

September/October 1980

ZEPHYR



Satellite meteorology
in a land of nomads



Environment
Canada

Environnement
Canada

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Cover: Former Buddhist temple in Ulan Bator, capital of Mongolia – now a museum.

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Environment Minister visits AES

Environment Minister John Roberts visited AES, Downsview, on September 22, 1980. Speaking to a large audience gathered in the Auditorium, he told members of the Service: "I am impressed by the quality of your contributions to programs affecting the safety of Canadians, the national economy, the quality of the environment and the advancement of science."

Mr. Roberts urged his hearers to pay special attention to the global and long-term challenges facing the world as well as Canada. Exploding world population, poverty, disease, shortages of food, energy and water, disappearance of forests, agricultural soil deterioration, plants and animal species extinction, pollution, climate change, and the spread of hazardous wastes were some of the enormous problems closing in upon all nations. Present trends could only be reversed if unprecedented levels of cooperation, goodwill and com-

mitment were forthcoming, he said.

On a more optimistic note, Mr. Roberts added: "I believe there is still reason for hope; that opportunities exist for vigorous and determined new initiatives; that public attitudes and national policies can be altered with regard to energy resources conservation, population stabilization and environmental protection."

The DOE response to the acid rain challenge both pleased and impressed Mr. Roberts. Core programs in atmospheric physics and chemistry made such a response possible and should continue to address other national and global concerns, such as the transport of atmospheric chemicals, climate change, and the carbon dioxide problem.

Mr. Roberts then spoke of the high technology component of his second portfolio, the Ministry of State for Science and Technology, and mentioned in part-

icular the space program and the vector computer (the latest generation of computers).

Following his address, the Minister visited AES' satellite facilities and was briefed on the latest meteorological applications of Canada's space program. The last minister to visit AES was Mr. Len Marchand, on June 5, 1978. The occasion was the opening of an extension to the Satellite Data Laboratory and the installation of a dish antenna receiving imagery from the GOES-EAST satellite.

Expert from Denmark tours AES

Professor Bennert Machenhauer of the Institute of Theoretical Meteorology, University of Copenhagen, visited Canadian researchers during the week of August 11-15, 1980. Professor Machenhauer is an internationally known expert in dynamical meteorology and has been a leader in the development of efficient computer techniques for weather forecasting and climate studies. Many of his methods have been used in both the spectral weather prediction model now operational at CMC as well as the climate model under development at CCC.

Professor Machenhauer's latest work on the adjustment of initial data for analysis and prediction was the subject for discussion during his visit. He spent two days with scientists at the CCC in Downsview discussing the effects of initial adjustments on the quality of the analysis. The knowledge of such effects is important in that it may affect the interpretation of climate statistics derived from analyzed data fields.

Following his Downsview meetings, Prof. Machenhauer spent two days with scientists at the Recherche en prévision numérique (RPN) in Montreal discussing the technical problems of applying initial adjustments to prediction models, especially in the case of those models applied to limited areas.



Environment Minister John Roberts (left) chats with Graeme Morrissey (centre), Chief Aerospace Meteorology Division, and ADM Jim Bruce during the Minister's visit to AES satellite facilities.

Fast access to archives now available at Downsview

The Downsview Computer Centre officially opened its new AS/6 computer facility on Tuesday September 23, 1980. The Magnetic Tape System 7420 will enable researchers to access any part of the AES meteorological archives within 10 minutes. This is a far cry from earlier days when the archives occupied the better part of a large building in Toronto, and when accessing information was a long, tedious and laborious task.

Through an intricate telecommunications system, users will be able to access the archives from anywhere in the world, provided they have a telephone. Larger weather centres, already equipped with a terminal, can obtain information within minutes; additional terminals are available and relatively inexpensive.

Outside agencies and the private sector will also be able to obtain archived information for research and statistical work. They will continue to do so through the Canadian Climate Centre Information Office. Use is expected to be high, at 90 per cent or better.

In addition to the magnetic tape system, a Fixed Disk Subsystem 7350 is provided for rapid access and temporary storage of information for use by research scientists. The language of the system is basic FORTRAN, a universal language with which most scientists are comfortable.

Though data are recorded in the metric system, earlier data in Fahrenheit, feet and inches are also stored in the computer for those who want them.

The opening ceremony agenda of events included several half-hour guided tours of the computer centre. Before leaving everyone was given a souvenir of the occasion, a computer graphic of Snoopy and a 1980 calendar.

