**Pacific Regional Soil Science Society** NEWSLETTER No. 6

JANUARY, 1985

EDITORIAL

This abbreviated Newsletter is being sent out now primarily as a reminder of our Society's Annual General Meeting and the annual B.C. Soil Science Workshop, both to be held at UBC next month. The contents also include the usual listing of other meetings of interest, along with a letter to the editors. We are particularly grateful for the latter contribution which responds to issues raised by Dave Moon's item published in the last issue. Informal exchanges of this kind are an important function of this type of publication, and we are anxious to encourage more of them.

We are pleased with the fairly good response to our appeals for membership renewals. Also, we would ask you to check the membership list at the end of the last issue -- if you know a colleague or friend who isn't on the list and should be, encourage him/her to join.

Best wishes for 1985 to all of our friends in the soils fraternity in British Columbia and beyond!

Paul Sanborn
Mike Curran

LETTER TO THE EDITORS

Dear Paul:

Please find enclosed a cheque for $5.00 for 1985 membership dues.

I find the newsletter very informative. It is nice to see the list of upcoming events and meetings. It is also good to see recent theses and editorials such as Dave Moon's. In summary, all these items are of interest to me and others in the field. Without the newsletter I feel I would lose touch with the rest of the soils world. Keep up the good work.

I should mention that Dave Moon's article caused a few sparks in our office. Dave's points on the facility and convenience of microcomputers are good, but he also mentions the lack of information transfer and compatibility between various models. Therein lies the weakness of micros and the strength of a large system. It is very useful for people to have access to each others data. As one surveyor in the office commented, "It would be nice to be able to have access to Dave Moon's data when I am working in an area he has previously worked in. It would help me to get a better idea of the soils of an area as well as avoiding obvious problems such as resampling in the same unit." This is the approximate quotation; I hope it makes the point.

Anyway, sorry for the digression. All the best wishes for the season.

Harry Quesnel
(Ministry of Environment,
Victoria)

**Department of Soil Science, University of British Columbia, Vancouver, B.C., V6T 2A2, Canada Tel: 228-2783**

# SOME CURRENT APPLICATIONS OF MICROCOMPUTERS TO SOIL SURVEY

D. E. Moon
(Land Resource Research Institute, Agriculture Canada)

Procedures have been developed to make soil survey field data immediately available for computer assisted analysis by recording data on a hand held computer in the field. Data is transferred directly to a transportable desktop microcomputer supporting a commercial data-base management package. This package provides for data management, report summaries, and statistical analysis to define confidence limits and the number of samples necessary to meet the survey objectives.

## Field Data Collection

A program has been developed, in transportable Basic, to use a hand held microcomputer for field data collection in computer readable format. The program constructs a program to : 1) prompt the surveyor for data, 2) perform validity checks, 3) display the data as an 8 line by 40 character screen form with headings for review and editing, and 4) store the data in a form compatible with the data base manager. Data may be transferred to a microcomputer, a minicomputer, or a mainframe computer and can be done either direct link or by telephone. While currently designed to run under Micro Soft's BasicA on a MS-DOS computer and to produce programs for the Radio Shack TRS-80 model 100 notebook computer, the program is transferable with little or no modification to any Basic language computer and can produce programs for any hand-held microcomputer which supports standard basic.

## Field Office Applications

Applications of portable microcomputers to use in the field office have also being developed. The data are loaded directly into a user defined data base management system which produces user defined hard copy reports of each data record as well as reports which combine parts of multiple files into one report. The data base management package offers full screen editing, produces simple sorts on selected variables such as soil name, or a combination of variables and produces univariate statistics, cross-tabulations and frequency distributions on user defined classes.

This procedure will be ready for implementation for the 1985 field season.

## FORTHCOMING MEETINGS AND CONFERENCES

February (exact date not yet set). Annual meeting, Soil Conservation Society of America, Alberta Chapter. Contact: Leon Marciak, Alberta Agriculture, Room 206, 7000 - 113 Street, Edmonton, Alberta T6H 5T6

February 10-11. Alberta Soil Science Workshop. Theme: Land and Water Management. Location: Lethbridge Lodge, Lethbridge, Alberta. Contact: B. Paterson, Alberta Agriculture, Agriculture Centre, Lethbridge, Alberta, T1J 4B1

February 18-20. Saskatchewan Soils and Crops Workshop. Location: University of Saskatchewan, Saskatoon. Contact: Mike Grevers, Department of Soil Science, University of Saskatchewan, Saskatoon, Sask. S7N 0W0

February 20. Soil Conservation Society of America, B.C. Chapter, Annual Meeting. Room 158, Macmillan Bldg., UBC, 7:30 pm. Featured speaker: Sen. Herb Sparrow, Chairman, Senate Standing Committee on Agriculture, Fisheries, and Forestry. Contact: Laurens van Vliet (224-4355).

