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	Page
Alberta Oil Sands	1
Programme de Recherches Environnementales	2
Air Pollution from Agricultural Spraying Operations by J. Maybank	7
Spectrum '76.	10
Canadian Meteorologist Elected	12
Nos vieux avaient un langage savoureux par Hélène Gignac.	13
North to Resolute Bay and Thule by Garry Toth	14
Who's Who?.	17
Arts and Crafts Show 1976 by Megan Lovelock	18
Patron de l'Environnement	19
Remarks from Beatrice Ontario.	19
Games People Play	24
Beau et chaud aujourd'hui.	26
Seminar in Applied Meteorology.	27
Séminaire de Météorologie Appliquée.	27
Personnel.	30
Trivia.	32

ALBERTA OIL SANDS ENVIRONMENTAL RESEARCH PROGRAM

First Intensive field Study – March 1976

The Alberta Oil Sands Environment Research Program is a cooperative effort sponsored and funded equally by Environment Canada and the Alberta Department of the Environment. The primary objective of this ten-year program is to examine the present environment of the Oil Sands area and assess the probable effects of large scale oil sands mining, extraction, and upgrading processes on the atmosphere, aquatic life, vegetation, wildlife, communities, and existing life styles.

The Atmospheric Environment Service in close cooperation with the Alberta Environment Pollution Control Division will play a significant role in studying present meteorological and air quality conditions and is assessing the impact of future developments.

The AES activity on this program is carried out through a field group and a headquarters group which is concerned with applied research and development of simulation models.

In March, these two groups were brought together for three weeks, in the first intensive field study in oil sands area. The objective of this study was to investigate in detail the fine structure of the atmosphere, small scale atmospheric motion, and to relate these findings and the broad scale characteristics, which are defined by the operational networks for meteorology and air quality. The study consisted of several experiments measuring various characteristics. Such as – wind, temperature profiles, stability, plume behaviour, snow chemistry and air quality.

The majority of investigation was undertaken by scientists of the Atmospheric Environment Service. Alberta Environment undertook some air quality measurements and supported the airborne plume studies through INTERA, a Calgary based environmental consulting firm. In terms of financial support, the federal and provincial contributions were about equal. The permanent AOSERP camp at Mildred Lake was the base of operations for all studies except the plume flying. This is located about 40 km north of Ft. McMurray and within five km of the operating Great Canadian Oil Sands plant and the Syncrude plant presently under construction.

The first of the scheduled studies got underway on the 2nd of March and by the afternoon of the 3rd, all experiments were operational. A high level of equipment service ability was maintained throughout the study period, although some temporary temperature operating problems were experienced with the tether sonde and the aircraft instrumentation gave some problems in the early stages.

A good variety of weather conditions were experienced in the three week period. Two of the interesting periods were right at the start of the study – March 1 – 4 and near the end – March 13 – 16. In both instances, a high pressure ridge was the dominant weather feature and gave rise to strong temperature gradients in the lower levels.

The evening onset of stratification in the river valley, the fluctuation in structure and flow during the night and the morning breakup were well documented by the several experiments which worked closely throughout the study: tether sonde, Delta-T sonde, acoustic sounder, and plume rise photography.

Other projects which were an integral part of the study were:

Precipitation Chemistry

Over 300 snow samples were collected within a radius of 25 km of the AOSE RP camp. These will be analysed for chemical constituents to establish the degree of purity under near clean conditions and to see if any distribution patterns are evident which can be related to the Great Canadian Oil Sands plant. Air Quality measurements were made at the Mildred Lake AOSERP facility and Birch Mountain which established baseline clean condition.

Atmospheric Sulphur Dioxide

Measurements were with the COSPEC (Correlation Spectrometer) instrument mounted in a four wheel drive station wagon. Limited road access in the area imposed some restrictions on its radius of action but in spite of these difficulties some very successful runs were made.

Minisonde

Two minisonde stations were in operation throughout the study period: one being located with the tether sonde unit and the other being free to set up at one of the four other predetermined sites depending upon the circulation pattern. The data from flights made at two hour intervals from 0700 to 1600 daily will provide the base to which all other measurements may be related.

The lead scientists agreed at the termination of the study that several very interesting case studies had been documented and that enough valid data had been acquired to enable them to be somewhat selective in the analysis phase.

The preliminary report on the study will be released before the first of May with the final results available, to all agencies participating in the program, by the end of the summer.

PROGRAMME DE RECHERCHES ENVIRONNEMENTALES SUR LES SABLES PETROLIFERES EN ALBERTA

Première étude approfondie (mars 1976)

Le Programme de recherches environnementales sur les sables pétrolifères en Alberta consiste en un projet mené et subventionné à part égale par Environnement Canada et le ministère de l'Environnement de l'Alberta. D'une durée de dix ans, ce programme a pour principal objectif d'étudier l'environnement actuel de la région des sables pétrolifères et d'évaluer les effets éventuels de leur exploitation sur une grande échelle, de leur extraction et des processus de transformation connexes sur l'atmosphère, la vie aquatique, la végétation, la faune, la collectivité et les modes de vie actuels.

Le Service de l'environnement atmosphérique, en collaboration étroite avec la Division de lutte contre la pollution environnementale de l'Alberta, aura pour tâche d'étudier les conditions météorologiques et de la qualité de l'air actuelles, de même que d'évaluer les incidences des futures développements.



Tethersonde Operation/opération "Sonde captive".



Syncrude (Looking east)./Syncrude (à l'est).



*Hi-grading party at work on rich oil sand.
Groupe au travail déterminant la teneur d'un gisement riche en sables pétrolifères.*

La participation du SEA à ce programme se fera par l'entremise de deux groupes de travail: l'un travaillera sur place, tandis que l'autre groupe restera posté à l'Administration centrale où se poursuivront la recherche appliquée et la réalisation de modèles d'essai.

En mars dernier, ces deux groupes se sont réunis pendant trois semaines pour la première étude approfondie sur le site des sables pétrolifères. Cette première étude avait pour but de sonder la structure complexe de l'atmosphère et le mouvement de l'atmosphère sur une faible étendue. Les spécialistes devaient ensuite relier les découvertes aux caractéristiques générales utilisées dans les réseaux opérationnels pour la météorologie et l'analyse de la qualité de l'air. Il s'agissait de mesures diverses caractéristiques dont le vent, les profils de température, la stabilité, le comportement du panache, la chimie de la neige et la qualité de l'air.

La plupart de ces expériences ont été menées par des scientifiques du Service de l'environnement atmosphérique. De son côté, le ministère de l'Alberta prit quelques mesures de la qualité de l'air et appuya les études sur le panache aéroporté par l'entremise d'INTERA, une maison de consultation sur l'environnement située à Calgary. En ce qui concerne le financement, les gouvernements fédéral et provincial y contribuèrent à peu près également. Le campement permanent du PRESPA, situé à Mildred Lake, sert de base d'essai à toutes les études, sauf celle de la montée des volutes. Ce campement est situé à près de quarante km au nord de Fort McMurray et à cinq km de l'usine de récupération de la Great Canadian Oil Sands et de l'usine Syncrude, présentement en construction.

La première étude au programme débuta le 2 mars, et le 3 mars, en fin d'après-midi, toutes les expériences étaient en cours. Pour la durée de l'étude, un service d'entretien et de réparation des instruments, hautement spécialisé, avait été mis sur pied. Malgré cela, on dut faire face à des problèmes de fonctionnement de la sonde captive de même qu'avec l'appareillage de l'avion au tout début de l'étude.