AES staff and special guests gathered in the Downsview auditorium at 3:15 p.m. for the official opening ceremony, at which Bruce Byce, chief of the Computer Centre was MC. Jim Bruce, Assistant Deputy Minister recounted the events leading to the acquisition of the system. "It took a long time," he said. "AES Management Committee approved the concept in July 1976, prepared a series of submissions to Treasury Board and, two years later obtained Treasury Board approval".

The Intel computer product group was selected, and National Advanced Systems (NAS) was charged with the installation of the system. Strong support was given to NAS by AES computer staff and in particular by an AES evaluation team, headed by Mr. Byce.

Mr. Bruce, armed with a pair of scissors, cut the traditional ribbon. The curtains opened, and a live transmission of the very first operations of the AS/6 computer facility appeared on a television screen. The audience was then able to see the 'launching' of the system, while the computer staff and everyone else held their breath. The system proceeded without any hitches, and was termed an unqualified success.

Don Robertson, NAS Marketing Branch manager, told the audience of the significant breakthrough in negotiations and the laborious steps that led to the signing of the contract. "We got out with our shirts on,

but only just," he said. "Your managers drive a hard bargain!"

To illustrate how fast the archives can be accessed, he compared the system to the common hand calculator, which executes about 33 instructions per second. "The system we installed can execute 3.3 million instructions per second, or 100 000 times that speed. It did not cost 100 000 times more than the calculator, although we would have liked it to."

Morley Thomas, director general of the Canadian Climate Centre, and former director general of the Central Services Directorate at the time of the negotiations and installation of the system, provided much needed support and encouragement to Mr. Byce in acquiring the AS/6 computer facility. "We made a good team," he said. He recalled the lengthy and cumbersome methods of accessing the archives during and after World War II. Information then had to be individually typed, as there was no Xerox machine in those days. "All I want now is to be able to sit at home, punch a few buttons and see the figures appear on my TV screen. Just get me the information and I'll make sure I'll use it," he said.



Admiring the newly-opened AS/6 computer facility at AES Downsview are (left to right): Clarence C. Boughner, retired head of Central Services; ADM Jim Bruce; and Bruce Byce, Chief of the Computer Centre. Mr. Boughner headed the Service's climatological division for more than 20 years.

Impressions of Mongolia

Introduction

Graeme Morrissey went to Mongolia in March 1980, to work for six weeks under the auspices of the United Nations Development Program, helping the Hydrometeorological Service of Mongolia set up their satellite program.

Except for a brief visit to the countryside, he spent most of his time in the capital, Ulan Bator.

This is the third article in Zephyr's special feature series about AES employees' work and personal experiences in the Far East.

Still mainly nomads

Mongolia, or Outer Mongolia as it is also known, is a land-locked country about the size of Ontario and Quebec combined, between Siberia and China. It has a population of about one and a half million, about 20% of whom live in the capital of Ulan Bator. The climate is strongly continental with cold dry winters and hot, not so dry summers. Although coal and other mining has increased rapidly, pastoral nomadism is still the country's major industry. Mongolia is sometimes referred to as the land of the five animals: sheep, goats, cattle, horses and camels. These animals provide food, fuel, clothing and shelter. There are over 24 million head of livestock in Mongolia.

The terrain of the part of the country I saw during the flight from Irkutsk to Ulan Bator consisted of rolling hills covered with coarse brown grass range lands, except for a few small cultivated areas



Entrance to a Buddhist temple, now a museum, in Ulan Bator, capital of the People's Republic of Mongolia.

used to raise cereal crops. The government has a program to increase the meat and cereal production through a move from nomadic farming to collective farms and teams of Mongolian agriculturists have already visited Canada to study our farming methods.

I had two tasks to carry out during my stay. The first was to assist the Hydrometeorological Service to develop plans for an R & D and operational satellite meteorology program. The second was to obtain approval for the program from the Mongolian government department responsible for distributing the country's United Nations Development Program funds. Essentially the same as obtaining Treasury Board approval in Canada.

Working as a Mongolian civil servant was interesting once we had overcome our initial concerns. There is very little difference between the meteorological services of Canada and Mongolia. The staff are dedicated to improve the quality and quantity of service provided. Senior management and the funding and control agencies, as always, fail to comprehend the advantages of providing the resources to accomplish these improvements. There are, however, a number of initiatives within their central government, agriculture, air pollution, energy, mineral resources, and central/regional cooperation for which funding may be more readily available. I had to get an understanding of the economy of the country to identify the major benefits

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that would accrue from the satellite program. But apart from small differences, the emphasis of the document was very similar to that of equivalent Canadian documents.