February 21. Pacific Regional Soil Science Society, Annual Meeting. Room 158, Macmillan Bldg., UBC, 7:30 pm. Contact: Tim Ballard (228-2300).

February 21-22. Ninth British Columbia Soil Science Workshop. (See details elsewhere in this newsletter).

March 4-8. 4th International Symposium on Remote Sensing for Soil Survey. Location: Wageningen, Netherlands. Contact: Dr. M.A. Mulders, Dept. of Soil Science and Geology, Agricultural University, P.O. Box 37, 6700 AA, Wageningen, The Netherlands.

June 18-20. Douglas Fir: Stand Management for the Future. A Symposium. Location: University of Washington, Seattle. Contact: Dr. C. Oliver, College of Forest Resources AR-10, University of Washington, Seattle, WA 98195.

June 17-19. International Conference on Soil Dynamics. Location: Auburn, Alabama. Contact: W.R. Gill, Conference Coordinator, National Tillage Machinery Lab, P.O. Box 792, Auburn, Alabama 36831-0792, USA.

August 21-23. 7th York Quaternary Symposium. Theme: The Paleoenvironmental Reconstruction of the Late Wisconsin Deglaciation and the Holocene. Field Trip August 24-26, 1985. Location: The Univesity of Lethbridge, Lethbridge, Alberta. Contact: Dr. R.W. Barendregt, Dept. of Geography, University of Lethbridge, 4401 University Drive, Lethbridge, Alberta T1K 3M4

# NINTH BRITISH COLUMBIA SOIL SCIENCE WORKSHOP

You are invited to the 9th British Columbia Soil Science Workshop!

THEME - The Role of Soil Analysis in Resource Management

WHEN - February 21 and 22, 1985

WHERE - Room 166, MacMillan Building, University of British Columbia, Vancouver, B.C.

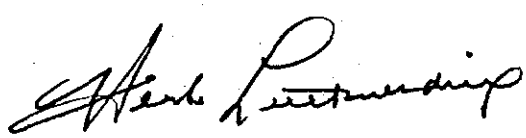
REGISTRATION - Anytime during the first day, but preferably in the morning

FEE - Not more than $10, which will provide a copy of the proceedings and cover the cost of postage, coffee and 'goodies'.

The Workshop is being held under the auspices of the B.C. Land Resource Science Lead Committee. It will address the soil analysis needs of the agricultural and forest industries, as well as some other land users. It will also focus on soil analysis from the perspective of the laboratory and discuss methods for dealing with soil variability.

The Workshop program is attached. Please circulate it among your colleagues and friends for widest distribution. If you have any questions, please contact Lawrence Lowe (228-3478, Vancouver), Tim Ballard (228-2300, Vancouver), or myself (860-7393, Kelowna).

Circle February 21 and 22/85 on your calendar now, and plan to attend! I hope to see you there.



H. A. Luttmerding,
Chairman, Organizing Committee.
December 27/84

## SESSION ONE - Thursday A.M., Feb 21/85

Session Chairman - G.G. Runka, Land Sense Ltd., Burnaby, B.C.

Topic - The Needs and Expectations of Soil Analysis Users

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| 8:45 - 9:00 | Welcome. L. Lavkulich, Chairman, B.C. Land Resource Science Lead Committee |
| 9:00 - 9:30 | Laboratory Analyses Applied On and Beyond the Farm. W.A. Herman, Pacific Soil Analysis Inc., Vancouver. |
| 9:30 - 9:55 | Horticultural Requirements and Interpretations. B. Mauza, B.C. Ministry of Agriculture and Food, Abbotsford. |
| 9:55 - 10:20 | Chemical Data Requirements for Forestry Interpretations. T. Lewis, Consultant, Burnaby, B.C. |
| 10:20 - 10:45 | Break |
| 10:45 - 11:10 | Chemical Attributes in Making Environmental Interpretations. J. Wiens, B.C. Ministry of Environment, Victoria. |
| 11:10 - 11:35 | Chemical Data in Soil Taxonomy. L. Lavkulich, Dept. of Soil Science, U.B.C. |
| 11:35 - 12:00 | What Does the Data User Expect of Soil Analysis? Panel consisting of the previous speakers |
| 12:00 - 1:15 | Lunch |

## SESSION TWO - Thursday P.M., Feb 21/85

Session Chairman - W. van Lierop, British Columbia Ministry of Agriculture and Food, Kelowna

