



THE ROUTE OF
GREATEST
COMFORT

REDUCED FARES

TO

Vancouver, Victoria, And Other Pacific Coast Points



THE ROUTE OF
GREATEST
COMFORT

FROM ALL STATIONS IN

Manitoba, Saskatchewan and Alberta



JOURNEY over the Canadian Northern is over new rails and through wonderful lands to a country abounding in big things—majestic mountains, great lakes, deep canyons and mighty rivers—in addition to rest, recreation and education.

Between Winnipeg and Edmonton the tourist traverses a picturesque prairie route which is of continuous interest. West of Edmonton the traveller leaves behind the wheat fields of the Prairie Provinces and the country becomes rougher, until finally the haze-clothed mountains loom up in the distance. For miles the line ascends the Athabaska River Valley through Jasper Park to Yellowhead Pass, where it crosses the Great Divide, or main ridge. Beyond, the Fraser River is followed to Mount Robson, the highest peak of the entire Canadian chain, yielding place to the Canoe River and the Albrede, which are in turn succeeded by the North and Main Thompson Rivers. The Fraser then gains right of way and leads to New Westminster and Vancouver through canyons matchless in their rugged grandeur. Nowhere in this journey of over seven hundred miles is there a moment that hangs heavily, so insistent is the attraction of each new vista or panorama that flashes past the windows of the comfortable observation car.

Compartment Observation Cars

TORONTO, WINNIPEG, EDMONTON
AND VANCOUVER

Several new features have been introduced in these cars which cannot fail to meet with the approval of the tourist, notably the entire privacy which they afford.

R. CREELMAN

GEN. PASSENGER AGENT, WINNIPEG

W. STAPLETON, D.P.A., Saskatoon, Sask.

J. MADILL, D.P.A. ... Edmonton, Alta.

Standard and Tourist Cars

The Canadian Northern luxurious steel sleeping cars have many new features that conduce to the comfort of a long journey. Both upper and lower berths are noticeably wider and longer than usual, and each standard is equipped with electric lights and a patent wardrobe which keeps the clothes creaseless and out of the way.

The most interesting results, however, were obtained from the sown-down grassland of various ages. In every case, even when the land has been grassed over for fifty-eight years, typical arable weed seeds occurred in such numbers and at such depths as to preclude any possibility of carriage by accidental means, as by birds, animals or machinery. The Laboratory House Meadow was laid down to grass in 1859, and even yet living seeds of orache, knot-grass and field speedwell were present in quantity, and the conclusion cannot be resisted that the seeds had remained buried and dormant ever since the field passed out of arable cultivation.

Geescroft had been grassed over for thirty-two years, and the arable seeds were much more plentiful than in the previous case described. Knot-grass was most abundant, as fifty-two seedlings appeared in the soil from holes measuring only one square foot in area, and orache, thyme-leaved sandwort, poor man's weather-glass, poppy, black bindweed and wild pansy were all represented. The old records for 1867 show that every one of these weeds was present among the arable crops on the field at that date.

It is noticeable that most of the arable seedlings appeared from lower inches of soil, from the fifth

to the twelfth inch, perhaps because the conditions at these depths are so unfavorable to growth that the seeds simply remain dormant, waiting for more propitious circumstances. The seeds that were in the upper inches of soil probably started into growth and were promptly smothered out by the herbage without having any chance of developing.

Another field had only been under grass for ten years, and it was truly amazing to see the multitude of seedlings that appeared from the samples. From an area of two square feet 791 arable plants were obtained in addition to those that belong indifferently to grass and tilled land. Orache, dwarf spurge, knot-grass, sow-thistle, field speedwell, ivy-leaved speedwell, charlock and poppy appeared in quantity, besides a number of parsley, thyme-leaved sandwort, lady's mantle and nipplewort; so that even ten years' burial had done comparatively little to reduce the number of arable weed seeds. Soon after the samples were taken the field was plowed up, and within a very short time it was thickly covered with seedlings of the same species that were observed in the pans, and at the present time the problem still is how to clear this field of arable weeds, in spite of the ten

years that it has been under grass.

These results lead irresistibly to the conclusion that when arable land is grassed over a certain number of the weed seeds are able to retain their vitality for very many years. Many of the seeds die within a comparatively short time after burial, and as time goes on the number of living seeds becomes gradually less, though proof has been obtained that some will survive for at least fifty-eight years. Usually most of the older arable seeds that are capable of growth occur in the lower depths of soil where the condition are less variable, whereas in land that has only been under grass for a comparatively short time a greater proportion are found nearer the surface. While the stock of arable seeds is diminishing with the lapse of time, the supply of grassland seeds is being augmented by the fresh seeds that are ripened by the surface vegetation and carried down into the soil.

Taking all things into consideration it must be concluded that there is no definite evidence that large crops of poppy, charlock or other weeds will appear true if old grassland is plowed up, although this may well happen if the fields have at any time been under arable cultivation. It is evident that under suitable condi-

tions the seeds of some weeds are liable to lie dormant at various depths in the soil for long periods and start into activity if and when the method of cultivation is so changed that they are brought nearer to the surface into the presence of the necessary light, warmth and air. Consequently the large crops of weeds that appear when temporary pasture is plowed up must be regarded as being derived from seeds buried in soil, and not from seeds transported from other areas by external agencies, whereas the case for arable weeds appearing at once when old pasture is broken up must be regarded as not proven.

W. E. Brenchley.

Step to the Head!

The teacher of natural geography directed all her pupils to write a definition of the word "geyser." Willie evolved this definition:

"A kaiser is a disturbance of the earth's surface."

Dennis—"Good mornin', Mrs. Murphy, an' is Pat at home, sure?"

Mrs. Murphy—"Sure, where are your eyes, Dennis Dinny?" "Isn't that his shirt fornest ye hangin' on the loine!"