Government always right

Outside the work area there were a number of substantial differences between the lifestyles of the two nations. Most of the Mongols I socialized with seemed to feel that their government very seldom, if ever, did anything wrong, somewhat different from the feelings of the average North American towards his government. This feeling is probably sincere because the civil service controls their press and broadcasting and is as critical of any government action as Contact is of DOE or Zephyr of AES actions. Neither is there an independent political body to criticize the government. I think that of all the impressions left by my stay, the importance of the role played by our politicians and the independent media in our society is the one that stands out the most.

The city of Ulan Bator was roughly what I expected. It is relatively modern because, except for a few Buddhist temples and the occasional single dwelling, every building had to be constructed after the Communist revolution of 1921. Prior to

that time it was a city of gers, the Mongolian word for tent. Until the beginning of this century almost all Mongols lived in gers. In spite of a large building program more than half of the city's population continue to live in gers to this day. There are a number of fairly large villas, almost all of which are occupied by the various embassies. The rest of the buildings are apartments, offices and stores. The stores are unusual in the lack of window displays and in the number of different types. There are stores for the Mongolians, the diplomatic store for embassy staff and advisors, where purchases can be made in the local currency, and special "hard currency" stores where local and western goods can be purchased at very low prices.

Jukeboxes, rock music - and \$8 Scotch

There are two main hotels in the city, both built by the Chinese prior to the breakdown in relations between the two countries. The bigger, the Hotel Ulan Bator, is an impressive building with a huge central marble staircase. The main dining room is vast, and reminiscent of a railroad station. I stayed in the hotel for the first two weeks before being transferred

to the other hotel to make room for a COMCON conference. Both of the hotels have bars and dining rooms for selected Mongolians and foreigners. The reasons for the restrictions on the Mongolians was explained as being necessary to limit the crowding of these facilities so that foreign advisors and tourists could be accommodated. The hotel charges varied widely. Mongolians paid very little for their rooms, people from the Soviet bloc about twice as much, UN and western officials about twice as much again and tourists twice that. The cost of food was reasonable by our standards and meals worked out to be about \$20.00 per day on the official exchange rate. The bar prices were out of this world, \$8 for a Scotch, and the noise unbelievable since each bar was equipped with a western jukebox and the latest western rock records. The jukeboxes were not operated by coins, neither were the names of the records displayed; one of the hotel staff fiddled in the back of the box to make the selection. The clientele were mainly Soviet bloc advisors, members of the diplomatic staff and tourists, with the occasional western business man. Most of the Soviet advisors were single males and they overcame the shortage of female dance partners by dancing with each other. One of the memories engraved in my mind is a dozen or so Russian men dancing with each other while the voice from the jukebox blared out 'I want to be free. . . .'

Mongolian hospitality is well known; all I can add is that their reputation was surpassed by their actions. Everything was done to make me feel welcome and at home. Dr. Tubdendorg, the director of the Hydrometeorological Service, who is also a cabinet minister, made sure that I had everything I needed, made arrangements for me to visit the museums, wrestling, opera and the last functioning Buddhist temple, and I was invited to a special WMO day reception and dance.

The reception was interesting, a western-style buffet with cold cuts, Mongolian vodka (arke) by the gallon for toasts, mineral water, Mongolian beer and Russian Pepsi to quench one's throat between toasts. Speeches and toasts were exchanged, all of which were translated into English for me. Wives did not accompany their husbands, and the women present were there in their own right as senior party or government officials. The dance which followed was not what I expected. I thought I would see something very dif-



Graeme Morrissey with (left to right): Mr. G. Dumbereldorj, Administrator of the Hydrometeorological Service of Mongolia; Mr. M. Badarch, Deputy Director of the Hydrometeorological Institute; and their driver.



The imposing facade of Ulan Bator University.

ferent; how wrong I was. A loud rock band at one end of the hall, girls sitting around on chairs backed on to the walls and all the young men hanging around the entrance. The songs were all western – European or American – sung for the most part in English, though I was informed that neither of the singers spoke English. The band and singers were all employees of the Hydrometeorological Service and were comparable to the Toronto bands I have heard at similar-sized dances.

Everything centers around the revolution. For centuries before, the country had undergone frequent occupations by the Russians and the Chinese; in fact both countries only recognized Mongolian autonomy in 1915. At that time the country was ruled by an abbot-king, the living Buddha, the leading lama in Mongolia. There were five classes, the princes, nobles, lamas, free peasants and serfs. The lamas made up almost half the population. With an infrastructure of such magnitude the country was ripe for rev-

olution and, with the aid of the Soviet Union, the Communist party took over the country and, when the abbot-king died in 1924, proclaimed the Mongolian People's Republic.

