and text	Open	Open
11	102	Egypt and Wales and writing on stone	Photos of Egypt and Wales (*includes descriptive list)	1992	Colour photos and text	Open	Open
11	103	China	China slides arranged as ten topics/places (* includes list but descriptions written on slides)	[1983]	Text and A/V - slides (10 sheets)	Open	Open
11	104	Sweden, Bangladesh, Australia	Sweden, Bangladesh, Australia (*includes descriptive list but explanations written on slides)	1983-1984	Text and A/V - slides (8 sheets)	Open	Open
11	105	International Soil Congress, Hamburg, and tour and UK visit	International Soil Congress, Hamburg, and post-congress Danish tour and UK visit (*includes descriptive list but explanations written on slides)	1986	Text and A/V - slides (6 sheets)	Open	Open
12	106	McAllister Environmental Services (MES)	MES: reclamation of disturbed soils - restoration reclamation at coal sites (*includes descriptive list but explanations written on slides)	1972-1986	Text and A/V - slides and colour photos (16 sheets)	Open	Open
12	107	Slides from 13 countries	Slides from 13 countries: Australia, Austria, Britain, Denmark, France, Germany, Holland, Hungary, Nepal, Romania, Russia, Switzerland, Thailand - arranged alphabetically (*list included with no comments except location)	1951-2001	Text and A/V - slides (16 sheets)	Open	Open
13	108	Africa and Alberta	1 sheet of Alberta Breton Plots and 14 sheets of Africa (*sheet list included but explanation mostly on the slides themselves)	1951-2001	Text and A/V - slides (15 sheets)	Open	Open
13	109	Africa (13 countries)	Slides of 13 countries, Africa, countries arranged alphabetically (*includes descriptive list of sheets)	1951-2001	Text and A/V - slides (18 sheets)	Open	Open
13	110	Thailand	Slides from 3 months in Thailand, primarily Bangkok, rural farming, Hill Country of the North and Thai Temples (only description is the paragraph included in the "About the Helen and Fred Bentley Collection" a copy of which is included)	Fall 1962	Text and A/V - slides (15 sheets)	Open	Open
13	111	"60th Anniversary Celebrations of His Majesty's Accession to the Throne"	A pictorial commemoration of King Bhumibol Adulyadej 60 year reign	2006	O/S magazine	Open	Open
13	112	Klinck Lecture	Selected remnants of Bentley's transparencies used for various requested addresses * pulled from another grouping, not part of item 76's list)	1970s-1990s	A/V - Mounted transparencies (O/S)	Open	Open
O/S	113	Jiangri Province, China	To Mr. C.F. Bentley in remembrance of his investigation tour Jiangri Province, the People's Republic of China. From Department of Agriculture, Animal Husbandry - S. Fishery" handwritten on inside cover of album, also includes map of china and booklet on Terra Cotta at Xian City	1984	O/S photo album with colour photographs	Open	Open
Ref Shelf	114	Echoes in the Halls	Published book - <i>Echoes in the Halls: An Unofficial History of the University of Alberta</i> - Association of Professors Emeriti of the University of Alberta. The University of Alberta Press, Edmonton, Alberta	1999	Soft cover book	Open	Open

Dr. C. FRED BENTLEY, P. Ag.
Consulting Agrologist

Professor Emeritus of Soil Science
University of Alberta
Edmonton, Canada

Correspondence:
13103 - 66 Ave.
Edmonton, Canada T6H 1Y6
Tel: (403) 435-6523

Listed 3 July 2005

Black Binder #4
Miscellaneous Requested Addresses &
Fred Bentley 1995 - 1984

- | Item # | Topic | Date |
|--------|--|---------------------|
| 219 1. | Recollections from Soils Dept Minn. | (1995) |
| 220 2 | Keynote Address to AB Cons. Village | (500) 1992 |
| 221 3. | Lessons we need to Relearn | (100+) 2002 |
| 222 4. | The Population Problem. | (700 260:100?) 1994 |
| 223 5. | Re Klein Govt. to Emeriti Profs. | (45?) 2002 |
| 224 6. | An Angry letter to Environment Canada. | 1990 |
| 225 7. | Convocation Address U of A | (2500) 1990 |
| 226 8. | Soil Conservation Letters | 1989 |
| 227 9 | Convocation Address U. of Guelph | 1984 (700?!) |

- 9 1 219 Bentley, C. F. 1993. Is a multidisciplinary research project needed? Proceedings 30th Alberta Soil Science Workshop, Edmonton. February. p. 171-176.
- 9 1 220 Bentley, C. F. 1993. An overview of IBSRAM challenges and opportunities. From: minutes of IBSRAM Board meeting 17 June. 2 p.
- 9 1 221* Hermans, J. C. and C. F. Bentley: 1993. Focus group Workshop for: Internal Sustainable Land Management Workshop, Univ. Lethbridge, AB. 30 p.
- 9 1 222 Bentley, C. F. 1993. Key issues for living on a shrinking planet: (Or: Sustainable agriculture on a finite planet with increasing population and economic growth.) To: Annual Meeting of "Earthkeeping" at Nisku, AB. Speaking notes. 6 p.
- 9 1 223 Bentley, C. F. 1994. A critical response to Canada Immigration's "Town Hall Meeting" at Univ. AB 28 June 1994. Original statement (& attachments) and, a reproduction in the nationally distributed SusPop News (Newsletter of Cdn. Pop. Action Network. Sept. 1994.) are attached.
- 9 1 224 Bentley, C. F. 1994. The population problem: ramifications and implications. Lecture to Zoology 220. Jan. 25. 10 p. (Copies of two pages of selection of hilites from: "Population Summit of World's Scientific Academies" were distributed.)
- 9 1 225 Agricultural Institute of Canada. 1994. Melding the compassionate with the competitive. Requested brief to the Govt. of Canada Foreign Policy Committee; Prepared by AIC Members: Dumanski, Hulse, Heald, Bentley and McNabb. 5 p.
- 9 2 226 Bentley, C. F. 1994. Objectivity lacking in ethanol argument. AgrSci. December.
- 9 2 227 Leskiw, L. A., Lynette Esak, C. F. Bentley and F. D. Cook. 1995. Agronomic and environmental management of Edmonton compost on Highvale and Whitewood mine soils. Contracted report by Can-Ag Enterprises prepared for TransAlta Utilities in support of that Company's proposal to contract for processing and disposal of City of Edmonton landfill materials. 30 p. (April 1996: proposal seemingly accepted.
- 9 2 228 Bentley, C. F. 1995. IBSRAM: the initial concept and its development. Requested article in the Tenth Anniversary issue of IBSRAM's Newsletter # 37. p. 15-17.
- 9 2 229 Bentley, C. F. 1995. Public benefits from the agricultural sciences, and some current considerations. Address to Camrose AB Rotary Club. 4 October. 6 p.
- 9 2 230 Bentley, C. F. 1995. Population: the world's and Canada's No. 1 problem. Address to P.O.W. Veterans Group, Royal Canadian Legion, Edmonton. 6 October. 5 p.
- 9 2 231 Bentley, C. F. 1995. Perspectives of the changes that have occurred in the last 25 years: and views regarding the directions a research organization like IDRC should take in the next five to ten years. Presentation as one of four former Governors of IDRC to members of the Centre's staff during the 25th Anniversary activities at the Centre. Ottawa, 26 October. 10 p.
- 9 2 232 Bentley, C. F. 1996. Sustainable agricultural systems for agriculture. Panel discussion presentation at the Annual Meeting of the AB Chapter and U.S. NW Section of The Wildlife Society. Banff AB 29 March. 13 p.

Contents of Bk 10. not stored in computer.

2007-08-15

Contents of Red 2" Ring Binder of Bentley's Speaking Notes as Listed Below

(Typed 16/1/1996 by C. F. Bentley)

1. Bentley, C. F. 1971. CIDA and agricultural development assistance. Soil Sci. seminar. 3 Feb. (Speaking outline.) 3 p. & attachment
2. Bentley, C. F. 1971. Agriculture and environmental challenges. UNIFARM pollution seminar. (Speaking outline. 4 March.) 4 p.
3. Bentley, H. S. & C. F. & guest s. 1971. Taped TV clips with Producer Bill Burley of UA video staff. (Taped five items: 23 (2 items), 26, 28 and 29 April. at UA studio.) 15 p. of materials.
4. Bentley, C. F. 1971. Improvement of food production through the export of resource materials and resource personnel. Requested contribution to a symposium at U. of T. organized by the Nutrition Society of Canada. 16 June. 9 p.
5. Bentley, C. F. 1971. Enhancing the capability of Canadian universities to contribute to development assistance by means other than training. Requested contribution to meeting #2 of a CIDA/University of Alberta workshop at the U of A. 28 June. 9 p.
6. Bentley, C. F. 1972. Population increase and mankind's problems. Notes for address to Edmonton Branch, Cdn. Institute of International Affairs. 24 January. 9 p.
7. Bentley, C. F. 1972. Unacknowledged problems facing industry and educators. Requested presentation at the Canadian Vocational Association Convention, in Edmonton. 31 May. 13 p.
8. Bentley, C. F. 1972. Fertilizers for turf. Address to the Alberta Turf Association annual meeting. Calgary. 14 April. 5 p.
9. Bentley, C. F. 1972. The international agricultural research institutes ---with emphasis on ICRISAT. Soil Science seminar presentation. 4 October. 6 p.
10. Bentley, C. F. 1972. Optimum population for Alberta. Panel discussion presentation to the annual general meeting of the Public Advisory Committees of the Environment Council of Alberta. 20 October. 2 p. outline.
11. Bentley, C. F. 1973. The international agricultural research institutes. To Edmonton Branch A.I.A. (??) January. 3 p. outline.
12. Bentley, C. F. 1973. Land: the basic resource. Presentation to the annual Service Board Conference in Edmonton, Transcript from tape recording of presentation. 10 p. 27 February. (Also 7 page outline from which the presentation was made.)
13. Bentley, C. F. 1973. Comparative community development. Notes for presentation to Inter-Disciplinary Seminar 601 (Dept. of Rural Economy ??) 17 October. 5 p.
14. Bentley, C. F. 1973. Population and poverty. Lecture to student at AB Vocational Centre. 5 p. of notes.
15. Bentley, C. F. 1973. Should we use the cold turkey treatment for drug addicts? Presentation to a requesting group (now forgotten!) 14 November. 7 p. (including backup items.)

Contents Bk #10. *not in computer.*

16. Bentley, C. F. 1979. Needed: Food production oriented research for the tropics. Presentation to Lethbridge Res. Sta. scientists and visitors. Date not recorded. 10 p. notes.
17. Bentley, C. F. 1982. Elements of applied soils for; Reclamation of soils with oils. Lakeland college, Lloydminster Campus. 9 June. 7 p. notes & about 10 transparencies.
18. Bentley, C. F. 1982. Diary and notes from Fred's month as a visiting professor at the College of Agric., Univ. of Guelph. Month of January. About 20 p.
19. Bentley, C. F. 1982. Challenges to feed the world. A keynote address to the Ontario Fieldmen's Conference. Univ. of Guelph 6 January. 8 p. notes.
20. Bentley, C. F. 1984. Understanding tropical soils. Seminar presentation to scientists at the Internat. Institute for Tropical Agriculture (IITA), Ibadan, Nigeria. 13 April. 8 p. notes..
21. Bentley, C. F. 1984. ICRISAT: its role, funding and activities. Agric. seminar at U of A. 10 transparencies.
22. Bentley, C. F. 1984. Opportunities & need for soil research on the Prairies. AB Chapter Soil & Water Cons. Soc. Annual meeting, Convention Inn, Edmonton. 23 January. 9 p. notes.
23. Bentley, C. F. 1985. Agricultural land and food for burgeoning populations. Edmonton Br. Cdn Inst. Internat. Affairs. U. of A. Campus 31 January. 3 p. detailed notes.
24. Bentley, C. F. 1985. Opening address at a Workshop at ICRISAT, India: IBSRAM and a proposal for a Vertisol Network in Africa. 18 February. 6 transparencies only.
25. Bentley, C. F. 1985. Seminar Presentation to Soils Dept. U of A. Presenting a seminar; and describing IBSRAM, its purpose and activities. 7 March. 4 p. notes & transparencies used.
26. Bentley, C. F. 1985. Considerations & hazards in consulting abroad by agrologists. Presentation to Sask. Br. Cdn. Consulting Agrols. Assn. Saskatoon, 29 March. 4 p. notes.
27. Bentley, C. F. 1986. Space for notes for address to Edm Downtown Rotary Club 20 February. TO GO HERE IF FOUND!2
28. Bentley, C. F. 1986. Soil conservation around the world; and here at home. AB Agr. Seminar for farmers. Barrhead Alberta. 3 March. 10 p. notes.
29. Bentley, C. F. 1987. Soil degradation and fall of civilizations. Address to the Mediterranean Society of Edmonton. Provincial Museum, Edmonton. 12 February. 9 p. notes.
30. Bentley, C. F. 1987. How to survive as an individual consultant: To CIDA Agricultural Sector Seminar. Edmonton Convention Centre. 13 May. (9 p. of preparation notes.)
31. Bentley, C. F. 1987. Importance and problems of development assistance. To Edmonton Nursing Reserve Assn. Lister hall, Univ. of AB. 13 May. (10 p. of speaking notes.)

- 20
- 9 2 232 Bentley, C. F. 1996. Sustainable agricultural systems for agriculture. Panel discussion presentation at the Annual Meeting of the AB Chapter and U.S. NW Section of The Wildlife Society. Banff AB 29 March. 13 p.

on p. 17

(Binder #11.) Miscellaneous Speaking Notes

(These notes may, or may not, be for addresses that are listed in the 17 page list of 'publications.)

No.	Date	Topic	Place/Group
1	1970/9/19	Economic nationalis m	UNA Edm
2	1974/3/6	Limits to growth	Inst. Pub Admin Edm
3	1974/4/17	World food problems	S. Side Rotary Edm
4	1974/4/24?	Moral & mental aspects of world food problem	Supt Schools Conf Edm
5	1974/5/1	Canada:India comparisons	Vermilion Sch Ag
6	1975/11/25	Botany 501: Ecology seminar	U of A (TYPED 6 p.)
7	1976/3/5	Pharmacology class : overview of agric. & slides	U of A (TYPED 2 p.)
8	1981/4/22	Long-term fert. Pr. Provs. soils	Cdn Soc Envir Biols Edm
9	1985/1/31	African food problems	CIIA
9A	ditto	Supporting data and note for #9	
10	1985/3/18	Soil degradation & food for mankind	UBC Ag Sci 410
11	1986/2/20	Maintaining productivity Cdn agric lands	D Town Rotary Edm
12	1986/3/7	#11 above -- modified	Little Club Edm
13	1987/10/15	Feeding the world's hungry (Panel Can & World)	U of A open forum
14	1988/6/12?	Can we reduce hunger?	Ann Conf Rotary Dist 536
15	1989/3/31	Soil conservation: a global perspective	Soil Cons Can Winnipeg
16	1989/6/6	"Our Common Future" --- as per Bruntland.	AB Women's Inst. Olds AB
17	1990/1/27	Effects of agr. on Prairie ecosystems	AB Fed Naturalists Edm
18	1990/3/1	Biol 300 : Soil conservation & /or dev. asst.	King's College Edm
19	1990/7/22	UA Brunch: 75th anniv Ag Fac U of A at Mayfair	Ag Grads '51 or earlier
20	1990/10/23	IDRC 20th Ann. & H of C Ext. Affairs Com.	IDRC Hq. Ottawa
21	1991/15/2	Sustainability of our agric. : 3 locations 1 day seminars	AIA/SWCS/AB Ag
22	1991/3/4	Chemical pollution & development; Student Internat Wk	U of A
23	1991/4/8	Our role in protecting the environment	GMCC 'Tidbits' for seniors
24	1992/1/13	Agric policies etc for soil cons.	ACTS ann conf Edm
25	1992/4/11	Panel moderator: How wellis agric cover4ed by media?	Media writers ann conf Edm
26	1992/5/19	Sustainable agric for Egypt	Alexandra Egypt
27	1992/10/2	Ditto	Little Club Edm
28	1992/12/3	Progress & needs in practical soil conservation	Sandblasters Cons. Soc.
29	1993/11/24	Sust. agr on a finite planet with pop & econ growth	Earthkeeping, Nisku
30	1994/1/25	Zoo 260/ Pop. problem: nature, ramif. & implications	U of A

Contents Binder Red Drawer # 2
→ #12

2

Contents of Red 2.5" Ring Binder of Bentley 'Sustainability' Presentations or Reports
(Typed 16/1/1996 by C. F. Bentley)

Bentley, C. F. 1981 .Agricultural land degradation: Summation and perspective. AB Soil Science Workshop on the Theme: "Agricultural Land: Our disappearing heritage?" (A two day symposium. at Coast Terrace Inn 25/2/1981. p. 393 - 412 in the printed proceedings.) *a duplication of #119 in Bk 4.*

red Bentley, C. F. and L. A. Leskiw. 1983. An overview of current trends and thinking regarding: The sustainability of the productivity of farmed lands with emphasis on Western Canada. A report prepared for The Canadian Environmental Advisory Council. Report Number 15. (Printed by Minister of Supply and Services, Canada, 1985.) *#134 in Bk #5 p.10*

Bentley, C. F., L. A. Leskiw and M. E. Wamsley. 1983. Agriculture/environment interactions in Western Canada. A report prepared for Environment/Statistics Canada (As part of the background material for Canada's first "State of the Environment Report." 148 pages. *#136 of p.10.*



Removed

1. May 7, 1974 "Reducing the Family Food Bill"
2. May 7, 1974 "Basing Grain Prices on Protein Content II"
3. May 7, 1974 "Needed: A Premium for High Protein Grain I"
4. April 26, 1974 "Appropriate Use of Agricultural Land"
5. March, 1974 "Food Prices"
6. March, 1974 "Bad Laws Encourage Crime"
7. March 5, 1974 "Limits of Growth"
8. March 15, 1974 "A Bad Ban"
9. 1974 "Conserving Energy Resources"
10. 1974 "Thinking People Should Speak Up"
11. 1974 "Those on Fixed Incomes Need Help"
12. February 26, 1975 "World Food Problems"
13. Feb. 26, 1975 "Better Pesticides and Pesticide Use"
14. Feb. 26, 1975 "Feeding Fires of Inflation"
15. Feb. 26, 1975 "The Myth of Canada's Agricultural Resources"
16. Feb. 26, 1975 "Does Food Production Rate Priority?"
17. Feb. 26, 1975 "Food Aid and Self-Sufficiency"
18. Feb. 26, 1975 "The International Agricultural Research Institutes"
19. Apr. 18, 1975 "Immigration Policy and Resources"
20. Oct. 7, 1975 "An Inappropriate Proposal"
21. Nov. 3, 1975 "Do Canadians Favor Abolition of All Executions?"
22. Nov. 3, 1975 "On Priority for Agriculture"
23. Nov. 3, 1975 "Effective Land Control Needed"
24. Nov. 3, 1975 "On Meaningful No's"
25. March 30, 1976 "The Good Soils are Already in Use"
26. March 30, 1976 "Limits to Canada's Population"
27. March 30, 1976 "The Green Revolution is a Boon"
28. March 30, 1976 "The Green Revolution is a Boon (continued)"

29. August 19, 1976 "Does Agricultural Land Need to be Preserved for Future Generations?"
30. August 19, 1976 "A Proposal for Administration and Use of Funds Generated by Levies on Strip Mining Operations"
31. August 19, 1976 "Good Agricultural Land is Still Being Urbanized"
32. August 19, 1976 "Why Isn't Agricultural Production More Efficient?"
33. September 28, 1977 "Support for Agriculture & Food Costs"
34. September 28, 1977 "Priority for Agriculture and Food Production"
35. September 38, 1977 "Agricultural Research Merits Better Support"
36. September 28, 1977 "Keep Prime Agricultural Land for Agriculture"
37. November 28, 1977 "Farming Near Tokyo"
38. November 28, 1977 "Agriculture and National Well-Being"
39. November 28, 1977 "Canada a Food Deficit Country?"
40. November 28, 1977 "The Competitiveness of Canadian Agriculture"
41. December 15, 1977 The Western Producer article re Magnetic seed treatment supported by Urban Pittman, soil scientist, Lethbridge.
42. December 2, 1977 "Research is Needed"
43. December 2, 1977 "A Definite Decision is Needed"
44. December 2, 1977 "Food Self-Sufficiency in Canada"
45. February, 1978. Articles clipped from Vancouver Province, Country Guide and 2 from The Western Producer.
46. March 30, 1978 "Food Self-Sufficiency"
47. March 30, 1978 "Decline of the Canadian Star"
48. March 30, 1978 "Death Control Can Endanger Both People and the Environment?"
49. March 30, 1978 "B.C.'s Agricultural Income Assurance Act"

2007-08-19

(Red) Binder # 14 Drawer # 2

LIST OF C. F. BENTLEY PERSONAL SUBMISSIONS AND LETTERS TO THE EDITORS

Bk & Tab	Y	M	D	Description
VII-1	91	12	5	Submission to: Special Joint Committee on A Renewed Canada. 15 pages and attachments.
2	91	11	1	Draft notes for an address to the Little Club: Canada's Constitution and Related Matters. (9 p.)
2	91	11	1	First draft: Proposals for Canadian Constitutional Changes and Election Reforms. 6 pages.
3	91	5	25	Submission to: Special Select Committee Of the Alberta Legislative Assembly on Constitutional Changes and Election Reforms. 6 pages.
				Summary of the foregoing item on two pages.
4	91	2	15	Personal submission to: Citizen's Forum on Canada's Future. 6 pages. Attachments too. <i>Incl: From/i Susan Garner</i>
4	90	11	1	Letter to Jean Chretien: Some suggested Policies, Programs and Philosophies for the Govt. of Canada.
5	84	1	3	Brief submitted to: The Alberta Govt. Committee to conduct Public Hearings on: Maintaining and Expanding the Agricultural Land Base in Alberta. 21 pages.

Tab #

LETTERS TO THE EDITORS (PARTIAL LIST ONLY)

7	93	10	2	Hopes of return to boom times are unrealistic (Edm. J.)
7	93	9	30	Food price article had errors. (Western Produce)
7	93	5	10	Some Klein proposals sheer vote-begging. (Edm. J.)
7	93	3	8	Mulroney lacked qualities people want. (edm. J.)
7	93	3	4	Farm income figures need close analysis. (West. Producer.)
8	92	12	12	Getty's unconscionable self-serving greed described. (Edm. J.)
8	92	9	4	Because of Dorothy Dobbie's debacle: I fear for the future of Canada. (EDM. J.)
8	92	1	31	Letter to Edm Jour. regarding the cost of bread: not published but passed to writer.
8	91	12	5	Mulroney slow to act on native rights. (Edm. J.)
8	91	11	8	Scott Paper's claimed environmental commitment ridiculed. (Edm. J.)
8	91	8	5	No one publically tells it as it is: An increasing proportion of the population are unemployable. (Submitted to Edm. J. -- --not recalled whether published or not.)
8	91	7	18	Election reforms are needed in Canada -- --and suggested herein. (Edm. J.)
8	91	2	27	Mulroney & Prov. Govts. are raiding pension funds and Medicare. (Edm. J.)
				<i>90/12/20 Unsuitable picture, Western Producer, Stoon.</i>
9	90	12	24	Mulroney's action horrendously divisive. (Not recalled whether the letter was published b Ed. J.)
9	9	9	27	Mulroney and Bourassa impairing Canada's good name. (" " " " ")
9	90	6	26	Elijah Harper's Contribution to Canad by defeating Meech Lake not adequately appreciated. (Ed. J.)
9	86	11	13	Supreme Court of Canada decision very regressive. (Edm. J.)
9	81	6	20	Unions, not marketing board, constitute ripoff. (Edm. J.)
9	74	6	30	Food production and population increase are on a collision course. (AIC Agrologist.)
10				Two itenms either not submitted or not published.

ENG. 405 & ZOO. 260 LECTURES NOTES + RELATED MATERIALS

(Assembled January 1996. C. F. Bentley)

TAB

1. 1995. Ten page handout (which includes a data sheet with 13 tables).
One sheet "Hindrances, challenges & necessities to attainment and support of lifestyle aspirations. [3]
2. 1995. Speaking notes 1995 [22] [Includes list of transparencies used.]
3. 1995. Letter to Prof. Whiting about evaluation of student hand-ins, and sending copies of hand-in to him.
4. 1994. Eight page handout. [Includes much of 1995, the 13 table data sheet and list of transparencies used, --- as well as speaking notes used.]
5. Eng. 405 items from pre 1994 years:
 - 1993 speaking notes & a discussion generators sheet.
 - 1990 outline and list of transparencies used.
 - 1989 "The Environment" six pages densely packed prepared for Little Club.
 - List of 1989 transparencies used.
 - 1988 one typed page outline for the topic: "Feeding the World's Hunger". [Eng. 405.]
 - 1987 Typed speaking notes for Eng. 405.
6. "Concepts related to: Hindrances, challenges and necessities to attainment of lifestyle aspirations" plus related bold typing for making transparencies used for discussion of that topic.
7. Summaries from some important sources.
 - Royal Soc. of Can.: "Population Summit of the World's Scientific Academies, Delhi 1993."
 - Arthur Kroger's 1993 Hanson Lecture: "Governments and the Jobs Issue."
 - Selections from a CSM article on "Revamping Welfare in the U. S. "

Zoology 260 Related materials

8. 1994: Ten page typed outline --- much the same material as for Eng. 405.
1994: Sopeaking notes for the above.
1994: Transparencies used.
9. 1994: Supportive news clips and data sources for Zoo. 260 lecture:
 1. 40 worst: young offenders list by Edmonton police.
 2. Energy & economic growth --- AICan BC Plans; --- Energy use in Canada
 3. Agriculture related items: subsidies; the Special areas handout of \$200,000./ farm;; ethanol for energy rip-off; comparative Cdn vs U.S. expenditures for soil conservation; effect of appropriate fertilizer application on nutritional adequacy of Calif. pasture.
 4. American population increase; & education levels of mothers; %pop. incr. & labor force participation; % of disposable income spent for food; relative production per worker U.S. vs Canada 1976.
 5. Costs of family planning vs costs of armies; FAO report 6/1/94; BC Welfare.
 6. Courts and judges.
10. 1988 Outline for Zoo. 210 class on topic; Feeding the World's Hungry.

Binders 2 *Contents Brown BK # 16 Drawer # 2*

BINDER # 16 : Assembled 1995 for/from
Bentley Lecture to Eng 405
Typed 9/1/2004

Tab:

- 1 Bentley letter 5/7/94 for forwarding to Canada's Minister of Immigration expressing CFB's total disagreement with Canada's immigration policy. (Printed in SusPop # 10 Sept 1994 (5 copies)
- 2 CFB 2 page summary of the R S C report on "Population Summit of the "World's Acads of Sci." Oct 1993 (7 copies)
- 3 CFB 2 page summary of Dr. Arthur Kroeger's address at U of A "Govts and the jobs issue" (12 copies)
- 4 Accumulated correspondence with Prof Whiting re Eng 405
- 5 7 copies 1994 Eng 405 handout
1 copy very similar used for Biol 260 in 1994
- 6 Master copy (cut & fitted) + One clean copy of 1995 Eng 405 handout
- 7 Transparencies lists for Eng 405: 1990, 1994; 1995
and photo copies of 11 new or redone ones used 1995
- 8 6 - 8 copies Eng 405 handout 1995

Might ~~consider~~ consider review with #15 and discard all duplicates thereby consolidating everything re 405 in one binder.

Contents of Black Binder #17 Draw 2

Binders 3 List of Contents of Binder # 107

Contents primarily Klinck Lecture Materials
(This typed 10 January 2004)

- 1 Text for Klinck Lecture Tour (18 AIC Branches) 1981-82
43 pages. (Still being distributed by AIC a decade later.)
- 2 List of 20 transparencies used for Klinck Lecture
- 3 List of tables , figures and appendicies for Klinck Lecture
- 4 Hand written speaking notes.
- 5 Agriculture suitedlands of Canada - - - 46 pages.

Contents of Gray Binder #18 Draw #2

Binders 4 List of Contents of Binder # 18

Contents: Bentley's materials for Agric/For 300 Communications
(This tyed 10 January 2004)

- 1 A two -sided plastic sheet about conduct of meetings etc
- 2 R E D A Parl Procedures & Conduct of Meetings (17 pages)
- 3 Agr/For 204 Course Guide & Assignments 80 pages.
- 4 A Booklet: Elements of Parliamentrary Procedures
- 5 " A Crib Sheet" for use in conducting meetings.
- 6 A booklet for 'Job Seekers'

Contents of
Binders 5 → List of Contents of *Gray* Binder # 19

Contents: Bentley's materials for Soil Sci 300 (Not for agric students)
(This typed 10 January 2004)

1 Explanatory materials, assignments etc 36 pages

As there was no introductory, Canadian Written, Soil Science text
extensive notes were assembled over th years by Bentley
and used as a required text (minimizing greatly note taking)

2 Course fall term: 50 pages

3 Course second term pages 51 - 109

4 Course second term pages 108 - etc

5 Copies of some transparencies that were used.

Index: Volume I. Agricultural Talks, etc. by C.F. Bentley

- 1. August 6, 1955 "Peaceful Co-existence", presented to the University of Saskatchewan.
- 2. August, 1957 "United Nations Summer School for High School Students, Outline of Lectures"
- 3. November, 1958 "The Real Accomplishments of the U.N.", Univ. of Alberta, United Nations Club.
- 4. May, 1960 "The Professional Employee in the Public Service", presented to the Annual Meeting of the Professional Institute of the Civil Service of Alberta
- 5. August 6, 1961 "Hiroshima Day", Alberta College Auditorium
5A. May 21, 1961 "It Can Be Done, But Will It Be Done", U.N. Assoc., Vancouver.
- 6. April 27, 1962 "New Challenges for Home Economics", Alberta Home Economics Convention, Calgary.
- 7. August, 1962 "Education - Key to Our Future", submitted to the Country Guide.
- 8. December 5, 1963 "The Faculty of Agriculture in Service to Alberta Agriculture - A Challenge", presented to a Seminar on Agriculture sponsored by the Government of Alberta, Red Deer.
- 9. August 16, 1963 "Food, Farms and People", presented to the Conference on "The Challenge of World Development", Banff.
- 10. 1964 "Our Stake in Better Agricultural Education", presented at Olds, Alberta.
- 11. June 24, 1964 "Training and Retraining for Rural People", presented to C.S.R.E. Panel, Fredericton, N. B.
- 12. August, 1965 "Fertilizer Usage in the Prairie Provinces", presented to Canadian Fertilizer Association.
- 13. December 13, 1966 "Future Requirements for Forage Crops in Western Canada", presented to Soil Science Workshop.
- 14. February 24, 1966 "National and International Aspects of Selling Agriculture Production", Edmonton Short Course.
- 15. August 27, 1966 UNESCO Seminar
- 16. January 30, 1967 Ag. Ec. Class
- 17. January 18, 1967 "Agricultural Prospects 1967", presented to the Edmonton Chamber of Commerce Conference on Trends and Prospects.
- 18. January, 1967 "This Business of Farming, Man's Great Leap Forward"
- 19. February 25, 1967 "Support for Agricultural Research In Canada", draft notes prepared by invitation for NDP Conference, Sask.

20. May, 1967 "Symposium Summary Perspective", Canadian Centennial Wheat Symposium.
21. February 29, 1968 "Dividends from Agricultural Research", from address to farm leaders, Banff.
22. February 23, 1968 "India's Agricultural Problems", Soil Science Seminar.
23. 1968 "Dividends from Agricultural Research", presented to Rural Leadership Conference, Banff.
24. March, 1968 "Canada and International Aid", presented to AIC meeting, Edmonton.
25. June 10, 1968 "Feed Science and the General Welfare", presented to Annual Conference, Banff.
26. September 12, 1968 "Agriculture and India's Future Food Needs", presented to CIFT, Ottawa.

20 Lists of: Publications, Manuscripts of Address, and of Miscellaneous Talks,
as well as other materials assembled in three-ring binders.
by Fred Bentley, April 1996 *

Binder no. & Color	Items Therein	Time Period	Approx. page nos. of list nos. A few items + or for some pages
1 yellow	1 - 24	1946 - 1962	1 & 2
2 "	30 - 57	1962 - 1970	3 & 4
3 "	58 - 91	1970 - 1975	5 & 6
4 "	92 - 121	1975 - 1981	7 & 8
5 "	93A - 93D 122 - 146	1980 - 1983 " "	9 & 10
6 red	147 - 176	1984 - 1988	11 & 12
7 "	177 - 196	1988 - 1989	13 & 14
8 "	197 - 218	1990 - 1992	15 & 16
9 "	219 - 232	1993 - 1996	17
10 "	Sp. Notes 1 - 31	1971 - 1987	18 & 19
11 "	" " 1 - 30	1970 - 1994	20
12 "	Items 119 & 136	1983 - 1984	Listed in Bks. 4 & 5
13 "	Radio items 1 - 49	1974 - 1978	21 & 22
14 "	Canada's constitution and related items: 1990 +		23 & 24
15 "	Engineering 405 & Zoology 260 lecture & related materials. 1988 +		
16 brown	Engineering 405 handouts for class.		
17 black	The Klinck Lecture & Agr. Canada follow-up 1881-82		
18 gray	AgFor 204 course materials, copies were provided to course members.		
19 "	Soils 300 course materials. copies were provided to course members.		

