



**PALYNOLOGICAL DATING OF SEDIMENTS ASSOCIATED WITH PLACER  
GOLD DEPOSITS IN THE BARKERVILLE – QUESNEL – PRINCE GEORGE  
REGION, SOUTH-CENTRAL BRITISH COLUMBIA\*  
(93G)**

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**KEYWORDS:** Economic geology, placer deposits, palynology, dating, correlations, Tertiary, Fraser Bend Formation.

**INTRODUCTION**

Placer deposits have been worked for many years in the Barkerville–Wells–Quesnel–Prince George region of British Columbia, with some yielding valuable amounts of gold. Throughout this long history, no direct evidence regarding the age of the placer deposits has been documented. It has been assumed by many geologists that the gold is associated with Pleistocene deposits, and a few have suggested that the placer gold was recycled from older Tertiary deposits, or that the deposits are quite variable in age, ranging from the late Tertiary through the Pleistocene (Clague, 1987; Eyles and Kocsis, 1988).

To attempt to resolve the uncertainties in dating, we proposed to apply palynological analyses to the placer deposits. The results reported here are the half-way record; it will take another year to zero in on the final picture. However, the preliminary results are interesting, and provide incentive to continue the search for the final answer.

**RESULTS**

Samples of the sediments were obtained from the localities numbered in Figure 6-4-1. Channel samples were taken from outcrop exposures to ensure a composite recovery of palynomorph facies. One of the first observations was that all of the outcrops examined contain volcanic clasts or are composed of volcanic ash, which was confirmed in the laboratory by identification of shards in microscopic preparations. From experience in this region, the occurrence of volcanics is limited to Tertiary successions. Palynologically, further support is given to a Tertiary age by the occurrence of *Cedrus perialata*, which is known to have become extinct in North America in the late Miocene (Rouse, 1977; Rouse and Mathews, 1979). In all of these sample analyses, care was taken to separate out any palynomorphs that may have been recycled from older deposits. Below is a list of palynomorphs recovered:

- Conifer pollen:
  - Cedrus perialata*
  - Pinus haploxyton*-type

- P. diploxyton*-type
- P.*-3 (Piel)
- P.*-4 (Piel)
- Picea grandivescipites*
- Podocarpus* sp.
- Keteleeria* sp.
- Pseudotsuga* sp.
- Tsuga heterophyllites*
- T. igniculus*
- Juniperus* sp.

Angiosperm pollen:

- Betula claripites*
- Myricipites dubius*
- Alnus vera*
- cf. *Quercus* sp.

Fungal spores:

- Granatisporites* sp.
- Dicellaesporites "taperensis" n. sp.*
- Reduviasporonites anangus*
- Multicellaesporites* sp.
- Tetracellate fungal spore
- "*Circulosporites*" sp.
- Fungal hyphae E (Norris)

Lycopods and Ferns:

- Osmunda irregulites*
- Lycopodium* sp.

Algal Cysts:

- Ovoidites*-1
- O.*-2
- Cyclopsiella* sp.
- Cf. *Lejeunia* sp.

It is clear that the placer sediments sampled to date are all of late Tertiary age: they correspond to the Fraser Bend assemblages originally assigned to the late Middle Miocene, circa 17 to 13.5 Ma., Barstovian on the mammalian fossil printout (Rouse and Mathews, 1979; page 435). Equivalent outcrops are in the highest beds below the late glacial tills northwest of Quesnel. Hence, the general stratigraphic picture is late Tertiary sediments forming the upper stratigraphic component of the placer sequence.

During the next field season, sampling of outcrop exposures will be done on the Willow and Cottonwood rivers, because we feel that the best recovery of distinctive palynomorphs will be found there.