Au cours des trois semaines, on fut soumis à un bon nombre de conditions météorologiques. Deux périodes des plus intéressantes furent celles expérimentées au

début de l'étude, soit du 1^{er} au 4 mars, et à la fin, soit du 13 au 16 mars. La caractéristique dominante fut, dans les deux cas, une crête de haute pression qui fit augmenter les puissants gradients de température aux niveaux inférieurs. La formation de strattes dans la vallée de la rivière en soirée, les fluctuations de structure et des flux pendant la nuit, et enfin, le retour à la normale au matin, furent soigneusement enregistrés par les divers instruments réunis pour l'étude: la sonde captive, la sonde Delta-T, la sonde acoustique et les photographies de la montée des volutes.

Les projets énumérés ci-dessous faisaient aussi partie de l'étude:

La chimie des précipitations

Dans un rayon de 25 km du campement du PRESPA, plus de 300 échantillons de neige furent ramassés. Ces échantillons serviront de constituants chimiques permettant d'établir le degré de pureté à des conditions pratiquement saines et d'examiner si ces modèles ne se retrouveraient pas à l'usine de la Great Canadian Oil Sands. On effectua des mesurages de la qualité de l'air aux campements du PRESPA situés à Mildred Lake et à Birch Mountain, ces derniers reconstituant des conditions de base saines.

L'anhydrique sulfureux de l'atmosphère

On effectua des mesurages à l'aide du COSPEC (spectromètre à corrélation) instrument monté dans une familiale à direction aux quatre roues. La limite de son champ d'action par le faible nombre de voies d'accès n'empêcha pas quelques expériences intéressantes.

Minisonde

Au cours de l'étude, on exploita deux stations à minisonde: l'une, située au même endroit que la sonde captive; l'autre, pouvant être déplacée à l'un des quatre autres sites selon le modèle de circulation. Effectuées aux deux heures, entre 7 heures et 16 heures tous les jours, les données de vol serviront de base aux autres mesurages.

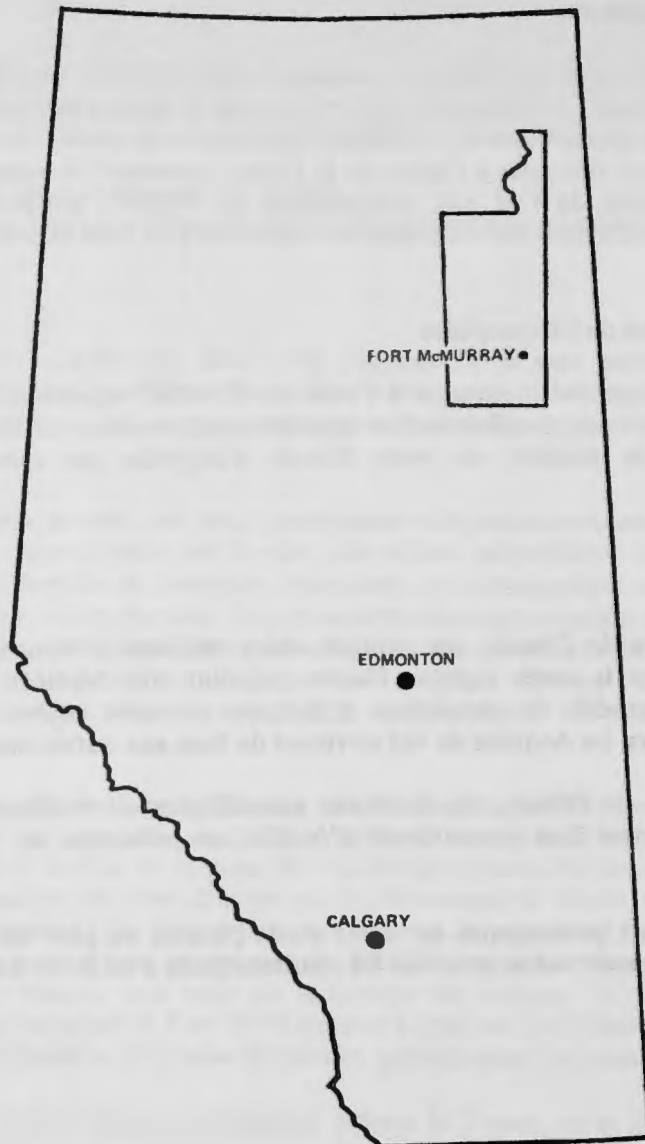
A la fin de l'étude, les éminents scientifiques admirent que la collecte de données intéressantes leur permettront d'établir une sélection au cours de la phase d'analyse.

Le rapport préliminaire sur cette étude paraîtra au plus tard le 1^{er} mai, et les organismes impliqués pourront se procurer les résultats finals d'ici la fin de l'été.

ALBERTA/CARTE DE L'ALBERTA

Showing the study area of the Alberta Oil Sands Environmental Research Program (AOSERP)

Localisation de la zone d'études du Programme de recherches environnementales sur les sables pétrolières en Alberta



AIR POLLUTION FROM AGRICULTURAL SPRAYING OPERATIONS

J. Maybank

Saskatchewan Research Council, Saskatoon
(CMS lecture - tour address, January 1976)

During the crop season some 20 million acres of land are sprayed with pesticides. At an average application of a half pound per acre this amounts to around 10 million pounds of chemical. Most of the total consists of herbicides, primarily various formulations of 2,4-D. These are generally applied to control weeds in crops or on summer-fallow during the period of June 1-July 15 each year. Approximately 90% or more is sprayed from tractor-drawn ground rigs, with aircraft spraying accounting for the remainder. The use of insecticides is more variable and is usually limited to specific areas of outbreaks each year; depending on the insect problem most of this may be applied by aircraft. Again, the time of use is more variable but generally lies between June 15 and August 15.

The drift from these pesticides beyond the confines of the sprayed field may consist of both spray droplets and chemical vapour. If only 1% drifts, the total airborne mass would be 500,000 lbs. or more of material. This constitutes a reversal of the classic pollution problem, giving an areal source and a point sink. Specific hazards include susceptible crops, tree shelter belts, vegetable gardens for herbicides and bees, wildlife, and fish for insecticides. If use of the chemicals could be made more efficient, drift could be reduced and these hazards ameliorated.

From the middle of the 1960's on, the amount of 2,4-D in the air has been monitored at Regina during the spraying season. For several years additional monitoring stations were operated at Saskatoon, Yorkton and other locations within the province. The results indicate that on roughly one-third of the days in the six week period the concentration over a 24 hour sampling period exceeded $0.1 \mu\text{g}/\text{m}^3$ and on a few days each year it exceeded $1 \mu\text{g}/\text{m}^3$. There was little or no correlation between the high levels at the various stations. Most of the chemical was the butyl ester formulation of 2,4-D, with generally lesser amounts of the lower volatile octyl esters also being detected.

That such amounts can be damaging is apparent in the tree foliage condition during July, as well as on occasion in gardens: crop damage is also regularly the subject of insurance claims and litigation. The problem becomes more acute as crop diversification proceeds and greater areas become planted in rapeseed, mustard and field peas.

It was apparent that unwanted drift should be reduced and that ways were potentially available to effect reductions. It was necessary, however, to distinguish carefully between droplet drift, occurring during spraying, and vapour drift occurring subsequently by volatilisation of the chemical. An initial study outlined the problem and in 1969 a series of field trials was planned jointly between Canada Agriculture and the Saskatchewan Research Council, with the cooperation of Defence Research Establishment Suffield. These involved the spraying of a swatch of ground immediately upwind of a sampling array with radio-actively tagged 2,4-D. Both volatile esters and involatile amines were used, so as to distinguish the relative drift hazards posed by droplet and vapour drift.

The results showed that, for 2,4-D butyl ester, some 35% of the applied chemical evaporated off the ground and drifted downwind. For the less volatile octyl formulation the figure was 12%. Finally, droplet drift from these applications (and the total drift from the involatile amine formulation) was apparently around 3%.

While the vapour was clearly the greater hazard, it could be effectively eliminated merely by phasing out use of the 2,4-D esters, and certainly the butyl one. Droplet hazards, even at 3%, can still be significant however, as their pickup by plants is more efficient than is that for vapour. So in 1973 a further series of trials was commenced to investigate this feature and how it might vary with sprayer settings and meteorological parameters.