Topic - Approaches in Soil Analyses and Interpretations

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| 1:15 - 1:30 | Some Possible Approaches to Soil Nitrogen Availability Testing in Field Soils and Soil-less Mixes. Michael Rowell, Norwest Soil Research Inc., Langley, B.C. |
| 1:30 - 1:45 | Review of Bray's Soil Test Calibration Theory. R. Bertrand, B.C.M.A.F., Cloverdale, B.C. |
| 1:45 - 2:00 | Laboratory Determination and Interpretation of Soil Physical Properties. Michael Goldstein, Soilcon Laboratories Ltd., Vancouver, B.C. |

2:00 - 2:15 Soil Variability with Respect to Soil Test Values. A.L. van Ryswyk*, John Hall and W. van Lierop, Agriculture Canada, Kamloops, B.C. and B.C.M.A.F., Kelowna, B.C.

2:15 - 2:30 Elemental Analyses Using Inductivily Coupled Plasma - Principles and Horizons. Michael W. Blades. Department of Chemistry, U.B.C., Vancouver, B.C.

2:30 - 2:45 Comparisons Among "Available" Zinc Extractants for Southern Interior Soils. Denise Neilsen*, P. Hoyt and A.F. MacKenzie, McGill University and Agriculture Canada, Summerland B.C.

2:45 - 3:00 Comparison of the Pipette and Hydrometer Methods for Determining Soil Particle-Size Distribution. Hong Chuah, B.C.M.A.F., Kelowna, B.C.

3:00 - 3:30 Break

3:30 - 3:45 Zinc and Phosphorus Interaction in Apple Seedings Grown in Nutrient Solutions. G.H. Neilsen* and E.J. Hogue, Agriculture Canada, Summerland

3:45 - 4:00 $^{15}N$-tracer Methodology in Soil Research. P.C. Pang, Pacific Forest Research Centre, Victoria, B.C.

4:00 - 4:15 Advantages of $^{15}N$ Techniques in Interpreting Data for Soil Research. C.G. Kowalenko, Agriculture Canada, Agassiz, B.C.

4:15 - 4:30 Comparison of Laboratory Methods for Evaluating Plant-Available Soil Phosphorus. W. van Lierop, B.C.M.A.F. Kelowna, B.C.

## SESSION THREE - FRIDAY AM, Feb 22/85

Session Chairman - Hans Schreier, Dept. of Soil Science, U.B.C.

Topic - How to Deal with Soil Variability

8:40 - 9:00 Soil Variability, does it Invalidate Our Interpretations? D. Moon, Agriculture Canada, Vancouver and H. Schreier, Dept. of Soil Science, U.B.C.

9:00 - 9:20 How do Geotechnical Engineers Deal with Soil Variability and Sampling? J. Gadsby, Gadsby Geotechnical Consultants Ltd., Vancouver.

9:20 - 9:50 Present and Future Trends in Soil Fertility Assessments. J. Beaton, Potash and Phosphate Institute, Cochrane, Alberta

9:50 - 10:10 Implications of Soil Variability on Fertilizer Assessments for Crop Production. G. Kowalenko, Agriculture Canada, Agassiz.

10:10 - 10:30 Break

10:30 - 10:50 Strategic Fertilizer Programmes for Individual Farmers in New Zealand. S. Smith, New Zealand Soil Bureau, Dunedin, N.Z.

10:50 - 11:10 Foliar Analysis for Deficiency Diagnosis and Fertilizer Prescription in Forestry. T. Ballard, Dept. of Soil Science, U.B.C.

11:10 - 11:30 Using Probability Assessments in Soil Research. M. Sondheim, Ministry of Environment, Victoria and T. Rollerson, MacMillan Bloedel Ltd., Nanaimo

11:30 - 12:00 Present and Future Trends in Quantitative Image Analysis and its Implications to Soil Science. B. Woodham, Computer Sciences, U.B.C.

12:00 - 1:15 Lunch

## SESSION FOUR - FRIDAY PM, Feb 22/85

Tour of MOE's Environmental Laboratory, 3650 Wesbrook Crescent, U.B.C. campus

Tour Chairman - Lawrence Lowe, Dept. of Soil Science, U.B.C.

Time

1:30 - 2:30 - tour of Environmental Laboratory. Transportation available from west side of MacMillan Bldg. at 1:15, or meet at Lab.

2:30 - 3:30 - tour of Environmental Laboratory. Transportation available from west side of MacMillan Bldg. at 2:15, or meet at Lab.

Tour participants are asked to segregate themselves into two groups, one for each tour.