At the time there were thousands of temples; now only one remains in operation on the outskirts of Ulan Bator. My Mongolian hosts took me to visit that temple as well as a couple of others which have been turned into museums. The architecture and art works were as I expected, but far more impressive in real life than in photographs.

Rich artistic heritage

The fine arts museum contains some of the most detailed bronze and brass statues I have ever seen. I am not sure which struck me the most, the detail or the overall beauty of the works. There were also a couple of panoramas depicting virtually all aspects of Mongolian society, one showing the sports and the other the life of the nomads. The more modern art,

except for the wood carving, is in a style much like the Soviet, glorifying the revolution.

I had wanted to see the wrestling, the opera and the circus. Unfortunately the circus was not playing when I was there. The opera I saw was the only 'traditional' opera presented now. It is called "The Five Fateful Hills" and tells the story of a wicked king who captures the fiancée of a peasant and takes her to his palace to add to his list of wives. The peasants rise under the hero's leadership and chase away the king. The costumes were traditional but the story post-revolution. One amusing point in the final scene – the hero presides over a banquet and is treated like a king. So much for equality.

The Mongolian style of wrestling is fascinating to watch. The match starts with an eagle dance to frighten the opponent, and the second chants the merits of the wrestler. The match then proceeds until some portion of a wrestler other than hands or feet touches the ground. At that point the match ends and the victor does

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The countryside some 80 km from the capital, which is reminiscent of the Alberta foothills country.

his victory dance. Another difference—several matches take place simultaneously.

As far as food is concerned — since the Mongolians are nomadic herdsman, their staple diet is meat. I have never eaten as much meat as I did in Mongolia. A typical meal starts with a cold meat plate followed by a soup (a bowl of meat covered in broth) followed by a hot meat dish. The meat is a little tough and fatty for our taste but apparently tender, fat-free meat is not considered very good.

The streets have a different appearance to ours. They are wider, with far fewer vehicles and almost no private cars. The dress of the people is, for the most part, European. The one exception is the *del*, which is worn mainly by the middle-aged and older Mongolians. The *del*, the national costume, is worn by both men and women. It is a robe worn over a shirt or blouse and

trousers, and is worn with boots and a hat. It is knee or calf length, wrapped and tied around the waist with a cloth sash. In winter fur-lined *dels* are worn, and in summer a light robe lined with a thin fabric. The outside of the *del* is normally a dull blue, green or red with a circular design.

My trip to the countryside was made by car. We left the city after work on Saturday. The Mongols work six days a week because there is so much to do. At first we drove along a paved road, but about 25 km outside the city we turned off onto a gravel road. The pastures are unfenced and smooth, so wherever the road was muddy because of the spring thaw, we left the road and drove alongside it. The countryside, with its rolling hills, reminded me of the Alberta foothills except that they went on and on without mountains or a prairie.

I was told that the coarse brown grass gives way to a fantastic display of wild flowers in summer. We spent the night at a government spa in Terelge which was used by senior party and government officials for rest and relaxation. There is also a hotel for visitors and a large rest camp for other government workers. Everyone has two weeks' holiday at this type of spa with lectures, games and relaxation every year.

Not all of my time was spent with my Mongolian hosts. I met the English and French lecturers from the university, the staff of the UNDP office, and the British and French embassies and a number of western tourists and businessmen. The differing impressions of the country, people and government and the friendliness of the lecturers and diplomats helped me to enjoy my stay even more. It was they who took me to the unofficial market on the outskirts of the city where everything from Buddhas to used nails is on sale. A fascinating place which provides a system to move used goods between the people. This market is normally off-bounds to visitors and seemed to be frequented by a large proportion of Soviet bloc advisors and diplomatic staff. A large number of Mongols are also there but I don't remember seeing too many of them buying things.

I am asked if I would like to go back again. I enjoyed my stay, and would like to go back again and take my wife with me. However, only if we both had the same status as I enjoyed last time. As tourists we would be accompanied by a guide at all times from breakfast to dinner and told what we could do and when to do it. I was permitted to wander at will, photograph anything and visit anyone. Of course, I was limited by the distance I could walk or where I could drive in the official car they offered. I would also prefer to go via Peking rather than via Moscow. The people and officials in Mongolia were kind, helpful and friendly. **Z**

Graeme Morrissey is chief, Aerospace Meteorology Division, Atmospheric Research Directorate, Downsview.

The planes stay mainly in the Ottawa Weather Office

When the Avro Arrow was cancelled, the existing aircraft were destroyed. When the Aurora model airplane company went out of business, the plastic molds of the Arrow were also destroyed. Now even models of the Arrow are scarce. But one hangs from the ceiling of the Ottawa Weather Office along with about 90 other carefully painted plastic models.