A complete field sampling system had to be designed and constructed for this purpose, as the DRES facility was not readily available or convenient. A new air sampler was produced, sampling masts, pumps, and power supply built or purchased and a meteorological observation console put together.

The trials were carried out on groundrig spray drift using land just outside Regina. Again a single swath was sprayed, and samplers put out to determine the ground deposit within it, the ground deposit downwind, the air borne cloud drift, and the size spectra of both the deposit and drift fractions. The wind speed at the time of the trial was the major meteorological parameter, while air temperature, temperature gradient and humidity played lesser roles. In general, they were kept within the range that might be expected to pertain to the majority of operational farm spraying.

The spraying variables were the nozzle type, boom height, hydraulic pressure, and application rate. In the latest series, 1975, much of this testing was achieved using a twin-boom system with which a modification could be compared directly, under identical weather and wind, to a standard system .

The operational procedure was extended in each year to a few aircraft spray trials as well for comparison of their advantages and disadvantages over groundrig applications. Modifications of the properties of the spray solution was investigated in the 1975 trials. Finally, a novel ground sprayer device recently introduced onto the market was also tested.

After each trial the samples were collected and transferred into solution in methanol. Analysis was by fluorometer for the dye tracer that had been added to the solution. Droplet deposits were examined microscopically to elucidate information on the size distribution.

The basic questions that the data had to answer were:

- (1) what was the magnitude and degree of uniformity of the swath deposit:
- (2) what mass initially drifted off swath;
- (3) what were the droplet size spectra of these two amounts;
- (4) how rapidly did the off-swath drift amount diminish as it moved downwind; and
- (5) did this decrease match downwind deposit on the ground or did it become impacted out on the grass cover foliage?

In general, some 90% or more of the spray applied by the groundrig became deposited in the swath. Coverage was far from uniform, however, even under the carefully controlled trial conditions imposed here. Still greater variation would have to be expected

under ordinary farm operations. Swath recovery and uniformity did depend to some degree on the spray system parameters.

Initial, or off swath, drift (i.e. at 5 metres downwind) varied from less than 1% to 8% of the total application. It depended on nozzle type, hydraulic pressure and application rate, and for each set of sprayer conditions was found to increase linearly with wind speed over the range of 2 to 10 metres/sec (~5 - 20 mph). Certain clear indications emerged from this of ways to reduce drift using presently available spray equipment.

The size spectra of the swath deposit were very heterogeneous. The volume median diameters ranged from 250 to more than 500 microns, depending primarily on type of spray nozzle used. As expected, the drift cloud was composed primarily of droplets below 100 microns in size (even after correcting for water evaporation). The spectra did not vary significantly with the spray system parameters.

Downwind drift (i.e. that at the 30 metre and farther sampling lines) was considerably diminished through fall out. Concentration, dosage, and mass flux values were reduced by cross-wind and vertical dilution and diffusion as well. Decay rates could be determined for the data that indicated roughly a cube root diminution in airborne drift mass with downwind distance.

The ground deposit downwind was very small compared to the loss of airborne material. The majority of the droplet removal appeared to take place via impaction and collection onto the grass blades as the falling droplets neared the ground.

The last two features suggest ways of estimating the total drift to be expected from full field spraying and identifying the nature of any resultant hazards. Using the decay curve one can calculate the additive drift fractions from successive spray swaths upwind, to yield a total drift mass at the downwind edge of any assumed field size. It is then possible to estimate its subsequent fate as it moves downwind over the adjacent unsprayed field. The readiness with which impaction rather than ground deposition takes place indicates the significance of the flux values in determining the hazard. Clearly, tree or shelter belt foliage or fully emergent crops are in greater danger of damage than are ground-level seedlings.

The additive nature of the drift from successive swaths, together with the confinement of the cloud to the lowest few metres of the atmosphere, provide for sizable amounts of pesticide crossing unit areas in the vertical. Magnitudes may indeed considerably exceed the ground deposition density obtained in the swath.

With regard to the aircraft spray studies, a few distinguishing features between the two vehicles should be noted. In the first place, the ground deposit is both less dense and less uniform when aircraft are used. This feature will be compensated for, however, by the superposition of additional material from the next swath spray upwind. The initial drift, as might be expected, is considerable, around 30-35% of the emitted spray. Unlike the grounding drift cloud, it consists of roughly the same droplet sizes as the swath deposit, and does not vary consistently with windspeed. As it is coarser, it falls out more readily; the total drift, however, will likely be significantly higher than that for a similar groundrig application out to at least 1,000 metres downwind.

During 1975 several new nozzles or chemical additives (thickeners) were tested. The effect of most of these was to reduce drift, some of them markedly, by shifting the size spectra toward coarser droplets. However, this was often accompanied by a considerable worsening of the swath deposit uniformity. In routine farm spray operations, such modifications would therefore be counter-productive, with the farmer being forced

to increase the amount of chemical being applied to compensate for the poorer coverage, thereby producing an increased drift amount (as well as having to buy more herbicide, of course).

In surveying the results outlined above it appears that a more promising approach would be to work towards improving the homogeneity of the swath deposit. If this were achieved, the application rate for any chemical that is necessary to produce a desired level of weed control could be reduced. This would naturally result in a decrease of the offswath drift for any given combination of sprayer parameters. There appear to be practical ways of doing this without drastically modifying present equipment.

It should be noted in conclusion that while these studies have been carried out on 2,4-D, the findings are basically applicable to any herbicide. The physical properties of the solution, rather than the biological effects of the active ingredient, are involved and once known, may be used to identify any divergence in quantitative values of deposit and drift features. The same generalisation may be made for the consideration of insecticide application, except for the proviso that the desired interaction of droplet and target will be different.

SPECTRUM '76

The Engineering Students of the University of Saskatchewan hold a Triennial engineering show and the theme this year was "Engineering and Society" and the overall theme/title was "Spectrum '76."

Among the 75 displays assembled under agriculture, housing, fossil fuels, mining, chemistry and fluids, physics, engineering, power and electronics, the Saskatoon Weather Office mounted their presentation in the agriculture and transportation section. Six to seven thousand spectators visited the show between January 23 and 25.

The exhibit was divided into two areas: in the outer area there was a showing of the educational weather series as developed by the Saskatoon Weather Office in conjunction with the television station CFQC-TV on a video tape TV monitor. There was also a self-operated slide presentation in this section which included pictures of Stratoprobe II, the SED&AES balloon launch from Yorkton in the summer of 1975. The question and answer climat board, developed by Central Region, was an interesting and popular item in this section.

The inner portion of the display was highlighted by a radiosonde suspended from a balloon and within the display were numerous instruments including a Stevenson screen, barograph, sunshine recorder and rain gauges. The tipping bucket rain gauge proved to be a very popular item, it had been set up so that water dropped into a funnel, tipped the bucket and was recirculated from a catch basin via plastic hose and a pump from a home aquarium. On display was a set of home-made instruments and this was further enhanced by the connection of the teletype, the facsimile machine and associated current weather map and weather information display. The whole area was back-dropped by a static display on several topics such as metric conversion, environment and research and climatic data.

*Saskatoon Weather
Office exhibit.
Exposition du
Bureau météorologique
de Saskatoon.*



Films were shown in several small theatres, among them were "In One Day," "Above the Horizon," and "Operation Gate."

Throughout the duration of the exhibition two or three technicians were on hand to field the numerous questions concerning the instruments and facsimile.

Tours of dignitaries, school groups, elementary and high school teachers were held on the first day. One group of particular interest was a group of deaf mutes from the School for the Deaf, who displayed a very keen interest and directed a number of queries through an interpreter.

