Abnormal Dentition in Dall Sheep (Ovis dalli dalli Nelson)

On August 3, 1973, a Dall ram was shot in the Kusawa Lake area, south-central Yukon Territory, Canada. The ram was seven years and three months old, using the horn-segment count method for aging, as established by Geist (1966) for bighorn sheep and as verified for Dall sheep by Hemming (1969). The animal was normally developed as to body weight, horn growth, and tooth wear. Its skull, however, showed several anomalies of which the most significant was the presence of two supernumerary molariform teeth in the maxillae.

The accepted dental formula for Dall sheep is $I$ (incisors)$0/3$, $C$ (canine)$0/1$, $P$ (premolars)$3/3$, $M$ (molars)$3/3$. The canine is incisiform, the premolars are considered to be the second, third, and fourth, while the molars are considered to be the first, second, and third (Hemming 1969; Cowan 1940). The additional teeth are similar in size and shape to $P_3$. They are located—symmetrically—on the lingual side of the normal tooth-rows of the maxillae, approximately between $P_3$ and $M_1$, at a distance of about 7 millimeters, measured at

back. The bill is very light colored with the tip darker. Its eyes are dark and the plumage of its sides is the same soft, ash-grey. 'The description clearly fits that of the Gray-headed Junco (Junco canniceps) in standard field guides (e.g., Peterson 1961), especially as Mossop later (1964b) specifically considered the possibility of a hybrid between the Slate-colored and Oregon Juncos (then $J$. hyemalis and $J$. oreganus respectively), ruling out by the "absence of any brown whatsoever on its sides." On 23 February the author and his father, Archie M. McNicholl, accompanied Mossop to the Calder home and observed the bird at distances ranging from about 10 to 40 feet. The chestnut triangle on the back and soft gray sides were carefully checked in detail at close range, and also show clearly on a photo transparency taken by Harold V. Hosford. W. Earl Godfrey (personal communication) has accepted this photo as sufficient evidence to add the Gray-headed Junco to the Canadian list. The junco was observed several times by Mossop and several others until well into March. A possible earlier record for Winnipeg is reported by Dr. Lawrie B. Smith (personal communication), who trapped a junco with a reddish-brown back in a banding trap on or about 28 September 1962. Unfortunately, further details were not noted, as the bird escaped before Dr. Smith was able to examine it more closely.

Although Godfrey (1966) did not have any definite previous Canadian records of this junco, sight records of one each have been reported for March and April, 1971 near Bowman, North Dakota (Stewart 1971; Houston 1971), and there are two recent sight records for Minnesota (Peterson 1969; Carr 1970; Robbins 1970). The usual range of this junco includes California, Nevada, Idaho, Wyoming, New Mexico, Texas, and Mexico (American Ornithologists' Union 1957).

I thank Dr. W. Earl Godfrey for comments on the manuscript, and for examining the photograph; Dr. Lawrie B. Smith for details of his observation; Harold V. Hosford for use of the photograph; and the late Harold Mossop for showing us the bird.

Literature Cited


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the occlusal surfaces (Figure 1). The additional tooth of the left maxilla is rotated by about 90 degrees, its buccal cusp pointing anteriorly, and its lingual cusp pointing posteriorly. The additional tooth of the right maxilla is rotated by about 180 degrees, its buccal cusp being on the lingual side, and its lingual cusp on the buccal side. The attrition on each supernumerary tooth is congruent with the wear pattern of the adjacent $P_4$, suggesting that both pairs had erupted at about the same time. The opposing tooth to the supernumerary tooth and the adjacent $P_4$ is the mandibular $M_1$. The even wear necessitated considerable lateral movement of the lower jaw during mastication.

The skull of this ram shows the following additional anomalies: the frontal bones are incompletely joined between the horn bases, leaving an opening to the cranial cavity of about 20 millimeters by 5 millimeters in size. The nasal bones are absent. Both mandibular $P_2$'s are absent, and the third (posterior) lobe of both mandibular $M_3$'s are only rudimentarily developed.