This display of aviation history is the result of a 25 year-long hobby of meteorological technician Murray Forbes. Since the bulk of the visitors to the weather office located at Ottawa international airport are pilots, Mr. Forbes notes that the presence of the model planes shows that "this office has an interest in aviation and this in turn builds rapport between the users of our weather services and the weather office." He continues, "These planes have been a good public relations device for AES."

In selecting the models for the weather office, Mr. Forbes decided to hang mo-



Models of military planes in the Ottawa Weather Office attract many pilots to the AES facility and show them that the Service has an interest in aviation.



Murray Forbes holds his model of the Avro Arrow.

dels of the same scale. It turned out that most are from World War II. He finds that many of the Air Canada pilots, who got their start in that war, now drop in just to look at the planes even if they do not need a weather report.

Mr. Forbes, his planes and the weather office were recently featured in a full page color article by the Ottawa newspaper *Le Droit*.

Mr. Forbes got started in this hobby while looking for a suitable recreational activity when the air force stationed him in the outback of Alberta in 1957. Mr. Forbes notes: "The model I then built, along with the outback, have long since

disappeared."

He starts with the plastic kits found in most hobby stores and then tries to make the same structural modifications which have been made to the actual aircraft. The real art comes in during the painting, which requires research to determine actual color patterns and lettering layouts.

He reckons that he has built 300-400 military models over the years, although not all survived the days when his son was young. His biggest problem now is that the glue on the planes he put together over 15 years ago is coming unstuck. He's busy now keeping wings, wheels and windshields in place. **Z**

DEPARTMENTS

AES Meteorologists attend forces management course in Winnipeg

Three AES regional meteorologists joined seven of their colleagues in the Canadian Forces Weather Service at a five-day first line management course held at CFB Winnipeg beginning Sept. 8.

The course marks the start of a new series offered by the Canadian Forces School of Meteorology. Originally set up some years ago to provide basic guidance in management philosophy and supervisory styles for newly-appointed DND supervisors, the courses were subsequently made available to other meteorologists on a space-available basis.

Guest lecturers included Gloria Miller (Staffing officer, Personnel, AESHQ), Don Boehmer (Staffing Officer, Personnel, Prairie Region), and Arva Shewchuck (Human Resources Development, MOT).



Participants and instructors at First Line Management Course 8001 - Front Row: L-R P. Dillistone (CFSMET), E.D. Moroz, J.R. Lauder (SSOMET AIRCOM), P. Kowal (CMDT CFSMET), R.C. Jacobs, H. Routledge, G.B. Jelley Back Row: L-R R.A. Howell (CFSMET), F.G. Hunter, W.B. Watson, R. Hopkinson, A.J. Keck, B. Friesen (CFSMET), D.J. Russell, H.R. Armstrong (NDHQ), D.W. Logan

At the closing luncheon at the CFB Winnipeg Officers' Club, participants and staff were addressed by Dave Pollock,

Supervisor, Operational Services, Directorate of Meteorology and Oceanography, NDHQ, Ottawa.

WOMEN ON THE MOVE

The Department's 1980 Annual Report on Equal Opportunities for Women (EOW) was published on August 1, 1980. Prepared by the Planning, Employment and Development division of Personnel and Organization, Environment Canada, it contains many interesting facts and figures on the progress (or lack of it) made by women working in the department.

DOE has undergone radical changes in the past two years (formation of the Department of Fisheries and Oceans, with 6,000 employees leaving the department, followed by the addition of Parks Canada, with 4,000 employees). The magnitude and complexity of their effect should not be overlooked nor underestimated when reviewing and assessing the women's movement.

Numerous shifts occurred throughout the organization, to which must be added general cutbacks in the size of the public service, through layoffs, limited recruitment, and retirements. Implementation of several EOW programs was postponed or cancelled. In-house training, for example, was severely limited due to resource cutbacks.

There were, however, some encouraging signs for women employed in the department. Traditionally considered temporary or marginal employees, women did not suffer unduly during those turbulent times.

In fact, the number of women declined by approximately 2 per cent less than the number of men in the department. In addition, an increasing number of women are currently being employed in the scientific and technical occupations (positions which in the past were held by men). These trends are expected to continue, with an increasing number of qualified women graduates becoming available.

Problems, however, have remained and, in some cases, become exacerbated by the conditions described earlier. Women still held the majority of the lower levels of most occupational groups, received little training and seldom progressed to managerial levels.