CANADIAN METEOROLOGIST ELECTED TO PRESIDENCY OF WMO COMMISSION FOR AERONAUTICAL METEOROLOGY

A new president was elected by the World Meteorological Organization's (WMO) Commission for Aviation Meteorology (CAeM) at its recent 6th Annual Meeting in Montreal, Quebec. He is Robert R. Dodds, Head of Transportation Weather Services for the Atmospheric Environment Service, Environment Canada.



Robert R. Dodds/Photo by Ronald Miller

"It is a great honor to have a third member of our staff elected to a governing position on one of the eight WMO Technical Commissions," said J.R.H. Noble, Assistant Deputy Minister of the Atmospheric Environment Service and permanent representative for Canada to the WMO, when announcing the appointment today.

CAeM is charged with developing standards and procedures for the provision of meteorological services for international civil aviation to meet requirements stated by the International Civil Aviation Organization (ICAO). It is one of eight WMO Technical Commissions.

Educated in Toronto, Mr. Dodds joined the then Meteorological Service in 1942, after graduating from the University of Toronto with a B.Sc. For the following ten years he served as a forecaster at Rockcliffe RCAF Station, Gander Weather Office and Montreal Dorval Weather Office. From 1952-1956 he worked as analyst and prognostician in the Central Analysis Office, now the Canadian Meteorological Centre (CMC) in Montreal. He then joined the Toronto Headquarters staff, and was subsequently appointed Head of Aviation Weather Services. He has been a member of many international committees and panels on aviation meteorology at Montreal and Geneva, and in 1971 was elected vice-president of CAeM. As president of CAeM he will serve a four-year term.

Mr. Dodds is married and has one son and one daughter. He lives in Don Mills (Toronto) Ontario.

NOS VIEUX AVAIENT UN LANGAGE SAVOUREUX

Par Hélène Gignac

La langue évolue. Les mots s'usent. Parmi ces mots, il y en avait de savoureux...

Jarnigoine: ce mot passe de l'habileté du talent à l'intelligence (d'une dinde), à la simple amabilité, pour finir en audace et en effronterie.

Jars: au sens d'imbécile et de niais. Est surtout connu dans cette expression: faire son jars, c'est-à-dire faire l'homme d'importance.

Jaspiner: du premier sens: causer, jaser, il devient vite maugréer, gronder, critiquer.

Ferlasser: produire un bruit semblable à celui des feuilles sèches remuées par le vent. Se dit aussi du frôlement des étoffes, de la soie surtout.

Nos vieux divulguaient, à travers leur langage, leur culte de l'euphémisme. C'est ainsi que pour parler d'une femme qui attendait ou avait un enfant illégitime, l'on disait d'elle qu'elle s'était cassé la cuisse, ou qu'elle se faisait échouer, ou qu'elle était partie pour la gloire, ou encore qu'elle avait jompé le manche à balai...

Nos vieux savaient boire ...

Pour eux, vomir parce que l'on a trop bu, se disait: vèler, dégober, pleumer son renard, déboire, dégueuler, dégober, câler l'original, restituer, renvoyer.

Et s'ils avaient trop bu, c'est peut-être qu'ils avaient du whisky de fabrication clandestine, c'est-à-dire de la bagosse, de la robine, de la boucane, du gouffre, du miquelon, du moonshine, de la patatia, du saint-pierre, du chien-rouge ou de la djim-robotte.

Pour couronner le tout, ils spécifiaient même leurs "parlures".

Manière de s'exprimer: parlure, parlette, parlotte, jaser.

Manière de parler beaucoup: parlette, parlure, parlaje, jasette (de là, l'expression "piquer une jasette"), jernigoine, moulin à paroles.

Parler à tort et à travers: jaspiner, placoter, pitouner, bagouler, placasser, piacasser, jaspiller.

Parler d'une manière populaire: parler en habitant.

Parler d'une manière châtiée: parler à française.

Note: Ces mots ou expressions proviennent, pour la plupart, des parlers français des régions de Charlevoix, du Saguenay, du Lac St-Jean et de la Côte-Nord.

NORTH TO RESOLUTE BAY AND THULE

By Garry Toth

During my stay here at CFB Cold Lake, I have had the opportunity to go on many different familiarization flights. The longest and most recent such flight lasted for eight days, and took me from Cold Lake through Frobisher Bay to Thule and then back to Cold Lake.

It all started on Sunday, March 14. I happened to be working that day, and Canadian Forces Argus 712 arrived from Comox late in the afternoon. A briefing was scheduled for 1:00 a.m. the next morning (Argus crews always brief at strange times). Talking with Major Fred Weir, the aircraft commander, after dinner that evening, I learned that the mission was essentially an Ice Patrol, with three AES ice observers from Toronto aboard. As luck would have it, there happened to be one empty seat on the Argus, so I quickly decided to take some leave and go along for the ride.

Argus met briefings are always interesting, because you get about ten pilots, co-pilots and navigators invading the office all at once to hear the story. This time was no different, and it certainly was a strange sight to see all these uniformed bodies piling into our small Cold Lake weather office at 1:00 a.m. Monday morning. What a way to start the week! With good weather forecast throughout the Arctic, the briefing was uneventful, and we eventually boarded the plane at 2:30 and finally took off at about 3:30. The route took us northwards near Coppermine and then to Cambridge Bay, then eastwards to the Boothia Peninsula and then southeastwards along Baffin Island to Frobisher Bay. We landed there Monday evening after fourteen hours in the air.

Fourteen hours aboard an Argus is a long time. We had a large crew on board (29 including myself) so there were always a lot of bodies floating around, since at any one time, only about half the crew was occupied with the actual operation of the aircraft. The other half would be sleeping, cooking in the galley, or simply sitting and reading. During the daylight hours, one ice observer was always in the plexiglass nose bubble observing ice on a two-hour shift. As for myself, with no specific duties to perform, I simply spent the time as best I could, with an occasional look out the window to see what was happening and where we were—I didn't take many pictures, because the Arctic landscape is not very picturesque from the air in winter. The Argus is a noisy airplane, so I found ear plugs or ear defenders to be absolutely indispensable. In addition, the engine vibrations are incessant, and I found this very tiring at first until I got used to it. All in all, I wouldn't recommend a long Argus flight to anyone who doesn't like flying.

We stayed in the Frobisher Inn Monday night, and Tuesday was sightseeing day. There aren't all that many sights in Frobisher Bay. It is small, with about 2500 inhabitants, but this is large enough to make it the major center in the eastern Arctic. The bulk of the town is located in a valley, with the Frobisher Inn (an apartment-hotel-shopping center complex) along with a few other buildings located much higher up, on one side of the valley. Most of the white population lives in that area, while most of the native population lives down in the valley. Unfortunately, this arrangement helps maintain the split between the two cultures.

With Tuesday's activities finished, I settled down to a caribou steak and liver supper with some of the locals, and then we packed up and headed off for met briefing at 11:00 p.m. at the weather office, where we ran into problems—Thule's weather was forecast to be well below limits on Wednesday. Hence, the decision was taken to delay for 24 hours, so back we went to the Frobisher Inn for another night. On Wednesday (the weather at Thule was CAVU, by the way) I went back to the weather office to meet Ed Guimond, the OIC. He told me more about the area, took me to a few places I hadn't seen in the town, and invited me to his home for dinner. The result was a very pleasant evening—thanks again for your hospitality, Ed.

At Met on Wednesday night, we got the same story. Poor weather was forecast for Thursday in Thule. The decision was made to go in spite of this, and we took off about 1:30 a.m. flying northwestwards along Baffin Island and into the Devon Island area. From there, the route took us eastwards to Thule, where we landed in the afternoon after about 12 hours in the air. The weather was again CAVU.

Thule air base is now only a shadow of its former self, in terms of activity and the number of people present. The Danes are gradually taking over with the Americans slowly pulling out. It is now a far cry from the days when about 10,000 Americans were stationed there. Both the Danes and the Americans make it very attractive financially for the people who serve in Thule, in direct contrast to the relatively poor arrangements made for the Canadians working in the Canadian North. For example, salaries are relatively high, and they are tax-free, and the price of goods in the Base Exchange is very low.