* The assembled ring binders are in lower drawers of the two right side filing cabinets in the bar area of our home at 13103 - 66 Avenue, Edmonton, AB.
I hope lethargy will not prevail and that I will assemble those consulting reports not included in the above listings of Bks 1 - 9.
Pages 1 - 22, which follow, provide details regarding contents of Bks 1 to 13 inclusive. All of the binders have a list of contents inside their front covers.

There is some duplication of things listed in Bks 1 - 9 and Bks 10 & 11. Lethargy prevailed and I did not remove such duplications as now remain. There are surely a few omissions, to be added if found.

As indicated: This is not an error-free compilation but as there are slight prospects of it being used by anyone there is no apparent need to have it letter perfect! C.F.B.

Continued →

Contents Red Binder # 22 Drawer # 2

Binders p 7

Binder # 22: Bentley concerns regarding Canada's Governments etcTab D a t e s

- | | | |
|----|----------|--|
| 16 | 10/5/93 | Suggestions to an AB Commission (10 p) |
| 17 | 6/12/91 | Submission to GOC Special Joint Commission (15 p) |
| 18 | 1/11/91 | Bentley to Little Club on Cdn Constitution (9 p) |
| 19 | " | First draft for # 17 above |
| 20 | 15/2/91 | Oral submission re AB Constitution Reforms (6 p) |
| 21 | 15/2/91 | Item to Spicer Com on Canada's future (6 p) |
| 22 | 9/11/90 | To Chretien: Re Policies, programs, philosophy (4 p) |
| 23 | 12/10/89 | For CIDA & IDRC workshop at Guelph (4 p) |
| 24 | 3/1/84 | Bentley to AB Hearings on Land Policies (21 p) |

Contents of Yellow Binder #24 March #2

2007-8-24

Book #24 of Bentley's Rin-Binder Files of Various kinds: April 1996

(This binder contains selections that I considered important - - at some time!)

TAB No.

- 6 J. H. Hulse 1981 IDRC. Human implications of protein utilization
- 7 Pedro Sanchez 1987 Science. Low-input cropping for humid region acid tropical soils
Easterbrook, G. > 1985. Atlantic. Making sense of farm policy in U. S.
Vietmeyer. 1986. Science. Potentially useful plants for agr & forestry.
Hardin, Garrett. 1968. Science. The tragedy of the commons.
- 7 Schultz, T. W. 1980. His Nobel prize address. The politics and economics of research.
" 1980. Amer. Agr. Econ. Assn. The effects of the international
donor community on farm people.
- 8 " 1979. Another Nobel address. The economics of being poor.
- 9 " 1978. In an IADS brochure. The economics of res. and agr. productivity.
Report in Science re: T. W. Schultz and Lewis co-Nobel winners 1979.
- 10 Lemann, Nicholas 1986. Atlantic. Origins of the underclass.
" " " " Part II.
- 11 Longman, Phillip. 1985. Atlantic. Justice between generations.
- 12 Fallow's, James. 1985. Atlantic. America's changing economic landscape.
Four papers re dioxin by W. e. Harris & others
- 13 Keartl, B. E. & Weisblat. 1979. Ag Dev Council. Inst. innovational reform etc.
Sivard, Ruth. 1082. World military and social expenditures. 44 p.
- 14 Head, I. L. 1986. W. " kind of world do we live in? (To: Nat. defense College, King)

Publications, Talk Papers, Typed Talks Notes, and some Written Talks Notes
(By C. F. Bentley 1946-1995. Arranged January 1996.)

Bk	Tab	No.	Titles	Agencies	Occasion	Place	Etc
1	A	1.	Bentley, C. F. 1946. The use of fertilizers and their relation to nutrition. Graduate Lectures, Sk. Agr. Graduates Assn., College of Agr., U. of SK. p 8-16.				
1	A	2.	Bentley, C. F. and J. Mitchell. 1946. Fertilizers in SK. Bul. 122, College of Agr. U. of SK. 18 p.				
1	B	3.	Maas, E. F. and C. F. Bentley. 1946. Phosphorus fixation studies with some SK. soils. Sci. Agr. 26:275-287.				
1	C	4.	Bentley, C. F. and C. O. Rost. 1947. A study of some solonetzic soil complexes in SK. Sci. Agr. 27:293-313.				
1	D	5.*	Newton, J. D., A. S. Ward and C. F. Bentley. 1948. Wooded soils and their management. Bul. 21, 4th edition, U. of AB. p. 60?				
1	E	6.	Bentley, C. F. and W. Odynsky. 1949. Minimizing the field time required for preparing permanent soil profiles. Agron. J. 41: 99-100.				
1	F	7.	Cormack, D. V., C. F. Bentley and D. B. Scott. 1951. Fertilizer studies with radioactive sulfur. I. Sci. Agr. 31: 41-51.				
1	G	8.	Renner, Ruth, C. F. Bentley and L. W. McElroy. 1953. Nine essential amino acids in the protein of wheat and barley grown on sulfur-deficient soil. Proc. Soil Sci. Soc. Amer. 17:270-273.				
1	H	9.	Schroer, F. W. and C. F. Bentley. 1953. Modification of the Beckman Model 103000 flame photometer. Chem. Anal. 42: 75-76.				
1	I	10.	Bentley, C. F. 1953. Agriculture in Ceylon. Agr. Inst. Rev. 8(6):19-22.				
1	J	11.	Bentley, C. F., D. J. Hoff and D. B. Scott. 1955. Fertilizer studies with radioactive sulfur. II. Can. J. Agr. Sci. 35: 264-281.				
1	K	12.	Vermaat, J. G. and C. F. Bentley. 1955. The age and channelling of Ceylon laterite. Soil Sci. 79: 239-247.				
1	L	13.	Bentley, C. F., L. Gareau, Ruth Renner and L. W. McElroy. 1956. Fertilizers and the nutritive value of hays. Can. J. Agr. Sci. 36: 315-325.				
1	M	14.	Pawluk, S and C. F. Bentley. 1956. Exchangeable cation characteristics of some Alberta soils. Can. J. Agr. Res. 36; 380-389.				
1	N	15.	Bentley, C. F. 1956. Equipment for seeding fertilizer expts. with small grains. Can. J. Agr. Res. 56: 508-509.				
1	O	16.	Bentley, C. F. 1957. Soils and fertilizers for Alberta lawns and gardens. Circ. 30, U. AB. p 29.				

* Denotes item is not included in these ring binders, but the reference is correct.

- 1 P 17. Newton, J. D., C. F. Bentley, J. A. Toogood and J. A. Robertson. 1959. Grey wooded soils and their management. Bul. 21, 5th edition, U. of AB. 88 p.
- 1 Q 18. Synghal, K. N., J. A. Toogood and C. F. Bentley. 1959. Assessing nitrogen requirements of some Alberta soils. Can. J. Agr. Sci. 39: 120-128.
- 1 R 19. Bentley, C. F. 1959. Yes, we do need a new look at agriculture. Agr. Inst. Rev. 14(6): 37-38.
- 1 S 20. Bentley, C. F., J. A. Carson and J. P. Bowland. 1960. Fertilizers and the nutritive value of wheat grown on sulfur-deficient gray wooded soil. Can. J. Plant Sci. 40: 146-155.
- 1 T 21. Bentley, C. F. 1960. Outsiders look at Home Economics. J. Can. Home Econ. 10(3):8-10.
- 1 U 22. McKeague, J. A. and C. F. Bentley. 1960. The effect of drainage condition on the redox potential, leachate composition and morphological characteristics of a soil parent material studied in the laboratory. Can. J. Soil Sci. 40: 121-129.
- 1 V 23. McBeath, D. K., C. F. Bentley, D. L. Lynch and J. P. Bowland. 1960. The nutritional value of increased levels of protein resulting from nitrogen fertilization of barley. Can. J. An. Sci. 40: 57-66.
- 1 W 24. Bentley, C. F. 1961. Population problems and man's future. Agr. Inst. Rev. 16(1) 9-12.
- 1 W 25.* Bentley, C. F. 1961. Soil management and fertility --- Western Canada. Resources For Tomorrow Conference, Montreal. Queen's Printer, Ottawa. Vol. I: 67-73.
- 1 W 26. Walker, D. R. and C. F. Bentley. 1961. Sulfur fractions of legumes as indicators of sulfur deficiency. Can. J. Soil Sci. 41: 164-168.
- 1 X 27. Bentley, C. F. 1962. A dean speaks frankly. Country Guide 81(9): 11-12.
- 1 YZ 28. Bentley, C. F. 1962. Our stake in better agricultural education. Proc. Can. Agr. Chem. Assoc. 10th Annual Meeting. Banff, AB 9-12 Sept. 6 p.
- 1 YZ 29. Toogood, J. A., C. F. Bentley, G. R. Webster and A. W. Moore. 1962. Grey wooded soils and their management. 6th edition. Bul. no. 21 (S-M-1) U. of AB. 87 p.

For convenience in thickness of ring binders the following out-of-date-sequence items are in this binder.

- 1 YZ *Moved To Book* Bentley, C. F., A. M. F. Hennig, T. W. Peters and D. R. Walker. (Editors). 1971. Gray wooded soils and their management. 7th edition. A joint publication of Agric. Canada and Dept. of Soil Sci. U. of AB. Bul. B-71-1. 89 p.
- 1 YZ *publics* Alberta Inst. of Agrologists (A. I. A.) 1971. A handbook: Agriculture and the environment. Prepared as a public service by the AIA by over 30 of its members. Distributed by the Office of the Registrar of the AIA. 92 p.

* denotes item not in ring binder, but reference is correct.

- 2 A 30.* Bentley, C. F. and D. J. Rhoner. 1962. Proposal for Khon Kaen Institute of Technology. (A feasibility study funded by FAO and UNESCO in response to a request from the Govt. of Thailand. The outcome was the establishment of Khon Kaen University in the city of that name in N.E. Thailand. That flourishing university now has over 6,000 students and several faculties.)
- 2 B 31. Bhatti, R. S., J. P. Bowland, C. F. Bentley and S. Zalik. 1963. Influence of variety, nitrogen fertilization, location and year of growth on the nutritive value of wheat as determined by rat growth. *Can. J. An. Sci.* 43: 22-30.
- 2 C 32. Bentley, C. F. 1963. The Faculty of Agriculture in service to Alberta agriculture. Requested presentation to a Govt. of Alberta "Seminar on Agriculture" at Red Deer. 3 December. 7 p.
- 2 D 33. Pawluk, S. and C. F. Bentley. 1964. The uptake of S35 by crops from variable depths in soils. *Can. J. Soil Sci.* 44: 261-263.
- 2 E 34.* Bentley, C. F. 1964. Check yourself! *Agr. Inst. Rev.* 19(3): 4.
- 2 F 35. Bentley, C. F. 1964. Will there be enough food? *AB Teachers Association Magazine* 44(9): 26-28. (Reprinted also in: *Agr. Bul.* no. 4, p. 4, 1965.)
- 2 G 36. Bentley, C. F. 1964. Towards even more responsible professionalism. *Agr. Inst. Rev.* 19(4): 27-28.
- 2 H 37. Bentley, C. F. 1964. Taining and retraining for rural people. *Agr. Inst. Rev.* 29(5): 16-19.
- 2 I 38. Bentley, C. F. and S. Paluk. 1964. Eroded pits in solodized solonetz soils of North America. *Proceedings Eighth International Soil Science Congress* : 703-714.
- 2 J 39. Bentley, C. F. 1965. Present and future agricultural production in Alberta's Peace River area. *Proceedings of "The Changing Frontier"*, Peace River Chamber of Commerce & Northern Alberta Development Conference. 5-6 October. 24-32.
- 2 K 40. Bentley, C. F. 1965. Fertilizer usage in the prairie provinces, 1965-75. Presented to and reproduced by Canadian Fertilizer Assn. 24 p.
- 2 L 41. Bentley, C. F. 1966. Will Canada survive the population problem? Presentation to: Canadian Feed Manufacturers Annual Conference. Vancouver. 27 June. 10 p.
- 2 L2 42. Bentley, C. F. 1967? The development of science in agriculture. An overview and compilation assembled for a first-year class for U. of AB agriculture students. 22 p.
- 2 M 43. Bentley, C. F. and J. A. Robertson. 1966. Soils and fertilizers for gardens and lawns. *Bul. S-M-2*, Extension Dept., U. of AB. 37 p.
- 2 M 44. Bentley, C. F. 1967. Full heads and empty stomachs. Presentation to an Inter-University seminar sponsored by The Overseas Institute of Canada and the University of Guelph, at Guelph. 1 May. 10 p.

* Denotes item is not included in these ring binders, but the reference is correct.

- 2 N 45. Bentley, C. F. 1967. The professional employee in public service. Newsletter of Professional Inst. of the Civil Service of AB. 1(1); 3-7.
- 2 O 46. Bentley, C. F. 1967. Summary and perspective. Canadian Centennial Wheat Symposium. Saskatoon, SK. p. 1-23. In the book of that title, published by Western Co-operative Fertilizers, Calgary, AB, sponsor of the symposium.
- 2 P 47 Bentley, C. F. 1967. Food for all: Can agriculture provide? Commissioned Centennial Lecture, presented at the A.I. C. National Conference at Montreal, and distributed as an A. I. C. brochure of 16 pages. (An abbreviated version was reprinted in the U. of AB Agr. Bul. #7, 1968.)
- 2 Q 48. Bentley, C. F. 1967. Population problems and economic growth in Canada. Proceedings of Symposium on: Stimulants to Social Developments in Slow Growing Regions. Banff, AB. 1: 125-137.
- 2 Q 49.* Bentley, C. F. (and 10 others). 1968. Report of the Canadian Agricultural Task Force to India, to the Canadian International development Agency (CIDA), Ottawa. 350 p (The Task Force was asked to identify how Canadian technical capabilities and resources might assist in increasing and improving India's agricultural production.)
- 2 Q 49. An abbreviated CONFIDENTIAL Summary of the report to CIDA (80 pages) is herein, together with a copy of Bentley's personal section of 22 pages, which like the personal reports of the other members of the Task Force, constituted part of the material in the main 350 page report.
- 2 Q 50. Bentley, C. F. 1968 Food science and the general welfare. J. Can. Inst. Food Tech. 1(4): A86-A89. (Presentation made at Ann. Conf. CIFT, Banff, AB, 10 June.)
- 2 R 51. Bentley, C. F. 1969. Dirty hand approach needed in tropical agriculture. Agr. Inst. Rev. 24(2): 14-15.
- 2 S 52. Bentley, C. F. 1969. How does your garden grow? The Rotarian. 114(6): 24-27.
- 2 S 53. Bentley, C. F. 1969. Development factors: population, food, government policies. To: Edmonton Br., Canadian Inst. International Affairs. 2 Dec. (Notes 12 p.)
- 2 T 54. Bentley, C. F. 1969. Human breeding control: the evaded imperative. In: The imperatives for development, the theme for: the 7th Annual Banff Conference on world affairs, sponsored by: the Universities of Calgary, Alberta, and Lethbridge; and Edmonton & Calgary Branches of the Cdn. Inst. of Internat. Affairs, and the UN Assns. in those cities. 18-23 Aug. Proceedings p. 80-89.
- 54A.* Bentley, C. F. 1969. Development factors: population, food, and government policies. Edm. Br. Cdn. Inst. Internat. Affairs. Speaking notes.
- 54B.* Bentley, C. F. 1970. Economic nationalism and agricultural policies. Edm. Br. UNA 25th Anniversary seminar. U. of AB. Notes.
- 2 U 55. Bentley, C. F. 1970. Careers in soil science. Agr. Inst. Rev. 25(2); 21-24.

*

Denotes item is not included in these ring binders, but the reference is correct.

2 U 56. Bentley, C. F. 1970. The role of OECD institutions in providing post graduate level agricultural education for persons, in developing countries, who who will later be teachers and/or researchers in their home countries. Presentation to the OECD Working Conference of Representatives of Higher Agricultural Education. 20-24 Apr. Paris, France. In the workshop proceedings. 24 p.

2 V 57. Bentley, C. F. 1970. Lecture/discussion materials. Some effects and challenges of economic development. UNESCO summer school for high school students. U. of AB 17- 22 Aug. 20 p. of preparatory material.

3 W 58* Robertson, J. A. and C. F. Bentley. 1970. Nutrient content of surface water samples: report of a preliminary investigation. AB Inst. Pedology. M-70-1.

3 W 59 Bentley, C. F. 1970. Population, the ultimate pollutant. Blue Jay 28: 106-110.

3 W 60. Bentley, C. F. 1970. A move in the right direction. Agr. Inst. Rev. 25(4): 18.

3 W 61. Bentley, C. F. 1970. We are pouring money down the (brain) drain. Agr. Inst. Rev. 25(60): 7-8.

3 X 62. Bentley, C. F. 1970. Land use, affluence, and the population explosion. Internat. Agricultural Students Conference. U. of AB (Speaking notes.)

3 X 63. Bentley, C. F. 1970. Comments to a group that had viewed: "Can the Earth provide?" as part of a U. of AB Ext. Dept. film series. "Man and his environment." (Speaking notes.)

3 X 64. Bentley, C. F. 1970. Social aspects of: "Alberta --- a land for livong." Panel discussion, Cdn. Inst, Forestry meeting in Edmonton. (Speaking notes.)

3 X 65. Bentley, C. F. 1970. You and pollution. Westlock Chamber of Com. (Speaking notes.)

3 X 66. Bentley, C F. 1970. Preparatory material for an AB Agric. weekly TV program for AB 4-H club members, conducted by Arnold Malone. (Live program.)

3 X 67. Bentley, C. F. 1970. The International Development Research Centre. (IDRC.) Blue Jay 29(3) : 151-153.

3 YZ 68. Robertson, J. A. and C. F. Bentley. 1971. Do fertilizers pollute? Agr. Bul. #15, U. of AB. p. 3-6.

3 YZ 69. Nyborg, M. and C. F. Bentley. 1971. Sulfur deficiency in rapeseed and cereal grains. Agr. Bul. # 15, U. of AB. p.13-15.

3 YZ 70. Bentley, C. F., A. M. F. Hennig, T. W. Peters and D. R. Walker. 1971. Gray wooded soils and their management (7th edition.). U. of AB Ext. Dept. (A joint publication of Agric. Canada and the Soil Sci. Dept. U. of A.) 89 p.

3 A 71. Bentley, C. F. (one of many contributing authors.) 1971. A handbook of agriculture and the environment. Published as a public service by the AB Inst. Agrologists and distributed by the Office of the AIA Registrar. 92 p.

- 3 A 72. Bentley, C. F. (one of many contributing authors). 1971. Agriculture and environment quality. A 4 page brochure prepared and distributed very widely by the AB Inst. of Agrologists as a public service.
- 3 A 73. Bentley, C. F. 1971. Applying research results. Agr. Bul. 31. U. of AB.
- 3 A 74. Bentley, C. F. 1972. Notes for a requested presentation to one section of the Annual Conf. of the AB P. C. Party. Macdonald Hotel, Edmonton. 22 January.
- 74A* Bentley, C. F. 1972. Population increase and mankind's problems. CIAA Edm. 9 p.
- 3 B 75. Bentley, C. F. 1973. Needed a premium for high protein grain. Ag. Bul. 31, U. of AB. p. 2-3.
- 3 B 76. Bentley, C. F. 1973. Producing grains of superior feed value. Ag. Bul. 31, p. 3-5.
- 3 C 77. Bentley, C. F. 1973. Development aid. New Zealand Agr. Sci. 7:110-112.
- 3 D 78. Bentley, C. F. 1973. Environment and cereal quality. Proceedings Cdn. Soc. Agron. Annual Meeting. Victoria, BC. p. 52-65.
- 3 D 79. Bentley, C. F. 1974. Our universities perform vital role. (Reader comment: Edmonton Journal, 4 columns wide, 7" deep. 15 February.)
- 3 E 80. Nyborg, M., P. M. Hoyt and C. F. Bentley. 1974. Effects of sulfur deficiency on yield of trunip rape (Brassica campestris) The Sulfur Inst. J. 10(2): 14-15.
- 80A.* Bentley, C. F. 1974. World food problems. Address to S. Edm. Rotary Club. Notes.
- 80B.* Bentley, C. F. 1974. Canada/India comparisons. Address to Vermilion Ag. Sch. students and staff. 1 May.
- 80C.* Bentley, C. F. 1974. Moral and mental aspects of world food problem. Address to Annual Conf. Of School Superintendents. Edmonton. April.
- 80D.* Bentley, C. F. 1974. Address to Seminar of the Institute of Public Administration. Edmonton. 6 March. Notes.
- 3 E 81. Bentley, C. F. 1974. World food and population. Letter to the editor. The Agrologist 3(3): 64.
- 3 F 82. Bentley, C. F. 1974 The food producing potential of Canada's land resources. U. of Guelph, Cenntennial seminar. 20 p.
- 3 F 83. Bentley, C. F. 1974. New Alberta areas with some sulfur deficient soils. U. of AB Agr. Bul. 23. 1 p.
- 3 G 84. Bentley, C. F. 1974. The world food situation and prospects. Address to the Swift Current Br. SK Inst. of Agrologists. 26 Februry. 14 p.

- 3 G 85.* Bentley, C. F. 1974. World food problems. Prepared for 'PEG' a publication of the Professional Engineers Assn. of AB. 10 May. 9 p.
- 3 G 86. Bentley, C. F. 1974. World population in relation to food and energy needs. Panelist Family Planning Fed. of Canada. meeting. U. of Calgary. 15 June. 7 p.
- 3 H 87. Bentley, C. F. 1975. Canada and development assistance in agriculture. Plenary session address, annual meeting, Agr. Inst. Canada, Brandon, MB. 17 p.
- 3 H 88. Bentley, C. F. 1975. Immigration increases food costs. Can. Ethnic Studies 7: 30-34.
- 3 IJ 89. Bentley, C. F. 1975. Food and population problems. AB Home Econ. Assn. Convention. Edmonton. 12 April. 10 p.
- 3 IJ 90. Bentley, C. F. 1975. Population, the ultimate pollutant. Address to the biennial meeting of the Cdn. University Teachers of Home Economics, held in Edmonton in conjunction with the Learned Societies Conference. (Published in the proceeding. Also reprinted by two professional organizations of Home Economists in AB.)
- 3 K 91. Bentley, C. F. 1975. Food for our world: we need a change. Horticulture Industry Days Conference. Winnipeg, MB. 27 November. 14 p.
- 4 L 92. Bentley, C. F. 1975. Maximizing food, timber, wildlife and fish production. Land-based Resources Section, Pacific Sci. Congress. U. BC Vancouver. 26 Aug. 15 p.
- 4 L 93. Bentley, C. F. 1976. The green revolution, modernization of agriculture in developing countries. The New Trail 32(2): 12-16. [U. of AB alumni magazine.] (A criticism, and Bentley's rebuttal of it, were published in The New Trail 33(1): 10-12. fall 1977.)
- 4 L 94. Bentley, C. F. 1976. Strings on aid? -- a rebuttal. Western Producer. 6 May.
- 4 M 95. Bentley, C. F. 1977. Agricultural changes and resource endowments. Proceedings of the 17th Symposium. Royal Society of Canada. Fredericton, NB. p. 29-47. June. (Also reprinted in Agr. & Forestry Bul 35, p. 9-17. Fall 1977.)
- 4 M 96. Bentley, C. F. and J. A. Toogood. 1977. Alberta to be setting for 11th International Soc. of Soil Sci. Congress. Agr. & Forestry Bul. Summer. p. 12-16.
- 4 M 97. Bentley, C. F. and J. A. Robertson. 1977. Soils and fertilizers for gardens and lawns. 4th edition. U. of AB, Ext. Dept. 50 p.
- 4 N 98. Bentley, C. F. 1977. Is welfare a right? Proc: Symposium on Canada and world food sponsored by Royal Soc. of Canada and Agr. Inst. of Canada. Ottawa. 22-24 Aug. 11 p.
- 98A.* Bentley, C. F. 1978. No easy solutions -- - to the major world challenges. AgFor 204 lecture. 5 p. outline.
- 4 N 99. Bentley, C. F., J. M. Crepin and K. W. Domier. 1978. No-tillage grain production in the Edmonton region. Agr. & For. Bul. 1(1): 17-25.

- 4 O 100. Bentley, C. F. et al. 1978. The 11th Congress of the International Society of Soil Science. U. of AB "Folio" 15 June. 16 pages about the Congress.
- 4 O 101. Bentley, C. F. 1978. Canada's land resources and the world food problem. President's address at the 11th Congress Internat. Soc. of Soil Sci. Transactions Vol. 2, 25 p.
- 4 O 102. Ratanalert, P., J. M. Crepin and C. F. Bentley. 1978. Soil tests for sulfur, importance and limitations. Agr. & For. Bul. 1(4); 16-21.
- 4 P 103. Bentley, C. F. 1978. Foreign agricultural aid to developing nations; success or failure? Guest editorial, A.I. A. Newsletter. 32(6): 2-5. Reprinted in the Agrologist, March/April 1979.
- 4 P 104. Bentley, C. F. 1978. Problems and opportunities in Western Canadian agriculture. SK Sci. Council, Background study #1, Sci. Policy Secretariat, Regina, p. 67-74.
- 4 Q 105. Bentley, C. F. 1978. The green revolution. ACTION CIDA. Winter 1978-79, p. 6-10.
- 4 Q 106. Bentley, C. F. 1979. Realism in appraising our agricultural land resources and our agricultural production potential. Western Canada Agricultural Conference. U. of Lethbridge. 30 March. 9 p.
- 4 Q 107. Bentley, C. F., N. Holowaychuk, L. A. Leskiw and J. A. Toogood. 1979. Enhancing agricultural production potentials through soil science. Prepared for: Agricultural Production: research and development strategies for the 1980's. Sponsored by German Development Agencies & Rockefeller Fdn. Bonn, Germany 8-12 Oct. 92 p.
- 4 Q 108. Bentley, C. F. (Editor.) 1979. Bonn Conference : Soils panel post-conference report. Submitted to Bonn Conference sponsors [Three German development assistance agencies and the Rockefeller Foundation]. 59 p.
- 4 R 109. Bentley, C. F. 1979. Western Canadian agriculture; the land and people resource base. 58 p. [A report commissioned by the Canada-West Foundation. A shortened version constituted part of the book "Western Canadian Agriculture and Prospects" published by the Canada -West Foundation, Calgary.
- 4 S 110. Bentley, C. F. 1979. Agricultural potentials awaiting exploitation. Jennareddy Venkat Reddy Memorial Lecture, A. P. Agric. University, India. 31 Aug. 16 p.
- 4 S 111* Bentley, C. F. (Editor.) 1979. Photographs and descriptions of some Canadian soils. Vol. 4. Proc. 11th Internat. Congress of Soil Sci., U. of AB, Edmonton, Canada. 100 p.
- 111A* Bentley, C. F. 1979. Foreign aid - - blessing or blight? Agrologist. Winter issue.
- 4 T 112.* Bentley, C. F., O. G. Bratvold, J. A. Clark and A. S. Johnson. 1980. Sri Lanka's agricultural sector and proposals for assistance to its development. Prepared for CIDA, Ottawa. 215 p.
- 4 T 113.* Bentley, C. F., O. G. Bratvold, B. A. Friesen and R. E. McAllister. 1980. A review of Canadian food aid and commodity loans to Sri Lanka. For CIDA, Ottawa. 114 p.

- 4 T 114.* Bentley, C. F. 1980. Agricultural land - - - the first resource. *Agrologist* 9(3): 5.
- 4 T 115. Bentley, C. F. 1980. The disappearing land. *Agrologist* 9(4); 8-9.
- 4 T 116. Bentley, C. F. 1980. Research on soil resources in the 1980s. *Entwicklung & Landlicher Raum, Frankfurt, Germany.* 14(1); 20-23.
- 4 T 117. Bentley, C. F. 1980. Expectations limitless: earth finite. *Can. Home Economics J.* 30(1): 5. (An invited editorial.)
- 4 T 118. Bentley, C. F. 1980. Soil and people. A closing address at: The Symposium on Paddy Soils. Nanjing, People's Republic of China. 24 October. 6 p.
- 4 T 119. Bentley, C. F. 1981. Summation and perspective for: Land our disappearing heritage. In: *Proceedings of the AB Soil Sci. Workshop, Edmonton, AB* 24 Feb. p. 393-411.
- 4 U 120. Bentley, C. F. 1981. Long term fertility of soils in the Prairie Provinces. To: *Cdn. Soc. Biologists, Edmonton.* Speaking notes 22 Apr. 6 p.
- 4 U 121. Bentley, C. F. 1981. Production practices needed to meet increased production expectations and to maintain/improve our soil resources. *SK Inst. Agrol. Annual Meeting, Saskatoon, 30 May.* 10 p.

4 V #107 and 108 above regarding the Bonn Conference are placed here in the binder due to their bulk - - - thereby facilitating locating other items in the binder.

5 **First some out-of-date-sequence additions to this listing of talks & papers.**

- 5 A 93A. Bentley, C. F. 1980. A food sector strategy study for Ghana. (A draft report prepared for CIDA, not finalized nor officially submitted because of a change of mind by the Govt. of Ghana. August. About 40 pages.)
- 5 A 93B. McAllister, R. E., L. J. Knapik and C. F. Bentley. 1980. Reclamation plan for an extension of the Sask. Power Corporation's Coronach mine. 200 p.
- 5 A 93C. Bentley, C. F. and R. E. McAllister. 1981. Prospective world fertilizer demand and prices (part of a "Smelter Sulfuric Acid By-Product Feasibility Study"). For: Kilborn Engineering, Toronto on a contract with the Govt. of Canada. 150 p.
- 5 A 93D. Bentley, C. F. and R. E. McAllister. 1981. An assessment of the environmental impact of the use of urea as an anti-icing agent on airport runways. For: Airport Facilities Branch, Transport Canada. 70 p.
- 5 A 122. Bentley, C. F. 1981. Security of Canada's agricultural land base. To: *Annual Conf. Canadian Environmental Councils, Banff.* Proceedings p. 125-149. 1 June.
- 5 A 123. Bentley, C. F. and O. G. Bratvold. 1981. Indonesia's semi-arid region and proposals for assistance to agric. res. and education there. For: CIDA, Ottawa. Nov. 100 ? p.
- 5 A 124. Bentley, C. F. 1981-82. Agricultural land and Canada's future. *Klinck Lecture tour to 18 branches of the Agr. Inst. of Canada.* Copies widely distributed. 43 p.

- 5 B 125. Bentley, C. F. 1981. The future of agriculture in the Peace River Country. To: Annual joint meeting of the Public Advisory Committees of the Environment Council of AB. at Grande Prairie, AB. 4-6 Dec . Proceedings p. 74-86.
- 5 B 126. Bentley, C. F. 1982. A review of soils research as related to land clearing and land management at the Internat. Inst. for Tropical Agric, (IITA) Ibadan, Nigeria. (Report of a one month review. April. 55 p.)
- 5 B 127. Bentley, C. F. 1982. Superior climate, soils and food production potentials. Notes for presentation as a professional witness for the BCIA before the BC Board of Public Utilities Commissioners, Vancouver. The BCIA was opposing the proposal of BC Hydro to build a second dam on the Peace River which would have flooded the best quality agricultural land in the north half of that province. The proposal was subsequently dropped. May.
- 5 B 128. Bentley, C. F. 1982. Agricultural land in Canada: quality, quantity and preservation. To: Federal/Provincial land use conference, Lands Directorate of Environment Canada. Ottawa 1 June. 32 p. An extended summary of 17 p. too.
- 5 C 129. Bentley, C. F. 1982. Baseline soil sampling for Suncor Inc. Thermal Project, Ft. Kent, AB. A consulting report. May. 60 p.
- 5 C 130. Bentley, C. F. 1982. Reconnaissance mission to Kenya and Rwanda regarding a proposed agricultural research initiative under the auspices of Cooperation for Development of Africa. For: CIDA, Ottawa. September 78 p.
- 5 C 131. Bentley, C. F. 1982. Agricultural issues. Notes for a presentation to a CIDA seminar for senior management personnel at Mt. Ste. Marie, Que. 21 Oct. 14 p.
- 5 D 132. Bentley, C. F. 1982. Disaster avoidance in land development projects. TO: Internat. Workshop on Land Clearing & Development in the Tropics, at IITA, Nigeria. Nov. Included as p. 3-16 in the book of that title Public. by A.A. Balkema, Boston 1986.
- 5 E 133. Bentley, C. F. 1983. Opportunities and problems for agriculture of developing countries. Lecture to I.D. 303 at U. of A. Feb. 10 p.
- 5 F 134. Bentley, C. F. and L. A. Leskiw. 1983. An overview of current trends and thinking regarding the sustainability of the product. Adv. Council, Ottawa. March. 68 p. (Edited version published as Report #15 by the Council.)
- 5 F 135. Bentley, C. F. 1983. Potentials and dilemmas of agricultural development assistance. U. of A. AgFor. Bul. 6(1): 5-8.
- 135A* Bentley, C. F. 1983. Draft terms of reference for continuance of the Canadian role in devising an integrated plan for enhancement of applied agricultural research in Eastern Africa. For CIDA, Ottawa. 13 p.
- 5 F 136.* Bentley, C. F., L. A. Leskiw and M. E. Wamsley. 1983. Major environmental effects, relations and concerns associate with agriculture in Western Canada. For: Environment Canada, Ottawa. March. 146 p. In Bk. #12.