The following statistics for AES were compiled by the department and illustrate some of the problems encountered.

Group	No. of Men	No. of Women	Total
Senior Executive	5 (100%)	- (0%)	5
Scientific & Professional	645 (94.71%)	36 (5.29%)	681
Administrative	123 (76.87%)	37 (23.13%)	160
Technical	1060 (96.45%)	39 (3.55%)	1099
Administrative Support	121 (35.59%)	219 (64.41%)	340
Operational	22 (95.5%)	1 (4.5%)	23

The departmental EOW program will, in the coming year, review these questions, and address itself seriously to resolving existing and past problems. Following the pattern established in previous years, the plan for 1980/81 will contain three major categories:

- Strategies of recruitment and staffing
- Training and development activities
- Improved administrative structures

In addition, and as it reported in its 1979 Annual Report, the Public Service Commission is currently examining a policy whereby employees could leave their jobs for up to five years to raise their children while retaining the right to compete in internal competitions. Another policy of interest to both men and women is now being considered, whereby a qualified public servant whose spouse is being relocated would be allowed first referral on any vacant position at the new location.

BOOK REVIEW

Reviewed by David Phillips

The Weather Book, Reuben A. Hornstein, McClelland and Stewart Ltd., in co-operation with Environment Canada and Supply and Services Canada, 1980, 96pp, 64 illustrations, \$7.95.

Many readers of Zephyr know Rube Hornstein as an Atlantic Region meteorologist and broadcaster, now retired, with an interest in weather lore.

His colorful broadcasts had served as the base for a booklet called Weather Facts and Fancies, distributed for some years by AES as part of the series of educational publications.

Extensively revised and enlarged, this basic text has now become a commercially available paperback, co-published by AES and the private sector.

This new collection of facts and fables about the weather is presented in a folksy, delightful style, charmingly illustrated and attractively produced. In it Hornstein examines numerous folk-tales and weather lore prevalent in North America and elsewhere. They are grouped according to various weather indicators, such as animals, plants, clouds, sky colors, the moon, sun and wind, dew and frost, auroras, and lightning.

Contrasting and balancing the more fanciful accounts of weather occurrences and their causes, are simple definitions and clear explanations of relevant meteorological events. As the sayings are quoted, their basis in fact is analyzed. Many of the maxims are sound meteorology, (e.g. "red sky in the morning . . .", or "when dew is in the grass, rain will never come to pass") others are based largely on superstition or myth (e.g. "sunshine on Groundhog Day," and "equinoctial gale").

Much of the information has been "Canadianized", although only about a quarter of the more than 120 sayings, literary references and anecdotes are original Canadian material, and nearly all of that is from Prairie and Maritime sources.

For me the tall tales were especially enjoyable, like the following two:

" . . . one very hot day, the field that was planted in popcorn, well, it began popping. The ground was so deep in white popcorn that some cattle in the next field thought it was a blizzard and froze to death;" and: " . . . up there in New Brunswick the weather

can change awfully quick. One time I was watching the trout jump on the lake and a cold squall came down from the north. I walked out on the ice and picked up a fine mess of trout."

More than merely a collection of folk tales, The Weather Book is also a source of practical information on how to avoid being hit by lightning, how to forecast the arrival of the mysterious chinook arch, and how the thermometer originated.

The title and cover page are somewhat misleading; they promise more than the book is able to deliver. If it is meant to be a "how to forecast guide" for the outdoor recreationist, then it was an oversight not to include pictures of the clouds mentioned in Chapter 6 (or at least the titles of the four clouds shown), or information on

wind changes, or surface water temperatures, among other forecast elements. Obviously the cover was designed by the publisher's promotion department, not by the meteorologist-writer.

Nevertheless, the book stands up as an entertaining and often useful compendium of weather information. Over 100 literary references, nearly 50 sketches and 18 photographs help to make it a readable addition to most any person's library, from a meteorologist to a lay reader.

(Negotiations for the French version are underway with the Department of Supply and Services.)

Mr. David Phillips is superintendent, Climatological Services Division, Canadian Climate Centre, Downsview.

Howard Ferguson filled in as Regional Director General

Howard L. Ferguson returned to his regular duties as Director, Air Quality and Inter-Environmental Research Branch on September 15 after filling in as Regional Director General, Ontario Region for six months.

Replacing Dr. R.W. Slater during his absence on French language training, Mr. Ferguson was the first AES officer to hold such a position for a considerable length of time.

Regional Directors General are members of the Senior Management Committee of DOE, reporting directly to the Deputy Minister and usually representing him in dealings with the provinces.