Geographically, the base is located in a shallow valley, with higher terrain and several large hills on either side. On base are roughly 100 buildings, most of them now used either for quarters or for storage. Entertainment is supplied by the NCO, Danish and Officers' Clubs, and by a movie theatre, a recreation center, a library, and a sports center. There are also several active clubs, including a small flying club with two light aircraft. A system of taxis and buses runs every day to provide transportation to and from any point on base. Several ancillary operations are also conducted by the base, such as the nearby BMEW (Ballistic Missile Early Warning) Site. All things considered, I think I could hack a two year stint in Thule with no problems.

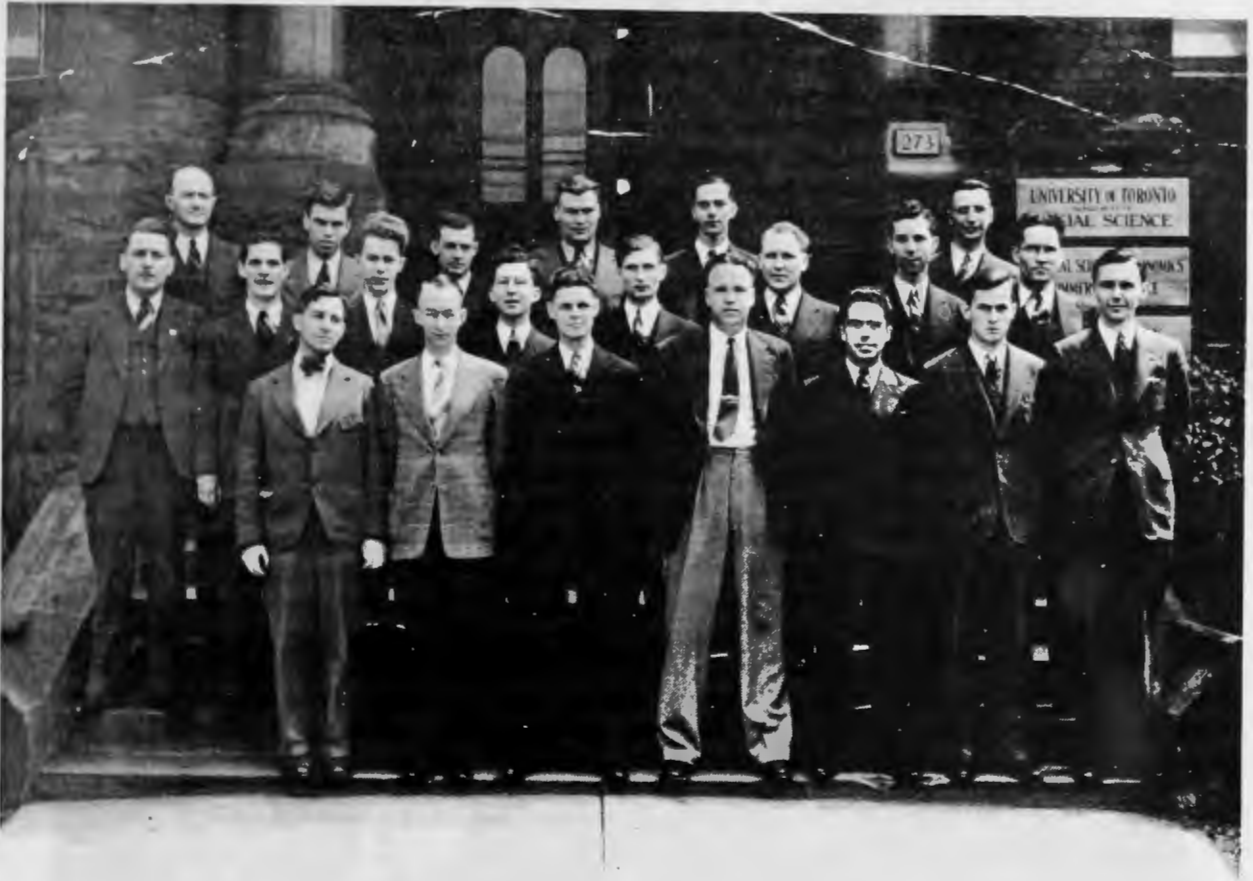
Forecasting the weather is always a thankless job and Thule is no exception. Forecasting the winds there seems to be especially difficult. We ran into this problem again on Friday night, when the forecast indicated a strong northeasterly wind off the Greenland icecap for Saturday morning. Sure enough, Murphy's Law contrived to operate perfectly that Saturday morning. After a series of small delays, during which the wind was steadily increasing, we finally managed to taxi out to the button, only to find the wind somewhat out of limits. To make matters worse, number one engine overheated (probably due to the wind blowing exhaust gases back into the engine intake, we later found out), necessitating a return to the hangar. So much for Saturday. As for Sunday, Thule air base closes down, meaning no departures or arrivals are allowed. Since we were simply waiting for Monday morning takeoff with bated breaths, Sunday was for us a *very* slow day. So what happens Monday morning in this continuing comedy of coincidences? You guessed it--more morning winds off the icecap. This delayed the departure until mid-afternoon. Liftoff was finally at 2:30 p.m. Thule time. The route took us southeastwards to near Resolute Bay, and then around Banks Island. We finally reached the Mackenzie Delta area at about sunset. This put an end to the ice observing, so we turned south, and arrived back home at Cold Lake at 3:30 a.m. MST, after 16 hours in the air. Being a dedicated soul, I went straight to work at 5:00 a.m. and briefed the Argus back to Comox at noon that day.

So ended the trip. It was long, but well worth it from my point of view. I saw that weather was of prime importance on all legs of the mission, and I was somewhat disappointed with the quality of forecasts and support we got from Resolute and from Thule. We simply had to make do with what we got, however. The point is that weather information and forecasts are still essential to most aviation activities, and hence meteorological support of these activities should not be made even more minimal than it is now.

Special thanks to ice observers Bob Bourbonnais, Don Isaacs and Larry Solar for "taking me under their wing" during the flight. Thanks also to Major Fred Weir, for allowing me along in the first place, and to Diane Danyluk for typing up the manuscript.

Would I go again? Not in winter-- but I sure would like to get up to Resolute and Alert this summer.

WHO IS WHO? . . .



A.H. Mason, Reid V. Dexter, A.W. Jackson, G. Busche, W.K. Sly, W.L. Gutierrez, D.E. Page, G.P. Adamson, L. Cooke, J.E. Blanchard, M.R. Fleming, W.C. Thurber, F. Goodwin, Ronald Glenn, E.A. Brickman, E.D.M. Williams, J.H. Meek, N.V. Jefferson, E.A. Johnston.

ARTS AND CRAFTS SHOW 1976

By M. Lovelock

On Thursday, April 8, 1976, the Cafeteria at AES Headquarters was the scene of a successful Arts and Crafts Show sponsored by the Recreational Association.

There were more than a hundred enthusiastic participants both exhibiting and viewing a display of hobbies and talents by members of the staff. We were astounded at the variety, the quality, the artistic presentation and the innovativeness of the exhibitors.

The occasion gave us an excellent opportunity of getting to know our fellow workers better. The co-operative atmosphere in setting up the Show and in clearing up afterwards was tremendous and greatly appreciated.

Judging from the comments received, everyone thoroughly enjoyed themselves. Even the Weatherman co-operated and sent us home with a glorious sunset. It helped us forget our weariness and was a truly fitting finale to a happy gathering.