- 6 1 153 Bentley, C. F. 1984. Crop diversification (intensification) for Bangladesh. (Requested by Permanent Secretary of Agriculture, Govt. of B'desh. from Bentley as a CIDA consultant.) March. 18 p. (A confidential additional 11 page supplement [153A] was provided to the CIDA office in B'desh together with the 18 page report to the Permanent Secretary.)
- 154 Bentley, C. F. and L. A. Leskiw. 1985. Sustainability of farmed lands: current trends and thinking. For: Canadian Environmental Advisory Council, Environment Canada, Ottawa. 32 p. (Envir. Can. Published version of #134.)
- 6 1 155* Bentley, C. F. 1984. Soil degradation in Canada. A review and impact assessment of the situation in Alberta: an Albertan's evaluation. Prepared for: Science Council of Canada, Ottawa. 129 p.
- 6 2 156 Bentley, C. F. 1985. Introduction to IBSRAM and purpose of the workshop. In: Proceedings of Vertisol Soil Management Network Workshop. ICRISAT, India. February. p. 5 - 10. (Original ms. attached as #155A.)
- 6 2 157 Bentley, C. F. 1985. The concept of a vertisol soil management network. In: The above Proceedings p. 10 - 15. (Original ms. attached as #157A.)
- 6 3 158 Bentley, C. F. 1985. Prospects for food self-sufficiency in Ethiopia, Sudan and some other parts of Africa. For a York University symposium "Prospect for mankind: Science and hunger. June. 29 p.
- 6 3 159* Bentley, C. F. and J. G. Ouellette. 1985. Informal notes made in preparation for a "discussion with a few staff members" which was in fact a full blown trip report to a group of World Bank Sr. Officers on a one month trip to French speaking countries of West Africa. (Thank goodness we had made these notes the evening before!!)
- 6 4 160* Kitchell, R. E., C. F. Bentley, J.R. McWilliam, Jr., Moss and E. J. Rice. 1985. Report of the mid-term External Evaluation of the International Benchmark Sites Network of Agrotechnology Transfer (ISNAT). For: USAID, Washington D. C. 20523, U.S. A.
- 6 4 161* Bentley, C. F., M. E. Andal and J. G. Nielsen. 1985. A review and assessment of the Sim Sim Dryland Agriculture Project in Sudan. For: Canadian International Development Agency, Ottawa, ON. 117 p.
- 6 4 162* Bentley, C. F., R. G. Griffiths and G. A. Reusche. 1985. Improved seed systems for Africa. For: Winrock International, Arlington, VA. 125 p.
- 6 4 163* Bentley, C. F. and J. G. Ouellette. 1985. West African agricultural research review, Sahel Sector,. Confidential draft report. For: West Africa Projects Dept., World Bank, Washington, D. C. 150 p.
- 6 4 164 Bentley, C. F. 1986. Maintaining the productivity of Canada's agricultural lands. Notes for address to Edmonton Downtown Rotary Club. 20 Feb.
- 6 4 165* Bentley, C. F. 1986. Challenges of Northern Agriculture. TO: Plenary session, International Bedding Plants Annual Conference. Edmonton. August. 20 p.

- 5 F 137.* Bentley, C. F., L. A. Leskiw and M. E. Wamsley. 1983. Major environmental effects, relations and concerns associated with agriculture in Western Canada. Prepared for Environment Canada's "State of the Environment Report". 97 p.
- 5 GH 138.* Bentley, C. F., N. C. Stoskopf and R. A. Hill. 1983. Project identification mission to Lui He Training College, Heilongjiang Province, China. For: CIDA. May. 95 p.
- 5 GH 139.* Bentley, C. F., Z. P. Kondra, J. J. Kennely and R. A. Hill. 1983. Project identification mission to Heilongjiand Agr. Land reclamation Univ. , China. For CIDA, Ottawa. July 180 p.
- 5 GH 140. Bentley, C. F. 1983. The more efficient Sask. farms of the future. Notes for address at FUTURE-SCAN the Saskatoon Centennial celebration. 8 June. 11 p.
- 5 I 141.* Bentley, C. F. 1983. Basline soil sampling for Suncor Inc. Thermal Project. Ft. Kent, Alberta. 62 p.
- 5 I 142.* Bentley, C. F. 1983. Tackling soil constraints to increase food production in the tropics. IBSRAM establishment workshop. ACIAR. Townsville, Aust. September.
- 5 I 143.* Johnson, W. H. (Project Director) and C. F. Bentley (Team Leader). 1983. Sahel recinnaissance ; Final report on strengthening the African Agricultural Research Project. Devres Inc. Washington, D. C. For: USAID, Washington. 66 p.
- 5 J 144. Bentley, C. F. 1983. Managing organics for sustained production. In: Proceedings ON Soil Mgt. Conf. on "Soil Today --- Food Tomorrow." Toronto. 7 Dec. 12 p.
- 5 J 145.* Bentley, C. F. 1983. Personal brief submitted to the public hearings on maintaining and expanding the agricultural land base in AB. Submitted to the Hearings Board through the Environment Council of Alberta. December. 20 p.
- 6 0 147. Bentley, C. F. 1984. Food by imports? land Development? land reform? zoning? mechanization? irrigation? improved technologies? In: Ehrensaft, P and F. Knelman. (Editors.) 1988. The right to food. The Canadian Associates of Ben-Gurion University of the Negev. p. 229-241. (Also in AgFor . Bul. #7, 1984.)
- 8 0 148 Bentley, C. F. 1984. How we approach today's problems to assure tomorrow's production. Keynote address to: Annual Confernce Alberta Agricultural Service Boards. Edmonton. 6 Feb. 15 p.
- 6 0 149 Bentley, C. F. 1984. Some contributions and dilemmas of soilconservation. A plenary session addres , 50th Anniv. Annual Conference, Soil & Water Cons. Soc. Oklahoma City, U.S. A. (Published in: Agric. For. Bul. Univ. AB 7(4): 13-18.)
- 6 0 150 Bentley, C. F. 1984. Report of participation in World Bank Team visit to China. 10 April to 5 May. Prepared for World Bank, Washington, D. C. 119 p.
- 6 0 151 Bentley, C. F. 1984. Canada's future. Convocation address. Univ. of Guelph, Guelph ON. October. 8 p.
- 6 0 152* Bentley, C. F. 1984. Soil sampling for Suncor Thermal Plant at Fort Kent, AB. 62 p.

- 6 5 166* Bentley, C. F., L. H. Shebeski and J. K. Fenton. 1986. A mid-term review and evaluation of the Barani Agricultural Research and Development Project in Pakistan. For: CIDA, Ottawa. 126 p.
- 6 5 167* Bentley, C. F. 1986. Report to CIDA on a meeting of: "The Technical Group on Collaborative Agricultural Research Networks." (A sub-group of the World Bank's SPAAR program. 18 p.
- 6 5 168 Bentley, C. F. 1987. The role of agricultural economists in agricultural production adjustments. Invited address to the Annual Conference of the Alberta Agricultural Economists Assn. Red Deer, AB. April. 9 p.
- 6 5 169 Bentley, C. F. 1987. Population, environmental and food prospects for Africa. Requested presentation to: Cdn. Assn. for African Studies Annual Conference. Edmonton, May. 25 p.
- 6 6 170 Bentley, C. F. 1987. IBSRAM developments afford participation opportunities for Canadian soil scientists in Africa. Requested presentation to: Annual Conference of Canadian Soil Science Society. Ottawa. August. 8 p.
- 6 6 171 Bentley, C. F. 1987. Feeding the world's hungry. A requested presentation at a Univ. of AB conference on "Canada, the World and the Future." (A review published subsequently in AgFor Bul. 10(4); 7-11 is attached as # 171A.)
- 6 6 172 Bentley, C. F. 1987. Response by Bentley on his election to the Alberta order of Excellence, Government House, Edmonton. November. 7 p
- 6 7 172A* Bentley, C. F. 1988. Outline for Zoo. 210 class on topic: Feeding the world's hungry.
- 6 7 173 Bentley, C. F. 1988. Soil conservation and our future. An item written by request for AB Agriculture as part of the promotion for Soil Conservation Week. (Subsequently reproduced in the B.C. Soils Newsletter, and in Soil Conservation Canada's Newsletter.
- 6 7 174 Bentley, C. F. 1988. Canada - - the world and the future. Address to Westlock Rotary Club (followed by a four page report in Hub Country Newspaper.) March.
- 6 7 175* Bentley, C. F. (Co-author). 1988. IBSRAM's strategy, programs and budget plans 1989-93. Published by IBSRAM, Bangkok, Thailand. 48? p.
- 6 7 176 Bentley, C. F. 1988. Can we reduce hunger? An address to the NW District (Canada and U. S.) Annual Rotary Conference. Edmonton. June. 10 p.
- 7 8 177 Bentley, C. F. 1988. Energy impacts on soil management: past, present and future. An invited presentation. In: Proceedings, Annual Conference, Cdn. Soil Sci. Society. Calgary, AB. August. 26 p.
- 7 8 178* Kiehl, Elmer, C. F. Bentley and F. K. T. Tom. 1988. A review and evaluation of the TAPAN project at Peshawar Agricultural University, Pakistan. For: Devres, Inc. Washington, D.C. under a USAID contract. September. 150? p.

- 7 8 179 Bentley, C. F. and J. G. Ouellette. 1988. Recommendations to the International Development Research Centre regarding the appointment of a new Director for the AFNS Division of the centre. A commissioned report prepared for IDRC. Ottawa. November. 15 p.
- 7 8 180* Bentley, C. F. 1988. Appraisal mission for project design for a fertilizer/ fungicide project requested of CIDA by the Government of Nepal. Prepared for CIDA. 158 p.
- 7 8 181* Bentley, C. F. 1988. An evaluation of the research component of the Tanzania-Canada Wheat Program, Phase II 1979-1987. For: Cida, Ottawa. 140 p.
- 7 8 182 Bentley, C. F. 1988. Soil conservation and our future. Pub. by BC Ch. SWCS. 4 p.
- 7 8 182A Bentley, C. F. 1988. Requested letter to President D.R. Cressman of S.W.C.S. offering suggestions for overseas activities of the SWCS. 12 p.
- 7 9 183 Bentley, C. F. 1988. An overview of agriculture in the Prairie/Parkland region. A requested address published in: Proceedings of the Environment Council of Alberta Annual Meeting of the Public Advisory Committees. 36 p.
- 7 9 184 Bentley, C. F. 1989. Principles of sustainable improved agriculture and related policies, proposed for supportive agricultural development assistance. Prepared for: Institute for Research on Public Policy [on a CIDA contract.] 38 p.
- 7 9 185 Bentley, C. F. 1989. Potential usage of Algoma wastewater as a source of nitrogen fertilizer. For: Algoma By-Products Corp., Cambridge, ON. 14 p.
- 7 10 186 Bentley, C. F. 1989. The environment. Address to The little Club. Also a handout for the lectures to Eng. 405 at U of A. 13 p.
- 7 10 187 Bentley, C. F. 1989. Sustainable agriculture. Requested contribution to Panel Discussion at Manitoba Conf. on "Environment and Economy". Winnipeg. 8 p.
- 7 10 188 Bentley, C. F. 1989. Improving agricultural development assistance. J. Soil and Water Cons. Soc. 44(3) 212-214. (Requested ms. and published version of it.) 9 p.
- 7 11 189 Bentley, C. F. 1989. Requested book review of: Conservation farming on steep lands. Edited by W. C. Moldenhauer and N. H. Hudson. In: J. S.W.C.S.. 44(4) 487-488.
- 7 11 190* Bentley, C. F. 1989. Sustainable use and improvement possibilities for Alberta lands of limited agriculture capabilities. For Resource Planning Br., AB Agr. 67 p.
- 7 11 191 Bentley, C. F. 1989. New approaches are needed for soil science in international development. Requested presentation to CSSS annual meeting. Montreal. 12 p.
- 7 11 192* Bentley, C. F. 1989. Principles of sustained improved agriculture and related policies for supportive agricultural development assistance. For: selected senior staff members of CIDA. Hull, Quebec.
- 7 11 193 Bentley, C. F. 1989. Soil management research in the search for sustainable agriculture. In a book:: Lal, R. and F. J. Pierce.(Editors.) 1991. Soil management for sustainability. p. 167-173. Soil & Water Conservation Society, Ankeny, Iowa.

- 7 11 194 Bentley, C. F. 1989. Response to request to soliciting suggestions of topics that might be considered at a CIDA/IDRC Workshop on Internat. Agric. Res. held at Univ. Guelph, Oct. 12. 4 p.
- 7 11 195* Bentley, C. F. 1989. New approaches are needed for soil science in international development. Commonwealth Agricultural Digest (CAD). 12 p.
- 7 11 196 Bentley, C. F. 1990. Effects of agriculture on prairie ecosystems. Notes for address to Annual General Meeting, Alberta Federation of Naturalists. Edmonton. 27 Jan.
- 8 1 197 Bentley, C. F. 1990. Agricultural sustainability in a broad context. Dinner address to MIA Professional upgrade course. Winnipeg. 13 p.
- 8 1 197 Bentley, C. F. 1990. Global change: Terrestrial matters --- expected changes, their social and economic consequences. Sigma Xi panel discussion. U. of Clgy. 4 p.
- 8 1 198* Bentley, C. F. 1990. Soil conservation and development assistance. Requested lecture to Biol. 300, King's College, Edmonton, AB. 1 March.
- 8 1 200 Dumanski, J., C. F. Bentley and M. Brklacich. 1990. Guidelines for evaluating sustainability of land development projects. Entwicklung & Landlicher Raum. (Germany) 3/90. p. 3-6.
- 8 1 201 Bentley, C. F. 1990. The CGIAR --- Consultative Group for International Agric. Research. Lecture to Soils 316 U of A. 7 March. 4 p. handout.
- 8 1 202 Bentley, C. F. 1990. Opportunities in maintenance and enhancement of land productivity. Invited presentation at: Globe '90 Conference on Worldwide Opportunities for Business and the Environment. Vancouver. 21 March 15 p. & 18 p.
- 8 1 203 Bentley, C. F. 1990. World agriculture in the 1990's. W. H. Pierre memorial Lecture, Iowa state Univ., 11 Apr. 17 p.
203A Seminar same day: Opportunities for agrologists in International Agriculture.
- 8 2 204 Bentley, C. F. 1990. Report for the IBSRAM Executive Committee on the IBSRAM Abidjan Office. May. 100 p.
- 8 2 205 Bentley, C. F. 1990. Critical problems --- we can solve them. Convocation address, U. of A. on receiving honorary D. Sc. 5 June. 5 p.
- 8 2 206 Bentley, C. F. 1990. Soil science and related challenges in Alberta irrigated agriculture. In: Proceedings Irrigation Research Development Conf. Univ. of Lethbridge. 17 July. 13 p.
- 8 2 207 Bentley, C. F. 1991. Links between human welfare, soil quality and soil management. Soil 316 lecture, U of A. 23 Jan. 12 p. copy prepared by request.
- 8 2 208 Bentley, C. F. 1991. Chemicals and sustainable agriculture. Notes (5 p.) and App. II above (•) assembled for the jointly sponsored AIA/SWCS 'soil conservation tours' that held one day seminars with farmers at Grande Prairie, Barrhead, Vermilion, and at Olds plus Vulcan? or Claresholm? --- supported and encouraged by AB Agric. (Bentley was a concluding spokesperson at the first three locations.)

- 8 2 208A Bentley, C. F. 1991. A compilation of soil management and soil fertility data for the Prairie Provinces region for use in the above seminars.
- 8 2 209 Bentley, C. F. 1991. Agricultural chemicals and today's farming. Keynote address to Annual Conference of AB Improvement Districts. Edmonton 20 Feb. Notes. 4 p.
- 8 2 210 Bentley, C. F. 1991. Agriculture and the Alberta Conservation Strategy. ("A wide ranging discussion of the role, achievements and problems of agriculture in Alberta and globally." Two of about 12 lectures in a Univ. AB Extension course with paying participants. Copies of the 35 p. handout were distributed to class members. Appendix I in that handout consisted of explanations about food safety regulations risk rules &c, together with examples of natural chemical hazards in common foods. Appendix II consisted of tables of data or tabulation most of which consisted of soil management data relevant to Alberta or Canada.
- 8 3 211. Bentley, C. F. 1991. Finding a way to make Canadian agriculture sustainable. Video-taped statement made in Edmonton for a panel discussion of the Marquis Project annual meeting in Brandon, MB - - - with telephone connection for discussion following showing of the video. 12 April. Manuscript of 6 p. for video recording.
- 8 3 212 Bentley, C. F. 1991. Workshop summary: Is there hope for sustainable land management? In: Proceedings, Evaluation for sustainable land management in the developing world. IBSRAM, Bangkok, Thailand. Vol.2 p. 621-631. A version also published in IBSRAM Newsletter # 21. Original manuscript & Newsletter herein.
- 8 3 213 Bentley, C. F. 1991. International development and sustainable land use. In: Proceedings, Sustaining land use: The challenge of global change for Western Canada. A Royal Society of Canada and Univ. of SK. convened conference. Edited by Glen Hass. 137 p. Ext. Dept. Univ. SK, Saskatoon. (p. 57-88). (34 p. ms. herein.)
- 8 3 214 Bentley, C. F. 1991. A personal submission to the "Special Joint Committee on a New Canada". (Prepared in response to an invitation to the public to make such submissions.) 15 p.
- 8 4 215 Bentley, C. F. 1992. Soil conservation, agricultural policies and sustainable agriculture. Keynote address. In: Proc. 1992 Soil Cons. Workshop. AB Cons. Tillage Society, 14th Annual Meeting. Cons. & Develop. Br., AB Agr. Edmonton. p. 1 - 17.
- 8 4 216 Bentley, C. F. 1992. Soil and water conservation and management, and desertification control for China. Background material prepared for CIDA President who was a member of a high level international committee seeking to be helpful to China. Dossier includes color map of the world showing human induced soil degradation on a global basis. Dossier has two versions: 25 p. (& 216A 8 p.)
- 8 4 217 Bentley, C. F. 1992. A non-Egyptian perspective. In: Sustainable agriculture in Egypt. Ed. by M. A. Faris and M. H. Khan. Lynne Pub. Inc., Boulder, CO. p. 27-38.
- 8 4 218* Bentley, C. F. 1992. Progress and needs in practical soil conservation. Notes for address to Annual Meeting, Stanislaw Sandblasters Cons. Soc. Stanilaw, Hall, AB.

The
University of
Lethbridge



Geology of Edmonton maps.

Left side

1. Soils map.
2. Surface deposits
3. Slumping potential
4. Thickness of surficial deposits.

Right side

5. Salt hazard for concrete
6. Thickness of glacial till
7. E-W Cross section
8. N-S Cross section.

Box # 9

Bentley Box # 5

Black 1.5 inch Binder # 1 A variety of personal or professional items:

- Tab 1 A few congration letters + a list of Fellowsips and honors
- Tab 2 A few congratory letters regarding some of Bentley's actions
- Tab 3 Several letters etc related to Bentley urging care of the land, and his service on the Environment Council of Alberta. Plus a report about Kohn Kaen Univ. in Thailand. - - - the result of the Bentley/Rhoner proposal for am agric. college !
- Tab 4 A letter to Bentley from India's greatest agric scientist
Also correspondence re 3 weeks in Pakistan for USAID
and some other Bentley interests
- Tab 5 An item in an Alberta Environment item about Bentley.
*Also re Bentley's Pierre at Iowa State University ; *an
Edmonton Journal Nick Lees article about Bentley *and
an Alberta Environment item about Bentley
*Also Bentley's annual report to the U of A soils dept 21 years
after his "retirement". * In 1992 Bentley was elected a Fellow
of India's National Academy of Agricultural Sciences.
*Also a 9 page blurb requested of Bentley on Land Management
and the Environment and *a heart racing note from Jean
Crepan,
- - - and some other itens at the end of this binder.

Contents of Gray Boxes #25 Drawer 2

Book # 25 Continuing with Items like those of Book # 23.

- 1. Delta
- 2.
- 3.
- 4.
- 5.

- 6. / McLaren, Dibby J, 1993. Delta (Newsletter of Cdn Global Climate change) Cairo Pop. Conf. 1
- Oldeman, L. R. ISRIC Bi-Annual Report. Global extent of soil degradation
- Harris, W. E. 1992. Low dose risks and authoritative misinformation. 20 p.
- " " " 1978. New trail. The 3 critical resources, society, and decisions.
- " " " 1980. Cdn J. H. Ec. Energy: the case of the 7 myths.
- Benbrook, Chas. 1991. J. S. W. C. S. Leopold center for sust. agric.
- Blackwood, Julian. 1988. Finance & Development. World bank & Rural development
- Finance & Development. 1989. Three aryticles.
- Resources for the Future. 1991. An analysis of EDP pesticide regulation.
- AIC Policy sttement on agric. and the environment. 1981
- Schuh, G. E. 1988 CGIAR: Agr. Res. still a good investment.
- McCalla, A. F. 1989. Emerging patterns of world agric. trade. To: AIC annual Conf. Mtl.
- Pollution Probe. 1987? about 40 pages of miscellaneous nature.
- 14 Final issue of the AgricFor Bulletin U of A. Fall 1991.

Odds and Ends: Residues from Many Sources and Years
 (Arranged in approximately date sequence: But two large items are last)
 (Assembled January 2004 by Fred Bentley)

Numbers

- 1 1970 etc Four exceedingly rewarding items 1.1 - 1.4
- 2 2003 Criticism of Canada's disgraceful immigration policy
- 3 Text requested address 2003 by Fred to Annual Agronomy Conference
- 4 Letter to Edm J regarding Kyoto: As expected: not published
- 5 Fred's item was the lead off in "Echoes in The Halls "(of U of A)
- 6 Honored as a member of the organizing group for Sask Inst Agrol
- 7 From Cdn Soil Sc. Soc meeting 1997 Surplus ISSS Congers to CSSS
- NB* 8 Fred's ms for requested paper at Banff Wildlife Society meeting.
- 9 Answer to a request for "The Good Old Days : U of Minn Soils Dept.
- 10 Letter to Editor: AIC AgriScience
- 11 Requested presentation on occasion of IDRC 25th Anniversary
- 12 Response to President of IDRC re a contemplated IDRC publication
- 13 One of a series of requested lecture by Fred to Eng.405
- 14 A one-pager by Bentley disagreeing with Canada's immigration policy.
- 15 Eulogy by Bentley at service for his late business partner 1989.
- 16 An address by Bentley to a Rotary Club on food and population .

- There are several other items following #16.
 - ... including a B. Desh dossier which illustrates the shocking ignorance of powerful B. Desh "civil servants"
 - a copy of Kluck's ^{lecture} which was still being distributed by AIC a dress

Retentions when discarding my many not-writings files.

Binder #1

- Tab # 10 some encouraging items.
- 9 most are re awards or honors.
- 8 About ICRISAT
- 7 About CIDA "Task Force" to India 1967
- 6 IDRC related
- 5 CIDA related
- 4 IBRAM related
- 3. About Royal Society
- 2 Guelph D. Sc.
- 1. U of A D. Sc.

Some Fred Bentley Letters-to-the-Editors
or

Primarily Miscellaneous Other Letters 2006 - *& earlier*

There are 3 black 3-ring binders of Bentley letters of the above types
Which are arranged (approximately) in date sequences - - - usually separated between years
by numbered divider sheets. There may be other binders (somewhere) that also have some of
my other letters of a generally similar nature,.

Inside the front cover the tab numbers for the various years are listed.

The 'success' of my letters has been quite irregular: my guess is that about 1/4 or 1/3 on my
letters to editors have been printed. I have very seldom had calls from editors regarding slight
adjustments that were to be made before publication.

I have seldom, if ever changed my opinions expressed in letters to the editors. I have had
numerous favorable comments from persons who had read one of my letters that had been
published..

John # Upper Left Corner

- 1 Bentley on execution of something - notes for an address 1997 + letter to Prime minister & others
- 2 " " costs to create new jobs
- 3 news clip: "miller hi electrode in low income families"
- 4 Roles / lives / of women in different countries & Religion
- 5 Fouie Arman doesn't understand some aspects
- 6 Letter to CBS about problems in Africa
- 7 70's of incomes spent for food in 30-30 countries 1958
- 8 Environment & pollution for 7 countries 1990
- 9 Bentley on Canada's Immigration Policy
- 10 Bentley selections from the Population Summit meeting 1993
- 11 Bentley letter to CBS re Foster/Alford Elliott children
- 12 Development assist. often failures
- 13 Congratulations to Harold
- 14 A Bentley challenge to 4 Echo M & hope for
- 15 Bentley proposal for re modelling program
- 16 Atypical child care program

John #

Items #

- 1 The Under Class: In 45 1980's
- 2 Bentley on AIDS in Africa
- 3 School dropout in Alberta 1991
- 4 Are Alberta children in safe hands?
- 5 George Bush opposed sanctions for Uganda /
- 6 George Bush & America for Africa
- 7 Over 4% of Americans live in poverty

List of Miscellaneous Transparency Dossiers

(Listed 1/9/99 without checking if any or all are included in the 1990 list of my transparencies. CFB)

DOSSIER

1. Green revolution & related
 - 1.1 HYV compared to local varieties response to applic. of N ferts
 - 1.2 Rainfall in semi-arid areas varies enormously.
 - 1.3 New rice in Tanjore India 1967
 - 1.4 Yield comparisons 5 crops India: yields traditional vs Hi Yield varieties (HYV)
 - 1.5 Yield increases India from pest control
 - 1.6 Speed of adoption of HYVs
 - 1.7 Green revolution criticisms and rebuttals
 - 1.8 HYV benefits for big & small farm compared
 - 1.9 % of Cdn labor force as farmers compared to other occupations
 - 1.10 Effect of rate of population increase on % of population in work force
 - 1.11 Fundamental factors which determine GNP/capita
 - 1.12 Kg of grain produced per kg of N fert. - - - HYV vs local varieties
 - 1.13 Effects of Gr. Revol on wheat and rice 1967-74 - - - India, Mexico & Phillipines
 - 1.14 Yields HYV vs local wheat & yield incr. per kg N fert used.
2. Transparencies prepared for CFB use at Pacific Soil Sci. Cong. 1975 (Land resource section.)
 - 2.1 Environmental factors determine crops possible etc.
 - 2.2 Human constraints agricultural productions
 - 2.3 Role of human talents & traditions
 - 2.4 Production limiting factors
 - 2.5 Biological considerations
 - 2.6 Economic considerations
 - 2.7 The 1st five Internat. Agr. Res. Centres
 - 2.8 The next 6 IARCs.
3. Miscellaneous x miscellaneous dossier. (Not all are transparencies)
 - 3.1 Global annual degradation of agric. lands
 - 3.2 U.S. vs Cdn soil & water conservation expenditures in Pr. Provs vs N.D. & Montana
 - 3.3 Canada's principal zone with soils suitable for agriculture
 - 3.4 Biomass production at Breton Plots 1930 -1961: ferts & crops systems compared
 - 3.5 Comparison of yield incr. influence vs yield decr. influences, Minn corn 1930 -79.
 - 3.6 Cdn soil scientists in Agr Dev Assit overseas: Paper copies only of Trans #32 - 38
 - 3.7 Effect of tillage equipment in surface straw residues in Camrose Co. (paper copy only)

Explanations Regarding Bentley's Transparencies

(Listed 2 September 1999 by CFB)

My transparencies were all prepared for classroom use, including non-agriculture classes, or for any of a very wide variety of invited addresses or professional presentations.

The transparencies are now arranged as hereunder.

1. Red covered ring binder (labelled Book 1) with a list by number and title of all items therein.

For each of the some 160 entries there is photo copy of the transparency concerned.

The actual transparencies are in individual numbered file folders in the file cabinet drawer of hanging files for them.

2. Blue covered three ring binder has contents and transparencies in dossiers, each having a list of contents.

#1 Green Revolution related transparencies.

#2 Transparencies for Pacific Soils meet (land resource section),

#3 Miscellaneous x miscellaneous topics - - - some photo copy only.

#4 List & transparencies for Bentley's summary of Sustainable Land Management Wkshop held in North Thailand Sept 1991. The IBSRAM newsletter following that meeting highlighted the Bentley presentation.

(That presentation led to Bentley being invited to be the foreign summarizer for a somewhat similar soils conference in Alexandra Egypt in June 1993. The Bentley presentation is the final paper in the published book "Sustainable Agriculture in Egypt.)

#5 Some 12-15 transparencies "Factors & Potentials for Increasing Agricultural Production in Canada".

#6 Photo copies of the 1st 7 transparencies of Bk 1 (related to the green revolution.).

Brown envelope #1: Bentley's Klinck Lecture Tour Transparencies (1981)

Brown envelope #2 Miscellaneous second copies of transparencies - - - most from those in Book #1.

LIST OF BENTLEY's QUALITY TRANSPARENCIES 6/3/1990

GROUP 1: Green Revolution related/examples

0. *Three thought provoking opinions.*
1. Graph of response of traditional and HYV to fert. N
2. Heads of wheat: local & HYV - - -Kashmir 1976
3. Graph of wheat yields Yaqui Valley Mexico 1926 to 1984
4. B'Desh: area in HYV vs local wheat: & yield/production increases
5. Rice in Colombia: areas; yields; production
6. Simplistic example of benefits of HYV wheat to India
7. Table showing differences in yield improvements by continents

GROUP 2: Population Graph & illustrations of effects of increases

8. World population 1 A.D. to 2050 in graphical form
9. Age pyramids and respective labor forces: Sweden & Costa Rica
10. China: decline in rate of population increase 1962 - 1986
11. Africa: more food but more mouths = less/capita food

GROUP 3: Trends in food production & some related factors

12. India: wheat & rice production: world grain area/capita & fertilizer use/capita; per capita grain prod. Afr. & L.A.
13. Trends in fertilizer use/ha: Asia; Afr.; L.A. & world.
14. Africa: % of export earning spent for food imports
15. Africa: decline in food production/capita 1974 - 1985
16. Subsistence level of food & production/capita Afr. 1950 -1985
17. Devel. asst. fund flows: all LDCs vs Afr. 1980 -186

(Bentley's Quality Transparencies Continued)

GROUP 4: Land and Forest Degradation and other Environmental Items

18. Sustainability of arable agric & eggs of degradation causes
19. Global agricultural land degradation per year
20. Effects of soil & crop management of grain yield: Sadoré Niger
21. Ethiopia's forest disappearance 1900 - 1990
22. In LDCs: more people = fewer trees = environmental disaster
23. Some effects & amounts of deforestation
24. Assaults on forests: Europe; Ethiopia: Canada
25. Acidification of lakes globally
26. *There is no transparency of this number.*
27. Global examples of agric. land degradation
28. Estimated yield reductions due to erosion in Kenya
29. Some urban air pollution data
30. Some data regarding water pollution
31. Are Canadians the worst polluters/capita?

GROUP 5: Agriculture and Environment Reltate Items in Canada

Group 5. BENTLEY'S SOIL SCIENCE SEMINAR TRANSPARENCIES 1990

"CANADIAN SOIL SCIENTISTS IN DEVELOPMENT ASSISTANCE & ASSOCIATED PROBLEMS"

- 32.. Activities of Canadians in development assistance.
33. Need new approaches to development assistance especially in agr. & soils.
34. Some background to soil degradation in LDC's.
- 35.
36. & Six proposals to halt/reverse agricultural land degradation in LDC's.
37. Perceived benefits from the foregoing six proposals.
38. There are formidable resistances & constraints that impede effective action

Group 6

CANADA'S AGRICULTURAL LAND RESOURCES & SOME QUALITY RELATIONSHIPS

39. Map of agricultural lands in Canada.
40. Zones of soil/climate limitations on agriculture in Canada.
41. & Maps by Geno & Geno estimating effect on P. Prov. agric. 1⁰C temp. decline.
42. ↘
43. ↘ Approx. provincial agro/climatic indices and corresponding agr. prod. potentials
44. ↘ CLI classes 1 - 4; relative yield potentials; & relative crop prod. costs.
45. Alberta data to show CLI classes are location specific: Tom Peters data.
46. Illustration of combinations of frost-free periods & regions on Alberta yields.
47. Approximate agricultural production potentials of Cdn. provinces.
48. Areas of CLI classes 1 - 4 in the Prairie Provs.
49. Yield increase 1940 - 1970 for each P. Prov. and Ontario.
50. Minnesota corn yields increased 2t to 6 t in 50 years - - inspite of degradations.
51. Changes in farm areas by Canadian regions 1921 - 1971
52. Relative self-sufficiency in food production of the Canadian provinces.

GROUP 7. LAND RESOURCE USE, & EFFECTS OF MANAGEMENT & POLICIES

53. Grassland soil zones of the P. Provs.
54. Diagramatic illustration of a Chernozemic soil profile.
55. Characteristics of a Chernozemic "A" horizon - - in words.
56. Effects of farming on Chernozemic soils (and other too).
57. Types of agricultural land degradation in AB
58. Bentley's guesstimate 1980 of yield effects of soil degradation.
59. Diagram of effects of 100 years of monocropping on N supply.
60. ^A/_B 1990 Better Crops maps of soil test levels in N. Amer.
61. A. Yields at Breton plots after 30 years.
61. B. Nutritional assessments on Breton Plot crops.
62. ~~Sadore~~ ^{by 20 ICRIAT data} data on effects of soil management. *stet*
63. Soil cons. expenditures of Cdn Federal & Prov. Govt. on soil. cons. compared to equivalent U. S. expenditures.
64. Canada's CLI system Classes and their characteristics & limitations.
65. Producer agric. subsidies E,E,C,, Canada, & U.S. 1988.
66. Urbanization of CLI land classes Edm. & Calagary 1966-73.
67. Changes in Cdn Farmland areas 1956-1976.
68. Alberta Govt. "Options" for expanding the agr. land base 1988-2088.
69. Bentley's definition of sustainable agricultlure.
70. Relative food costs for 15 countries - - - % spent on food.