Duties of the RDG, Ontario Region include management of the Great Lakes Water Quality Program, and he is also closely involved in consultations with United States agencies and the Province on water quality agreements.

STAFF CHANGES

Promotions/ Appointments

J. Abraham (MT-4) Meteorologist, WO1, Whitehorse, Y.T.

R. Arseneault (EG-3) U/A Tech. QAEOU, Nitchequon, P.Q.

A. Bagi (CS-1) ACRO, Downsview, Ont.

Y. Belland (EG-6) Surface Inspector, QAEOI, St-Laurent, P.Q.

J.M. Bullas (MT-6) Supvr. Meteorologist, Prairie Weather Centre, Winnipeg, Man.

M. Collins (EG-2) Met. Tech. WS3, Jasper, Alta.

P.V. Connor (EG-10) AIMC Downsview, Ont.

G. Cormick (EG-5) Met. Tech. WO4, Inuvik, N.W.T.

C. Daigle (EG-3) U/A Tech. QAEOU,

Fort Chimo, P.Q.

J.E. Dennahower (EG-5) Pres. Tech. WO, Sarnia, Ont.

H. Fast (PC-1) Scientist, ARPX, Downsview, Ont.

I. Findleton (MT-8) Meteorologist, CMC, Dorval, P.Q.

M.A. Gillespie (EG-3) U/A Tech. WS1, Mould Bay, N.W.T.

M. Greenwood (EG-6) Western Region, Edmonton, Alta.

D.A. Henry (EG-2) Sfc. Tech. WS4, Hudson Bay, Sask.

L. Jackson (EG-2) Met. Tech. WS3, Cape Parry, N.W.T.

B. Kinsman (EG-2) Met. Tech. WS3, Fort McMurray, Alta.

P. Koclas (CS-1) Analyst, CCRM, Downsview, Ont.

G. Langevin (EG-6) Met. Tech. Alberta Weather Centre, Edmonton, Alta.

R. Lantigne (EG-3) U/A Tech. WS1, Eureka, N.W.T.

DEPARTMENTS

H. Loo (CR-3) AAF, Downsview, Ont.
J.B. Martin (EG-6) Tech. ARQT, Downsview, Ont.
T.E. McLean (EG-2) Sfc. Tech. WS4, Island Lake, Man.
F.L. Mirecki (EG-3) U/A Tech. WS1, Alert, N.W.T.
D. Petrunik (EG-5) Pres. Tech. WO4, Inuvik, N.W.T.
D. Polutnik (EG-2) Met. Tech. WS, Slave Lake, Alta.
S.C. Ricketts (MT-5) OIC, WO4, Resolute, N.W.T.
R. Risbey (EG-6) OIC, WS1, Trout Lake, Ont.
J. Sandilands (MT-7) Meteorologist, CCPO, Downsview, Ont.
S.F. Smith (AS-3) AIBD, Downsview, Ont.
D. Speigle, (CS-2) Computer Analyst, CCRM, AES, Downsview, Ont.
R.A. Stengel (EG-2) Sfc. Tech. WS4, Armstrong, Ont.
R.E. Stewart (SE-RES-2) ARPP, Downsview, Ont.
P.W. Summers (SE-RES-3) Scientist, ARQD, Downsview, Ont.
G. Trudel (CR-4) QAEP, St-Laurent, P.Q.
P. Turmel (AS-4) Admin. Officer, QAED, St-Laurent, P.Q.
R. Verret (MT-5) Meteorologist, QFC, St-Laurent, P.Q.
B. Weiss (FI-1) Western Region, Edmonton, Alta.
R. Winterer (MT-5) Meteorologist, Alberta Weather Centre, Edmonton, Alta.

Transfers

A. Borraccia (SCY-3) Secretary, ACDG, Downsview, Ontario.
M. Bureyko (EG-4) Tech. WS2, Port Hardy, B.C.
J. Chapman (EG-5) Met. Tech. WO4, Fort Nelson, B.C.
J. Colville Ontario Region, Toronto, Ont.
M.D. Conner (CR-3) AAF, Downsview, Ont.
J.J. Crevier (EG-4) Tech. QAEOU, Nitchequon, P.Q.
R.L. Drouillard (MT-3) Meteorologist, CFWO Comox, B.C.
S.A. Gauthier (EG-4) Tech. QAEOU, Maniwaki, P.Q.
A. George (EG-5) Pres, Tech. WO4, Moncton, N.B.
R.C. Harvey (MT-6) Project Meteorologist, ADEC, Downsview, Ontario.
S.A. Hattie (MT-4) Meteorologist, METOC, Halifax, N.S.