Arts and Craft Show - 1976

PATRON DE L'ENVIRONNEMENT



Il n'y a pas tellement longtemps, St-Antoine était proclamé patron de l'environnement par le Vatican. Les responsables du domaine devraient peut-être l'invoquer plus régulièrement car ils semblent en avoir par-dessus la tête. St. Antoine était un Egyptien ascétique vivant dans une caverne où il atteignit l'âge de 105 ans. Au XI^e siècle, une communauté était fondée en son honneur et ses membres s'adonnaient au reboisement.

REMARKS FROM BEATRICE, ONTARIO

- | | | |
|--------------|---|---|
| Mar. 3, 1876 | — | bright sunny day, blue jays and Chicadees unusually merry |
| Mar. 5 | — | heard today that wild geese are moving north, but did not see them myself |
| Mar. 9 | — | an exceedingly lovely night, bright moonlight and calm |
| Mar. 12 | — | a miserably dull damp day |

- Mar. 16 — a remarkably dry wind today, cracking the skin with a very short exposure
- Mar. 19 — a perfectly quiet day, rudi Boreas taking a rest, and nature gone to sleep
- Apr. 1 & 2, 1876 — from Purgatory to Paradise, a most agreeable change from the weather of the past week. The Crows again rendering the groves melodious with their charming melody
- Apr. 12 — shot hawk, breakfasting on wild duck, said hawk measured 3 ft from tip to tip
- Apr. 14 — wind began to blow at 5 pm, and Boreas is now in full blast (9 pm)
- Apr. 25 — saw first robin of the season this morning
- May 1, 1876 — first salute of the Canadian Nightingales (bullfrogs)
- May 8 — navigation on Lakes Muskoka and Rosseau opened
- May 25 — first fire flies this season
- July 7 — large falling star at 9 pm fell north west
- Aug. 31 — got in the last of grain crop, an unusually early harvest, the crops having matured in an unusually short time this season
- Jan. 22, 1877 — saw a flock of canaries today
- Early Feb., 1877 — the month of Feb. with the exception of one day has been a continuation of remarkably fine weather such as is rarely seen at this season of the year
- Mar. 23, 1877 — a flock of canaries seen today
- Apr. 1, 1877 — crows lively and melodious
- Apr. 3 — saw a dozen canaries this morning, season 12 or 14 days earlier than usual
- Apr. 11 — saw wild goose going north, robins on hand
- Apr. 13 — earth nuts in flower
- Apr. 17 — the music of the Spheres, the heavenly bullfrogs in full chorus
- Apr. 25 — Navigation opened on the Muskoka Lakes
- Apr. 28 — advent of the wild pigeon, wild violets in bloom
- July 5, 1877 — the heaviest storm of wind, rain, and hail for some years past, from the NW the storm having a rotary motion, lasted about 15 minutes
- Dec. 24, 1877 — ploughing stubble today
- Dec. 26, 1877 — still ploughing
- Jan. 30 & 31, 1878 — during the whole of the past month, most of the birds common to the summer season have been around here
- Mar. 8 — hawks around, partridge drumming
- Mar. 18 — saw butterfly first this season
- Apr. 5 — Mary Lake clear of ice
- Apr. 19 — earth nuts and wild violets in flower
- May 11 — ground with snow, this morning, half in snow at Port Sydney this morning
- May 22 — lively times with B flies and mosquitoes
- Sept. 18 — very heavy thunderstorm 8.45 P, 0.45 of rain fell in 15 minutes
- Dec. 8 — navigation closed on Muskoka Lake
- Dec. 23, 1878 — 19 inches snow fell from 7A to 12 noon
- Apr. 27, 1879 — that heavenly choir, the bullfrogs on hand tonight
- May 15 — violets, dogwood, wild and tame currants, pears and plums in blossom
- May 20 — carnival time with those pleasant little folks the mosquitoes

- May 24 & 25,
1879 — Haziness in the atmosphere probably arises from the amount
of burning in the locality
- Oct. 10 — saw mosquitoes today
- Oct. 16 & 17 — birches coming into leaf, currents in bud, and strawberries in
flower, grass growing as vigorously as in the month of May
- Oct. 19 — strong gusty wind during past night
- Oct. 22, 1879 — wild goose going south
- Mar. 25, 1880 — crows lively and jubilant
- Apr. 20 — bullfrogs in full chorus
- May 17, 1880 — large star visible during most of the day
- Early Aug. 1881 — the haziness recorded during the present month I think may
be principally attributed to the prevalence of Bush Fires in the
locality
- Oct. 16, 1881 — remarkable arrangement of what I should call rolled cumuli
extending in bands from horizon to horizon E and W on the
16th at 8A
- Sept., 1882 — tremendeous heavy storm of wind and rain from the west,
during the whole of the day (the 14th). Wind highest from 2 to
4P, uprooting trees unroofing buildings, blowing over fences,
and damaging the telegraph lines throughout this locality
- Nov. 17, 1882 — the most brilliant aurora I recollect seeing, often covering the
horizon for more than 180°, a display of a similar character
occurred about the end of Sept, or early in Oct. 1868, when I
was in Toronto
- June 6, 1883 — thunderstorm at 3.30 P, 0.56 rain fell in 15 minutes
- Nov., 1883 — a remarkable feature of this month, has been the gales of wind
prevalent during the night often when there has not been any
wind at the 9P observation, has the wind begun to blow heavily
before midnight, and continued until dawn, of day, very often
either moderating or ceasing altogether at that time. Another
peculiar feature of the latter part of the month has been the
nature of the light at sundown and immediately after, and just
before sunrise, at sundown the horizon would be of a tawny or
russet hue, and the light would be of a bluish ghostly character
in the morning everything would be tinted with a pinkish hue
- Note: The volcano Krakaton, in Indonesia, erupted in 1883. Strahler,
Physical Geography, page 222
- Nov. 24, 1883 — very peculiar light W and SW after sundown
- Nov. 25, 1883 — very peculiar light W and SW after sundown
- Jan. 1, 1884 — lowest reading of Barometer in my experience this evening
- Apr. 18, 1884 — bullfrogs on hand, first butterfly of season
- May 29, 1884 — our old friends the black fly and mosquitoes doing their best
to be agreeable and entertaining
- May 26, 1885 — our old friends the skeeters on the warpath
- Dec., 1885 — with compliments of season
- Jan., 1886 — the solar corona for the 24th was formed of two rings far apart
and the lower points of which dipped below the horizon, and
the partial formation of a third ring whose curvature was in
the opposite direction to the curvature of the other two rings,
thus horizon
- May 8, 1886 — auroral display unusually brilliant. The auroral display was
continuous during most of past night, was very beautiful at 11
and from my information, must have been class II about 3 this
morning