GROUP 8. DEGRADATION RELATED TRANSPARENCIES: CANADA & TROPICAL

- 71 Types of degradation problems: all occur in Alberta.
- 72 An alternative list of degradation types or factors.
- 73 PFRA estimates of P. Prov. degradation costs to 2000.
- 74 Some off-farm estimated costs of degradation. (~~Not yet prepared~~)
- 76 Examples of degradation effects from : Nepal, Sadoré, Africa and Canada.
- 76 Mitigation programs suggested by Bentley to reduce degradation in Canada.
- 77 Proposal to maintain/enhance land quality in Canada
- 78 Some program proposals to rebuild soil quality in Alberta
- 79 Benefits anticipated from the proposals on # 78
- 80 Proposals are neither PIE IN THE SKY nor Dreaming.
- 81 Some causes of tropical soil degradation.
- 82 Proposals to halt/reverse tropical soil degradation.
- 83 Benefits anticipated from the 'proposals in 82.
- 84 Single sheet with # 82 & # 83 on it.
- 85 *W. Afr Ag Res Rev. of WB aspirators of researchers*
~~Bentley proposals for soil quality improvement in W. Africa.~~
- 86 Some myths about farming & food needs constitute problems.

GROUP 9. TRANSPARENCIES (PREPARED FOR "TEA & TID-BITS".)

(Numbers upper left of white copies; upper right on transparencies)

- 87 1. One person's global perspective.
- 88 2. Components of Edmonton's residential garbage.
- 89 3. Environmental tips from Edmonton Examiner.
- 90 4. Conserving water: suggestions from Environment Canada.
- 91 *Kenya/Can Guesses Savings needed/new job created*

GROUP 10. ASSEMBLED JUNE 1991 (L FOR GMCC ELDERHOSTEL ETC

- 101. Chemicals in animal and plant nutrition.
- 102. Main sources of increases in agricultural productivities.
- 103. Population projections for stabilization at 2 children per family.
- 104. Canadian soil limitations on agriculture; permafrost; rocks; agricultural areas.
- 105. Effects on farmable areas in P. Provs. with 1° C drop in temperature.
- 106. California range land improvement: #1.
- 107. " " " " #2.
- 108. " " " " #3.
- 109. Iowa corn yields vs. Sask. wheat yields.
- 110. Sask. wheat yields vs. North dakota wheat yields.
- 111. Alberta net farm income 1948 - 1988 - - -graph.
- 112. Agricultural subsidies 1970's and recently - - - 6 countries.
- 113. Percentage of farm pop. 1931 - 1986 & aver. farm size---graphs.
- 114 *Food safety tests abbreviations*
- 115 *General Guide For Suspected Carcinogens*
- 116 *Endogenous Hormones*
- 117 A *Hayts namapa yields*
- 117 B *" " topsoil dusts*

TRANSPARENCIES ARRANGED 4 April 1994

TRANSPARENCIES ARRANGED on 4 APRIL 1994

Group 11. Some Used for Eng. 405 March 1994: Changes in labor productivity & employment.

No.

- 121 Labor force in Canada 1867 and 1994; Teacher wages & cost of bread 1934 & 1994.
- 122 Then & Now: Stephansson House data; 1892 & 1982 comparisons wages & costs.
- 123 Improvements in ON pork production efficiency 1951-1991-
- 124. " chicken " "in ON " "

- 125 Post-industrial examples in changed labor reqmt per unit of output: from Reich's book.
- 126 Reich's labor force categories & changes in incomes 1970 - 1992.
- 127 Cdn rates of unemployment 1950's to present: Kroeger 1993.
- 128 Kroeger's UI costs in Canada 1970 to 1994.
- 129 Factors affecting Quality of Life (Competitiveness)

Group 12. Some Socio-Econ. Items for Eng. 405 March '94.

- 131 U.N. population projections 1990 - 2100
- 132 Female literacy rates and population rates of increase 1988 - 2000 From C.S.M. 8/7/92
- 133 Inverse relation: female education:births (U.S.A. 1970.)
- 134 Bentley to RSC defines Development.
- 135 Data for ICRISAT broad beds in a village. 500 to 2500 kg sorgo.
- 136 Thai data illustrating rural:urban social inequities.
- 137 Bentley's definition of Sustainable Agric.
- 138 Biomagnification in herring gull eggs for two pesticides: Lake ON.
- 139 Bentley's GOOD NEWS BAD NEWS for concluding lecture to Engineers.
- 140 List arguments: supportive of; or opposed to: 7 statements.
- 141. Six statements very similar to #140.
- 142 Possible written assignment: Engineers last lecture 1994.

new or restore trans.

immediate
Dist all
trans Eng
FB 485
'95

- # 143 #1
- 126 #14
- 144 10
- 145 12
- 127 15
- 128 16
- ~~133~~ 18
- 146 21
- 147 23
- 148 26
- 149 25

Factors effecting lifestyles
 Reich's Labor Force Categories.
 % of Consumer # for Food Econ '47-'92
 Danziger Cartoon: reduce taxes.
 Kroeger U.I. costs in Can.
 " Unemployment Can 1950-1990s
 ♀ literacy & # babies
 Egypt Pop Iner 2.8% & food
 India Encourages all only 2 children
 Cont. Pop Iner = Problems
 Selected World Demog. Data

13. Miscellaneous Items Related To Aspects of Africa: Some Have Data

- 151 Agro-ecological Zones of West Africa.
- 152 Sustainable populations for food production & fuel supply, vs current pop. W. Afr. 1980
- 153 African food import costs & export earnings of agric. exports 1971-1984. Graphs.
- 154 ANigerian on-farm comparison of maize yields, local & HYV varieties, with & without fertilizer.
- 155 Sorgham yield, Burkino Faso, with & without 60 N, with 4 mgt. practices
- 156 Population increase vs per capita grain production 1971-85 for 12 African countries.
- 157 World regions & African refugees 1986 - - - total and per million of populations.
- 158 Some Egyptian food self-sufficiency data, and agricultural trade balances '70's & 80's.

14. A couple of Land Resource Related ones: Global & AB

- 161 Nyle Brady's data for Global land resources by soil orders & agricultural potentials.
- 162 Colored map (a poor one!) of surficial deposots in Alberta.

Alphabetic List of Transparencies, by topic

(A transparency may be listed under several headings)

1. Africa Related: 151-158 11/9/99 Clearly some transparency numbers are not entered here. 98

2. Agricultural Land Resources

2.1 In ABI 152

2.2 In Canada:

2.3 Global: 161

3. Economic --- Various aspects

3.1 Job creation costs:

3.2 Robert Reich Categories etc.

3.3 Project data

3.4 Agr. Res. & Food Costs

3.5 Economic Disparities/Inequality

3.6 Food Imports: Agr & others

4. Energy related

5. Environment

5.1 Air: 24, 29,

5.2 Water: 23, 25, 30

Emission Control

5.3 Land/soil degradation: 19, 27, 56, 57, 58, 59

5.4 Cdns pollute/degrade: 31

5.5

5.6

6. Food production: 16, 28,

7. Forestry: 21, 22, 23, 24,

Green revolution: see also #11: 1, 2, 3, 4, 5,
6, 12, 49, 50, 61B, 62,

9. Post-Industrial; incr. productivity:

10. Population:

10.1 Stats & rates of incr.; food/cap; dependent ratios

10.2 Educ, single parents, job creation costs.

11. Research Dividends: see also #9:

11.1 Soils:

11.2 Crops & Livestock: 7₂

11.3 Green Revolution: 1, 2, 3, 4, 5, 6, 12, 49, 50, 61B, 62

12. Soils & Soil Sci. Related:

12.1 Land Resources:

Alberta: 45, 46, 56, 57, 58, 59, 60

Canada: 39, 40, 41, 42, 43, 44, 45, 47, 48, 51

& CLI: 53, 54, 55, 56, 60A, 60B,

World:

2 Sustainability: 18, 28, 46, 52, 56

12.3 Soil Mgt, Fert: 12, 13, 20, 27, 28, 59C, 60A,
60B, 61A, 62

12.4 Agr. Chem (incl fert) & Food/Feed quality & Safety:
61A

12.5 Soil Scientists & Dev. Asst: 32, 33, 34, 35, 36, 37, 38

GROUP 9. TRANSPARENCIES (PREPARED FOR "TEA & TID-BITS".)

(Numbers upper left of white copies; upper right on transparencies)

- 87 1. One person's global perspective.
- 88 2. Components of Edmonton's residential garbage.
- 89 3. Environmental tips from Edmonton Examiner.
- 90 4. Conserving water: suggestions from Environment Canada.
- 91 *Kenya/Can Guesses Savings needed/new job created*

2007-08-93

African Population Data Arranged by Fred Bentley

- #1 Effects of birth rates on % of population mbrs of work force
- #2 4. differing rates of pop. incr + % of pop mbrs of work force
- #3 African decline of food production/capita in 12 yrs
- #4 Africa had lowest per capita production of food grains
- #5 1960-1988 Africa food production/capita $114 \rightarrow 92 = -20\%$
- #6 African per capita food grain 1950-1985 below per cap needs.
- #7 1971-84 African food grain imports more than tripled
- #8 Sub-Saharan cereals deficit consistently below production
- #9 African traditional agric. production methods inadequate
- #10 It costs to create new jobs: @ Kenya's 4%/yr incr pop.
about 75% of family income needed to create new jobs.
- #11 Another version of #10.
- #12 " " " "
- #13 Food and fuel productions X below/capita needs.
- #14 "The Human Development Index" (HDI)
 $\frac{3}{4}$'s of the countries with HDI's less than 50% are Afr.
- #15 Literacy % and births/woman
- #16 1993 projected Population Increase by 2100
- #17 Declines in grain production 1971-85 (12 Afr. Countries)
- #18 Africa worst demographic data 1991
- #19 Bentley letter to Colm. J. re G-8 + Africa

Red Binder # 4

ICRISAT slides sorted and thinned March 2000 in five categories: (Reviewed March 2001)

Sheet #

- # 1 "Pastures" and regrowth when pastures are protected; sorghum diseases;
7 photos of red and black soils at ICRISAT
- # 2 Soils: the ICRISAT 'broad beds'; animal traction; and P deficiency.
- # 3 Genetic variations in sorghums; P deficiency; stover enroute to Hyderabad as a
principal feed for Hyderabad buffalo herd dairies.
- # 4 Scenes in the Hyderabad region: Paddy; groundnuts; flamboyant; etc
- # 5 The Green Revolution --- (plant breeding achievements + irrigation + fertilizers)
at or near ICRISAT Campus. The ICRISAT Creshe, instigated by Bentley

Group 12. Some Socio-Econ. Items for Eng. 405 March '94.

- 131 U.N. population projections 1990 - 2100
- 132 Female literacy rates and population rates of increase 1988 - 2000 From C.S.M. 8/7/92
- 133 Inverse relation: female education:births (U.S.A. 1970.)
- 134 Bentley to RSC defines Development.
- 135 Data for ICRISAT broad beds in a village. 500 to 2500 kg sorgo.
- 136 Thai data illustrating rural:urban social inequities.
- 137 Bentley's definition of Sustainable Agric.
- 138 Biomagnification in herring gull eggs for two pesticides: Lake ON.
- 139 Bentley's GOOD NEWS BAD NEWS for concluding lecture to Engineers.
- 140 List arguments: supportive of; or opposed to: 7 statements.
- 141. Six statements very similar to #140.
- 142 Possible written assignment: Engineers last lecture 1994.

Tajikistan, Samarkan, Moscow & Leningrad

(International Soil Science Society 10th Congress . Moscow. USSR July 1974: Notes by Fred Bentley 30/1/2000)
 ("Six day tour to Tajikistan" although as in comming President to the ISSS and the fact that Bentley made application to go on what was ,for him , a much preferred 10 day tour, the Bentleys were assigned without option to the six day Tajikistan tour.. Tour scheduel: leave hotel at 07:00 ; bus broken down at 08:00 - 08:30 arrived at airport at 10:00 ; "you missed the flight " ; waited until about 19:00 : dusk soon after takeoff so could see nothing: arrived in Dashumbe about 23:00.

Defacto tour: Day 1: Dashumbe tours & muesum visit; Day 2: Field trip in irrigated and cultivated area in vicinity of Dashumbe: Day 3: Tours in the very rolling and arid loess region where livestock grazing was the dominant activity; Day 4: about 08:30 depart to go to the mountainous area; interesting gorge --- some light rain "too hazardous to go on": return to Dashumbe. Day 5: Leave to go into rolling loess region to see and just being completed earth filled dam ---: you are going to be the first ever foreginers to see it: " Interesting, nothing great. Proceede to entertainment pavillion for high level visitors. A very pleasant fine dinner. Day 6; Leave Dashumbe for flight to Moscow: about a six or seven hour flight. Airborne: "We have a surprise for you: we are going to stop at Samarkan so you can see the wonderful things there." Samarkan is a fabulous place: great sights. Left for Moscow about 19:00 as light was beginning to fade. Unable to see terrain we were over. Arrived at Moscow airport about 00:30 Since dinner was on the list of things we were receive to we waited an hour for cursing staff to get a meal for the 25 of us. We were delivered to our hotel about 03:00.

Slide

Sheet Brief list of contents

-
1. Day 1: Dashumbe street scenes and museum photos.
 2. Day 2: Intourt host (he had never been outside moscow before); fruits, flowers; irrigation canal and resulting soil salinity; some loess scenes.
 3. Day 3: Rural people, some housing (from the distance), loess scenes.
 4. Day 4: Started up gorge 'rained out' :more loess and people at work.
 5. Day 5: Trip into higher more rugged region to see dam and be guests at an entertainment centre for high level visitors. A very fine meal.
 6. Day 6. Leave Dashumbe for Moscow: air borne "We have a surprise for you. We will stop at Samarkan" Spent six to eight hours there; excellent photos - - -see also sheet 7.
 7. Day 6: Samarkan to Moscow Hotel; arrived about 03:30 of day #7! !
 8. Days 7 & 8: After truly great difficulty Helen and Fred had manged to get permission to go to Leningrad "not on your schedule - - - you can spend the three extra days in Moscow !." Since we were not part of a tour group we were an annoyance to all everywhere we went.
 9. Day 9. Moscow scenes.
 - Day 10: We escaped from USSR again. And again, as after our first trip to the USSR, we had no desire to ever return there.

Slide binders 1 This is one of about 25 Binders of Selected Kodachrome Slides
Taken 1952-1993 in over 50 Countries
arranged according to Countries and/or Special Interest Topics

There are brief Explanations, Descriptions, or Expressions of View in Each Binder
prepared by C. Fred Bentley, O. C. Professor Emeritus of Soil Science, U of A.

There is an index sheet by countries or topics . Each binder has its own list of contents or topics, with accompanying short explanations, descriptions or stories. In each binder the sheets of slides are numbered in sequence in the lower right corner.

Binder # 1 Some soils related slides from Alberta, Canada, S. America, Africa and Eastern Europe.

- # 1 How soil monoliths are taken. Soil monoliths are mounted vertical soil sections about a metre in depth which display the varying characteristics that are the visual basis for classifications of soils.
- # 2 Road cut photos of soils with humus rich upper layers taken near Bogota, Colombia(SA). Such humus rich soils are very unusual in the tropics, but may occur in cool high altitude ares.
In deep valleys near Bogota irregular mud slides of soil in farm fields may occur due to heavy rains and the effects of , and types of ,cultivation by farmers.
- # 3 These photos, taken at a very high altitude in Ethiopia, show a very good soil with superior moisture holding capacity due to its high content of a particular type of clay. In one photo alternate swelling and shrinking of the high clay content soil during the wet and dry seasons has slowly brought stones from some depth to the surface - - - necessitating much labor to remove them for arable farming.
- # 4 These photos were taken in north central Ghana in West Africa. They show extremely hard fragments of rock-like material, ranging from hen eggs to bath tubs in size, which now litter the soil surface. They are very numerous components of the soils in this specific area and it is generally impractical to try the cultivate such soils. The origin of rock-hard lumps or chunks is interesting.
Many thousands (or millions) of years ago under swampy conditions soil forming processes resulted in accumulations of iron (ferrous) rich materials as a layer well below the soil surface. When earth quakes or earth movements disrupted such areas and exposed the iron rich layer to the air the iron compounds were oxidized and formed an extremely hard material - -- harder and more weather resistant than concrete. Today where such special conditions occur local people 'mine' such subsoil materials by cutting out blocks similar to our concrete blocks. After a few months of exposure to the air the blocks harden and are ready for use in construction. Many of the ruins at Ankor Wat, the famous remnants of an ancient civilization in Cambodia, were built of such hardened material (called 'laterite', or 'Cabook' in some places). During the more than 1500 years since Ankor Wat was built there has been very little weathering of that material - - even in a hot, moist and humid environment! In Ghana the hardened chunks are called 'plinth'.
- #4 - 10 These photos consist primarily of many soil monoliths, or soils in road-cuts or 'pits' , displaying the great variations in soils even in restricted regions. The

soil monoliths and related materials were prepared by the Rumanians who hosted the International Congress of Soil Science held in Bucharest, Rumania in 1964. The monoliths were prepared specifically for that soils congress. Other photos in these sheets were taken in Moscow, or during a special pre-congress soils tour from Moscow to the Black Sea arranged for 125 soil scientists who were enroute to the Congress in Rumania.

Binder #1 continued: A few photos related to soils, vegetation, and land resources - - or scarcity!

- #11 The world-famous "Morrow Soil Fertility Research Plots" University of Illinois, Urbana - - - established 1886 (?). Dr. F. A. Wyatt, the first Professor of Soils in Canada, came to the U of A in 1919. from the University of Illinois. Here in Alberta it soon became evident that most of the grasslands lands of the Prairie Provinces suitable for arable farming had already been taken up by homesteaders. Lands for the flood of incoming immigrants intent on homesteading would have to go into the wooded regions where the soils were dramatically different to those of the grasslands. Dr. Wyatt and his colleagues began extensive soil fertility and cropping systems research aimed at finding improved fertility and cropping practices suitable for "Gray Wooded Soils." That led to establishment in 1930 of The Breton Plots of the University of Alberta, the layout of which was affected greatly by Dr. Wyatt's knowledge of the Morrow Plots. The Breton Plots of the University of Alberta have had such an enormous effect on farming in Alberta's wooded regions they were designated as "A Registered Alberta Historic Resource" on the occasion of the 70th Anniversary of "The Plots", July 1999.
- #12 This sheet has photos related to "Gray Wooded Soils". The name resulted from finding that on first plowing the exposed furrow layer of soil had an ash like gray color which is generally of low fertility. These photos show some gray wooded region landscapes.
- #13 The photos in this sheet illustrate some of the marked differences in 'road-side monolith' exposures of a few grassland and a few Gray Wooded soil profiles.
- #14 Due to the differing nature of the geological formations which were ground up, mixed and deposited by the most recent glaciation (which melted away from Alberta about 10,000 years ago) compositions of the surface materials left in various regions by the glaciers differ greatly in their mineral and chemical compositions. Soil parent materials that contained large amounts of certain water soluble salts such as sodium chloride (table salt), Epsom Salts (magnesium sulfate) sodium sulfate and so forth result in formation of soils with exceedingly hard compact subsoil layers that may range from 10 to 25 cm in thickness. Such soils are called 'solonetzic soils' (a name of Russian origin because that was where such soils were first described). Solonetzic soils are of generally poor quality for arable agriculture and because they often occur in very uneven and irregular distribution they pose problems and challenges as to how, or if, they can be farmed..

This sheet also has two photos showing how Alberta's world famous "oil sands" have even contributed have some lumps or patches of that material to surface soils in Alberta's renowned Fort MacMurray region where enormous developments are now extracting huge amounts of oil from 'the oil-sands'.

GrBk 2(1)

This is one of some 25 Binders of Selected Kodachrome Slides
Taken 1952-1993 in over 50 Countries
arranged according to Countries and/or Special Interest Topics

There are brief Explanations, Descriptions, or Expressions of View in Each Binder
(prepared by C. Fred Bentley, O. C. Professor Emeritus of Soil Science, U of A.)

There is an index sheet by countries or topics . Each binder has its own list of contents or
topics, with accompanying short explanations, descriptions or stories. In each binder the
sheets of slides are numbered in sequence in the lower right corner.

Green Binder # 2 Soils and landscapes in Alberta or elsewhere in Canada.
Sheet #

1 Aerial views taken during a flight from Cagary to Edmonton, early September 1975.
The very dark areas are being 'summer fallowed', a year when no crop is planted and
the land is cultivated to kill weeds. Fortunately this environmentally unfriendly
practice (which increases soil erosion by water run-off, and wind erosion) has declined
greatly and may now affect about 5 percent of cultivated lands in this prime
agricultural area of Alberta. On-farm research by University of Alberta soil scientists
had a significant role in reducing the usually wasteful practice of summer fallow in this
region. The yellow fields are ripening grains ready for harvest.

2 These 1971 photos taken in the Swan Hills area of Alberta illustrate some of the soils
(predominantly Gray Wooded Soils) as well as some of the predominant vegetation and
topography types of the region.

3 Land clearing (cutting trees and burning them) in preparation for ploughing fields for
cropping entailed back-breaking work by early homesteaders. They used axes to fell
the trees and 'grub hoes' to take out the larger roots . Originally cultivation and
seeding were done with plows and drills pulled by oxen or horses.

"Homesteads", public lands sold to settlers for a few dollars, were usually a 'quarter
section' (160 acres - - - a quarter of a square mile.) It usually took a decade or
two for a homesteading family to get most of their quarter section under cultivation.
Today land clearing is done by special bulldozers, at a cost of about \$150 per acre. All
production and harvesting activities are now highly mechanized, and most Alberta
farms are in the 800 to 2000 acre range.

Due to constraints of climate, soil quality and topography most remaining as yet
undeveloped lands with some suitability for arable agriculture provide such low
incomes that few people are willing to accept such a difficult lifestyle.

4 These aerial views , taken primarily in the Edmonton region, illustrate differences in
topography, and also variations of land qualities for farming in this small area.
Ice from the most recent glaciation (which in the Edmonton region disappeared about

GrBk 2 (2)

10,000 years ago) must have exceeded 800 metres in thickness here. Smooth flat areas, such as in the upper left photo, have stone free soils which have developed on sediments that settled out of the waters of former Lake Edmonton. Prior to the most recent glaciation most of the lands of Alberta would not have been well suited for farming.

- # 5 These photos illustrate some differences in forest vegetations. Kinds of tree differ greatly in the effects they have on the soils where they grow. The chemicals released by the decomposition of leaves, needles and debris have very different effects on the soil materials on which they grow. In Alberta even such closely related trees as white poplar (*Populus tremuloides*) and black poplar (*Populus balsamifera*) cause marked changes even when they are grown on the same soil!
- # 6 These photos illustrate some of the common types of water erosion in Alberta. They do not include examples of wind erosion which is most serious in Southern Alberta. Fortunately research by agronomists has developed cropping and management practices, which, when adopted by farmers, have reduced soil erosion in the Prairie Provinces
- # 7 The left column of photos illustrate how wind erosion has removed so much soil that the many stones now exposed confirm that there has been very damaging erosion. Moreover the surface stones are so numerous and of such a size as to be very damaging to seeding, tilling and harvesting machinery.

The right column photos show enormous damage due to acid rain from mining activities, which has killed almost all vegetation in some places. Indeed such damage at Sudbury, Ontario had converted the area into such a barren rockscape that American astronauts rehearsed there when preparing for the first flight of humans to the moon.

- # 8 The upper seven photos illustrate soil erosion in Alberta in the early 1970's.

The lower two photos show tree windbreaks, in the naturally treeless prairie of a community near Saskatoon, Saskatchewan, about 1950. The results were encouraging but the practice was not widely adopted, in part because of the ever larger machinery used in farming.

2007-08-42
a+b

11 pages of text herein

Slide Binders p 5

This is one of about 25 Binders of Selected Kodachrome Slides
Taken 1952-1993 in over 50 Countries

They are arranged according to Countries and/or Special Interest Topics
There are brief Explanations, Descriptions, or Expressions of View for the slides in each sheet
of slides. Most slides have some written note(s) on them

(Prepared 2000 by C. Fred Bentley, O. C. Professor Emeritus of Soil Science, U of A.)

There is an index sheet by countries or topics . Each binder has its own list of contents or
topics, with accompanying short explanations, descriptions or stories. In each binder the
sheets of slides are numbered in sequence in the lower right corner.

Binder #3 The Sri Lanka (formerly Ceylon) Slides

There are about 350 slides in this collection, in plastic slide-holder sheet with 20 slots each.

Sheet Nos. on
rt. lower corner Titles: topics; descriptions &c

- # 1 Map of Ceylon; & a miscellaneous collection of indigenous animals
- # 2 Scenes in Colombo (the Capital); most at zoo or harbour.
- # 3 'Bible' rock enroute to Kandy (ancient capital); Kandy scenes &c
- # 4 Dewali & 'The Perahera' major annual celebrations
- #5A & #5B: Scenes & people in Kandy & vicinity
- # 6 Shifting cultivation (or 'chena') & some principal tree fruits or foods
- # 7 Mechanical ' land clearing ' ; & excavating 'cabook' (laterite) blocks that harden
- #8 Peradeniya Gardens - - -world renowned botanical garden.
- @9 Nuwara Eliya & Horton Plains (7,000 - 7,500 feet) Vacation, & exotic agri expts.
- #10 Jaffina (hindus & seek independance; & Trincolamalee (last UK Asian harbor)
& Adam's Peak (renowned pilgrimage point & significant to 3 religions)
- #11 Rock weathering exposed in road cuts; religion related; a fertilizer warehouse.
- #12 Archeological sights in ancient Capital (2500 yrs ago) Annaharadapura. Remnants of
world's 1st skyscraper, world's largest dagoba etc etc
- #13 Annaraharadapura continued.
- #14 Polonaura: ancient capital 1500 yrs ago. Interesting ruins.
- #15 More Plonaura ruins: Sigeria - - fortress of a rebel.
- #16 Rice & rubber production
- #17 The Coconut story: one of three most important commercial crops.
- #18 & 19 tea production fields, soil erosion, spectacular scenery
- #20 Tea processing
- #21 More tea scenes

Binder
3

Binder
4

This is one of about 25 Binders of Selected Kodachrome Slides
Taken 1952-1993 in over 50 Countries

They are arranged according to Countries and/or Special Interest Topics
There are brief Explanations, Descriptions, or Expressions of View for the slides in each sheet
of slides. Most slides have some written note(s) on them

(Prepared 2000 by C. Fred Bentley, O. C. Professor Emeritus of Soil Science, U of A.)

There is an index sheet by countries or topics . Each binder has its own list of contents or
topics, with accompanying short explanations, descriptions or stories. In each binder the
sheets of slides are numbered in sequence in the lower right corner.

Binder #3
The Sri Lanka (formerly Ceylon) Slides

There are about 350 slides in this collection, in plastic slide-holder sheet with 20 slots each.

Sheet Nos. on

rt. lower corner Titles: topics; descriptions &c

- #1 Map of Ceylon; & a miscellaneous collection of indigenous animals
- in* #2 Scenes in Colombo (the Capital); most at zoo or harbour.
- Binder* #3 'Bible' rock enroute to Kandy (ancient capital); Kandy scenes &c
- # 3* #4 Dewali & 'The Perahera' major annual celebrations
- (a)* #5A & #5B: Scenes & people in Kandy & vicinity
- #6 Shifting cultivation (or 'chena') & some principal tree fruits or foods
- #7 Mechanical ' land clearing ' ; & excavating 'cabook' (laterite) blocks that harden
- #8 Peradeniya Gardens - - -world renowned botanical garden.
- @9 Nuwara Eliya & Horton Plains (7,000 - 7,500 feet) Vacation, & exotic agri expts.
- #10 Jaffina (hindus & seek independance; & Trincolamalee (last UK Asian harbor)
& Adam's Peak (renowned pilgrimage point & significant to 3 religions)
- ↑* #11 Rock weathering exposed in road cuts; religion related; a fertilizer warehouse.
- in* #12 Archeological sights in ancient Capital (2500 yrs ago) Annaharadapura. Remnants of
Binder world's 1st skyscraper, world's largest dagoba etc etc
- # 4* #13 Annaraharadapura continued.
- (926)* #14 Polonaura: ancient capital 1500 yrs ago. Interesting ruins.
- #15 More Plonaura ruins: Sigeria - - fortress of a rebel.
- #16 Rice & rubber production
- #17 The Coconut story: one of three most important commercial crops.
- #18 & 19 tea production fields, soil erosion, spectacular scenery
- #20 Tea processing
- #21 More tea scenes

Sri Lankan (Ceylon) Slide Sheets

(Most of these slides have some identification or description on them)

Sheet Title

- # 1 Map of Ceylon plus Miscellaneous collection of indigenous animals & livestock Identities/explanations are written on most slides. A few wild elephants remain; cattle are rather few and the last 2 slides about research on forage crops for livestock feed are included as that is the only place in a developing country where I have seen 'research' on crops specifically intended to provide feed for livestock. Usually animals are fed crop residues, or they graze (usually over graze) community owned lands, roadside edges etc.

A common serious waste of resources in many developing countries is inter-agency feuding, even within the same department. An FAO forage specialist was sent Ceylon, by request, to the livestock branch in the Ceylon Dept. of Agric. to assist research on forage crops research. However the Veterinary Branch (of the Dept. of Agric.) had been doing whatever research on forage that was being done :: they would have nothing to do with the FAO forage specialist! After over a year of frustration the FAO specialist was the most disheartened development assistance worker I have ever encountered!

Flying foxes' are large bats that are nocturnal feeders on tree fruits. During the day they 'hang' on the limbs of jungle trees and sleep. Nightly in Kandy, at dusk, thousands of them leave to feed on fruit trees. They do great damage.

- # 2 A few scenes in Colombo, the Sri Lankan capital
The beaches in Ceylon are beautiful and before the current civil war tens of thousands of tourists from temperate regions were an important source of foreign exchange. The saris worn by the women at the zoo are typical garb of ordinary urban women and girls.
- # 3 'Bible Rock' enroute to Kandy, an ancient capital, now the 2nd largest city in Ceylon. 'Paddy lyiads' (where irrigated rice is grown) are often micro in size. It is traditional that when parents die the land owned is divided between the children. With 4 to 8 children families such subdividing continued for 3 or 4 generations some areas are as small as a one Edmonton house and may have multiple owners. In such cases the various owners take turns cropping such small areas. In 1952 an FAO (Food & Agric. Organization of the U N) economist saw that numerous small paddy lyiads were not being cropped, so he asked why. He found that about 10% of paddy land near Kandy was not being cropped because the many 'owners' were unable to agree whose turn it was to crop the plot next!
- Kandy lake (a man made one created by a dam) is in the centre of the city and has a circumference of about 3.5 km. It is a beautiful lake and is neat and clean at all times. A 45 minute stroll around the lake was delightful after a day at the office. The variety of activities in the centre of the city are shown by some of the slides.
- # 4 The Kandy Perahera, held in the August week of the full moon, is a seven day affair which grows nightly for its duration. There is an elephant and a few drummers the first night; half a dozen elephants, plus drummers, dancers and torch bearers by the third night, and bedlam the concluding night. A few years after our departure one of the elephants went wild because a glowing coal from a torch bearers basket got between the toes of the elephant.

'Dewali' is an annual religious celebration and fun time, which may be likened to Christmas in Canada.

5A & 5B These are street, work and country side scenes in and near Kandy. The Afghans (2nd slide bottom row of sheet 5 A) are money lenders who really do come from Afghanistan. Their most common victims are the women who work in the tea estates. In 1953 such workers earned about 25 Canadian cents a day and they were paid at two week intervals. It was heart rending to see a line of workers receiving their pay with a couple of Afghans standing 5 to 10 metres away to collect interest on their loans.

6 The last 10 slides of this sheet show two traditions that are centuries old.

'Chena' (shifting cultivation, or 'slash and burn', or 'swiden farming') is a centuries old practice on public lands of Ceylon's arid region. The northerly and easterly 3/4 of Ceylon has a rainy period ('monsoon') of 3 to 5 months duration. The rest of the year is practically rainless and very dry indeed. There is a rather sparse tree cover on large 'dry zone' areas where, over many thousands of years, soils of very low fertility have developed. Traditionally some farmers hack down the trees on patches the size of one or two Edmonton city lots shortly before the end of the dry season.

The woody materials dry quickly in the high temperatures, usually in the 30 to 40 degree range. A few days before onset of the monsoon the woody materials are set afire and it burn only partly. With hoes and similar implements the farmers quickly plant the seeds of the crops they are going to grow. The ashes from the burned woody material are really fertilizer containing plant nutrients the trees had accumulated from considerable depths over the preceding 40 to 50 years. Yields the first year might be comparable to about 15 bushels per acre; the second year 4 to 8 bushels, and if cropped a third year 3 to 6 bushels. Lack of nutrients and fierce competition from weeds forces abandonment and return to 'bush fallow' for the next 40 to 50 years - - - traditionally! However increasing human population has shortened the bush fallow periods drastically. Today the ashes from smaller trees provides few nutrients for chena crops. because of the shortened period of bush fallow. It is often impractical to continue chena farming where bush fallow periods have become only 1 or 2 decades in duration. The 'tree house' slide is where a chena farmer slept to guard his crop from damage by elephants or other wild life - - - and from thieving neighbors!

7 'Mechanical land clearing', soil protection, land utilization, or destructive activities. Mechanized land clearing with heavy equipment was misguided and destructive because soil scientists were not involved in evaluation and selection of the areas to be cleared. Under anaerobic conditions iron in the ferrous form is quite soluble. However on exposure to air iron laden waters that seep through paddy land 'bunds' (micro dams) quickly develop the bright rusty color of iron in the ferric form.