Except for Murie (1944), who discusses malformed teeth in relation to actinomycosis, I am not aware of any published information with regard to dental anomalies in Dall sheep. Considerable information, however, is available for Desert Bighorn sheep (Bradley and Allred 1966; Allred and Bradley 1965) and for members of the deer family. The most recent publications are those by Miller and Tessier (1971) for caribou, Mech et al. (1970) for white-tailed deer, and Pekelharing (1968) for red deer and wapiti.

Over the past five years the writer had the opportunity to inspect over 400 Dall sheep skulls. So far all anomalies consisted of the absence of teeth or of malformations. This is the first specimen in which supernumerary teeth were encountered.
The skull is deposited in the collection of the Yukon Game Branch at Whitehorse.

**Literature Cited**


**Loiseleuria procumbens** (L.) Desv., Alpine Azalea, in Alberta

There has been considerable confusion in the reports of the presence of *Loiseleuria procumbens* (Ericaceae) in Alberta. Moss (1959) did not include the species in his *Flora of Alberta*. Campbell (1900), however, reported *Loiseleuria procumbens* (sub *Chamaecistus procumbens* (L.) Kuntze) from Tunnel Mountain, Banff. Boivin (1967b) discounted this and referred to a comment in his later publication under *Coronopus didymus* (Boivin 1969): "Most later authors have ignored the many papers by Campbell and his numerous additions and range extensions. And rightly so, as nearly all his unusual reports and many of the run of the mill ones are based on errors of identification. Thus his reports of *Silene acaulis* and *Sibbaldia procumbens* from Wolsley, Sask. are based respectively on *Phlox hoodii* (QK; DAO, photo) and *Potentilla concinna* (QK; DAO, photo). Other reports by Campbell were systematically ignored; too many of them border on the fantastic."

Actually, two collections, made by Campbell and misidentified by him as *Loiseleuria procumbens* exist. These are labelled vaguely as "Above Lake Louise, Laggan, Rocky Mt.s., June 1897" and "Banff, B.C., June 1897" (MTMG). They were revised to *Vaccinium vitis-idaea* var. *minus* and *Emetrum nigrum* var. *purpureum* respectively, by Bernard Boivin in 1970.

Hultén (1948) included "Alberta (54°N)" in his description of the geographical areas in which *Loiseleuria procumbens* is found. The report in Boivin (1966 and 1967), and possibly also that of Fernald (1950), is based on the information given by Hultén (1948). Boivin (1967b), however, believes that Hultén's report is likely based on a misreading of Hooker (1834, *sub Azalea procumbens* L.), which was repeated by Macoun (1884), "Mount Edgecombe, lat 54°." This mountain, as pointed out by Boivin, is in the Alaska Panhandle in the vicinity of 54°, not in the Rockies of Alberta.

Hultén (1958) in his *Amphi-Atlantic Plants* apparently ignored his earlier information, because he does not show any records from Alberta on his map. In his *Flora of Alaska and Neighboring Territories* (Hultén 1968) however, there is a circle on the circumpolar map which might be interpreted to cover a portion of the Rocky Mountains of Alberta.

Recent collections of *Loiseleuria procumbens* from Jasper National Park are thus of considerable interest. Data are as follows: Tonquin Valley, N. B. Sanson (undated) (ALTA); same locality, J. G. Packer, Aug. 15, 1958 (ALTA) (Packer and Dumais 1972); same locality, alpine communities of the slopes of Mount Clitheroe, 52°43'30" N, 118°15' W, altitude 7500 ft, G. W. Scotter 17104 (DAO). On the latter specimen, immature capsules were dark purple in color when the plant was collected on 17 July 1971.

Dr. Erling Porsild, in conversation with the senior author, revealed that he too had collected *Loiseleuria procumbens* in Jasper National Park. This was in 1958

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