- July 29, 1886 — the storm this morning was accompanied with strong NW wind, and with hail, judging from the rattle on the window panes
- Dec., 1886 — with seasons compliments
- Feb. 28, 1887 — the solar halo this evening was of a somewhat unusual character, the circle was not complete, lacking one fourth, down on the horizon, but on the north and south sides of the circle was a very bright body of light on the outer sides of the circle, and at these points the prismatic colors were very bright, and the prismatic colors were very brilliantly developed on the upper part of the circle likewise
thus
- May, 1887 — the haze recorded during the month, probably arises from the burning of brush in the locality
- Aug., 1887 — haze during the month may be safely ascribed to bush fires
- Sept., 1887 — fog recorded during the month will mostly be smoke from bush fires
- Nov. 30, 1887 — notice the extremely high Barometer on this date (29.93 in)
- Dec., 1887 — compliments of season to all the boys
- May 23, 1888 — our lively little friends the mosquitoes on hand to give us their annual serenade and collect their yearly tribute
- Aug. 16, 1888 — Storm at 10A, strong NW wind blowing over fences upturning trees, blowing over fences and unroofing buildings
- Dec., 1888 — compliments of season to all the Boys in office
- Jan. 9, 1889 — note the low Barometer this evening (28.00 in)
- May 9, 1889 — mosquitoes in force
- May 11, 1890 — mr. Crow very jubilant
- May 29, 1890 — canaries, black flies and mosquitoes on hand, or to order
- Dec., 1890 — with compliments of season
coldest Dec. here since 1876
(Note: 1886 was colder)
- Apr. 28, 1891 — after 9P observation last night wind increased considerably, at 11P was blowing a gale sufficient to satisfy any reasonable individual
- May, 1891 — haze or fog recorded during the month is smoke from bush fires
- May 20, 1891 — black flies on hand, plums in full bloom
- May 22, 1891 — mosquito music for the million
- Aug. 29, 1891 — considerable damage done to vegetation by frost this A (screen min. was 34.0°)
- Nov. 23, 1891 — note low pressure, the lowest on record here (it was 27.92 in)
- Dec. 9, 1891 — old Boreas around on the high jinks again during past night
- Jan. 5, 1892 — the auroral display commenced 6P and was not entirely dissipated at 10P, being at times very brilliant and beautifully colored
- Jan. 25, 1892 — large flock of canaries around today
- Feb. 13, 1892 — aurora covered about 25 per cent of horizon from NW to NE the rays of light in the eastern portion being green, while the rays in the western half being a beautiful deep crimson, so much so as to give a deep ruddy hue to the snow on the ground. Fan shaped.
- Feb. 26, 1892 — aurora tonight covered from NE to NW, a band of auroral light spanned the sky at an elevation of 45, streamers of light ascending from the horizon of a green hue
- Mar. 30, 1892 — very brilliant meteorite in E 10.30 p
- Apr. 21, 1892 — the partridge beats his Tom, Tom, navigation open on the lakes

May 24, 1892	-	mosquitoes and black flies out on a collecting expedition
July 4, 1892	-	clover in low spots cut by frost
Nov. 8, 1892	-	past night has been a roarer
Mar. 31, 1893	-	solar halo today was peculiar, the sun not being in the centre but on the ring on the southern side thus
May 22, 1893	-	the black fly and the jubilee singers very much in evidence
Oct. 14, 1893	-	note low pressure this A lowest recorded have (27.60 in)
Nov. 28, 1893	-	old Boreas out playing high jinks last night
Dec. 21, 1893	-	past night a rustler
Dec., 1894	-	the seasons compliments to all the boys in the office
Feb. 11, 1896	-	rude Boreas blew his horn with unusual vigor during past night
May 9, 1896	-	the lively skeeter again on his annual tour, and just as social and interesting as ever
oct. 20, 1895	-	precipitation a compound of the various conditions of the aqueous element.

TO THE SUPERINTENDENT, METEOROLOGICAL OFFICE, TORONTO

Aurora of July 16th 1892

At the 9p observation a body of auroral light was observable down on the horizon, went outside 9:30 to see what might be transpiring, and found that the light had developed into an irregular arch or bank stretching from the horizon from NE to NW, at an elevation of 45 and from which streamers were issuing towards the zenith, a smaller band or arch below this existed in the North, there being clear sky both below and between it and the arch above.

Stretching some distance in a southerly direction from where the points of the larger arch touched the horizon and rising to a considerable elevation were bodies of auroral haze, the auroral light at this time was of a pale green color, with occasional tinges of red on the points of the streamers.

This constituted the general character of the display until shortly after 10 o'clock, when the light gradually increased in intensity and spread in a direction south of zenith, and by 10.30 the whole visible sky from E to W from N to S was covered down to the horizon with such a body of auroral light as I never before witnessed from the horizon, all around, rose streamers, waves and billows of light, leaping and dancing with lightning like rapidity towards the zenith, which seemed to be a vortex or gulph into which nature might through her possessions and yet not fill, I can compare it nothing more appropriate than the mighty Niagra running up but without its thunder, yet not noiseless, as the display was accompanied with a swishing rustling sound, such as would be produced by the separation of two sheets of some light fabric whose surfaces were slightly sticky.

The culminating time of the display was about 10.30 which lasted with full vigor for about 15 mts, when the pulsations became less violent for a time and the sky cleared in parts, a further display, but not so violent or extensive occurred at 11 o'clock and when I ceased to observe at 11.15 a considerable portion of the sky was still covered with auroral light, and bands.

A distinguishing feature of this display was the well defined bands of light stretching in a direction from NE to NW, and those south of zenith being parallel to or in the same direction as those north of the zenith.

I think I have seen more highly colored auroral lights than this one, but never anything so extensive or so violently agitated.

J. Hollingworth
Beatrice 31 July 1892

"GAMES PEOPLE PLAY"

A "Weather Wits" tournament was held in the AES Headquarters Library in conjunction with a library display on "Games People Play." Copies of the games were supplied by "Rick Lawford" who devised it, and the competitors were R.E. Vockeroth, Bruce Findlay, Denis Bourque, Lolita Stripnieks, Ted Axton, Don Champ and Rick Lawford. Bruce Findlay was declared winner.



Bruce Findlay and R.E. Vockeroth



Rick Lawford



Players and kibitzers

Photos Courtesy G.W. Kiely

Les photos sont une gracieuseté de G.W. Kiely.

BEAU ET CHAUD AUJOURD'HUI ... QUI DIT MIEUX?

par Renée Rowan

Nos anciens n'avaient pas d'Alcide pour leur prédire le temps qu'il fera demain. Mais ils savaient regarder, observer, écouter et, paraît-il, ils se trompaient rarement.

Quand le boeuf regarde en l'air, les cochons se grattent, les puces sont importunes, le cheval baille ou les chiens paraissent engourdis, c'est signe de pluie...ça ne trompe pas!

Des éclairs sans tonnerre signifient du beau temps prolongé; par contre, quand les oiseaux sont à terre le matin, la pluie s'en vient. Ecoutez le sifflet des locomotives; si vous l'entendez de très loin, c'est présage du mauvais temps; lorsqu'il s'entend mal, comme s'il était étouffé, c'est signe de beau temps.

Dans le *Dictionnaire de la météorologie populaire au Québec* (éditions de l'Aurore), Pierre Des Ruisseaux nous parle avec humour de cet homme étendu de tout son long dans l'herbe haute, cet homme qui semble rêvasser, mais qui se prend à réfléchir sur le temps qu'il fait... Tiens, ces étoiles, là, dans cette partie du firmament, qui se déplacent, c'est du vent qui proviendra de cette direction, sûr! Les grenouilles et les crapauds croassent, il fera beau demain... la pleine lune commence à diminuer, il fera chaud.

Pour colliger ces signes de la nature en un dictionnaire unique en son genre, le quinzième ouvrage de la collection *Connaissance des pays québécois* à l'Aurore, l'auteur a fait appel à de nombreux informateurs et rapporteurs qu'il a rencontrés sur une période de cinq années dans les différentes régions de la province.

On y trouve non seulement l'interprétation de signes "météorologiques", mais aussi plusieurs dictons pratiques et croyances populaires qui ne manquent pas de faire sourire. Ainsi, si on veut du beau temps pour la journée du mariage, il faut, la veille, accrocher son chapelet à la corde à linge... Ce n'est pas parole d'Évangile, mais ça vaut toujours le coup d'essayer!

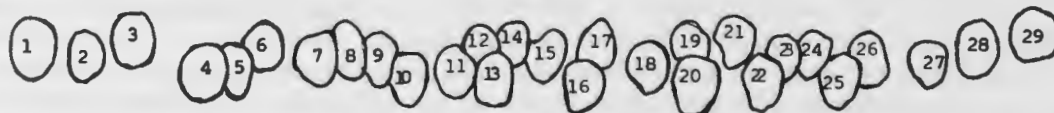
L'auteur cite ses sources, ce qui ajoute encore de l'intérêt à cet ouvrage de consultation facile et de lecture agréable.