Due to scarcity of land suitable for farming ,very steep slopes are too often cleared for cultivation. So devastating soil erosion usually occurs because annual rainfall is about six to eight times as much per year as in Edmonton. In tea 'gardens' (fields) extensive terracing is a frequent way of protecting the land from erosion as excess

water (run-off) is conducted to lower levels without cutting destructive gullies.

'Cabook' (Ceylonese name for what is also called 'laterite' in many other tropical areas with high rainfalls) is a very valuable building material that is mined from some special wet land areas that have been undisturbed for thousands of years. On flooded areas the anaerobic conditions results in accumulations of ferrous types of iron compounds and some other materials that are intermingled with the ferrous deposits. Over the centuries the water logged materials become fairly hard but after drainage using suitable axes and other tools the firm materials can be cut out in rectangular blocks of size and shape very similar to concrete building blocks used in Edmonton. The Cabook blocks are stacked in ways to maximize their exposure to air on all surfaces. After a few months the best quality Cabook is much harder and a great deal more resistant to weathering than our best concrete blocks in Edmonton. The famous ruins at Anchor Wat in Cambodia, which were built with Cabook, have resisted 1500 or more years of intense weathering under tropical vegetation and conditions. Limestone building materials near by are badly weathered.

- # 8 The Peradinya Gardens, about 3 or 4 km from downtown Kandy, are an internationally renowned tropical aboretium. During World War II Lord Louis Mountbatten used a building in 'The Gardens' as headquarters for the British Southeast Asia military command. The building where I had classes with my trainees was less than 200 metres from the building Mountbatten had used for his headquarters.

- # 9 Nuwara Eliya and district: elevation 7,000 to 8,000; a vacation resort for expatriates; a major vegetable production centre; & experiments with exotic crops.

'Patanas' are treeless steep slopes in naturally forested regions of high rainfall. For centuries, just before the beginning of the major rainy season, farmers have burned off the coarse dead grasses that grow there. When the rain begin the new grasses are good grazing areas for a few weeks. The annual burning prevents reforestation. It also results in much soil erosion when tropical downpours hit the bare soil (and rocks¹). As shown by a couple of slides horrendous soil erosion results from over-grazing some of the best patanas - - - which have many fewer slabs of exposed rock or gravelly surfaces.

- # 10 Jaffna, Trincomalee, and Adam's Peak.
JAFFNA FIRST.

In 1953 the Ceylon population consisted of:

- about 72% Sinhalese Buddhists, the original civilized people of Ceylon dating back about 3000 years;
- about 20% Tamils hindus of two kinds;
 - * 'Ceylon Tamils' who had conquered the northern part of Ceylon, one to two thousand years earlier; and
 - * 'Indian Tamils', brought by the British from the Madras region of India about 100 - 120 years ago, to do the drudgery work on tea estates - - - which Sinhalese were loath to do; and
- an 8 % mixture of: * Muslims; * burgers of Dutch X Sinhalese ; *some expariots

There was very little inter-marrying between those six 'ethnic' groups. In 1952 there were only 800 inter-marriages between any possible combinations of people from those six 'groups' - - - in a country with 8,000,000 people!

In 1948, at the time of independence from Britain, about 75% of the middle and higher rank civil servants were Ceylon Tamils. That was probably due to the Tamil willingness to work harder than the Sinhalese. In the arid and more difficult north region of Jaffna the Tamils had to work very hard to survive. However with 1948 independence the Sinhalese majority rapidly replaced many Tamil civil servants by Sinhalese, regardless of Sinhalese capability or diligence. By about 1953 that policy had been so drastic that an educated Tamil who had a Sinhalese wife decided to send their children to a Sinhalese school. He thought that would enable their children to have capability in the dominant language of the country. But those children were not allowed to attend a Sinhalese school - - - their father was a Tamil!

In the late 1970's, enroute to an important meeting in India, I had agreed to make a three day stop in Ceylon for a voluntary (without fee) consultancy on a soil problem in Jaffna. I had flown from Colombo to Jaffna but an extremely heavy monsoon rain in Colombo had flooded the airport and return there by aircraft was not possible. At that time civil war, that has raged ever since (Ceylon Tamils seeking separation to form another country) was just beginning; there had been some killings. Tensions and fears were so high that my Tamil hosts would not let me hire a taxi to take me to Colombo: "It will not be safe for you to travel by taxi with a Tamil driver." So I took the train - - - and there was an armed soldier at each end of each coach of that train!

By the fall of 1982 there were large scale massacres of Tamils in Colombo because of bombings by the "Tamil Tigers" promoting independence. At that time a Sinhalese soil scientist friend, from our days in Kandy 30 years earlier, came to a small international meeting of soil scientists in Australia. He was so deeply distressed that he immediately came to the hotel room of my wife and self to pour out the story of how devastated he was. "When you see a close and respected fellow scientist and friend, with whom you have worked for more than two decades, killed because he is a Tamil not a Sinhalese, you cannot imagine how horrible it is".

Today, nearly two decades later, the war and slaughtering continues in that most beautiful yet devastated country. As our Sinhalese friend said: "It impossible to understand the savagery between some ethnic or religious groups". Today events in Kosovo, Ireland and the near east confirm that comment!

NEXT ADAM'S PEAK

Sinhalese do not take vacations as such. Instead they go on a pilgrimage to some temple, monastery, or other place or part important to their type of the Buddhist religion. A pilgrimage to Adam's Peak is the most favored one in Ceylon. Adam's Peak is the small flat top of a rather sheer-sided mountain. The peak is about the size of one or two Edmonton city residential lots. Annually some hundreds of thousands of 'pilgrims' make the long and arduous ascent to 'The Peak' during the few weeks between the two yearly monsoon periods.

The Peak has significance in three religions: a foot print of Buddha is there (- -- a very large one!); Mohammad is reputed to have visited The Peak; and it is said that there is some link to Christianity.

Accompanied and guided by our best Ceylonese friend we began the ascent of 'The Peak' at the 4500 foot level about 22:30 hours. That timing was intended to get us to the top at about 05:45 when the sun would be rising to the east. With that timing and good luck we might be able to see the shadow of The Peak on the clouds far to the west. We estimated that there might have been about 10,000 people milling up and down the path to The Peak that night. It was a slow fatiguing climb. In some places there were paths up to a couple of metres in width. In other places there were stone slab steps of uneven height, sometimes wide enough for people going up and down to pass each other. However in the steepest places there was one-way traffic and a firm steel hand-rail protected people from the sheer drop beyond the rails. The flow of people going up and down at such railed places was alternated at about ten minute intervals for 'up', then ten for 'down'. As there were a number of such railed parts they slowed the rate of climb. We arrived at the peak (7500 feet) just in time to see the shadow of the peak on the clouds far to the west!

Due to the horde of people one could not stay at the peak more than a very few minutes - - just long enough to manually ring the enormous bell there. One ring is made for each time a pilgrim has been there, including time one! About 1/3rd of the clapper had been worn away by pilgrims; we counted one who rang 20 times = 20 years of doing the pilgrimage! The trip down to the starting point was harder than the ascent; it was hard to judge the rise of the uneven steps and if a high one was misjudged you received a painful jolt when your weight came on the leading leg.

The climb of Adam's peak was a once-in-a-lifetime experience.

TRINCOMALEE NEXT

Trincomalee, a marvellous harbour on the central east coast of Ceylon, had long been a British naval base because it is so well protected. The entrance to the spacious harbour is only a couple of hundred metres wide! In Kandy we had met a naval officer from Trinco, on medical leave because of a broken leg. He extended a very warm invitation to visit him at the Trinco naval base. It so happened that a couple of months later we were able to do that. With enthusiasm he told us we were lucky: in the morning the British fleet stationed there would depart for the last time. Ceylon did not want a foreign naval base in its territory. Obviously our friend was a high rank naval officer: at 06:00 the next morning he was personally able to take us to the lookout point overseeing the harbour. We arrived there at the exact moment of the departure of the last British naval ships to be stationed there.

It was an impressive sight, on a beautiful morning, to see the naval ships steam out to sea.

- # 11 Rock weathering; Religion related; Evaluation of fertilizer aid project.

These slides need little explanation beyond the scrawled notes on them. However it must be explained that the first two road cut slides are great examples of rock weathering and soil reactions in tropical high rainfall forest regions. Due to tremendous earth quake upheavals 100's of millions of years ago Ceylon has very rugged mountainous terrain in the south central part of the country.

The first slide is of a fresh road cut made less than a month earlier. Exposure of the fresh surface to air resulted in rapid oxidation of ferrous iron to reddish colored ferric form. The uneven color bands are due to differences in the type of minerals in the various bands of rock and so there are differing amounts of iron in them. Astonishingly, two days after a very heavy rain following a dry period, water was seeping out at the bottom of the road cut although the entire exposed surface had been dry two days earlier. The clays in such Ceylon soils are drastically different to most clays in temperate region soils and water percolates through such material as if they were sieves!

The second slide has a patch where the surface couple of cm had been scraped off to expose material that had not been fully exposed to the oxygen rich air for the couple of weeks after the road cut had been made.

There are four principal religious groups in Sri Lanka: Sinhalese Buddhists; Tamil hindus; Muslims; and a few Christian converts.

In 1983 Canada's CIDA (Canadian International Development Agency) sent a three person team to Ceylon to evaluate the effectiveness of agricultural assistance projects. One inspection encountered disastrously bad storage of some fertilizer received from Canada; that activity was given a very low performance rating.

- # 12 Anuradhapura: Ruins, of the Ancient Sinhalese Capital: more than 2500 years old.

Anuradhapura has two particularly famous ruins:

Runnveli dagoba which took 20 years to build by 20,000 workers (probably most were women). The dagoba is still maintained in excellent condition, including the surrounding wall decorated with life-sized trunks and heads of elephants - - each different to all others on that huge wall. It is believed there is a sacred Buddhist relic in the very core of the dagoba.: no one has been inside to verify that! The following six slides are of other dagobas - - - five showing various stages of decay.

The seventh slide is of the now remaining more than 1000 granite pillars (originally there were 1600 pillars) which supported nine stories of the world's first 10 story skyscraper - - - built more than 2000 years ago.

- # 13 Other slides on sheet #12 and those of sheet # 13, show the wealth and variety of one of the world's most remarkable sites of archaeological ruins. Moonstones (Carved half- circle entry pieces) are traditional much respected religious pieces.

- # 14 Polonnaura was the capital of Ceylon about 1500 years ago. The most famous among the ancient kings of Ceylon was Pakram Bahu who ruled from Polonnarua. The ruins there have great variety but generally do not match the splendors of Anuradahapura.

Slide number 12 is of a fellow soil scientist who was on a CIDA review team. His hand is on the corner of a temple ruin. A famous Hollywood film of 50 years ago set in Sri Lanka was entitled "Elephant Walk". It had a scene where the stars, Elizabeth Taylor and Peter Finch, were having a serious discussion about their relationship. In that scene Elizabeth Taylor was seated precisely where my friend was standing. So I told him of the movie scene. He promptly put his hand on the spot in the photo and instantly said: "It is still hot"! (Not a surprise at 37 C degrees !!)

- # 15 More Polonnarua Slides of Sigira

The above comments also apply to these six photos also taken at Polonnarua.

The lower 5 photos show a large flat-topped rock about 100 m high, the top of which has about the same measurements from side to side. Legend has it that two brothers were in a war to the death over which one would become king. One of the brothers built his fortress atop Sigira rock. Two of the photos show that the ruins there are badly deteriorated but they show that the development there was impressive. There were two ways for the inhabitants atop Sigira to go up and down. On the westerly side a long narrow graded pathway was chiselled along the rock face. People could walk and carry up the pathway which was heavily guarded against 'the enemy'. Part way up the walk, in a shelf protected from rain, there are half a dozen world famous frescoes which are still discernible. The second access to the top of Sigira was by a vertical ladder, flanked at the base by gigantic toes shown in one of the slides.

- # 16 Rice: Ceylon's most important agricultural crop.

Rice is the basic food of people in Sri Lanka. Practically everyone eats rice twice a day. On my first field trip we stayed at a 'Guest House' - - - a very simple type of 'hotel' with capacity for perhaps 4 to 8 guests. Very soon after we sat down for dinner a heaping plate of rice accompanied by all the array of condiment (10 to 15) that constitute a Ceylon rice & curry was placed in front of a guest at the next table. That man surprised me by his poor manners; instead of waiting for the other members of his group he started to eat. And he just kept on eating until all of the rice was gone!

The original Ceylonese people at Anarahdapura and Polonnarua were dependent on irrigated rice as their principle food. In 1953 it was still being debated as to whether those two ancient development collapsed because of the termination of the rice production capability, due soil erosion which filled the irrigation reservoirs with soil, or whether the collapses were due to prolonged fighting with Tamil invaders. In any case Kandy became the capital and the king of the Sinhalese still ruled from there when European invaders came to their country about two hundred or more years ago.

In 1953 rubber was one of the three most important commercial crops exported from Ceylon.

The last 4 slides on this sheet illustrate briefly the production of rubber latex. Small, nursery produced, rubber treelets are usually planted in contoured bands on moderate to steeply sloping lands not usable for rice production. Contoured ditches between the rows of rubber trees are dug by hand; they intercept potential runoff water and when there is exceedingly heavy rain they lead excess water to down-drains designed to prevent soil erosion. Rubber tapping is a skilled kind of work done between 05:30 and 11:00 as that is when the latex (sap) flow is best. A sharp tool removes a very thin layer on continually used sloping cuts in the tree bark. The latex is collected at the base of the long sloped cuts. The field work is concluded by collecting the latex and taking of to the 'factory' for processing. It is my guess that production of synthetic rubber in industrialized countries has reduced greatly the profitability of natural rubber production in Ceylon.

17 Coconuts are the second most important commercial crop exported from Ceylon.

The slides show coconut plantations which may be on sloping lands or low wet areas not well suited for other crops. Everything is used or reused! The husks provide the fibre for 'coconut mats' and ropes, or they are placed around producing coconut trees where their decay returns the essential plant nutrients they contain - - - an environmentally friendly recycling of crop nutrients. Coconut milk is an ancient 'soft drink'. The copra (white inner lining of the coconut) is used as a food or is processed to extract its oil which is an important vegetable cooking oil world wide.

Toddy is a kind of alternate for beer. When the trees are in bloom toddy tappers climb the trees, make an incision in a flowering stem, and attach a pail to collect the sap. By about noon vigorous fermentation has taken place and the 'toddy' (beer-like) is ready for consumption. By evening the fermentation has converted much of the alcohol content into unpleasant vinegar. When distilled the alcohol in toddy becomes a very potent alcohol similar to gin.

Hard work spurs labor-saving schemes! Often toddy tappers will fashion rope walkways from tree top to tree top in order to reduce the 'climb each tree' labor of toddy tapping. The ropes used are made of coir, the fibre made from the inside of the coconut husks. The wood of coconut trees can be used for making furniture and other uses of wood.

18, 19, 20 and 21 Tea, tea, and more tea!

Tea production and export is by far the most important commercial activity in Ceylon. In 1953 tea exports provided half of Ceylon's earning of foreign exchange.

The best quality of tea grows in higher altitudes, elevations ranging from about 1600 to 7500 feet. The Kotmale River region is where most of the best quality of tea grows. The Kotmale head water area is near Nuwara Eliya (7500 feet) and it is a rugged semi- mountainous part of Ceylon. Rainfall varies greatly due to the rough

terrain as well as unevenness of the monsoon rains. The tea estates (farms) constantly hoe between the tea bushes, which are usually kept at a height of about 60 to 100 cm, every 10 to 14 days. That protects the workers from very poisonous snakes which tend to set up house keeping if there are grassy plants and weeds between the tea bushes, which are spaced about 100 to 150 cm apart. Because the rainfall can be exceedingly heavy at times (the record in the Kotmale region: 48 inches in 48 hours) soil erosion is the most serious problem for tea producers.

Some of the slides show scrawny tea bushes on small pillars of soil shielded by those bushes from the ravages of erosion between adjacent bushes. Originally tea plantings were laid out in rows spaced uniformly about 140 cm apart - - - without regard to the slopes! That, and hoeing, were a formula for maximum soil erosion. So plantings were changed to rows in contour bands or rows of tea bushes. A further improvement was to have contour drains (ditches) between the rows of tea bushes. The drains arrest water flowing down the slopes so it can soak into the ground instead of running down the slopes causing ever more soil erosion. The contour ditches are called drains because during heavy rains water in the drains can not soak into the soil fast enough to prevent over flowing of the drains. Therefore the drain are constructed with a slope of about 90 cm per 30 m so excess water in them flows slowly along the drain to some place where it can ne directed safely into 'down drains' which are often stone walled and paved to prevent the rushing waters from cutting new gullies.

To protect small tea bushes when they are set out in the fields the preferred practice was to cut coarse grass, harvested by hand, which is placed between contoured rows of tea bushes. Various slides show most of the tea bush management described above. However there is another important management practice which also favors soil erosion. Tea bushes are 'plucked' by hand, normally two leaves and a bud, in such a way as to keep the top of each bush rather flat and level. The tea bushes get tired of that and about every 3 or 4 years their growth rate declines sharply. The remedy is to get the pruning shears and cut off the leaves and lower the 'plucking table' top by about 20 to 30 cm. That results in bare naked tea bushes! Nature doesn't like that and within a few weeks new leaves develop on the tea bushes - - - ready to repeat the cycle. Tea bushes may continue to be productive for 3 or 4 decades.

Tea plucking (collecting) is done by women who must not take more than 2 leaves and a bud at a time, nipping them off with finger nails and tossing them into wicker baskets on their backs. It is arduous work as each plucker was required to pluck 27 pounds to earn a full day's wage - - - of about 25 cents Canadian in 1953.

There are striking differences in the appearances of the tea fields in various slides. Most of the fields that have rather thin covering by the tea bushes were taken in 1953. Most photos of beautiful lush green fields were taken in 1976. The principal explanation of that difference is applied genetics: the much more productive, greener tea fields are primarily genetically modified organisms (GMO tea bushes).

During the first 60 to 80 years tea bushes were produced from seeds which were not *homozigous* - - not genetically identical, even if they came from the same tea bush.

As a result there were considerable (great?) variations in tea fields planted with seed even if they came from the same parent tree. Genetic research enabled development of tea plants that produced *homozigousseeds* , genetically identical if they came from the same tree. That now enables having uniformity in plantings, or replantings, of tea gardens (fields).

Another genetic technology has also contributed importantly to improvement in the productivity and uniformity of tea plantings. Vegetative reproduction is a technique whereby slips (cuttings) can be taken from a superior tea plant and therefrom hundreds (thousands) or tea plants with the same superior qualities of the parent stock can be produced. Most of the beautiful, dense, uniformly green photos of tea field were taken in 1976. Those development have increased tea yields greatly - - - and with improved quality in some cases..

The processing of tea is a complex activity and the skill of the supervisor affects greatly to quality of the end product. The tea leaves as plucked are reduced to fragments of uniform size. The resulting material is put on large trays to a uniform depth of about 8 to 10 cm and the morass is left to ferment. The skill of the tea maker is the ability to identify, to within a few minutes, when the fermentation process should be terminated by drying. As atmospheric temperature and humidity both affect the rate of fermentation , and both are quite variable in a 24 hour period, tea makers have a big effect on the market value of the tea produced by the tea factories.

Miscellaneous comments to conclude:

Our family's year in Ceylon was the first overseas experience for all of us. Our children were ages 5 and 7 when we arrived in Colombo. They still remember some places and incidents not recalled by my wife or self. The children saw life as it is for many other people. As a result the fall of their return to Edmonton they organized a group of their classmates and went out collecting for UNICEF at Halloween. Those ten, perhaps fewer, children brought in ten percent of the total UNICEF collection in Edmonton that year - - - the inaugural or a very early year of such collections here.

Inexperienced newcomers are usually unaware of the extent and rigidity of class distinctions in some developing countries. The Brit who preceded me as expatriate soil conservation officer had held that position for four years. During that time he worked with the same four or five Ceylonese colleagues as I did during my year there. My wife and I were invited to dinner at the home of the Brit the evening before his departure from Ceylon. I was amazed when he said to his wife during dinner: "By the way dear I learned today that Jaywardina (one of his colleagues for four years) has an interesting first name 'Kingsley' ". Whenever the superintendent of a tea estate that our soil conservation group was visiting wished to show us a kind of soil somewhere on the estate he would call a peon, hand him a shovel, and in tamil tell the peon to dig a hole so we could see the soil profile. One day a Ceylonese official who worked in the same building as I offered two Ceylonese and me a ride into Kandy. We accepted the offer with alacrity and one of the Ceylonese and I got into the back seat of the car. Our host and the other Ceylonese got into the front seat. Near the outskirts of Kandy the two Ceylonese passengers thanked our host and got off. The driver sat there for a minute before he asked me to move into the front seat with him: "Someone might think that I am your driver": definitely a lower class!

The maintenance of social class was so important that my trainees, who had graduated from high school a couple of years earlier, had been unemployed from then until my arrival. They could have taken available jobs that would have been below their social class. If they took such jobs they might not have been able to regain their social status.

However the boundaries of social class have variations. One day the trainees and I went to do practical field work. We were going to lay out and do the work of making the contour drains in what was to become a coconut plantation. Doing such labor was a no-no for the social class of the trainees. But they knew I would ask them to actually dig part of a contour drains. Knowing me they also knew that refusal might result in a failing grade in their training course. They were quite literally a terrified group. There was no conversation among them by the time we arrived at the work site. As a group we made the measurements and laid out the lines for two contour drains. The next step was to start digging the drains. The audience of villagers were watching everything. It was an awful moment for the trainees: until I picked up a shovel and said: "Siri is by himself I will work with him" and I promptly lifted the first shovel full of earth. The trainees immediately began too and were soon the usual happy chattering group! If Professor Bentley could work digging the drain the villager audience would understand that it was OK for the trainees to dig too!

We had lived in Kandy about nine months before we learned about an unpleasant reality of life in Ceylon 1953. Child slavery. One night we were invited to the home of Canadian friends who were longtime residents of Ceylon. After some time I commented on the continuous sobs of a crying child. "Oh that is the little girl next door, she cries every night. She is a slave." So we learned that traffickers scour the poor country areas and buy children for a few rupees from parents unable to feed them adequately. In Kandy, Colombo and other substantial centres those children are sold to well to do families for hundreds of rupees. The children then become literally slaves in such households. As they grow older and more knowledgeable the youngsters are told they are being paid a hundred or whatever rupees per month: "But we are saving them for you until you grow up. That will give you a good start." That ploy misleads the slave children and simultaneously protects their 'owners' from any charge of slavery that might be brought against them. Another experience confirmed the reality of child poverty.. While visiting Ceylonese friends in Colombo the wife told of a heart rending experience she had earlier in the week. When she came home from work an obviously poor woman asked her for a few rupees for her little girl of three or four. "I love my child but I have nothing to feed us. Please take her." Our friend had no need or inclination to buy the child. Moreover either a gift of money or acceptance of the child might encourage and reward the woman if she was a devious slaver! Life in developing countries is often very hard.

We Bentley's were one of the first half dozen Canadian families to go overseas for Canada on international development assistance work. We were indeed fortunate to have been in Ceylon/Sri Lanka. By the United Nations rating system Sri Lanka has one of the highest qualities of living among developing countries. The people are very pleasant and friendly. We have been in some 50 countries and to us Ceylon is the most beautiful of all.

We were exceedingly fortunate. Our year in Sri Lanka literally changed our lives and attitudes.

2007-08-93

Slide Catalogue 3

Slide Catalogue Lists by Countries of Topics

C. F. Bentley September 2000

Binder # 5 Indonesia, 1976; 1980; 1981.

Slide Sheet # Topics, explanations; comments.

- # 1 Bali, a tourist visit: Photos in Denpasar and vicinity.
- # 2 Trip to isolated weaver's village
- # 3 Temples (Hindu) and people at work, in Bali
- # 4 Photos Yogyakarta and vicinity, including Bobadur.
- # 5 A Java research station; and about Muslim traditions and a museum.
- # 6 A day in Kalimantan (Indonesian part of Borneo)
- # 7 Sumatera and three disheartening visits there. introduction to Bataks.
- * 8 Batak country
- # 9 Weat Timor - - - the 'out back'.
- # 10 Back to Yogyakarta.

2007-08-93

Archives slides p 12 -16

Binder #5

Indonesian Slide Sheets

(Listing begun 5/9/2000 By C. F. Bentley)

Introduction:

Indonesia is a country of many islands: there are more than 13,000 of them. Indonesia is also the fourth most populous country in the world of 2000. My wife and I were in Indonesia, at Yogyakarta (on Java) for a week in 1976 because of her interest in batik, a unique type of textile patterning which is complex, requires great skill, is very attractive and commands high prices - - - I was dithering about buying or not buying a shirt for \$25; the decision was "NO" instantly when I realized I had made an error in calculating the exchange rate: the price was \$250! I was in Indonesia on an agricultural consultancy in 1980 and that work took me to Java, Bali, Sulawesi and Timor. In 1981 I was a member of an international team that entailed travels in Java, Sumatera and Kalimantan. We discerned no significant economic differences between those visits but found great ethnic and economic variations between those islands.

The accompanying sheets of slide are arranged by island names and places.

Sheet # Place and/or Description/Explanation.

BALI

- # 1 We visited Bali in 1976 because a group of Canadian colleagues were there on contracts.

The head quarters of their project was at Denpasar, the renowned centre for tourists. So the first afternoon our friends took us to Kuta Beach, which was the set for most of the very renowned movie "South Pacific".

We never encountered such aggressive hawkers anywhere else in the world! Once a woman stepped in front of my wife, deftly put a moo-moo type garment of her and said: "That will be only \$30. Thank you" She pretended to be dismayed when my wife refused to buy. (See the first 3 slides.)

Our friends toured us around the country side in the vicinity of Denpasar. Previously we had seen several procedures in other countries for processing salt for household use from sea water. The drying pans shown in two of these slides were probably the best and most extensive salt processing program we had ever seen.

The other slides on Sheet #1 show common activities in the surrounding country side and villages.

- # 2 Weaver's village trip. Knowing of my wife's interest in textiles our hosts took us to a remote village which they had recently found because it was little known as it was a non-commercial village. The people there wove for pleasure and it was with some difficulty that my wife managed to obtain one piece of their textiles. Another unusual feature of the village was the swings or merry-go-rounds that occupied the village centre .

Two other slides on this sheet are of Hindu temples (more to come.) The people of Bali are Hindus and are the only island dominated by that faith. Currently most of the rest of Indonesia has a Muslim population.

J

- # 3 Sheet #3 has more temple photos as well as photos of people at work.

JAVA SLIDES

- # 4 A Our 1976 trip to Yojakarta was a photographic disaster. I took a whole roll of 36 photos in the Batik Research Institute, our reason for going to Java. The flash on the camera went off every time, but unknown to me the camera shutter didn't move even once! Zero Batik Institute slides!
- # 4 B However while at Yojakarta, we were able to visit Bobadur the world renowned Buddhist temple site which has been designated a World Historic Resource. UNESCO (the United Nations, Educational, Scientific, and Cultural Organization) is engaged in a tremendous long term project of restoration at that astonishing complex.
- # 5 The first five photos are agricultural research related and taken at a station at the eastern end of Java. Two research results were impressive.
A maize (corn) variety that matured in 90 days (compared to the usual 110 to 140) was exciting. It could either escape a withering drought that would nullify good early growth of a variety of the same crop which matures in about 120 days. It might also avoid some insect pest that is adapted to later maturing maize varieties. Perhaps the most important advantage will be the possibility of growing a second crop that season on the same land.
The fourth slide shows a greenhouse tray planted to several different varieties of the same crop. It is evident that one variety has not been affected by insects that destroyed other strains of the plant in the same tray. Plant research had found this resistant crop strain. However the resistant strain may lack desirable properties that some other strains possess. In that case plant breeders will probably transfer the gene for resistance to other varieties with preferred characteristics. When achieved that is achieved there will be another GMO (genetically modified organism) able to increase food production for hungry people.
Slide # 6 shows that in a Muslim country it may be business as usual on Sunday.
Slide #7, of a Chinese cemetery, spurs mention that Chinese Indonesian citizens may be the best business group, and very good farmers, but they are severely discriminated very blatantly in many ways.
Slides #8 - 10 are of an indigenous museum in Jakarta.
- # 6 Part of our team of consultants spent one day in Kalimantan, the Indonesian part of the island of Borneo. We were there to see a superlative forestry facility completely constructed and equipped by a foreign donor. A year and a half after its completion the only staff were the care takers!

On our flight to Kalimantan three or four architects debarked when we did. They were there to design an agricultural research station to be built on a site selected without any consultation with agronomists. The architects asked us what agricultural researchers do!
The soil erosion slides show horrendous erosion along a recently completed highway - - - with no provisions for soil conservation or prevention of highway washouts!
- # 7 Three of us from the consulting team were asked to go to Sumatera to see about potential needs for support for agriculture research at three locations there.

Our first visit was to an excellent soil testing facility built and appropriately equipped by a European donor country. That development assistance package had included several person years of training for Indonesians in soil testing facilities in the donor country. During our visit to the laboratory I asked how many nitrogen determinations were being made in that fine facility. "Thirty". "Per hour or per day?" "Oh no: per year." During the visit of over a half hour we observed that the only work being done by laboratory staff of about 10, was being done by six female workers who were doing the trivial work of folding filter papers! - - - and there was no sign of what the filter papers were needed for!

Our second assignment was to look at a "land development project" being settled by a large number of Java farm families who were forcibly removed from their traditional wetland farms, because of flooding that would result from a massive dam being built.

They has been 'settled' on previously forested land, and there was no farming anywhere in the vicinity. Bulldozers had 'prepared the land' by cutting and burning every tree dozers could get at. No agronomists had been involved in selection the location of the 'land development project' and the soils were so acidic that few if any agricultural food crops could be grown. The settlers were provided with a very small shack, a few simple hand tools, and a very modest food allowance for the first six months. After that they were on their own. A month or so later a respected tropical soil scientist at the conclusion of his visit to the project said: "The only thing likely to grow here is the cemetery." Our sentiments were identical.

The third assignment was to have a look at a large agricultural research station being developed with a big international loan. That project was located in a western part of Sumatera. The people there are Bataks who are very blunt and forthright - - - quite unlike the Javanese who are extremely laid back. The Batak in charge of this huge project was a young man who had graduated from an agricultural college or university a couple of years earlier. In the presence of our Javanese interpreter and guide the Batak bluntly said: "This is crazy. I do not have the qualification nor the experience to do what I am asked to do here. And I have no effective source of help or guidance." After an hour's tour around with him we were in complete agreement with his assessment. Sadly there was nothing that we could do to assist him. As soon as we left the project our Javanese guide said: "These Bataks are terrible people. No one should say things such as he did".

We left on the long trip to Medan for our flight back to Jakarta. Enroute we passed through Batak territory. The slides of sheet 7 illustrate the distinctive and beautiful architecture of the Bataks.

Enroute to Medan for our flight back to Jakarta we also passed through a large area with estate after estate planted nothing but palm oil trees. That oil is probably the leastcostly vegetable oil produced for human consumption. Unfortunately, it has about the lowest nutritional quality among vegetable oils. Do not buy margarine that contains palm oil: Canada's canola oil has very high (the highest?) nutritional quality among vegetable oils used for human consumption.

- # 8 This sheet has additional photos of Batak architecture and some other scenery.

The flight from Medan back to Jakarta was acute misery. I had an acute case of "tropical trots" (diahhera sp?) I managed to get to the hotel without disgracing myself but at the hotel I asked the check-in clerk to "Get me the house doctor at once please." Fortunately the doctor came promptly. I explained my distress and that I was scheduled to fly to Kalimantan very early the next morning. The doctor said: "Not to worry. Take two of these pills, at two hour intervals, three times tonight.. Then take one at five hour intervals three times tomorrow commencing when you get up. You will be alright." In disbelief I did as the doctor had instructed me - - - and the trip to Kalimantan went smoothly without discomfort. The pills were manufactured in Jakarta!

TIMOR

- # 9 West Timor is probably the most primitive region I have seen. The first photo is of a Komodo lizard ('dragon') on display near our hotel. Legend has it that this is the most ferocious lizard there is. We were not anxious to test that report; we kept our eyes open when ever off well travelled areas! The mural of the second photo was one-of-a-kind: we did not see any other example of local distinctness.

Photos 4 to 8 show the most primitive farming I have seen. 'Slash and burn farming' entails, cutting trees in a forested area, burning off as much of the woody material as possible at the end of a dry season, and then planting food crops among the stumps and woody debris. After two or three years crop yields are so low that the land is left to regrow trees for several decades, before a repeat of the slash, burn, crop sequence. That kind of food production occurs frequently some parts of semi-arid areas but not as a major part of a region. Photo #7 shows group 'cultivation' of a superior type of soil high in clay. here the 'cultivation; was done with a simple pointed wooden stick! Photo #8 is of a rural house in the area.

However there was one striking variation in farming practices in West Timor. We heard so much about the village of Baun that we went there. Two or three decades earlier a missionary group had set up an operation there. They had introduced *Leucena* a woody legume shrub with some similarities to our Carrigana, also a legume. However *Leucena* grows very quickly and has profuse branches and leafiness. New branchlets rich in nitrogen plant has obtained from the air can be slashed off repeatedly. The *Leucena* loppings are rich in nitrogen which the plant has obtained from the air, thanks to a bacterium which grows symbiotically on the roots of *Leucena* and other legumes. Since nitrogen is, overall, the essential plant nutrient most severely limiting the grow of agricultural crops in tropical regions the nitrogen containing slashing of *Leucena* are exceedingly benefical. For example the yield of maize interplanted in rows between *Leucena* shrubs, or grown as a crop following *Leucena* obtains large amount of nitrogen from the decay of the *Leucena* slashings. In the village of Baun there were nice homes, a school, a church and a small generator for a very limited amount of power. All the results of practical missionaries, *Leucena* and the nitrogen from its slashings. In my opinion the greatest deficiency of farming in tropical agriculture is the failure to exploit appropriate legumes similarly.

