PALYNOLOGY OF NEOGENE OUTCROP SAMPLES, ALASKA 2018

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Ten outcrop samples, all of Neogene age, have been examined for palynological content. A summary of forms observed is shown on the accompanying data chart.

All samples were productive of palynomorphs, entirely of terrestrial origin, with recovery ranging from sparse to excellent, and preservation generally good, with one exception. The overall populations are quite similar, and consist almost entirely of forms recognizable in environments present today, which is a normal circumstance with palynological populations that are Miocene or younger. In the absence of a stratigraphically vertical standard against which to compare these populations, precise age interpretations between Pliocene and Miocene cannot be made with confidence. In general, Nothing seen in any samples contradicts estimated ages provided by client, and shown on the data chart.

Most samples were dominated by abundant bisaccate gymnospermous pollen, most specimens of which cannot be securely identified to a genus, owing to preservational characteristics (e.g., folding or fragmentation). When identifiable, the dominant bisaccate gymnosperm genus is *Picea* (spruce), with lesser numbers of *Pinus* (pine), *Cedrus* (cedar) and *Abies* (fir). The other common gymnosperm genus is the monosaccate form *Tsuga* (hemlock). Angiosperm pollen is not highly variable, and dominated by *Alnus* (alder). The content of fern, lycopsid, and other spores varies from sample to sample, but all are of genera having botanical origins recognizable today.

**31 CONG (Camp 2; Center of vertical beds; jeff conglomerate)**

This sample was one of the most diverse, and in addition to the ubiquitous common forms, contains notably a variety of fungal entities.

**54 CONG (Camp 3; near abundant tephra locations)**

This sample was of low diversity, and consists entirely of relatively abundant forms. No fungal material was observed.

**CONG 1-G2** (as labeled on the microscope slides; presumably CONG 2-G2 as given on the age estimates received). (CCR- 1 or 2?)

A low diversity sample similar to 54 CONG, with no fungal material.

**CONG 5-G3 (camp 1.5 base)**

A low diversity sample, similar to those above. A single fresh-water algal form was observed.

**CONG 2-G4**

A moderately diverse sample containing fungal elements, and also notable for containing *Taxodium* pollen.

**CCR G46**

A sample of relatively high diversity, with fungi, sphagnum moss, fresh-water algae and *Taxodium* present, suggestive of a fairly wet environment. Notable also is the presence of two angiospermous taxa not known to exist in present environments, identified as *Diervilla* sp. and *Corsinipollenites oculus-noctis*. The *Diervilla* species differs from the most common species, *D. echinata,* by being less distinctly ornamented; *D. echinata* is known mainly from Oligocene strata. *C. oculus-noctis* is known from Pliocene and older strata.

**CCR1 G7**

A highly diverse sample having overall similarity to CCR G46.

**CONG 5-G16 (Camp 1.5)**

The population of this sample is relatively poor in preservation, and appears somewhat darker (?more mature thermally) than other samples.

**01 JAR MUDSTONE**

Palynomorph recovery in this sample was sparse, and the kerogen consists dominantly of black angular grains. These characteristics suggest the possibility that some, perhaps most, of the palynomorphs may be modern contaminants.

**PHELAN CREEK**

Palynomorph recovery in the Phelan Creek sample was relatively sparse, and of very low diversity, consisting only of the most common forms seen in other samples.

**CONCLUSION**

The recovery of palynomorphs in these samples indicates clearly that good data can be obtained from these sediments. It would be greatly desirable to establish a vertical succession from a single locality, if possible, in order to facilitate stratigraphic comparison. The radiometric data is extremely valuable, and appears to be consistent and accurate.