F. Herfst (MT-7) MOP, ACDG, Downsview, Ontario.
D. Higgins (EG-5) Pres. Tech. WO4, Fort Nelson, B.C.
M. Jodoin (EG-4) Tech. QAEOU, Maniwaki, P.Q.
K.A. Learmonth (CR-4) AFDH, AES, Downsview, Ont.
M. Leblanc (MT-3) Meteorologist, Alberta Weather Centre, Edmonton, Alta.
E.J. Oja (MT-3) Meteorologist, Atlantic Region, Bedford, N.S.
G. Ouimet (EG-4) Tech. QAEOU, Inoucdjouac, P.Q.
C. Pare (EG-1) Tech. QAEOO, Cape Dyer, N.W.T.
J. Pelto (MT-3) Meteorologist, Alberta Weather Centre, Edmonton, Alta.
A. Sirois (MT-2) Meteorologist, Arctic Weather Centre, Edmonton, Alta.
R.A. Stuart (SE-2) Project Scientist, ADED, Downsview, Ontario.
W. Williams (CR-4) Clerk, OAP, Downsview, Ontario.

Temporary or Acting Positions

K.B. Armstrong (EG-6) ACGH, AES, Downsview, Ont.
A. Charpentier (EG-7) ACTA, Cornwall, Ont.
T.G. Docherty (CR-3) Clerk, Toronto Weather Office, Toronto, Ont.
A. Durkin (CR-3) AAG, AES, Downsview, Ont.
J.D.P. Gaudet (EG-6) Pres. Tech. WO, Dorval, P.Q.
H. Genger (MT-9) AIBD, AES, Downsview, Ont.
P. Greenwood (EG-4) Aero. Tech. WS1, Sachs Harbour, N.W.T.
J.N. Hadad (AS-2) AAG, AES, Downsview, Ont.
G. Langevin (EG-6) Pres. Tech. Alberta Weather Centre, Edmonton, Alta.
C. Payette (CS-4) DSI, CSD, Dorval, P.Q.
R. Robinson (MT-8) Meteorologist, CMC, Dorval, P.Q.
A. Tremblay (MT-2) ARPP, Downsview, Ont.

Departures from AES

L.O. Appleby, WS1, Eureka, N.W.T.
D. Atkinson, WO4, Edmonton, Alta.
J. Blouin, QFC, St-Laurent, P.Q.
C.R. Bowman, WS1, Eureka, N.W.T.
M. Butler, ARQL, Downsview, Ont.
D.H. Champ, AIBD, AES, Downsview,

Ont. (WMO Geneva, Switzerland)
M.J. Delisle, QAEOO, Mirabel, P.Q.
M. D'Gabriel, CCAS, AES, Downsview, Ont.
K. Ford, WS3, Fort McMurray, Alta.
C. Foucher, QAEOO, Baie-Comeau, P.Q.
R. Fournier, CMC, Dorval, P.Q.
K.D. Gardner, ACGC, AES, Downsview, Ont.
A. Gillespie, WS1, Resolute, N.W.T.
B. Janz, Arctic Weather Centre, Edmonton, Alta.
B. Kessler, WS2, Fort Nelson, B.C.
C. Lin, CCRN, AES, Downsview, Ont.
D. McDonough, Central Records, Downsview, Ont.
B. McNaughton, WS3, Edson, Alta.
Y. Perreault, ADED, National Capital Region, Ottawa, Ont.
D. Poole, WS2, Sachs Harbour, N.W.T.
R.W. Postnikoff, WS1, Eureka, N.W.T.
R. Raisbeck, WS2, Norman Wells, N.W.T.
G. Roberts, ACRO, AES, Downsview, Ont.

Retirements

F. Stelck, Central Region, Winnipeg, Man., August 1980
A. Wilk, CCCD, AES, Downsview, Ont., July 1980
W. Gilmour, Alberta Weather Centre, Edmonton, Alta., Aug. 1980

Secondment

R. Hopkinson, Scientific Services Regina, to ARQT, Downsview, Ont.

Promotions, appointments, transfers, temporary or acting positions sections provide information on new postings including location. Only temporary or acting positions which involve a change of location are listed. Retirements and departures indicate the last posting.

Abbreviations used are:

MT - meteorologist
 EG - engineering & scientific support
 SE-RES - research scientist
 PC - physical scientist
 ES - economist, sociologist, or statistician
 SX - senior executive
 DA-PRO - data processing
 EL - electronics technologist
 ENG - engineer
 GL-VHE - general trades
 ST - secretary
 FI - financial officer