Bursee

YOJAKARTA

10 Associated with our trip to West Timor, hampered greatly by the priority given to military personnel headed there, we had a brief stay in Yojakarta. That enabled us to visit large scale restoration activities at a seriously decayed ancient Hindu temple just outside the city. The photos on this sheet were taken there.

It is ironic that in today's Indonesia, where the Muslim faith is so dominant, the most important examples of former splendors are the ancient Buddhist development at Bobadur and the the Hindu temple near Yojakarta.

Times change. Let us hope (2000!) stability and progress will be enjoyed by the world's fourth most populous country, Indonesia, in th decades ahead.

Contents of Photo Binder # 6 Preliminary arrangement (as more entries are expected.)

<u>Binder</u> <u>Tab #</u>	<u>Description</u> <u>Page #</u>	<u>Slide</u> <u>Sheet #</u>	<u>Description and/ or Countries</u>
1	1	1	Antigua
1	1	2	Barbados
1	2	3	Colombia
1	3	4	Colombia <i>+ 4A</i>
2	3	5	Domonica
2	4	6	Greenland
2	4	7	Guyana
2	5	8	Jamaica
3	6	9	Mexico <i>9A 9B</i>
3	7	10	St. Kitts & Nevis <i>10A 10B</i>
<i>4</i>	7	11	St. Vincent
<i>4</i>	8	12	Trinidad
<i>4</i>	9	13	United States.

Binder #6: The Americas Slide Sheets

(Listing begun 30/9/2000)

These slide are listed Alphabetically by Country and most have some explanatory or identifying written material somewhere on the slide.

Sheet # Place and/or Description/ Explanation /Dates etc

These slides are primarily from a 1969 tour of Caribbean countries and Mexico for CIDA as Canada's response to numerous requests for projects proposed by the 'countries' concerned.

1 ANTIGUA

Antigua is a member of an arc of small Caribbean islands ranging from Trinidad to St. Kitts. Like many of the islands Antigua has a long colonial history . The well protected harbour was a British naval base. Nelson spent some months there and that harbour was much used for "rolling" ships of the day. ("Rolling" entailed beaching wooden ships to enable scraping off the accumulated barnacles on their bottoms- - - which impeded sliding easily through ocean waters.)

Our group had an unpleasant over night stop in Antigua. CIDA's travel department had prepaid, at the only 'hotel' in Antigua, for three cottages for our all inclusive stay at 'an island paradise with individual cottages and a truly beautiful beach.' (promotional brochure.) On arrival we were told only two cottages were available: there would have to be a doubling-up. Our spokesman was emphatic: "We have prepaid assured reservations. We demand what we have paid for." "Well give us an hour - - we will see what we can do for you. In the meantime you can go to your the two available cottages." By jeep we were taken to our cottages: shacks with malfunctioning light fixtures and a 'shower' that was simply terrible. A maid was asleep in the bed of one of the 'cottages.' After two more "We'll see what can be done"(followed by no action) our spokesman blew his stack A tape recording of his verbal assault would have sold like hot-cakes!! We got our third 'cottage'. (A second emergency stop in Antigua, a year later, due to an air craft problem was equally enraging. We had to wait for an hour for the jeep to come and take us to the dining room - - -nearly a kilometre away, and in the dark. On arrival at the dining room the head waiter tried (unsuccessfully) to force us to order a special meal (at our expenses) "because you are ten minutes late for the 'package dinner'.". Travellers beware!

The slides show there is a beautiful beach at Antigua, barren terribly overgrazed pastures, sights at the 'Blue Waters' former British harbour.

2 BARBADOS

This island, now independent from 'Trinidad and Barbados' has rough terrain and low flat areas subject to flooding by sea waves. A beef production scheme was doing innovative applied research endeavoring use sugar cane material as cattle feed. Bajayans are outgoing pleasant people.

The slides illustrate the rough terrain, the flat lowland, the posh Hilton Hotel (3) and two homes in the capital city.

3 COLOMBIA

The Board of Governors for Canada's International Development Research Centre met in Colombia in 1972 to provide the Governors with an opportunity to see first hand some of the problems and achievements of agricultural and social development assistance in a developing country. Even then Colombia, and Bogota the capital, had major security problems: an armed guard on every floor of our first class hotel; department stores in the heart of downtown with doors securely locked to enable an appraisal of those wishing to enter stores. And wrist watches were being snatched off the wrist if an arm was resting on doors of cars stopped for traffic lights.

The first two slides, one an aerial photo from the air, illustrates how rugged the area around Bogota is. The next 4 slides were taken at a large ranch of a wealthy owner. The ranch had its own uniformed and heavily armed troop of 50 or more soldiers "to protect us and our property."

The next nine slides were taken in the Caquaza Valley, a typical isolated inter-mountain farming valley about 60 km from Bogota. The Caquaza Valley was the primary reason for the IDRC Board of Governors meeting being held in Colombia. IDRC, in cooperation with local agricultural advisers and farmers had executed a program of on-farm experiments. The researchers had introduced combinations of the best known crop production practices (such as: use of improved high yielding maize seed, appropriate fertilization, and limited use of pesticides). There was great success: for example maize yields were tripled. So the researchers departed feeling very proud of their helpfulness.

On a visit, to view the anticipated improvements, two years later the researchers found to their astonishment that the only improved practice being used by the farmer was to plant improved superior maize seed. Yields were increased by only 20 percent - - - or less. The astonishing explanation was that farmers were so poor that they could not buy fertilizers or pesticides; and if they took a loan to enable them to buy those chemicals the interest rate for a four month loan was 100%!

That posed a major challenge to the researchers. They solved it by:

- finding the amounts of the chemicals which would give the greatest increase at the least cost;
- helping farmers to form a support-each-other cooperative which was able to purchase the chemicals in bulk at greatly reduced cost; and
- to combine their excess production so as market it in bulk at about twice the price received for individual sales of small family surpluses of production. The cooperative was so successful that the farmers were soon able to construct a 'cart track', so donkeys could haul supplies and products for sale - - - thereby ending the arduous labor for farmers to pack on their own backs what they bought and what they had to sell.

The last Caquaza photo shows one of the fortunate families, a mother and seven children.

The last 3 Popayan photos are from a less rugged and more productive farming area near the city of Cali.

4 COLUMBIA Continued

Sheet #4 consists of photos taken at CIAT (Centre International Agricultura Tropical) The IDRC Governors visited Cali because it is one of the first four IARCs- - International Agricultural Research Centres. The Rockefeller and Ford Foundations built and funded operational costs for the world's first four IARCs. CIAT was established with the assignment of improving the productivity and sustainability of agricultural production, both domestic and commercial, in much of South America.

Some visitors to IARCs (there are now about 15 of them) are critical of the provision of such excellent facilities for applied agricultural research in remote areas. The justification is that good resources and living conditions are essential to recruitment of excellent scientists for work in far away places. The talents of such scientists are not used effectively if they are hampered by inadequate facilities and supports.

Perhaps operations of the IARCs have by now cost as much as a billion dollars. Those investments in agricultural research have probably produced better returns than have any other investments in development assistance during the 50 years since their commencement. A single example justifies that statement. The International Crops Research Centre for the Semi-Arid Tropics (ICRISAT) has responsibility for efforts to improve the sustainability and production of five of the most important food crops for the most extensive kind of arable lands in the world, the semi-arid tropics. After 20 years of research by ICRISAT the increase in production of pearl millet (a dry region food grain) in India alone had a value of \$50 millions dollars (U.S.).per year! Vast areas of Africa also benefit from the ICRISAT research on pearl millet. Yet the budget for ICRISAT's research on pearl millet is probably less than \$5 million per year.

The dividends that flow from investments in research by the IARIs is nicely illustrated by two of CIAT's major contributions. Vast areas in South America's savanna are only suitable for cattle production. Research by CIAT has found forage crops species and management practices for their use that have increased by at least four fold the animal production per hectare on vast savanna areas. Food grain legumes such as various beans and related species are the principal source of protein in the diets of many, perhaps most, low income South Americans. CIAT developed greatly improved varieties (cultivars) of some of the principal grain legume crops of the region. An equally important CIAT contribution was development of truly effective methods for reliable production and distribution of seeds of the improved crops- - thereby making the benefits available to everyone.

5 DOMONICA

The 18 slides of this sheet were taken during our brief CIDA mission to the former British colony, which had earlier been a French colony. The island is so rugged that the airport was about 20 miles from the capital. The runway was so short that it was sloped upwards quite steeply as the aircraft flew in from over the ocean. The steep slope was designed to act as a strong natural brake to help the plane to halt in time on that very short runway.

From the moment of our arrival in Dominica we were greatly embarrassed. A Canadian company from B. C. had a CIDA joint-venture contract to introduce modern equipment and to teach/train Dominicans how to use it for extraction and sale of fine lumbers harvested from the relatively unexploited tropical hardwoods on much of the island.

The Canadian company was intent on one thing: make as much money as fast as possible. So they built the saw mill at the most -convenient- for-them location. As can be seen in the first two slides the smoke from burning saw- dust was carried into the capital along main street. That made driving very dangerous much of the time. There was little training of Dominicans; they were used for most of the grunt work. Rather than careful selective harvesting of logs. there was ruthless taking of the best woods without care for the trees remaining. Worst of all: timbe trucks driven by Canadians drove recklessly down the centre of narrow roads frequently endangering people and/or damaging their vehicles.

Enough of that. The next 10 slides include: • photos of, or from our hotel which suffered terrible damage by a hurricane in the 1980s which blew a wave nearly two metres high into and through that hotel; • some homes of ordinary people; and • a high school 'home economics' laboratory/classroom.

The remaining six slides include: • a field of elephant grass (for fodder or fibre)); • the only handicrafts that we saw; • a delightful small falls enroute to the airport; and • a last beautiful Dominican scene.

6 GREENLAND

These eight photos were taken from on a flight from Europe to Edmonton in mid September. The first four photos show snow and various stages of flowing glaciers. The last three photos have many white spots in the blue waters: each a huge iceberg such as the one that sank the Titanic.

Canadian Airlines used to have direct flights to Europe from each of Vancouver, Calgary and Edmonton. An in-flight map showed that the depth of ice below the three flight lines were repectively 10,000; 11,000 and 12,000 feet!

7 GUYANA (South America)

My trip to Guyana was very unexpected. A senior CIDA officer was charged with responsibility of evaluating a request for assistance with a project to plant various tropical trees that would produce high value special tropical lumbers. The officer arranged to have me accompany him as qualities of soils would obviously effect the prospects for success at various locations.

We were fortunate to have a Guyanan UBC graduate in agriculture as our guide and information source. I wanted to learn something about soils in the areas under consideration from any soil scientists in George Town the capital. With considerable hesitation our guide agreed to try to arrange for us to visit the appropriate officers. Our reception was warm and we obtained some useful information. On our departure, as soon as we were out of earshot of those we had met our guide poured out his thanks and delight that he had been able to accompany us: "For three years I have been trying, without success, to obtain that information. But it is another department!"

The first 11 photos show what is one of the world's most extensive deposits of white silica sand - - - the material that most clear glass is made from. Silica sand does not have or provide any of the 15 essential nutrients that crops and trees must have for growth and reproduction. Fertilizer costs to obtain the feeble grow seen in most of those photos had to be applied as often as four times per year - - - at costs of \$500 or more per year. Clearly not economic. Moreover accoushi ants are difficult to control and if uncontrolled they can destroy both seedlings and mature trees of species they like to eat!

Our trip to see the proposed plantation sights entailed a flight in a small float equipped plane which took off from and landed on the main river. The flight was moderately dangerous. The river was at a very high level and there were numerous floating trees, logs and debris. We were told we must be back to George Town before dark because there were no lights along the landing wharf. Our pilot arrived very late to pick us up for the return flight. We landed (SAFELY) in the dark - - -some lanterns had been placed along the edge of the landing wharf to assist our pilot.

The last 6 photos show massive sea walls built to prevent ocean flooding of the best agricultural land in the country, and some of the well kept homes of middle class families.

8 JAMAICA

Our visit to Jamaica was different and informative. The first four photos illustrate the incredible stupidity of some large hotel chains. Neither the Fairy Inn in Kingston (Jamaica) nor the Holiday Inn in St. Catherines (ON) had any kind of fresh fruit available in their dining rooms. Only canned fruit juice or canned fruit cocktail respectively, were served. Meanwhile nearby fruit stand were loaded with superb fruits. Photos 3 and 4 are of a very hospitable farm couple who were delighted to tell us of the prosperity of the grapefruit farm!

Photos 5 -7 were from a livestock breeding research establishment. There was great pride in the achievement of developing the "Jamaica Hope" breed of cattle. The air lifted Holstein calves were also for breeding research. But there was a problem of where to pasture or grow forage for the cattle: to quote our guide: "All of the best land for pasture or forage production is used exclusively for race horses, a major sport." By contrast slide 8 is a distant view of a "Settlement project"; a scheme to develop arid rough land with poor soil into small farmer holdings.

A development assistance project had funded development of a fine large warehouse for handling and preparing fruits and vegetables for export. When we visited the facility had been complete for a considerable time, there was no sign of any fruit or vegetables. There was a dozen or more 'workers' in the cavernous building only one of whom was doing anything - - - driving around in a motorized sweeper, cleaning a floor that wasn't dirty!

Mining "bauxite", the earthy ore from which aluminium is made, is the most important industry of Jamaica. The red earth, exposed by excavation for a house being built, is bauxite that at this location is not deep enough to be mined at present.

Although the "you don't have to get pregnant" signs were numerous, so were the children. And the last 3 slides illustrate interesting facets of life in Kingston: The homes all have sturdy metal gratings on all windows; the combination of "salt fish" (cod from Canada) and "akee" (the core of the fruit in the second last slide) is the traditional everyday food; and Jamaicans love fairs!

9 MEXICO

Our CIDA team visit to the several Caribbean countries was followed by a brief visit to Mexico to appraise a request for Canada to become a financial supporter of CIMMYT (International Centre for Maize and Wheat Improvement) CIMMYT was the first of the International Agriculture Research Institutes (IARIs) and had grown out of a request by the Mexican Government to the Rockefeller Foundation seeking scientific help to improve yields of maize (corn) and wheat. In 1947 the RF engaged two or three agricultural scientists to go to Mexico and work on improvement of yields of wheat and maize. Twenty years later achievements were dramatic, especially with wheat. A team of scientists, both American and Mexican, by that time had developed varieties of wheat that were: semi-dwarf, stiff strawed, and high yielding. That was the beginning of "The Green Revolution" - - - unprecedented increases of yields of some crops by plant breeding. Dr. Norman Borlaug, leader of the team of wheat breeders was awarded the Nobel Peace Prize in 1970 in recognition of the wonderful contribution to people all over the world.

Our team's happy task was evaluate the need for and likely benefits should Canada decide to become a partner in The Green Revolution by some funding support for CIMMYT. Our task was easy. A trip to a remote Mexican village 'Pueblo' was exhilarating. We saw signs of obvious improvements in the village. In a packed room with about 75 people the Mayor used his personal example to explain how yield increase of his commercial crop, maize, benefited his family. "We had more food for the family, the children got shoes and they could go to school - - - AND I GOT A DONKEY SO I WOULDN'T HAVE TO TILL MY LAND BY HAND!"

There were two extremely brave women in that packed room. Contrary to all tradition they had slipped into the most obscure corner of the packed room - - - they were there with their ears wide open!

Our flight reservations resulted in the week end in Mexico City. It was marvellous. We spent hours in the fabulous museum, sheet #9A of the slides and top top 4 slides of #9B illustrate some of the marvels of that wonderful cultural history.. The next 12 slides on that sheet illustrate: the horrendous pollution in Mexico City (now so serious that Canadian Embassy staff are advised not to have their children in the city during the worst of the winter months); the shocking housing: differences: acre large lots with ten foot high walls around them, within which there is parking for many cars, and fabulous ornate costly houses - - - a striking contrast to hovels jammed together and made of scrap materials; huge ornate churches; a few photos taken at Pueblo Village; a glimpse of the massive ancient "Pyramid of The Sun" 40? 100? km north of Mexico City.

10 Back to the Caribbean: St. KITTS and NEVIS

The smallest of the "countries" we visited was Nevis. I say 'countries'; because when we were there (February 1969) NEVIS with a population of less than 10,000 was actively seeking independence from St. Kitts, which had a population of 280,000! Nevis is where Columbus first saw land in the Americas. Sheet # 10 has 9 photos from the two hour trip to Nevis.

Nevis is where Columbus first saw land in the Americas. The island has an area of about a township or two. There is a very prominent mountain peak the tip having an altitude of about 1000? 2000? metres. Due to the high humidity of the region the mountain peak is usually hidden by a snowy white cloud. That is why Columbus named it Nevis - - thinking it was snow capped.

St. Kitts (an abbreviation of St. Christopher - - after Columbus) had a population of about 280,000 in 1969 and an area of about 550 square miles. It had a full compliment of officials: Governor General, Prime Minister, Ministers of Agriculture, Trade etc, etc. The Minister of Agriculture had only one thing he wanted from CIDA: a Charlois bull! He had a number of cows and he was convinced that a Charlois bull would solve all of the problems of St. Kitts (including his own!)

The photo sheet for St. Kitts illustrates what a quaint and pleasant place it was in 1969. Massive tourist developments have undoubtedly brought dramatic changes. However the European history of the island is intriguing. The British and the French fought to claim it as 'theirs'. Legend (probably true) has it that for some time the French occupied one end of the island and the British the other end. Of course that led to bloody battles as to where the the separating border was. Once, when a truce was agreed upon, a tree became the boundary line. The next bloody battle was sparked by disagreement as to which side of the tree was the borderline! The photos of the Fort at Brimstone Hill confirm that the British/French disagreements were serious. Life must certainly have been grim for the black slaves who had to cut the massive stone blocks and build the fort at Brimstone Hill.

11 St. VINCENT

St. Vincent, like Dominica, is another rough 'mountainous' Caribbean island. The photos show the beauty of the island as well as its ruggedness. Notes on the photos identify the crops and scenes. Three vivid memories of St. Vincent persist.

Our hotel was quite new and located where there is a beautiful view. It was staffed by neat well dressed young women - - - who had not had any training for their work! They were doing their best but didn't know how to make a bed, or of how knives, forks and spoons are used. We felt there was despicable exploitation by the expatriate owners.

One member of our team had never been out of Canada before. One day we returned from a field trip just as the children were emerging from schools. Our team member must have said: "I have never seen so many kids" at least half a dozen times: he was impressed. No wonder: the rate of population increase was 4% per year! We were told

there were about 70 children per teacher. That, and low pay, explained why only one of about 16 who had recently completed Teacher Training had been willing to become teachers.

St. Vincent was having a very difficult time. Two of the three major export crops were in distress. The market for "Arrow Root", a processed 'flour' made from the root of a crop, had collapsed. Europeans could now obtain an equally satisfactory 'flour' for making 'Arrow Root' cookies (baby food) from a new much less costly alternative source. The second market under stress was nutmeg and mace, two spices produced from the same tree. Mace is from the covering of the nutmeg nut and by weight was less than 10% of the weight of the harvested unit. Due to a decline in demand for those spices the British owners of the estates producing the crop were profit hungry and had learned that mace was selling for several times the unit price for nutmeg. So they instructed the estate manager to "Stop producing nutmeg; focus on mace production."

Once on return from a field trip we saw a long lineup of people moving very slowly forward. We investigated. It was 'the butcher's day'. A large steer had been killed and the meat was being sold to the people in the line. The carcass was lying on a large table at the end of which the butcher had a huge chopping block. The procedure was surprising: "Mrs. Brown how much do you want?" "Two pounds." The butcher swung an enormous cleaver; wham! "That's about two pounds. X shillings!". "Next?" Wham again and the next part of the carcass was cut off by the huge cleaver. Notes on the slides identify their topics.

12 TRINIDAD

Trinidad is one of the larger former Island colonies of the British. When our agricultural team was there in 1969 the large incomes from oil exports, the only Caribbean island oil exporter was devastating the work ethic. "Citizen Dividends" were being given to every one and were sufficient to sustain people. -"So why should I work as a laborer?"

Our visit was very unsatisfactory because almost continuous heavy rain hampered or prevented visits to 'project requests'. As the slides illustrate small holder 'farms' were on difficult lands of generally low productivity: not an incentive for hard work! The "farms" of various companies or well-to-do owners were on the best quality lands and dairying was often the primary activity on those farms. Some pure Holstein cattle of high quality had been imported (by air) and one request was for Canada to provide more superior animals in the same way. Our team was not persuaded that the request was for a good practical prospect that would yield substantial benefits to ordinary citizens.

We were in Trinidad during "Carnival Week" a wild time of celebration and of intense competition between individuals, schools and businesses - - - hoping to win prizes or awards for the best costumes or displays. Perhaps that was why my 'lost luggage' sat in the hotel check-in area four days before I got it - - - although I asked at least twice every day about it: "Not yet sir." It pays to be observant as well as persistent! Notes on the slides identify the topics or activities. Having observed the numerous children, we asked our taxi driver one day if he had any children: "Oh yes, two in and four out" (ie. out of wedlock.)

13 UNITED STATES

On a business trip to Hawaii, to interview an applicant for the position of Director General of ICRISAT at Hyderabad, India, we spent about 36 hours in Honolulu. Only seven photos were taken: it was a business trip.

A long extinct very small volcano near, Portland , Oregon was very interesting to a soils scientist: so four photos of it!

Contents of Binder # 7; Photos From Italy.

<u>Photo Sheet #</u>	<u>Topics</u>
# 1	The Victor Emanuel Memorial, The Forum and Palatine Hill
# 2	E U R and the FAO building
#3	In and around Rome
# 4	Rome by night and by Day
# 5	Rocca da Pappa, and Cloister San Paul
# 6	"The Tiber: Tufa: Hill Towns
#7	Viterbo and Selections of Popes
# 8	Some Agriculture Related Scenes
# 9	Pompeii
# 10	The Amalfi Drive
# 11	Isle of Capri
# 12	Sorrento
# 13	Rome to Venice; and The Alps
# 14	Bellagio and Lake Como

Binder #7 Italy

(Listed 17/10/2000)

Generally these slides are grouped by geographic Locations and/or Topics. There is rather little written on the slides, so some comments and descriptions may refer to individual slides or groups of slides by the number (slide slot position #1 upper left, 2, 3, 4 to the right; similarly #5 to 8 in second row etc.)

The slides are selections from photos taken 1952 - 1984 during about a dozen visits to Italy. Visits were often 2 - 5 days as I was in Rome on FAO business most times, and often stayed at my brother's residence in EUR. He and his wife were employed by FAO in Rome for about a decade. We had numerous superlative tours guided by them.

Sheet #` Locations/topics/explanations etc# 1 Caesar's and Victor Emanuel's Rome

- #1-4 Victor Emanuel was (I think) the founder of modern Italy about 130 ?? years ago. This Massive building in his name is at the western end of historic Rome.
- To the east less than a km away is the coliseum #5 & 6.
- On the left is the old Roman Forum, #7 to 11. Tourist guides say: "The consensus is that Caesar was killed within about five metres of here." That spot is perhaps 200 m from the Victor Emanuel.
- On a ridge to the right and extending down to the Coliseum is the Palatine Hill. Photo #13 looks NW to the Palatine Hill from the FAO (U. N. Food & Agriculture Organization building). The flat open area to the south of the Platine hill is the now dry place that Nero had constructed as a lake for boating: his palace on the Palatine Hill looked down on the lake. Photos #14 - 18 are taken on the Palatine Hill.

My wife had an amusing experience on the Palatine Hill on a chilly October afternoon. She was waiting for me to finish my FAO business and join her. By that time of year there are few tourists in that area: indeed almost no well-to-do looking women who might be widows. So a not too young, neatly dressed man greeted my wife pleasantly and wondered if he could do anything for her. When she thanked him and said: "No thanks. My husband is to meet me here any minute now." the man didn't even say goodbye!

2. "EUR" and FAO

Mussolini was not a modest man. He was going to have colonies just as others had them. So his army conquered what is now Eritrea. That was the first of the African colonies he planned to have. He therefore built the massive building, (# 10 -12) that is now the FAO Headquarters, intending it to be the administrative headquarters for his African colonies.

Mussolini had full expectations that Rome was to be the host for the next Olympic Games. So the architects were engaged to develop the Centre for the Games on a piece of agricultural land just at the edge of Rome. EUR (I did not learn what the letters stood for) was built quickly, but well, with distinctive architectures. (#1 - 9).

The distinctive square building was nick-named "The Square Coliseum" - - - for obvious reasons!

By the 1960's the Olympic Games Headquarters (they didn't become that) was a new and very attractive part of Rome. It has a super church, an impressive museum, an abundance of stores and many apartment buildings. Photos #13 - 15 were taken from a window of the E U R apartment of my brother and sister-in-law.

Two Canadian agronomists were among the elite F A O staff members. The former Dean of the College of Agriculture at the University of Saskatchewan became head of the F A O agronomy program. In that capacity Dr. L. E. Kirk made a contribution of great and enduring importance. Sporadically a locust pest, that devourers almost any kind of herbacious crop, has an explosive increase in the Saudan peninsula, east or north Africa. Knowing no boundaries, if uncontrolled, the locusts will spread over that vast region with devastating effects. Locust out breaks occurring in one country can affect many countries. Efforts at locust control in individual countries were not very successful because of lack of trained personnel, knowledge of the most effective control methods, and lack of equipment resources.

Dr. Kirk got all countries affected to agree to work together, FAO and donor countries funded modern equipment and a truly coordinated locust control program was begun. Remarkably, largely due to Dr. Kirk, countries that were 'at war' with each other cooperated without any back-sliding or failure to co-operate fully and effectively. My wife and I when in Asmira (Ethiopia then, now Eritrea) saw at 11:00 A. M. aerial photos taken two hours earlier of the entire area subject to locust damage. The photos identified places where showers or rain had dampened the ground - - - there by enabling locusts to lay their eggs. Air craft could treat affected spots thereby preventing outbursts of the locusts. The program of locust control developed by Dr. Kirk continues to protect food grains and other crops for hundreds of millions of people every year.

Dr. Vladimir Ignatieff, Assistant Professor of Soils at the University of Alberta until he joined the Calgary Highlanders in 1940 did not return to the University after the war. He became the head of the soil fertility section of F A O. Based on his Alberta experience, and as a co-author of an early edition of "Wooded Soils and Their Management" while here in Alberta, Dr. Ignatieff early-on prepared a booklet "Soils and Fertilizers". Translated to several languages, and revised and improved numerous times, that publication has had a world wide effect

3 Miscellaneous Street Scenes Around Rome

1: the Vatican; # 2: railway station (beautiful); # 2 : independence Day;
 #3 & 4: Campodillo; #5 & 6 Independence Day military parades; (also # 23)
 # 7: Crowd watching the street filming of a motion picture; #8 - 14: fountains are numerous in Rome; # 17: Rome has its own "Crater Lake" - - - this too is a lake, near Rome, in the crater of a long gone volcano; # 18: For some life is still hard; land clearing - - - stone picking by hand!

Two memorable street episodes in Rome stand out in my memory.

One morning about 10:30 Helen and I were walking along a nearly vacant street in a posh shopping district just north of The Forum area. Slightly ahead of us a well dressed woman of about 40 was walking along quite primly. A man coming towards us was staring at the marvels of Roman and accidentally bumped the woman very slightly. I have never, before or since, heard a louder or more continuous stream of invective as that woman screamed out at the poor man. She was still shouting imprecations at him when they were about a hundred metres apart.

On another occasion Helen and I were at a piazza (traffic circle) near the Vatican when a car in the circle and another just entering the circle came within centimetres of a collision about ten metres from us. Instantly both driver jumped out of their car and rushed towards the other: they stopped nose to nose! The shouting, arm flailing, oaths and imprecations poured out. Within seconds there was a crowd of at least 30 watching the show which went on with ever louder venom and arm flailing for a couple of minutes. Then they quietly turned, got into their cars and drove off. The show being over the crowd quickly melted away.

That event reminds me of the temperament of my sister-in-law, Margaret, when driving in Rome. The Ferrari cars, an Italian make of car, are renowned world wide for their speed: they are renowned in auto racing circuits. No wonder: drivers in Rome drive as if they are in an auto race. Margaret, who played on the University women's hockey team was not easily intimidated and she had always revelled in driving. In Rome she was determined not to let any local driver cut her off! The first few times we drove with her around Rome Helen and I were constantly 'pulling leather', a demeaning phrase for a cowboy on a bucking bronco who grabs part of the saddle to save himself from being thrown from the horse he is trying to ride. However, Margaret was a very skilful driver and over time we became quite at ease when driving with her in Rome. But don't ask me to drive there!

4 Rome by Night: and by Day

In and About Rome. Some photos have an identifying word.

5 In Close Proximity of Rome:

#1 - 4: Rocca da Pappa: a near Rome retreat and 'country cottage' for the pope and very few others.; #5 - 7: Anzio beach: where Canadians distinguished themselves and our country in World war 2; #9 - 13: Cloister San Paulo.

6 Tufa and Hill Top Towns:

1: The Mighty Tiber, isn't really very mighty; #5 - 11: "Tufa" : Tufa is a very soft, light weight, porous type of 'rock' that has resulted from mild consolidation or cementing of volcanic ash over the millenia; # 14 - 16: are photos of hill-top towns

In view of the of wars, turmoil, invasions etc over the the millenia residents of Italy have located their towns on hilltops when ever they could. They are easier to defend - - -- even today many of the twisty roads up to them are a challenge. (Photos #14 - 16)

7 Veterbo: a Small but Historical Town:

My wife and I would not have visited Veterbo were it not for my brother and sister-in-law: Margaret belonged to a F A O Wives History Club. Weekly, a 'Professor' that they had engaged took them on a historical trip of two to four hours and they visited some interesting place 'of historical significance'. As told to Us:

There had been a long tradition that the cardinals met at Veterbo to elect a new pope - - - when ever that became necessary. The Monastery (?), or archbishop's mans(?) was comfortable, and the local people had developed a tradition of sending in meals, wonderful meals, so that cardinal's would not be disrupted in their solemn deliberations. When the Cardinals finished their deliberations, sometimes it took days, they would light the smokey fire place to signal that they had reached a decision . Then the villagers would rush to learn who had been selected as the new pope.

But one year the deliberations went on for a week; no smoke; and another. Those inside were in no hurry: a quiet peaceful comfortable place, superb food, and no other immediate responsibilities: why hurry?

Finally the villagers decided that enough was enough: they stopped sending in the food. A decision was reached on the second day thereafter!

8 Some Agricultural Scenes in the Rome Region

Most of the photos have a brief written identification. They illustrate the great variations from fertile flat lands to rugged rocky 'sheep only' types of pasture land.

9 - 12 A Memorable Weekend

8 Pompeii; #10, Amalfi; #11, Capri; and #12 Sorrento

On a long weekend my brother and his wife took my wife and I on one of the most spectacular trips of our lives..

The notes on most of the photos identify them; most photos speak for themselves. On the Amalfi drive one had to admire the sturdy women who climbed up and down extremely steep terraces loaded with supplies going up, and carrying grapes on the precipitous descent.

Near Sorrento lemons the size of small grapefruit were maturing on wooden(?) lattices that supported branches of the lemon trees which lay there like blankets covering completely the latticed areas.

Having seen Sorrento one understood why some from among Byron, Keates, Shelly or others chose that beautiful quiet place to do some of their inspired writing.

The photos at Capri cannot do the wonderous place justice: one must see it to appreciate The Isle of Capri. No wonder the renowned British songstress Gracie Fields, after decades of global tours, chose Capri for her retirement.

One surprising, a bit unsettling - - - and eventually amusing event occurred on the trip. It was on the Amalfi Drive and is identified by slides #21 and 22 of the Amalfi sheet. I wanted to obtain the two photos (#21 & #22) so I did not accompany Helen and Margaret into that church, When they had not returned about a half hour later I became quite concerned went towards the church to find them. Just as I approached the door they came out with some alacrity.

When they had gone into the church a priest took them on a guided tour of the massive main floor. Well pleased the two women were about to leave when the priest insisted that they see the lower level of that remarkable building. That accounted for most of the time they had spent in the church.

When they were going to mount the stairs to leave the priest insisted on a donation. He blocked the stairs and stood there holding out a bowl for the donation. Helen had just arrived in Italy the night before and had nothing but traveller's cheques - - - which she was not about to 'share'. Margaret had not brought her purse with her. They were nonplused and getting quite concerned about the unyielding blockage of the stairs. Thankfully Margaret remembered she had almost a full packet of cigarettes in her jacket pocket. That bought their way out!

13 Rome to Venice:

In October 1953, after a year in Sri Lanka for Canada's infant Development Assistance Program, I stopped on Rome, as request of me from Ottawa, to inform FAO about my year in Sri Lanka. Some of the preceding photos about Rome were taken on that occasion. I then arranged to travel from Rome to Paris on a guided tour bus. It was late in the tourist season, the bus was nearly full and the travellers were friendly people. The first night was in Florence and as we arrived after dark no tour activities were arranged there. However, as I was anxious to see as much as possible, I wandered around for about an hour. The highlight was to cross the river by the remarkable bridge in the centre of the city.