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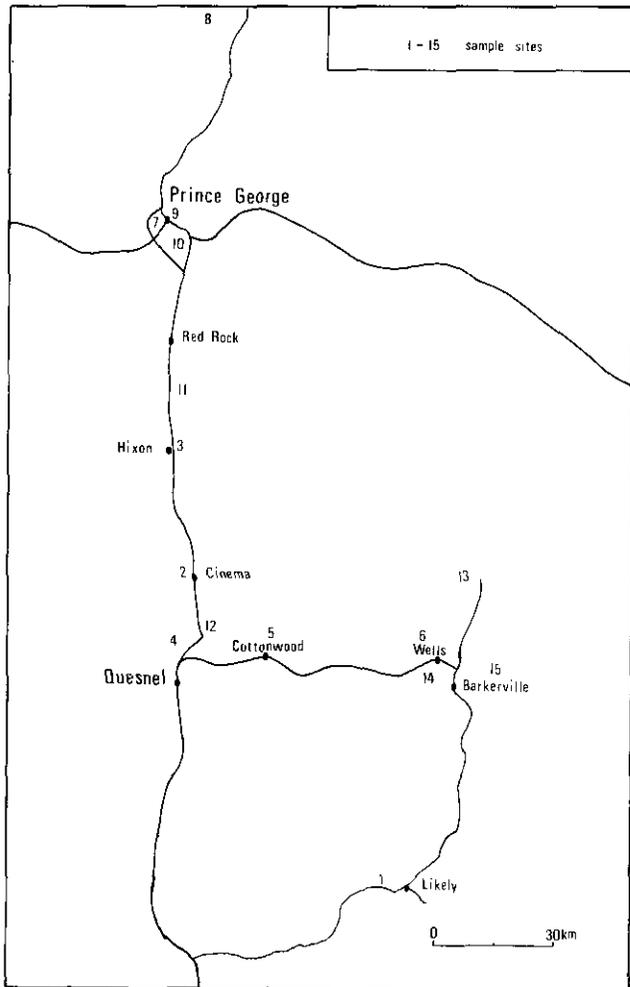


Figure 6-4-1. Distribution of collection sites in placer gold deposits.

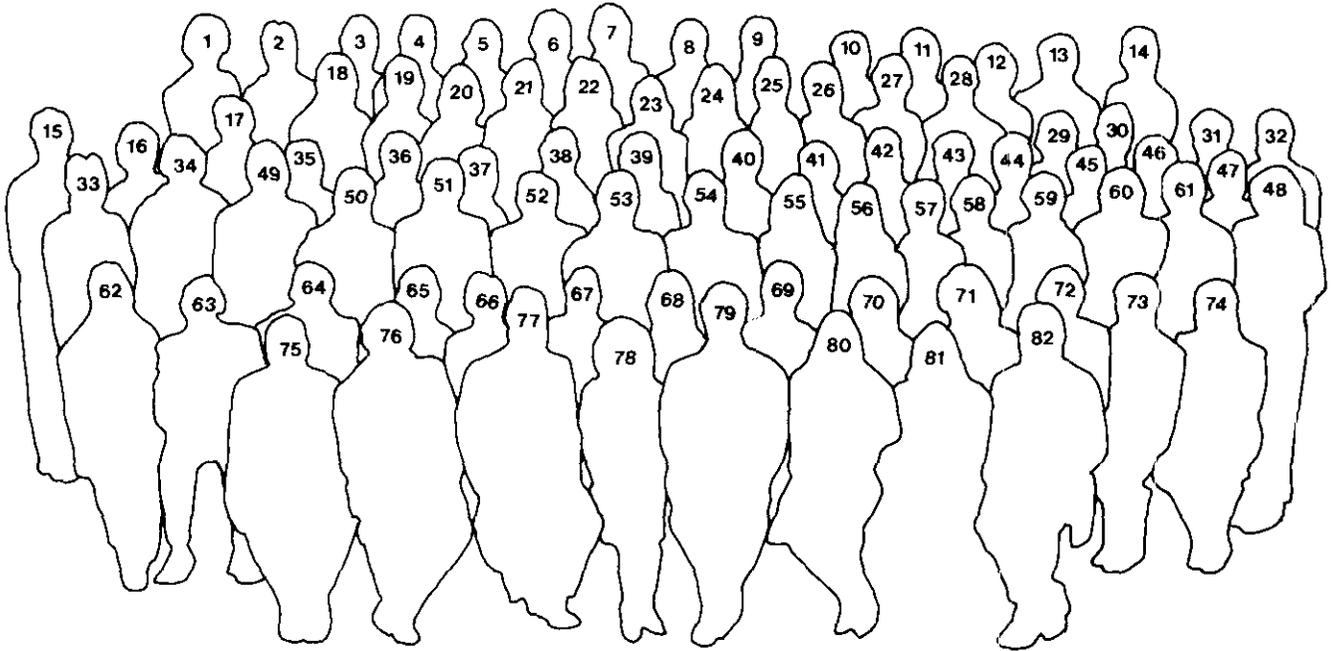
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