SEMINAR IN APPLIED METEOROLOGY FOR METEOROLOGICAL TECHNICIANS

The second Seminar in Applied Meteorology for Meteorological Technicians was held at AES Headquarters from 29 March to 9 April 1976, for 24 meteorological technicians from across the country. The objective of the seminar was to inform the meteorological technicians of the possibilities and opportunities to apply meteorology across a broad spectrum of Canadian life and economic endeavour; to refresh their knowledge of meteorology and climatology; to introduce them to fundamentals of the various special sectors of applied meteorology and to illustrate how meteorology can be used to assist those who are planning for and directing operations in agriculture, forestry, transportation, building, conservation, etc. Experts in each of the various fields of applied meteorology presented lectures and led discussions. The end result was a successful seminar.

SEMINAIRE DE METEOROLOGIE APPLIQUEE DESTINE AUX TECHNICIENS EN METEOROLOGIE

Vingt-quatre techniciens en météorologie, sélectionnés à travers le Canada, assistèrent au second séminaire de météorologie appliquée des techniciens en météorologie qui s'est tenu à l'Administration centrale du SEA du 29 mars au 9 avril dernier. Ce séminaire avait pour objectif d'informer les techniciens en météorologie des possibilités et des occasions d'appliquer la météorologie à un large éventail d'aspects de la vie canadienne et de préoccupations économiques; de rafraîchir leurs notions en météorologie et en climatologie; de les familiariser avec les principes de base des différents secteurs spécialisés de la météorologie appliquée; et enfin, de leur montrer le rôle de la météorologie dans la planification et la réalisation de projets dans les domaines suivants: l'agriculture, les forêts, les transports, la construction immobilière, la conservation, etc. Des spécialistes des différents domaines de la météorologie appliquée firent des présentations et animèrent des discussions. En fait, ce séminaire fut des plus réussis.



1. J. Carpick, Winnipeg 2. T.L. Richards, ACHC 3. A.G. McDonald, Toronto 4. P.G. Aber, AFRC
5. R. Clyde, Regina 6. G. Sanscartier, Val D'Or 7. R. Quinney, Ft. St. John 8. A. Larocque, Quebec
9. D. Aquilar, Radisson 10. S.J. Hickey, Goose Bay 11. T. Murphy, OAEWR 12. D.M. Forbes, TCTI,
Ottawa 13. R. Koch, Port Hardy 14. D. Richier, Penticton 15. G. Blakey, Terrace 16. J. Miron,
Sherbrooke 17. L. Enns, Thunder Bay 18. R. Page, Fredericton 19. R. Holland, Toronto 20. F.R.B.
Decker, Sydney 21. B. Finch, London 22. G.W. Yeomans, Moncton 23. R.A. Shewchuck, Lethbridge
24. E.A. Favelle, Churchill 25. G.L. Pincock, AFSD 26. E. Prozny, Calgary 27. D.M. Scott, AFRC
28. T.L. White, ACGC 29. A.Missio, ACGC /Absent H.F. Earle, TCTI, Ottawa.



“You’ve got to hand it to him — he’s not afraid to stick his neck out.”

PERSONNEL

The following have accepted positions as a result of competitions:
Les personnes suivantes ont accepté ces postes après concours:

76-DOE-WIN-CC-502	Central Region Senior Aerological Observer EG-ESS 5 Eureka, N.W.T. R.A. McInnes
76-DOE-WIN-CC-502	Central Region Senior Aerological Observer EG-ESS 5 Isachsen, N.W.T. R. Stainer
76-DOE-WPNA-CCD-117	Western Region Financial Clerk CR-4 L. Ward
76-DOE-WPNA-CCD-117	Western Region Financial Clerk CR-4 D. Pich
75-DOE-TOR-CC-178	Duty Forecaster MT 4 Halifax METOC Centre B.F. Stenton
75-DOE-TOR-CC-272	Senior Staff Officer Administration AS 4 DMetOc A.D. Rutkus
75-DOE-AES-CC-35	Shift Supervisor MT7 Maritimes Weather Office R.J. Lee

Appointments

Nominations

D.K. Smith

Regional Director
Ontario Region

J.R. Mathieson

Regional Director
Pacific Region

The following transfers took place:
Les transferts suivants ont été effectués:

P.J. Delannoy (Capt.)

FROM: CFOCS Chilliwack
TO: 1 CAG Baden-Soellingen

Effective April 1, 1976, the Central Region assumed responsibility for the operation of Hall Beach, N.W.T. from the Québec Region. The following personnel were transferred:

D.A. Crossley
M.A. Varrin
D.A. Crossley
M.A. Varrin
C. Laprise
P. Fichaud

**Recent Graduates from the Aerological Course 7601:
Nouveaux diplômés du cours d'aérologie 7601:**

D.M. Ross	TO:	Trout Lake
W. Myskiw	TO:	Trout Lake
J.J. Guenet	TO:	Mould Bay
k.E. Lloydwalters	TO:	Mould Bay
J.C. Plourde	TO:	Mould Bay
T.R. Gurdebeke	TO:	Mould Bay
M. Schulz	TO:	Resolute) First Married Couple in
F.I. Schulz		Resolute
D. Stankey	TO:	Hall Beach
H.M.J. Gaudry	TO:	Alert

**Separations:
Démissions:**

J.C. Walton	Resignation	Western Region
R.A. Lafrance	Resignation	Western Region
G.D. Munson	Resignation	Western Region
S.J. Croteau	Resignation	Western Region
H. McCourt	Resignation	Trout Lake
B.R. Baker	Resignation	Trout Lake
B. Buchanan	Resignation	Cree Lake
T. Magnusson	Resignation	Resolute

TRIVIA

Expression	Signification ou équivalent
A coeur de jour	Tout au long du jour
Nous sommes en mesure de commencer	Nous pouvons commencer
Prendre de la fraîche	Attraper un rhume
Prendre les nerfs	Perdre contrôle de soi-même
Prendre un risque	Se mettre en danger
Avoir une belle bagnole!	Avoir une belle voiture
Se conduire en écoeurant	Avoir une mauvaise conduite
Rire à gorge déployée	Rire très fort
Etant donné que tu es là	Puisque tu es là
J'arrive en-dessous dans cette affaire	Je perds de l'argent dans cette affaire

The best way for a housewife to get some time by herself at the end of a day is to start doing dishes.

Man alone, of all earthly creatures, is the architect of his ultimate destiny.

Some people pretend they want candid criticism; what they really want is praise.

If a man has a wife who tells him what to do and a secretary to do it, he may become a success.

We must dream of an aristocracy of achievement arising out of a democracy of opportunity.

Imagination was given to man to compensate him for what he is not, and a sense of humour was provided to console him for what he is.

“Don’t work too hard” is advice which is often given – and taken.

In today’s complex and fast-moving world, what we need more than foresight, or hindsight, is insight.

PROVERBES QUEBECOIS

–“Une maison sans feu est comme un corps sans âme.”
Un foyer sans amour n’en est pas un.

–“Quand le fruit est mûr, il tombe.”
Quand le moment est venu, ce qui devait arriver arrive.

–“Qui vivra verra.”
L’avenir dira qui a raison.

–“Quand on est à l’eau, il faut nager.”
Quant on est en difficulté, il faut combattre.

–“C’est l’occasion qui fait le larron.”
L’occasion propice peut pousser à des actes répréhensibles.

–“Les rois avant les épais.”
Les meilleurs avant les imbéciles.

BUZZ WORD VOCABULARY

Think of a 3-digit number.

Select the corresponding word from each column and you will be able to communicate the spoken or written word with bureaucratic elan.

0	restructured	0	threshold	0	pattern
1	nondirective	1	motivational	1	dynamics
2	definitive	2	developmental	2	principles
3	steadfast	3	historo-cultural	3	guidance
4	in-service	4	disciplinary	4	relationship
5	individualized	5	educational	5	norm
6	achieved	6	supervisory	6	counseling
7	implied	7	enrichment	7	accreditation
8	regressive	8	parental	8	testing
9	unique	9	resource-intensive	9	rate