As we were scheduled to stay in Venice the next evening the journey began about 8:30 on the second day. There was continuous information from the tour guide as we travelled north and easterly. Towards 11:00 the guide told us there would be a coffee break shortly and stressed that we must be back on the bus at 11:10 or we will go without you! Such strict instructions were puzzling - - -but emphatic! And for a good reason.

I think every one took a photo similar to mine: Photo # 1 - - - the chapel where Romeo and Juliette were married!! There was no time and no arrangement for anyone to do more than a photo, and then back to the bus.

Two other stops were on a rather similar basis. # 2 is a photo of a still-in-use bridge built 100 A. D.! Under similar conditions Photo # 3 of Padua was taken.

It was nearly dusk when we arrived at Venice. We were quickly loaded onto about three typical Venician boats and paddled, at a surprisingly fast rate, to our hotel near the fabulous St. Marks church. It was dark when we got there. After dinner I took Photo # 4 from the window of my room; then off to prowl the streets during which I took # 5 as I walked along the quay. I wandered for about an hour but it had been a long and wonderful day. Before breakfast I dashed out to take photos #6 and #7 in dawn's early light. Fortunately there were a few minutes to see St. Marks in daylight (# 9) and to picture about 0.01 percent of the hordes of pigeons in St. Marks square. Photos #10 - #12 were taken enroute back to our bus.

Day three was up into and through the Alps. At one point the tunnel was so narrow that one of the driver's assistants warned him if the back end of the bus was less than 15 cm from the tunnel wall: simultaneously another assistant warned the driver if the front end of the bus was less than 15 cm from the tunnel wall!

I dropped off the bus at Lauzanne, Switzerland and stayed there over night so as to see the French country side from the train enroute to Paris the next morning. What a trip!

The four photos #17 - #20 were taken on a flight over the Alps a quarter of a century later. There were no obvious signs of change in those rugged mountains.

14

Bellagio on Lake Como

In the fall of 1970 I was asked by CIDA to represent Canada at an informal meeting arranged by The Rockefeller Foundation and the Ford Foundation, to be held at Bellagio in northern Italy. As mentioned in another binder of this assembly of photos, RF and FF had been the two agencies that had funded the first four Internatiional Agricultural Research Institutes (IARIs). Those first four institutes had applied the latest techniques of agricultural research to obtain spectacular increases in yields of maize (corn), wheat, rice, and some other tropical food crops. It was recognized that there were many other parts of tropical regions where there were great unexploited opportunities to increase production of important food crops by modern agricultural applied research. But the RF and FF couldn't foot the costs of all that needed research: would other agencies and national governments contribute funds to establish and sustain other needed applied tropical agricultural research centres?

The Bellagio meeting was held in a huge former home? castle? (some 20 to 30 rooms) that the RF had acquired for holding important international meetings for small groups. Bellagio is a very ancient town on the shore of Lake Como backdropped by the Alps and about 125 km from Milan, the nearest airport. Those present included some RF and FF

staff members, representatives of development assistance agencies for about 15 countries (including Canada), a representative of the World Bank, and a small support staff.

The after three days of discussion and debate the conference reached four conclusions:

- Yes, there was urgent need for applied agricultural research on crops not covered by the four existing IARIs;
- The food crops most urgently needing applied agricultural research were sorghum, pearl millet, and some grain legumes - - - all non-irrigated crops of the semi- arid tropics.
- There were good prospects that potential donor countries and agencies would be willing to commit to some continuing funding providing there was an agency willing to coordinate and administer the proposed actions.
- There was indication that The World Bank might be willing to become a major contributor and would cooperate in administration the proposed activities.

The result : The CGIAR (Consultative Group on International Agricultural Research) was established in 1971 with headquarters in The World Bank, Washington D. C. That same year a team of three, with wide experience in semi-arid tropical regions, was engaged to propose a program of activities for the suggested new institute, and to identify possible locations for it..

The result: ICRISAT (International Crops Research Institute for the Semi-Arid Tropics) was established near Hyderabad, A. P. in south central India in 1992 with 1360 ha of seriously over-grazed land provided by the Government of India. The budget for the first year of operations, as well as for buildings and acquisition of whatever other needs were required, was \$500,000.

I was the first Chair of the Board of Trustees of ICRISAT, a position I held for 10 year during which a research establishment, with physical plant and equipment valued at \$25 M had been established. In the tenth year the ICRISAT budget was \$15M.

I have quoted those dollar figures for a specific reason: far too often I have heard: "Are there returns from such costly research that can justify those large expenditures?"

Yes !! ICRISAT research benefits people in: Asia, Africa, Oceania, South America and North America.

ICRISAT has a world responsibility to do applied research on five very important food crops: sorghum, pearl millet, groundnuts (peanuts), chick peas (garbonza beans) and pigeon peas.

In 1995, in India alone, the value of the increased production of pearl millet (ICRISAT's 3rd or 4th most important crop) was US\$50 million. A dividend from investment in agricultural research to be repeated each year for decades.

To be extremely conservative the cumulative global cost of all research by the IARIs since their inceptions have been less than 20% of the value per year of the increases in food production resulting from that research.

14

Bellagio and Lake Como Continued

We worked hard at Bellagio : I was able to go on two brief walks during the stay there. Photos #1 - #7 are of beautiful Lake Como which might be called an Italian counterpart of Banff National Park in Canada. But there is a historic difference: Bellagio has had human occupants for millenia. That is why the strets are so narrow #9 - #11.

But history is not always pleasant. A walk in the woods on a cool October afternoon near our meeting place #13 - #14 was pleasant until we encountered an artifact from long ago (I hope!). The large shaped stone in front of the man standing to its left was literally a "chopping block" for beheading people! The slight forward slope, and shaped with a shallow groove to the lower end was designed to make it easier to collect the blood of those executed. And ironically, quite close by, # 16, was an artifact related to some belief.

This ends my selection of photos from ancient and modern Italy.

2007-08-96

Archives # 8 Japan

4

Contents of Binder # 8: Photos from Japan

<u>Photo Sheet #</u>	<u>Topics</u>
# 1	Tokyo by day and night: and Agricultural mechanization.
# 2	A guided tour of Tokyo
# 3	A visit to Toba and The Shrine at Ise
# 4	Guided tour of Kyoto and vicinity
# 5	Kanjiro's house
# 6	Kyoto in winter
# 7	A secluded little shrine in winter
# 8	Miscellaneous photos from JapAn

Binder # 8 Japan

(Listed 30/10/2000)

These photos from Japan were taken from 1967 until 1988 during which my wife and I visited Japan about half a dozen times. Notes on some slides may be of help but I have arranged the sheets by topics not times of visits. Consequentially the descriptions which follow are rather general in nature. Our visits were about equally divided between scientific meetings and unguided touristic visits to Tokyo and Kyoto. Once, at Kyoto, we had the great good fortune to have a personal guide for three days. He was a graduate student studying with a Japanese professor friend of ours who was overseas at the time. We were truly fortunate to have such a pleasant and knowledgeable young man as our companion. And it is true: the world is getting smaller: I met the young man in Nigeria about a decade later!

Sheet # Locations/topics/explanations etc.

1 Tokyo by Day and Night; and Agricultural Mechanization Research

- # 1 - 8. Tokyo by day and night in the Ginza (the heart of downtown)
- # 9 - 12 The original Imperial Hotel, where we stayed was world renowned. It was designed by the famous American architect Frank Lloyd Wright. He was successful in the challenge to design a multiple levels hotel that would withstand the shocks of Tokyo's frequent earth quakes. Wright's success led the construction of a flood of high rise buildings in Tokyo. We four, a group of Canadians enroute to India, had the pleasure of staying in that famous building in 1967, shortly before it was replaced by the present Imperial Hotel.
- # 13 During our stop in Tokyo in 1967 we saw a number of experimental efforts to build machinery for mechanical transplanting of rice which traditionally was done by female human fingers. Human transplanting of rice required 15 women working all day to transplant one acre of rice seedlings. The machine shown in this photo was far from being suitable for routine in-the-field rice transplanting.
- # 14 - 17 These photos, taken in 1977, show the remarkably efficient rice mechanical rice transplanters which had replaced hand work by women. They display the steps in mechanical transplanting: seeds are germinated in small covered trays (#15); exposed to the sun for a few hours (#16); and placed on the neat little transplanter (# 17): that planter could transplant an acre of rice in 10% of the time 15 women workers needed to do that much transplanting. Photos # 18 - 20 show a comparably admirable mechanization of rice production: the small machine harvesting rice could do that arduous work in less than 10 percent of the time required to harvest a comparable area by using hand sickles.

> # 2 A Guided tour of Tokyo
 In 1973, having completed the business that had taken me to Tokyo, I took a Tokyo guided tour for visitors. It was impeccably organized and pleasant. A tape recording was made as the tour went around - - - for use to check and improve the work of the tour guide! # 1 is a photo inside the tour bus. # 2 - 11 were places where the tour made stops; # 12 -13 were taken from Tokyo Tower - - - and as can be seen the air was clear for many kilometres. In 1967 viewing from the Tower could not identify buildings less than a kilometre away because the pollution was so bad! # 14 was part of the conclusion of the tour: "The Tea Ceremony" is a traditional Japanese event conducted very precisely in a pleasant but solemn manner. That concluded a wonderful tour.

#3 A Visit to Toba and The Shrine at Ise

- Toba is on a narrow peninsula with a beautiful bay towards the north side. Toba is where the famous Mikki Moto conceived, developed and commercialized production of pearls by placing a grain of sand inside the valve of an oyster. After a year ?? or five years ?? women divers, with masks to protect their vision and a basket in their hands, dive down to the oyster beds and bring 'seeded' oysters to the surface 2 to 4 minutes later!. In the processing facility the oysters are examined to see if a harvestable pearl has formed around the implanted grain of sand. Photos #1 - 8.
- # 9 and 10 were taken from the Toba railway station. Japan has a wise, and so far as I know unique, requirement for school children. Schools must at some stage take the children, within a designated age range, on a week?? or two week?? tour to some part of Japan far from their home region. The highly disciplined students have a wonderful time - - - while learning, first hand, more about their country. # 11 to 19 are photos taken at a famous Japanese shrine. "The Ise Shrine." The setting is among the trees of a wonderful stand of giant cedar trees. All of the buildings at the shrine area are constructed by manual labor - - - and no nails or other metallic materials are used: everything is wooden - - - including the pins that hold buildings together. In that humid, high rainfall area not even cedar can endure: the buildings must be replaced about every 20 years. Ise is a tranquil, serene and very beautiful place.

4 Guided Tour of Kyoto and Vicinity.

The graduate student of our friend Dr. Kyuma must have had very explicit instructions to give us the super-deluxe tour. Ordinary Japanese people are not allowed to visit the historic Grand Palace. Similarly only a few foreign visitors are able to obtain permission to enter that historic resource. Our guide had obtained tickets for us - - - but he was required to wait outside for us! Photos # 1 - 9
We also had the good fortune to visit "The Villa" a superlative hillside retreat (of rulers?) overlooking the city of Kyoto. #10 - 15.

5 Kanjiro's House

My wife Helen being an artist (textiles, creative weaving, silver smithing and so forth) had a great interest in "Kanjiro's House." Kanjiro was a world renowned designer and potter who had left his home, its furnishings, and his kilns as a small museum to be kept exactly as he had lived in it. It is an intriguing and beautiful place - - and we had the pleasure of visiting on two occasions. Photos # 1 - 16.

6 Kyoto in 'Winter'.

Once we arrived in Kyoto about mid-December. The lobby of our hotel was ablaze with lights and Christmas decorations: see the Christmas Tree !! Photos #1 - 3.
The next morning Kyoto was a winter wonderland: There had been about 6 - 9 cm of snow overnight and it had stuck to everything it fell on! - - - as can be seen in photos #4 - 12. Snow is not very frequent nor are there heavy falls in Kyoto; none the less

we must have seen 50 motorists stopped and putting chains on the rear wheel of their cars. What fun! Photos # 13 -17 were taken from the train enroute to Toyko.

7 } *A secluded little shrine in winter*
There is a secluded and famous small shrine near Kyoto where, to preserve the integrity of the shrine , the number of visitors is strictly limited - - - during the tourist season.

But on the snowy December morning we were the only visitors to the shrine. We were fortunate to be able able to truly enjoy its peacefulness and beauty. Photos #1 -11.

8 Miscellaneous Photos from Japan

These slides have notes on them. # 2 Shinmon zin Street is the "Artists Colony" of Kyoto and Helen obtained some of her treasures there. The photos taken from the train enroute to Toyko illustrate some of the varying country scenes.

2007-08-97

ser BK 6 (4)
A

Contents of Green Binder # 9: Photos of Hong Kong
(Listed 30/10/2000 by Fred Bentley)

Photo Sheet #	Topics
# 1	Hong Kong 1962: Buildings and housing.
# 2	An agricultural tour in the Kong Kong territory 1962
# 3	Building under construction and "The Star Ferry" (between Kowloon & H K)
# 4	"The Peak" & rail way up it on H K island: The "Star Ferry" & water crafts.

Stubble incorporation

In Deyr 1987, sorghum and mungbean grain and dry matter production were significantly enhanced in plots where the previous Gu season's sorghum stubble had been incorporated into the field (Table 6). There were 150 kg ha⁻¹ more sorghum grain and 800 kg ha⁻¹ more dry stover produced in the stubble-incorporated treatment than where stubble was removed. The Deyr 1987 rainfall was below average and the effect of stubble incorporation on improved moisture retention and crop growth was clearly visible in the field

TABLE 5

Land equivalent ratios (*LER*)¹ of cowpea/sorghum intercrops calculated for three assumed yield levels of monocropped cowpea

Assumed yield of monocropped cowpea (kg ha ⁻¹)	<i>LER</i>	
	Intercrop (low density)	Intercrop (high density)
100	1.27	1.66
200	1.10	1.22
300	1.04	1.06

¹Defined as $LER = S_i/S_M + C_i/C_M$ where S_i and C_i are the yields of sorghum and cowpea, respectively, when planted together in an intercrop, and S_M and C_M are their yields when planted as monocrops.

TABLE 6

Total dry matter and seed yield of mungbean and sorghum in plots from which sorghum stalks from the previous Gu 1987 season had either been removed or incorporated into the soil. Bonka, Bay Region, Somalia, Deyr 1987

Previous Gu season treatment	Seed yield (kg ha ⁻¹) (12% moisture)	Total dry matter yield (kg ha ⁻¹)
Mungbean crop		
Sorghum stalks removed	247	646
Stalks incorporated	343	790
CV%	17	12
Significance	$P < 0.05$	$P < 0.10$
Sorghum crop		
Sorghum stalks removed	403	1982
Stalks incorporated	551	2770
CV%	28	25
Significance	$P < 0.05$	$P < 0.05$

Binder # 8 Hong Kong

(Listed 7/11/2000)

Most of these Hong Kong photos were taken in 1962 or 1973. The changes by mid-1980's and the '90's were not short of absolutely astonishing. Our visit in 1962 was about early December. I was on a three month contract with FAO (UN Food & Agricultural Organization) in Thailand and due to traditional festivities there the week-end was four days long: so Helen and I decided to go to Hong Kong! Helen had her cousin Carl posted there on work for the Lutheran Church's International program. The Acting Director of the FAO office in Thailand, Dean Chang was previously the Dean of Agriculture in Nanjing, China. We got along famously so he volunteered to give us a letter of introduction to the FAO Officer in Hong Kong. What we found out was that Dean Chang's letter told the FAO Officer to give us a day long royal tour of agriculture in Hong Kong. What a wonderful day! On the second day cousin Carl told us and showed us about his work for the Lutheran Church. By hook or by crook he was to promote and help refugees from China get some kind of housing as most of them were illegally camped on rugged land with only cardboard 'housing'. Carl was associated with a program to build large low cost buildings with one room 3.5 X 3.5m (< 150 square feet) assigned by a 'draw a straw' procedure per family of SIX OR MORE. And all facilities were shared with several other families - - - also of at least six members!

By the 1990's my guess is that the number 15 to 40 story buildings in Hong Kong island and Kowloon (the more populous peninsula where tourists are most plentiful) had increased about ten fold. The Hong Kong Business Association is (was?) a tremendously important force in the Colony: it decreed and enforced that all businesses be honest and neither cheat or exploit customers - - - because that would be bad for tourism and would destroy their economy. For example the tailor I did business with would not sell a made-to-order suit without having a fitting before the finishing stitchery was done.

During our 1962 visit to Hong Kong Island, primarily to take the mechanized trip to "The Peak" which gave wonderful views in all directions, we saw an astonishing sight on the main street. Two workers with two ten foot long poles on their shoulders were carrying a trunk that was suspended from the poles and hand hanging between the two workers who were jogging at a slow pace. About four metres behind them a third man, also jogging, was carrying a shot gun. That was the 1962 Hong Kong model of a Brinks armoured car transferring a trunk full of money from one bank to another!

I bought a pair of 'made to measure' shoes at the Lee Kee shoe store. I was surprised at what 'made to measure' meant: the workman from the behind-the-curtain workshop was called in and the manager told him in chinese the kind of shoe I wanted. So I put my foot on a sheet of brown paper and the workman traced my foot print on the paper. Then he measured across the fore part of my foot before doing the same across the arch on my foot. "Ok, you come back next week" - - which I did. Over the years I bought six pairs of shoes there!

A final surprise 1991, in Hong Kong airport, where the waiting room is an amazing duty free shop. Liquor of all kinds takes up a lot of space and I was casually checking prices of Scotch. Such brands as Johnnie Walker were about 70 percent of Edmonton prices for the same quantity. As I strolled I spotted a two litre very attractive carafe Scotch - - - but I lost interest when I saw the price \$250 Cdn! In disbelief I checked the exchange rate, I must have made a mistake I thought. Indeed I had made a mistake: THE PRICE WAS \$2,500 FOR 2 LITRES!

ments at Bonka (Smith, 1986; Anon., 1987). It seems unlikely that the large visible response of peanuts to fallowing in this trial could be attributed entirely to improved pre-season moisture. At Bonka, the Gu 1988 season received such high rainfall that much of the pre-season effects would have been masked. Throughout the Bay Region, peanuts showed severe symptoms of iron deficiency. There was, however, an observed amelioration of these symptoms in the fallow treatments of this trial in comparison with the unfallowed treatments. It is possible that clean fallowing had beneficial effects additional to its moisture-conserving effects.

Stubble incorporation resulted in a marked increase in sorghum yields in Deyr 1987. However, in above-average seasons, the response is likely to be poor or even negative because stubble incorporation reduces the availability of nitrogen (G.E. Eagleton, unpublished data, 1988).

With both fallowing and stubble incorporation, immediate production is sacrificed so as to benefit future productivity. Although there may be a demonstrable economic gain from this, subsistence farmers are reluctant to take such risks.

Is it possible to conceive of a cropping system that would retain the advantages of these practices without incurring unacceptable risk?

One potential system is relay cropping with a perennial legume such as pigeon pea or *Faidherbia albida*. Planted in the Gu season, in rows along the bund walls, a late-maturing cultivar of pigeon pea would offer little competition with the staple crop. Its initial growth would be slow, but in most years plants would persist after the sorghum's harvest, through into the Deyr season, producing quality forage, nutrient-enriched leaf litter and, in good seasons, edible seed.

Relay cropping is well known in India and Kenya (Willey et al., 1980; Omanga and Matata, 1986), and incorporates elements of the practices reported in this paper: run-off reduction, mulching, optimised moisture use across seasons and the synergistic effects of multiple cropping. However, such systems cannot be assumed to work in every environment, but must be tested empirically (Lal, 1989).

CONCLUSIONS

The traditional practices of bunding and intercropping have evolved to capture and better use the limited rainfall of the Bay Region. Fallowing and crop stubble retention were introduced to expand the range of potential moisture-conserving techniques, but have proved difficult to incorporate into the existing farming system. Their value has been conceptual — in exploring the possibilities of moisture transfer across seasons, and in the use of mulches and vegetation banks to reduce run-off.

Any new cropping system for the region must aim not only to improve

Gr Bk 6 (2)

2

Sheet #

Locations/topics/explanations etc

1 Hong Kong December 1962 & 1973

#1 & 2 First glimpses: leaving the airport and enroute to hotel.

3 -12 Christmas decorations and street scenes.

13 Cemetery

#14-17 Apartment buildings: where it all (laundry) hangs out!

18 Carl Nielsen's "Housing for the refugees" - - - one room of <150 sq. feet only for families of six or more !!!

2 An agricultural tour of Hong Kong colony.

#1 - 10 Our FAO Officer's tour focused on development of "new lands" for farming. The island of Hong Kong itself and the other parts of the former colony are primarily very rugged rocky areas with predominantly steep slopes and rather little soil. After driving up on a very twisty 'road' we reached an area under 'development' for farming. The area, some thousands of feet above sea level, was rocky with a thin layer of earth (not soil in the normal sense.) To develop that area very sturdy stone walls five to seven feet high were built on the contour and the earthy material was placed between the stone walls. The walls were necessary if farming was to be done there: at that altitude the wind and rainstorms would intermittently be so strong and violent that the crops that could grow there would be essentially destroyed! These 10 photos go progressively from raw land to rebuilt land and show progressively better on-the-slopes-farming as we progressed downward on return. As can be seen the not-so-steep area of #7 -10 were well developed because that is when the first settlers had begun farming the slopes. #11 - 16 are of long established farming on the lower slopes - - - but well above the dyked and flooded paddy lands where the #1 crop rice was of course dominant.

Fish farming a man built lowland areas was just in a preliminary state of testing. Bulldozers were used to create 'ponds' 1.5 to 3 metres deep where fish would be 'planted' to grow on the water plants that would grow in the ponds. But it was not working: plants did not grow and 'planted' fish to be fed fish feed died within an hour or so. Why? Bulldozers, their owners and drivers, are not very good soil surveyors. Under the water-logged anaerobic environments existing when the earthy materials had been deposited by geological processes weathering processes had resulted in deposition, in some places, of elemental sulfur. The bulldozing exposed such sulfur to the atmosphere and some microbes 'burn sulfur' to obtain energy for their lifestyle - - -and oxidize the sulfur to form sulfuric acid. The unsuccessful 'fish ponds' had pHs around 3 - - - where the fish could not live even for a few hours.

The FAO Officer's tour took most of a fascinating day. We were truly impressed by the diligence and innovativeness of the Chinese people; qualities which enabled them to survive in an area so low in resources.

TABLE 8

The Gu 1988 seed yield (kg ha^{-1} , at 12% moisture content) of 'Local' sorghum and nut-in-shell yield of peanuts (oven dried) in response to the previous Deyr 1987 land use, under both fertilised and unfertilised conditions, at two farms in the Bay Region, Somalia

Deyr 1987 season land use	Gu 1988 season			
	TSP fertiliser		No fertiliser	
	Sorghum seed yield	Peanut nut yield	Sorghum seed yield	Peanut nut yield
Bonka				
'Local' sorghum	1014	556	382	317
'Dabar' sorghum	959	568	552	348
Fallow	1112	973	447	604
Analyses of variance				
Fallow vs. crop	NS	***	NS	**
CV %	39.8	21.3	80.8	32.2
Doy Gaab				
'Local' sorghum	751	305	390	-
'Dabar' sorghum	506	331	390	-
Fallow	545	450	407	-
Analyses of variance				
Fallow vs. crop	NS	*	NS	-
CV %	39.5	19.2	45.9	-

NS = not significant.

*Significant at $P < 0.05$.

**Significant at $P < 0.01$.

***Significant at $P < 0.001$.

were much greater where phosphorus was applied than where no fertiliser was applied, but there was no statistical interaction with the fallowing effect.

DISCUSSION

Bunding and intercropping have a long history in the Bay Region. On the other hand, stubble incorporation and fallowing are introduced techniques that do not easily fit into the existing farming system.

Fallowing depends on a more complex technology (animal traction cultivation and/or herbicides) than currently exists. Although this trial demonstrated economic responses for peanuts, no benefit from fallowing was shown for the sorghum. This difference between deep-rooted species (e.g. sunflowers and peanuts) and sorghum has been observed in other fallowing experi-

G. A. K. 6 (3)

3

- # 3 Our second day we wandered around the tourist shopping area centered on Nathan Road in Kowloon.
- #1- 7 illustrate our fascination with construction of huge buildings totally with bamboo scaffolding. Not one crane was seen. It took great skill and unbelievable bravery to construct those bamboo scaffolds and to build tall buildings thereby
- # 8-9 are just street scenes. #10 is the street (1973) approaching the famous "Star Ferry" that takes tens of thousands daily back and forth between Kowloon (on the peninsula) and the Island of Hong Kong - - - less than one km away.
- #11-13 are photos of Hong Kong where most of the people are located in a narrow strip along the shore with "The Peak" rising in the background.
- #14-19 are photos taken from the Star Ferry or the docks for it, which illustrate the bewildering variety of water craft in those waters.
- # 4 Photos #1 -4 again show water craft and the passenger approach to the Star Ferry in 1962. This area was unrecognizable by 1990 due to massive building - - - but the Star Ferry dock location was unchanged
- The remaining photos on this sheet were all taken from "The Peak" on Hong Kong. The lower seven photos, all taken from The Peak, are in sequence from almost directly east towards north -east and finally north of north-east to Kowloon.

Concluding Comment:

Of all of the cities I have been in around the world Hong Kong is one of the two or three where I have felt completely safe, with exceedingly pleasant people, and simply fascinating too. I enjoyed every one of my 15 or more visits there - - even when they were just over night.

An example illustrates why I feel that way. Three of us were travelling from Hyderabad, India to Manila. We flew to Delhi and there changed planes for the flight to Hong Kong where we were again to change planes for the flight to Manila. We had had a long hard day and when we checked in with our luggage at Delhi we said we were going to Hong Kong. Enroute we realized how dull we had been: our stop in Hong Kong was to be about 30 minutes - - and we had checked our luggage to Hong Kong not to Manila! We could not get our luggage from the carousel in Hong Kong in time to get it checked in for Manila. We were in a real sweat.

There are pleasant airline hostesses to meet debarking passengers in Hong Kong. I dashed up to the first one I saw and explained our problem. The lady said: "Give me your baggage checks - - -and stay right there till I come back! About 12 minutes later she returned and handed us our new baggage checks for our flight to Manila. I doubt that there is any other large airport in the world where such astonishing competence and outstanding service can be found.

from as early as November. When soil moisture was measured after harvest, the difference between stubble-mulched and stubble-removed treatments was no longer apparent. There was significantly more moisture remaining in the surface soil layers after the mungbeans than after the sorghum crop ($P < 0.05$).

Clean fallowing

In January 1988, at the end of the Deyr season, there was significantly more moisture stored in the soil in fallowed than in cropped plots, at both Doy Gaab and Bonka (Table 7). There was, however, no difference between sorghum varieties in the amount of moisture stored.

The response to fallowing was the same at both sites: no response in sorghum and significantly improved yields in peanuts (Table 8). This difference in response between the two crops was observed both in unfertilised and phosphorus-fertilised conditions, and was reflected not only in seed yield, but also in stover yield (C.E. Eagleton, unpublished data, 1988). Yields of both crops

TABLE 7

Volumetric soil moisture content (%) stored after different cropping treatments at two sites in the Bay Region, at the end of Deyr 1987

Site	Depth	Deyr season land use			Significance		
		Fallow	'Local' sorghum	'Dabar' sorghum	Crop use (C)	Depth (D)	C×D
Bonka	0-20	16.8	15.4	15.8			
	20-40	34.8	26.1	26.4			
	40-60	32.5	28.7	28.6			
	60-80	33.8	31.1	30.5			
	80-100	33.2	30.6	32.5			
	Mean	30.1	26.4	26.7	***	***	*
Doy Gaab	0-20	25.0	18.2	16.5			
	20-40	35.1	26.7	25.6			
	40-60	36.1	30.1	30.9			
	60-80	35.8	34.8	32.0			
	80-100	38.1	37.0	38.2			
	Mean	34.0	29.4	28.7	*	***	NS

NS = not significant.

*Significant at $P < 0.05$.

***Significant at $P < 0.001$.

Contents of Binder # 10: India 1

<u>Photo Sheet</u>	<u>Notes Page</u>	<u>Topics</u>
# 1	1	Introduction The Taj Mahal, Delhi, and areas NW and E of Delhi
# 2	2	More Taj, Akbar's Tomb and nearby buildings
# 3	2	Scenes in Delhi and region
# 4	2	Mysore and World Univ. Internat. Conference
# 5	3	Transportation methods and street scenes n Delhi
# 6	3	Kutub and a day in Delhi
# 7	4	Tombs galore!
# 8	4	A trip from Hyderabad to Warangal
# 9	4	The Temple of the Thousand Pillars
# 10	4	Rural tours in north India
# 11	5	A glimpse of the Tanjore region
# 12	5	A Tour of Southern India: Part 1
# 13	5	Southern Tour: Part 2
# 14	6	The stop in Kerala
# 15	6	A brief visit to Kashmir

Binder # 10 India I

Begun 12/11/2000

My first visit to India was in 1953. I was on a one year leave-of-absence from the University My family and self were in Sri Lanka (then still called Ceylon) on a contract with Canada's infant development assistance program. I had accepted a request to be a staff member at a World University Service international conference being held in Mysore City, Mysore State, India. My wife and I arranged with Canadian friends in Kandy, Ceylon to look after our 6 and 8 year old children for twelve days. That would enable us to be tourists in India for three days after conclusion of the WUS Conference. We made plans to fly from Madras to Delhi after leaving Mysore.

Helen was anxious to visit Kashmir because of her professional interest in Kashmiri textiles and so forth. Therefore she left Mysore early and flew to Kashmir. She would join me in Delhi Wednesday evening so we could have two days in Delhi before rushing back to reclaim our children as our friends were to leave Kandy the day of our return.

While I was flying to Delhi our craft was grounded at Nagpur because a severe dust storm (from Rajasthan) had closed Delhi airport. When I arrived in Delhi I had a severe case of tropical trots due to something I had eaten in Nagpur. No sign of Helen!! and I did not believe the House Doctor when he told me that if I took the hazel nut size pills he prescribed I would be able to be a tourist the next day. The Doctor was right: I was ok in the morning and as there was no sign or word about Helen I was a tourist on my own on Thursday. Still no sign of Helen so on Friday I went to Agra to see the Taj Mahal. No sign of Helen when I returned at 16:00 - - - and my flight to Ceylon was at next morning 07:30. I would have to get to Kandy to reclaim our children! To my enormous relief Helen arrived about 17:30. The Rajasthan dust storms had prevented flights from Kashmir for three days! Helen was a trooper: she wanted to see the Taj etc so I went home to Kandy to look after our children and Helen came three days later!

At the time of that memorable first visit to India I had not the slightest clue that I would be back there more than thirty more times. There is a saying: "Familiarity breeds contempt." A variation of that is: "Take your photos when you first arrive: you soon become familiar with strange things and won't take some photos that you should have taken." About half of my photos from India were taken during that first trip and during my second three month stay in India in 1967.

Sheet # Locations/topics/ explanations.

1 The Taj Mahal, Delhi, and areas northwest and east of Delhi.

I have seen a number of the 'seven wonders of the world'. But for me the Taj Mahal at Agra, India has been the most impressive. From the entrance gate (#1) to the tomb in memory of Shah Jhan's favorite wife is more beautiful than any pictures of it (#2 - 8). The one piece screens (9) carved from single sheets of marble are unbelievable: so too are the inlays (10 - 12) which are so smooth fingers cannot detect the joins. (# 13) The view from the Taj to the entrance gate, and a last look back at the Taj (#14) still entrance one. (#15 -20) are of adjoining buildings that are impressive but not in the same quality category as the Taj Mahal!

The story of Shah Jhan is sad. It took 20,000 workers about 20 years to build the Taj - - - about 500 years ago. Jhan's eldest son became so enraged at his father for squandering most of the family wealth on the Taj that the son took over; imprisoned his father in a corner room of a building about a kilometre away - - - so oriented that his father could just get a glimpse of The Taj.

2 More Taj photos and some of Akbar's tomb and other impressive buildings in the area surrounding the Taj.

3 Scenes in Delhi and Region.

(#1 - 4) are of two children of wealthy families; the Oberoi Hotel (the best one in Delhi) and a high school for children of the wealthy. (5 - 6) are the 'homes' of squatters - - - within 300 m of the other two buildings!. (7 - 8) are a lawn mower (1967) and of well to do youths. It is not well known that about 10% of the people (100 million) in India enjoy a lifestyle fully comparable in amenities and opulence to that in the prosperous countries of Europe.

(#9 -12) are agricultural research related: #9 is cropping sequence research to develop a system for producing four different crops per year on the same land: reseed the same day a crop is harvested! # 10 shows efforts to produce crops on very arid land by contouring a rounded surface, which is not cropped, so some of the runoff will enable getting some crop from the adjacent area. #11 -12 are plant breeding research plots seeking to find ever higher yielding crop strains. Sadly, in Canada as well as world wide, because of the false hope of finding new genetically modified crop strains that will end the world food problem there is almost no recognition that: regardless of how wonderful the genetic potential of crops strains may be (whether in existing crop varieties or developed by plant breeding) the actual yields obtained depend on soil quality and soil management where they are grown, yet funds for such research are very meager compared to expenditures on plant breeding.

In 1967: (13) is a local rural 'coffee shop'; (14) is threshing grain by hand; (15) was part of a demonstration of "mechanized wheat seeding": five bullock teams each with: one driver, one seed dribbler and two bullocks, - - -to seed five rows of wheat very badly with a plow such as in #16:

Mysore and World Univ. Internat. Conference

→ # 4 These are most of our 'tourist' photos while in Mysore at the World University Service International Conference where there was a very full schedule. In sequence # 1-3 are: a distant view of the entrance to the Maha Rajah's palace; the gold-gilded roof protecting the stature of the loved and revered Grandfather of the last Maha Rajah. That great man was worshiped because of his enormous and constant efforts to improve the lives of ordinary people; and a view of part of the Palace from inside the surrounding 3 to 4 metre high wall.

Some incongruities are astonishing: one huge door as one exited from the palace itself was completely decorated on the inside-the-palace side with exquisitely carved squares of ivory about 10 cm by 10 cm (100's of them!) They were nailed to the wood of the door with common 6 cm nails.

4 and 5 illustrate two common types of a seven tier temples and a typical temple gate adornment.

The origins of "The Sacred Cow of India" merits explanation because it evolved from a

a very practical survival plan instituted millennia earlier. If in times of extreme drouth the people were to eat their cattle they would not have those animals to do much of the field work to produce grain crops. Lack of sufficient grain for human food would magnify greatly the devastation of fammine. So long ago some wise people created the concept of The Sacred Cow to prevent their slaughter by hungry people during periods of intense drouth.

Photo # 6 was taken at a residential school showing an assembly of the students. Although the students, all male, were from relatively well-to-do families the principal told us that when students needed medical attention the doctor's diagnosis was almost always "due to malnutrition." #7 - 9 are street scenes of women toting heavy loads on their heads: in two of the three cases shown the load was cattle dung collected from the fields - - - the fuel to cook meals. #10 shows construction work in progress - - - with females doing most of the drudgery work. #11 -13 show animals at work (pity the poor donkeys too!) # 14 shows well-to-do boys 'hanging out', and # 15 is at a railway station high-lighting a well-to-do going man who was going on a log trip. Those travelling first class had to bring their bedding even if they had a reserved berth. (Helen and I learned that when we travelled by train from Hyderabad to the Adjunta Caves in 1972).

5 Transportation Methods and Street Scenes in Delhi:

I was intrigued by the many different methods of transportation in Delhi in 1953.

3 -10. I took almost no other photos illustrating transportation during the subsequent many times I was in India.

1 & 2 & 11 were also 1953 street scenes. However in # 13 the red triangle in the distance (1972) illustrates that by that time there was widespread advertisements promoting smaller families: Large bill boards with parents and two children happily walking along - - and boldly: "Two are enough".

→ *Kutub and a day in Delhi.*

6 In 1953 on arrival in Delhi after the International Student Conference in Mysore I took a morning tour which included a stop at "Kutub" a thousand (?) year old renowned tower at the outskirts of Delhi. (#1 - 6) There is an internal stairway to the very top, from which there was a magnificent view of the countryside. However one could not go up alone - - - too many had terminated themselves by jumping off from the top. There had to be at least two persons to obtain authorization to go up. So I was nor-plussed: what to do? I looked at the man next to me, who was looking at me. "Shall we go together?" "Yes." And we did. India's population at that time was about 350 million (one-third of what it is now 2000). and I thought that I was going up with a citizen from India. It took only a couple of minutes to learn that my companion was a Shinalese from Ceylon who was studing in India: *and he knew all of the Ceylonese with whom I was working in Kandy!*

#9 - 16 are photos of, or within, or in the neighborhood of the renowned "Red Fort" in Delhi. It is incongruous that peddlers use the wall of that historically famous military fort as thier place of business (#9). Inside the Fort and other historical buildings in the vicinity are more important tourist attractions (#11 - 16).

7 Tombs Galore!

The memorial to Mahatma Gandhi is a simple and beautiful tribute to one of India's greatest ever citizens. (# 1) It is in sharp contrast to the many tombs of ancient rulers or invaders which are so plentiful in Delhi - - - and widely elsewhere in India. # 2 - 11 are of a few of those in Delhi. One of the more opulent ones in Delhi is Humyan's tomb and its surroundings. He was a ruler some centuries ago (#13 - 20.)

8 A Trip From Hyderabad to Warangal

In 1972. while on a two month stint at the newest International Agricultural Research Centres near Hyderabad, Helen and I took a Sunday trip of two or three hundred kilometres, eastward from Hyderabad to see some famous historical places.

#1 - 3 are photos of the remnants of Warangal which had been a highly developed city before the conquering moguls destroyed it. #1 - 3 show still standing remnants of massive structures which withstood the efforts of mogul elephants to destroy them. #4 - 5 are photos of some of the few surviving wall decorations.

In sequence #9 -12 are of scenes that day: towering twin granite peaks surviving 50 million years of weathering; young people with a car (the only one we saw that day); # 11 palm trees which can be 'tapped' to collect the sap (like maple syrup in Canada) which in a few hours of natural fermentation becomes powerful toddy ('beer').

#17 -20 are from a very small, very withdrawn, religious sect called Jains. We were fortunate to be able to take these photos.

9 The Temple of the Thousand Pillars

On the return trip from Warangal we visited a famous temple and surroundings which had not been destroyed by the moguls and their elephants. The 19 photos of this sheet illustrate again the remarkable developments at places in India many centuries earlier.

#10 Some Miscellaneous Photos from Rural Tours in North India:

In 1967 a Canadian Task Force of ten spent three months in India seeking to identify ways that Canadian materials and personnel might be able to contribute to increased food production in India where, successive years of drought and rapid population, had increased the country's acute food shortage. Indeed so much food grain assistance was being offered by numerous countries trying to be helpful that, the Indian railway system was unable to transport all of the offered grain to the most needy areas. This photos in this were sheet taken during our task force visit to rural area in north India.

#1 a camel pumping water to irrigate sugar cane. #2 a field of a new high yielding wheat variety that had not yet been 'rogued' (removal, by hand selection, of individual "off-type" plants so as to maintain the genetic purity of the new improved crop strain.)

#3 "summer fallowing" (a Canadian term for tilling the soil to encourage release of nutrients by decomposition of soil humus or recent plant residues.) But on land that had been cropped for 2000 years without leaving crop residues in the fields there was very

little humus or crop residues remaining to be decomposed. In some places fields were being tilled like this (summer fallowed) 12 times in the hope it would increase wheat yield the next crop year!

4 a farm grain storage facility. #5 & 6 manual work to line an irrigation canal with stone blocks (shaped by hand) so as to reduce loss of water by seepage through the sides and bottom of the canal. #7 non-arable, severely over grazed. 'pasture' land. #9 - 11: hasty photos taken at the Museum in Lucknow. (Ten years later Helen and I, and about 150 other air passengers enroute to Delhi spent 12 miserable hours in the Lucknow airport when a dust storm prevented landings at Delhi. The Lucknow airport was equipped to handle 25 passengers at a time!! #13 - 15: aerial photos near Ranchi in Bihar State where poor quality land, drought and severe over grazing meant terrible hardships.

1 1 A Glimpse of the Tanjore Region (near Madras, south east India):

Tanjore has a long history of being one of the leading rice producing areas of India. And for good reason. #1 & 2 attest to the pride in the 1600 year old barrage (dam) #3 which has led to excellence in rice production. #4 & 5 illustrate the excellence of a new high yielding rice variety pioneered in Tanjore. #6 details the rapid expansion of production of that superlative rice variety. #7 & 8 honor the men and women farmers who do the arduous work of rice production. #9 shows how the increase of production of the 'Green Revolution' variety AD-27 has enabled purchase of a modern water pump to increase rice production. #10-12 detail the rapid increase in farm credit, tractorization and the construction of a very successful cooperative warehouse: all are keys to successful adoption of new improved practices by farmers. These are examples of the merits and importance of the "Green Revolution" --- adoption of improved agricultural practices that contribute enormously to India's national economy. Tanjore has ancient temples too; and a local coffee shop which sells pieces of sugar cane stalks as a 'candy'.

1 2 A Tour to Southern India: Part 1.

A International Congress of Soil Science was held in Delhi in 1982. After the Congress there were several field tours for those able and wishing to join them. Helen and I took the tour from Delhi to Hyderabad (central) to Trincomalee (southern tip) and to Kerala on the western coast south of Bombay. Our 40 passenger bus had people from about a dozen countries and all enjoyed the very pleasant and informative tour. #1 - 12 were taken in the high altitude Ooty region which has a European summer type of climate. Tea production is a principal agricultural activity and so we were taken to visit a Tea Estate, operated by a large company which has its own "Tea Factory" to process the tea leaves plucked by 'tea pickers' in the fields. #13 is one of many beautiful blooming trees we saw; #14 a grapes in a vineyard; and #15 an example of *inter-cropping*, growing --- several crops at the same time on a piece of land.

1 3 Southern Tour: Part 2

After Ooty we proceeded to Mysore City. #1 is from a tour of the city. #2 & 3 are photos of the temple in the Maha Rajha's palace compound. That evening we were treated to a wonderful evening of traditional Indian entertainment. (#4 - 12).

#14 has an Indian host, the Bentleys and on Helen's left the only Chinese on the tour; he was glad to meet someone who had been to China! #15 - 18 illustrate the exceedingly warm reception for our bus tour when we arrived in Kerala.

Kerala is the only Indian state where Christianity is the dominant religion. Kerala also has the highest level of literacy, something they need greatly because it is a state very poor in natural resources - - especially quality agricultural land.

14 The Stop in Kerala

The first photo illustrates the land scarcity and the tenacity of the Keralise. The conical mounds are built with head basket fulls of earthy sludge used to create these mounds whereon an agricultural crop (palm trees) are planted!! (2 & 3)

Nearby we saw an even more astonishing program for creating land for food production. Young men with wicker baskets dove down in a murky river about 6 or 7 metres, filled their baskets with muddy earth, came to the surface and slowly built a bund (dike) to keep river water out of the paddy land they were creating. (4 - 11)

#12 shows a woman carrying rice from the created land off for threshing!!

That is most astonishing example of land scarcity that I have ever seen!

13 is the Bombay Gate at Bombay harbour where the Soil Congress Field Tour ended.

#14 -19 are from Ahmedbad, the capital of Gugarat State. #14, the Calico museum is a world renowned private textile museum which Helen visited for the third time - - - to her delight! #15-18 are outstanding buildings designed by an Indian architect, who had been a visiting professor of architecture at Harvard University, and who had a major role in the architectural design at Hyderabad when the international agriculture research centre, ICRISAT, was build near Hyderabad. (Many photos of the construction at ICRISAT are included in Binder #___ of this assembly assembly of photographs primarily from overseas.) #19 show woven and recently dyed textiles "out for drying".

15 A Brief Visit to Kashmir: 1976

Photos 1 to 4# were of special interest to Helen. #1 shows a museum textile. #2-4 illustrate a 'make it yourself' paper making procedure. #5 & 6 are of beautiful Dahl Lake where many visiting tourists spent time living on 'house boats' (one per family). #7 & 8 illustrate rice production on man made terraces, and hand harvesting of mature rice. #9 illustrates severe nitrogen deficiency in rice fields: most Kashmiries cannot afford to buy nitrogen fertilizer. #10 is a surprising export from Kashmir - - - cricket bats!! - - - reportedly the largest exporter of cricket bats in the world. #11 is for another agricultural export: mulberry trees the leaves of which are the feed for the silk worms; no mulberry leaves no silk. #12 illustrates dramatically the growth and yield differences between traditional (unimproved) wheat varieties and the much higher yielding and equally nutritious varieties produced by scientific plant breeding (genetic modifications). #13 -17 were taken on a trip of about 70 km into a remote valley with, so far as we could see, with only one motor vehicle friendly road into it. Farming was almost confined to the valley flats where by dyking it was possible to grow rice as shown. #18-19 show admirable ingenuity: houses are build on south-facing slopes and are dug into the hill sides to conserve heat: the windows all face south and in winter enable solar heating to do much to keep the houses warm.

19/07/2000 This a Belated Continuance of Slide/Photo Thinning & Listing

Red Binder # 3.

This is a miscellaneous collection of mostly professionally related B & W photos listed as follows:

Sheet #

- # 1 Miscellaneous professional related photos.
- # 2 The Canadian Agricultural Task Force to India 1967
- # 3 Ballagio Italy where fred participated in the meeting that led to the start of Consultative Group Internat. Agric Research (CGIAR)
- # 4 Fred as AIC past president 1964; AIC Klinck lecture tour 1981; with family; D. Sc. U of A 1900
- # 5 With Pirm and family in Khon Kaen 1985 & some Thai scenes
- # 6 More Thai scenes + Kenya & Phillipine post cards.
- # 7 Danish tour after Hamburg ISSS Congress in 1986. Director Zhou (Nanjing Soil research Institute) & Dr Li of Harbin forest soil res. institute.
- # 8 Fred campaigning against urbanization of #1 soil - - - to no avail !!
- # 9 Pleasant times and people in the Soils Dept. One of Fred's field trips with graduate students.
- # 10 Enroute to thre Bamff IBSRAM Board Meeting 1993 with Chalinee & Mark Latham
- # 11 & 12 Photos and negatives at Writing on Stone Park SE AB (H & F '93)

2007-08-101

Explanation of Numbering in this Red three Ring Binder for Slides

- 1 On the typed list of contents of the binder there is a red circle around the number of each individual sheet of slides.

The sheet numbers are on the lower right corner of each sheet and they are also circled in red.

- 2 To the right of the typed sheet numbers for the individual sheets there are the "Item nos" which identify the photos in each individual sheet of photos. There are usually 8 photos per sheet of photos. - - - each identified by its own number below the individual photos of each sheet..

For example for the first sheet of photos:

Sheet #	Item nos	
1	#1-3	refers to the 1st three photos on Sheet# 1
	#4 - 6	identifies the next 3 photos on that sheet
	# 7	refers only to the 7th photo on that sheet, and
	# 8	refers to the last of the 8 photos in sheet # !

The sheet numbers , i n lower right corners, are circled in red.

Saved Black & White Photos from the Accumulation
of such Photos That Were mounted on Gray Album Paper Sheets

(May 2000 C F B refined March 2001)

Red Binder # 2: Soils & Crops Related Photos: Some May be Suitable for Use in Breton Plots History

Sheet # Descriptions:

Item nos.

- 1 #1-3 Photos illustrating common soil profile variations among Gray Wooded (Gray Luvisol) soils:
- #4-6 After heavy rain the gray eluviated Ae horizon flowed like molasses down the slope from fresh road-grading activity:
- #7 Windrows of woody debris from land clearing employing a sharp-bladed bulldozer to cut and pile the tree vegetation.
- #8 A freshly 'broken' (ie ploughed for the first time) field of Gray Luvisol soil where inverting the furrow slices has exposed the gray Ae soil horizon.
- 2 #1-2 #2 Hiway, road cut at Niskiu ca 1950 showing Kavanagh soil developed on relatively undisturbed Edmonton Geological Formation .
- #3-4 Fresh hiway road cuts near Rycroft AB (where chinook winds have resulted in development of grassland, not tree vegetation,) and soil salinity has resulted in soil profiles with an intense Ah horizon underlain by an intensely leached/bleached Ae horizon, over a dark very tough solonetzic Bnt horizon above the lighter colored parent material: "solodized solonetz soils are often exceedingly variable!"
- #5-6 Two solodized solonetz soil profiles
- #7 The hard compact Bnt horizon of strongly developed solodized solonetz soils usually have round-topped columns the caps of which have a gray color as weathering, due to the solonetzic processes, disintegrates soil particles leaving a gray colored powder. "Varving" results from seasonal variations in color and texture of the sediments that settled from waters of glacial lakes: 'a varve' consists of a lighter colored layer from summer depositions below the darker colored winter deposit of that year .-.- 9 years of deposits are seen in this photo.
- 3 #1-4 Photos taken August 1963 in Elk Island National Park. Buffalo (Bison) take 'dust baths' (wallow) to get rid of mosquitoes or other insect pests that bother them. When dry the gray dusty Ae layer of solonetzic soils is ideal for bison 'wallowing'. In Elk Island Park only 5% of the soils are solodized solonetz yet over 90% of the buffalo wallows are on that kind of soil. Bison are pretty good soil surveyors!
- #5-8 In the "solonetzic soils areas" of the grasslands of south-eastern Alberta there is often an inter-mingling of solonetzic and 'orthic' (typical) grassland soils. Solonetzic soils have inferior tilth - - - often so inferior as to make them unsuitable for arable farming. "Buffalo wallows" are roughly circular spots about 2 to 3 meters in diameter where buffalo and winds have combined to remove the Ah and the Ae soil horizons leaving the tough hard Bnt sub-soil horizon material as the surface layer remaining. Photos 7 & 8 illustrate the inferior tilth of soil in buffalo wallows compared to adjacent 'not wallowed soil'. (Continued on sheet #4)
- 4 #1-2 "Buffalo wallow" spots (#1) are not suitable for crop growth, whereas adjacent soil where the Ah & Ae horizons have not been lost are more 'crop friendly'.
- Comment: weathering over the last 60 yrs has reduced the intensity & bareness of buffalo wallows
- #3-5 Photos are from Fred Bentley's Ph. D. thesis research sites near Radville SK (1943).
- #6-7 More 'wavey' solodized solonetz near Rycroft AB
- #8 Dr. Krishan N. Syngal the first Ph. D. student in Soil Science at the Univ. of AB 1957?

Descriptions

- 5 #1-2 At the Breton Plots plant growth/crop yields are increased by each of the essential nutrients S, N P --- effects are usually evident from fertilizer application of each of them but applying all 3 to grain crops gives the best yields & quality.
- #3 An S providing fertilizer increased alfalfa growth greatly on this farmer's field.
- #4 Fertilizer increased yield of the barley crop on this farm.
- #5 Combining grains to harvest them is now almost universal in the Prairie Provinces. In the 1950's fields of 'stooks' like this were still common. Wheat, oats and barley were stooked to speed the drying of the kernels of grain to 14% moisture (or drier) to avoid mould and decay of grains stored in granaries.
- #6-8 Long strips, with different or no fertilizers, enabled accurate measure of actual yields in farm fields where there were topographic &/or soil variations.
- 6 #1 This fertilizer spreader, bolted on to the tail gate of a pick-up truck and driven by a chain & sprocket from the rear axle of the truck was used to place on-farm fertilizer experiments on many tens of farm hay fields. That activity was a factor in there being widespread use of fertilizers on Alberta hay fields long before there was significant application of fertilizers on hay fields in MB and/or SK
- #2-4 Truck applied nitrogen fertilizers in late June on this visibly very nitrogen deficient field of grain resulted in big yield increases. #3 shows a big response to fertilizer in another farmer's grain field. Often grain from fertilized grain fields have important increases in protein content. #4 shows that such protein increases, and their effects on quality of bread loaves, may vary with the amount of nitrogen applied amount, kinds of soil and between grain varieties. Grain analyses and animal feeding experiments are needed to determine the nutritional significance of fertilizer applications.
- #5-8 These photos from the Breton Plots were taken at once after applying truck-spread fertilizer the day before spring seeding. #5 & 8 show that the soil had much better tilth in the 5-year rotation plots (deeper truck tracks) than in the harder lumpier continuous wheat plots (with the much lighter colored wheel tracks). Similarly 6&7 show the more granular soil of the 5 year rotation compared to the lumpy or powdery soil in the continuous wheat plot.
- 7 #1 Even after the same soaking by a heavy rain the humus (organic matter) rich soil has superior quality for germination and growth of plant seeds.
- #2 Manure and urine are rich in N and K but have relatively less available P. On N deficient fields growth of grasses is much better, and a darker green color indicates a higher protein content. But cattle pasturing such fields do not eat grass on the manure spots (unless they are starved into it) because, due to a lower P content, such grasses do not taste as sweet! (Verified by analyses and light spray of a sugar solution on grass of the spots!!)
- #3-4 The soil of #3, developed on glacial till parent material, is not nearly as responsive to P fertilization as the nearby lacustrine clay soil where water sorting has changed the combination of minerals in the parent materials of that soil.
- #5-6 Alfalfa planted in nitrogen deficient soils grows poorly unless it is 'inoculated' with the N fixing Rhizobia micro-organism --- which takes N from the air and changes it to a form that the microbe can use for its own growth, simultaneously fixing N in excess of its own needs 'which it gives to the alfalfa as rent'. The alfalfa and the Rhizobia have a mutually beneficial 'symbiotic relationship.'
- #7 A remarkable example of responses to fertilizer in a hay field on Hiway #16 about 3 miles east of the turn-off to Ft. Saskatchewan. Remarkably there was not a similar response, nor a large residual effect the following year. Precipitation (soil moisture contents) and soil temperatures affect plant growth.

8 Photos from Ceylon (Sri Lanka 1953) #1 wife watchman's [hunt]

#2-6 terracing for rice production

Descriptions

- 8 #1-6 Sri Lankan photos used in an invited article by Bentley in the A I C Review 1953
- #1 Farmers build tree huts for safety from wild animals as they guard small patches of vegetable on jungle land they have cleared and cultivated.
- #2-5 The areas with good rainfall in Sri Lankan are usually quite rugged. Hand built terraces hold water to create flooded patches where rice can be grown.
- #6 Tea, the most important export crop grown in Sri Lanka, has the best quality when produced on steep mountainous slopes where rain is abundant and temperatures are not swelteringly hot. The contour trenches, are hand-dug, on these steep slopes before the tea bushes are planted. The trenches catch and retain part of th rainfall to provide moisture for the tea plants. The trenches have gentle slopes of about 3% to lead excess water to hand-built stone 'down drains' which safely take the excess water down to streams below without development of enormous gullies

The Following is a Miscellaneous Collection of Professionally Related Photos
Which Continues in This Binder.

Gray Sheet Descriptions

- 9 After the A I C annual general meeting of the AIC in Banff in 1963 , Fred was astonished surprised to become Honory Chief Yaha Tinda (High Mountain Meadow) of the Morley AB Stoney Indian Tribe at a barbecue following his induction as President of the AIC earlier in the day . To his enormous discomfort he had to join in a ceremonial Indian dance before over 600 hundred people: - - - and he has only two left feet , neither of which is designed for dancing!
- 10 #1 Fred receiving Univ. Minn. Outstanding Achievement Mpls Campus 1965.
#2 Fred speaking at Budapest, Hungry 1964. A soil salinity meet proceeded a Field Tour in Russia (Moscow to Black Sea) and then on to the 1964 Congress of the Internat Soil Sci. Soc .at Bucharest, Rumania - - - - where Fred got the idea that we Canadians should offer to host an ISSS Congress - - - as we did in 1978.
- 11 Fred receiving a United grain Growers cheque for \$5,000 for research on zero tillage 1966 It is possible that the first AB field expt with Roundup for weed control was on the land of a cooperating farmer 2-3 miles south of Josephburg AB
- 12 A group of University AB persons 1967 - - -at a- not-remembered on-camps occasion. Back row: Bob Folinsbee (Geology), Max Wyman (Math & Assoc Dean Fac Grad Studies), Ken Thompson, M.D. (Bessie Bowser's brother); Fred Bentley (Dean Agr), Walter MacKenzie (Dean of Medicine), Don Ross (Dean Science), Walter Johns (President) , ___ Bradley (Chair Bd of Govs U of A, Ray Lemieux (Chemistry - - - and the first person in the world to synthesize plain white sugar!), Harry Gunning chair of Chemistry.
- 13 & 14 Fred first met Maurice Strong,, newly appointed President of CIDA, at lunch for the CIDA Agricultural Task Force to India (of 10 persons, in India for 3 months - - Fred leader) fall 1968. A press release (back of sheet) identifies specializations of team members in photo (Who L - R were as follows: Wight, McRae, Pretty, Bowser, Taylor, Purnell, McDonald, and front: Beamish, Bentley, Strong, and Poirrier. (Bill Gall, a food processing specialist joined the Team in India.)
- 15 Fred's lifetime membership in the Soil Conservation Society of America. 1985

3

KODACOLOR PRINTS & NEGATIVES
(Listed April 1996)

Bk #3: Red #' Ring Binder Egypt & Wales & Writing on Stone (again!) 1992
Tab Sheet

1st Map of Egypt

- 1 #1 Hotel in Cairo, (4) an ancient dock (2)
 #2 Side 1: 3 more Cairo hotel: Side 2: Hotel at Alexandria & scene from it (4 incl 1 on sheet #3
 #3 Agric field tour (5) & a tree trunk near Alexandria hotel. (1)
- 2 #4 Nile tour: 1st stop. (4) Karnak (2)
 #5 Two more Karnak; envelope of negatives film roll #1.
- 3 #6 Six more Karnak
 #7 Three more Karnak
- 4 #8 & #9 Still Karnak (I think!) Last 1 on #9 is at Edfu by nite.
 #10 More Edfu (Last one on side 2: Howard Stepler & Fred at Kom Ombo)
- 5 #11 More Kom Ombo & 4 on #12 with our guide in full voice. Last 2 on #12 are at Aswan.
- 6 #13 & #14 at Aswan --- with envelope #2 of negatives on back of #14 (& Helen's extra prints.)
 #15 Around Aswan
- 7 #16 & #17 & #18 Around Aswan including visit to Aga Khan's tomb.
- 8 #19 We're in Wales. "The Gower" National heritage area. Helen, Lionel & gorse!
 #20 & #21 Birthday party for little Emma's seven (?) year old sister.
 Envelope of negatives for film roll #3 is on back of #21
- #22 Trip to coal mining area. (4) & Swansea Castle (2)
- #23 Back in The Gower again! (4): Thomas older daughter & family (2).
- #24 Thomas younger daughter & family in parent's garden (6)
- #25 The Gower, same trip as #22. (5)
- #26 Pauline, Helen & Fred in the Swansea Park (4); the school where Pauline used to work (1)
- #27 Waterton Park (6)
- #28 " " (1); Writing on Stone Park (again!) (3).
 Also envelope of negatives, film roll #4

Red Binder # 5

Selected and thinned Slides from China Trips arranged as 10 Topics/ places

Sheet #

- #1 Shanghi and Canton

- # 2 Hanzhou: Western Lake: If there is a heaven this it; this is it; this is it!

- # 3 Suzhou --- embroidery centre (embroidery with single silk fibres ! !)

- # 4 Nanjing Conferences on paddy soils 1981 (Helen & Fred among about 40 foreigners ---
--- and about 200 Chinese ! Min Chen's home area.

- # 5 Beijing and vicinity in 1983. fred led two CIDA teams of 3 persons each for about 3
weeks each

- # 6 Jaingxi for World Bank (Fred a member of a 10 person World Bank team)

- # 7 Longhou = --- also W B

- # 8 Mizhi- - - also W B

- # 9 Mizhi & Xian --- also W B

- # 10 Harbin & August First University --- also CIDA

Note: There is a charousel of 70 - 80 of the best slides from China.

Red Binder # 6

Sudan; Bangladesh; Australia - - under 8 categories after thinning.

Sheet #

- # 1 Sudan 1984 Khartoum & enroute to Sim Sim.
- # 2 Sudan photos at Sim Sim & vicinity.
- # 3 Sim Sim & vicinity - - - photos sent to CIDA
- # 4 Sudan: primarily neighboring farmers
- # 5 Africa Seed Tour 1985: Senegal; Burkino Fasco; Niger; Abidjan & IITA
- # 6 Balance of African seed unit; & B'desh country tour with Nielsen & then Sykes
- # 7 Rural scenes in B'desh 1984
- # 8 Townsville Australia 1983

"Folder CFB Photo Lists
"Slides 5/00"

Red Binder # 7

International Soil Science Congress 1986 at Hamburg; Danish tour; U. K. afterwards

Sheet #

1 Congress at Hamburg & Heligoland & Denmark

2. More Congress tour in Denmark

3 More Congress tour in Denmark

4 Copenhagen after Congress tour

5 York Cathedral & Durham Castle

6 Durham and Coventry

There may be a carousel with some toys

Red Binder # 8

McAllister Environmental Services: was a partnership consulting firm with three persons (R. Erin McAllister; W. Earl Bowser; and C. Fred Bentley) The company began about 1972 and Earl Bowser passed away in 1976: McAllister and Bentley carried on until Erin's death in 1982. Erin did about 85% of the consulting which was primarily concerned with restoration reclamation at Forestburg, Round Hill (The Camrose Riley Project), the Whitewood, Highvale and Keep Hills strip mines in the Lake Wabmun area and the Lake Abraham dam site west of Nordegg. With Erin's death the company was closed out.

Sheet #

- # 1 Photos of Erin's equipment.
- # 2 Camrose/Riley; Whitewood Mine; Cardinal River; & Big Horn revegetation
- # 3 Excellent crops on Camrose/Riley Pits 1985
- # 4 Burnstad trenches; soils & mine spoil.
- # 5 Bighorn revegetation; Crops & fertilizer at Whitewood mine.
- # 6 Kodacolors from Bighorn seeding.
- @ 7 More of Erin's equipment
- # 8 Kodacolors of crops at Camrose/Riley
- # 9 Kodacolors at Pit # 2 soils & crops May 1986
- # 10 Kodacolor As # 9: Flooded area & crop preparations
- # 11 " Pit # 2 crops ready to harvest.
- # 12 " Pit 3 excellent crops fall 1986
- # 13 " Pit 2 fall 1986: crops and scald on them
- # 14 Slides Forestburg and Cardinal River.
- # 15 Bighorn 1974
- # 16 Highvale mine slides.

2007-08-107

Archives Photos List 3

Slide Catalogue Lists by Countries and Topics

C. F. Bentley 9 March 2003)

Large Red Ring Binder #10 slides from 13 countries in alphabetical sequence and showing the no. of sheets & slides therein.

Binder

<u>Tab #</u>	<u>Sheet #</u>	<u>Slides</u>	<u>Country</u>	<u>Location or topic</u>
# 1	(1)	2	Australia	Sydney
		5	Austria	Miscellaneous
	(2)	13	Britain	In London 1952
# 2	(3)	15	Denmark	Darby Area (Helen's father's area)
	(4)	15		Tivoli amusement park; etc
	(5)	18		Copenhagen sites etc
# 3	(6)	15	France	Paris & Veresailles
# 3	(7)	19	Germany	Berlin & Rhine
	(8)	19		Rhine boat trip
# 4	(9)	7	Holland	Rotterdam
	(10)	17	Hungry	Budapest
	(11)	19		Budapest etc
	(12)	12		Soils etc Hungairn plains
# 5	(13)	19	Nepal	Katmandu etc
	(14)	12		Katmandu etc
# 6	(15)	19	Romania	Bucharest & Maima beach
	(16)	15		Bucharest & ISSS Congress
# 7	(17)	19	Russia	Moscow
	(18)	19		Moscow & trip to Black Sea
# 8	(19)	12	Switzerland	Travel through etc
# 9	(20)	19	Thailand	Primarily Khon Kan

2007-08-108

Archives Photos List 4

Slide Catalogue Lists by Countries and Topics

C. F. Bentley 9 March 2003)

Red Ring Binder #11 slides from 13 countries in alphabetical sequence and showing the no. of sheets & slides therein.Binder

<u>Tab #</u>	<u>Sheet #</u>	<u>Slides</u>	<u>Country</u>	<u>Location or topic</u>
# 1	(1)	16	Alberta	Breton Plots (nutrition) & lime/liming
	(2)	9		Kinsella breeds & Gray Wooded windthrow
	(3)	11	Burkina Faso	1982 People & IC++ business
# 2	(4)	9	Ethiopia	Addis Ababa & country scenes
	(5)	20	Ghana	Scenes & text on slides
	(6)	20		Scenes & text on slides
# 3	(7)	19	Kenya	Air flights, Masai people, some agric crops
	(8)	12		Enroute to Uganda; a little text
	(9)	17		Misc: forestry tour; some text
# 4	(10)	18		Forestry tour & Lake Baringo Some text
	(11)	18		Air flight to Masi savana & Lake Baringo
	(12)	19		Lake Baringo; worst ever erosion due cattle
# 5	(13)	13		Termites: savanna pest; red soils dominant
	(14)	18		Nairobi & game -- park & wild
	(15)	9	Mali	Bamako city

2007-08-109

Archives Photos List 5

Slide Catalogue Lists by Countries and Topics

C. F. Bentley .9 March 2003)

Big (Red) Ring Binder #11 slides from 13 countries in alphabetical sequence and showing the no. of sheets & slides therein.

<u>Binder</u>				
<u>Tab #</u>	<u>Sheet #</u>	<u>Slides</u>	<u>Country</u>	<u>Location or topic</u>
# 6	(16)	17	Malaysia	Palm oil area (why we were there)
# 6	(17)	19		Kuala Lumpur (K L) city & zoo
# 6	(18)	7	Malaysia	Univ & Agric College; Tin mining (envirom. area)
# 7	(19)	19	Nigeria	Village where expatriate trying to be to helpful
# 7	(20)	18		Res at Internat Inst Tropical Agric (Text on slides)
# 7	(21)	15		Research plots at IITA, Ibadan Nigeria
# 8	(22)	15		Near Port Harcourt: res on bananas text on slides
# 8	(23)	10		IITA Machine res. & roadside vendors
# 8	(24)	11	Niger	Slides 5-8 = yields 300, 600, 600 & 120 Another internat agency contended ICRISAT had made a mistake or cheated; they repeated with more complex expt + 250 - 1450 !! Text on slides
# 9	(25)	15	Senegal	Agr research & rural scenes Text on slides
# 9	(26)	20		Agr res. & textiles & crafts: old slave pier
# 9	(27)	14		Rural scenes: text on slides
#10	(28)	5	Sudan	Cdn project on semi-arid Sudan plain
#10	(29)	20	Tanzania	Flight to Muwamza some text on slides
#10	(30)	19		Dhar Salam(?) & vicinity incl Livingston tomb
#11	(31)	18	Uganda	On dairy assist for CIDA: Cattle & rural scenes
#11	(32)	19		Kampala scenes & some agr scenes Some text
*11	(33)	17		Bark cloth & agric related. some text